

Webinar

**Sustainable Transport
Solutions for
EU Islands**

23 January 2020



E-Ferry Ellen: A maritime technological solution to the climate crisis

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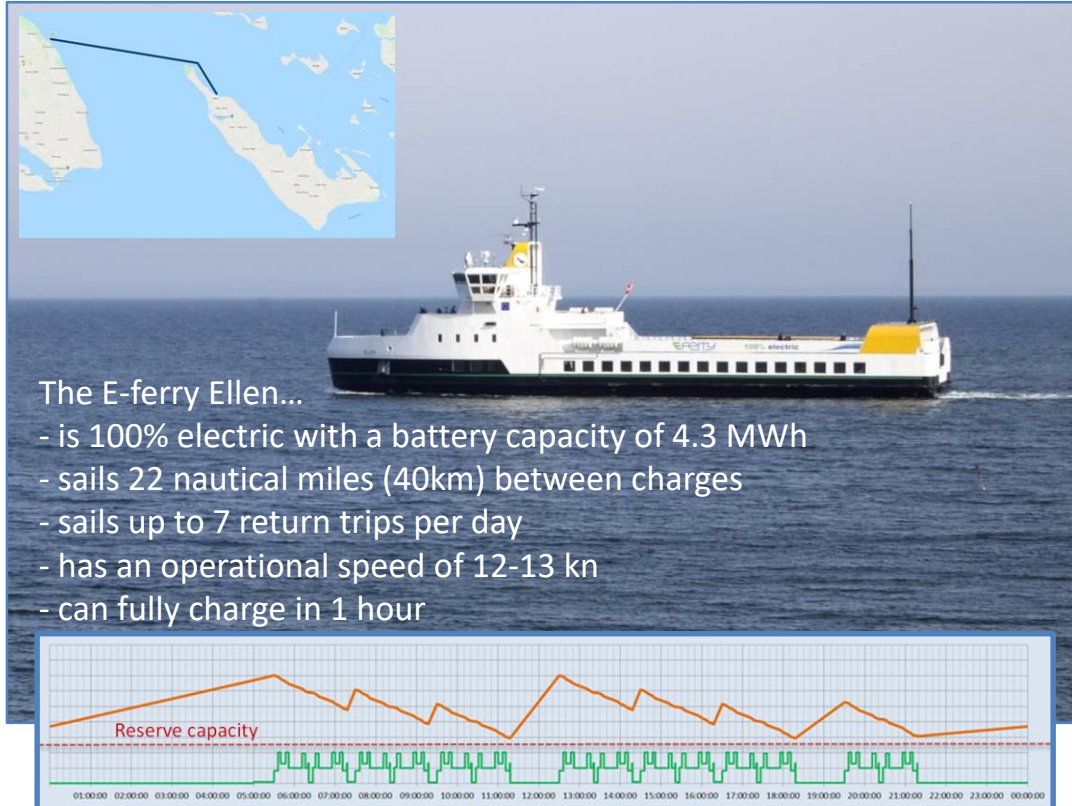
www e-ferryproject.eu
el-færgeprojekt.dk

f Eferryproject
Den bæredygtige energiØ Ærø

in e-ferry-project



E-ferry Ellen



Funding and expenses

Total expenses: 32 mil. EUR

Funding:

EU's Horizon 2020: 15 mil. EUR



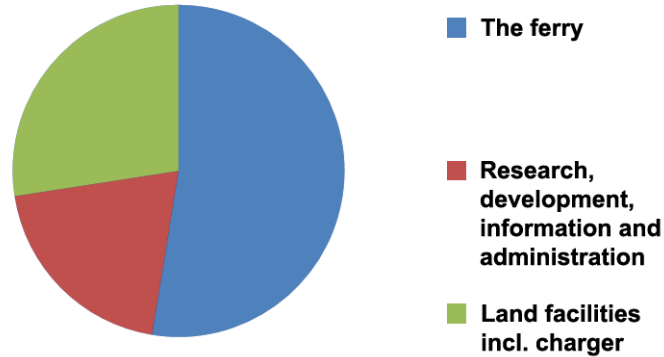
Municipality of Ærø: 14 mil. EUR



Swiss government: 0.8 mil. EUR



Distribution of expenses



Advantages of sailing 100% electric

Emissions saved by operating Ellen: 2.000 tons CO₂ + 41 tons NO_x / year

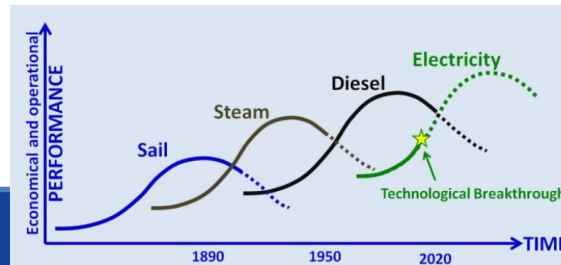
High energy efficiency: Total loss in the chain reduced to 20-30% compared to 70-80% in conventional diesel operations.

Technological simplicity: E-motors have few moving parts, require little maintenance.

Reduced operating costs: Ellen sails for a third of the price of diesel ferry (approx.)

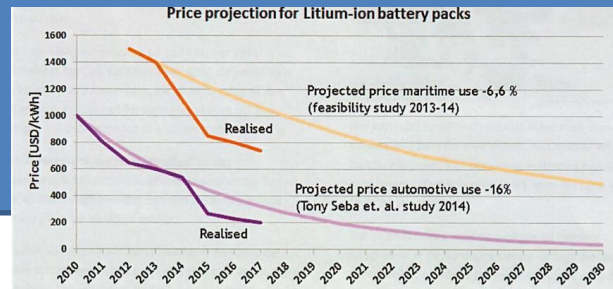
Passenger satisfaction: Ellen sails quietly and smoothly and without emitting fumes

Crew satisfaction: No fumes and highly responsive drivetrain, like in e-car



Barriers challenged by E-ferry

- Limited range of pure battery operation
Solved: Large battery capacity, energy density advancing steadily
- Too costly batteries with rare metals
Partly solved: Lithium-ion prices lowered 15% per year last 6 years
- Lack of safety technology and procedures in electric operations
Solved: Firefighting with new foam system, redundancy, training and maritime certification of battery systems.
- Needed charging infrastructure and power from the grid
Solved: Record breaking plug size of 6000 ampere. Still propagation barriers – not yet an off-the-shelf product.





working towards +sustainable mobility

CE4EU Islands Secretariat transport webinar

2020 - 01 - 23

Lukas Reichel

Engineering and EU-relations @ Som Mobilitat SCCL

Interim CEO @ TMF SCE







"Som Mobilitat's mission is to offer products and services to our members to accelerate the transition towards a more sustainable mobility"





on foot + by bicycle + public transport



shared electric mobility





1 Find a vehicle

2 Reserve it

3 Open it and drive

4 Receive a detailed invoice at the end of the month with a usage report:

- Total km driven
- Total time of use
- Total days of use

We need a technological solution to provide this service



☰ 🔍 Cerca un cotxe disponible

Zoe 02 (8464 JWT)

100% 🔋

🏠 La havana
📍 Carrer Antoni de Capmany 30

FES SERVIR ARA **RESERVA ARA**

Zoe 02 (8464 JWT) és teu
des de Dg 11 jun. 18:51
fins a Dg 11 jun. 19:51

ACABA DE FER SERVIR ?

localització actual del cotxe
Av. del Maresme, 08301
Mataró, Barcelona,
Espanya

🔋 92% matricula
8464 JWT

⌚ una hora duració

📏 16.2 km distància

🔒 [Slider] 🔒

All inclusive:





The movement integrates into the same project:

civil society

+

companies & organizations

+

city council



The members can buy a vehicle, either **individually or collectively** and share it on certain days.

Institutions, companies and other entities can acquire one or more vehicles, use them with our platform and share them with other partners outside business hours.

Municipalities can easily create a social car-sharing service for both professionals and neighbors.



1

We create local communities

Local groups of Som
Mobilitat



2

We are creating an European
network of local electric car-
sharing cooperatives



We join forces with Belgium coop Partago

PARTAGO

Co-development

- We start contributing to existing Partago IT-Platform
- We agree on shared ownership of code base
- IT platform develops into multi-coop platform serving the needs of different coops
- **We agree to evolve our collaboration in a new cooperative structure:**

THE MOBILITY FACTORY SCE

Partago CVBA (Gent, BE)

- Consumer coop
- Established in 2015
- As today:
 - 300 members
 - operating 55 electric cars



PARTAGO

Som Mobilitat SCCL (Barcelona, ES)

- Consumer coop
- Established in 2016
- As today:
 - 1700 members
 - operating 35 electric cars



The Mobility Factory (TMF) is a [European Cooperative Society \(SCE\)](#), founded in 2018 by 8 cooperative enterprises and REScoop.eu.

The SCE offers an **e-car sharing platform** ([platform cooperativism](#)) to their members, which consists of a customizable co-owned and co-developed software product.

It is governed based on the [ICA principles](#) of good cooperative governance.

Every cooperative enterprise engaged in **sharing electric cars** can become a member and benefit from the services and IT of TMF and decide on its future development.



ENERGIEGEWINNER
BÜRGER. ENERGIE. GENOSSENSCHAFT.



LOCHEM ENERGIE
Je eigen energie



URSTROM
BÜRGERENERGIEGENOSSENSCHAFT
MAINZ EG

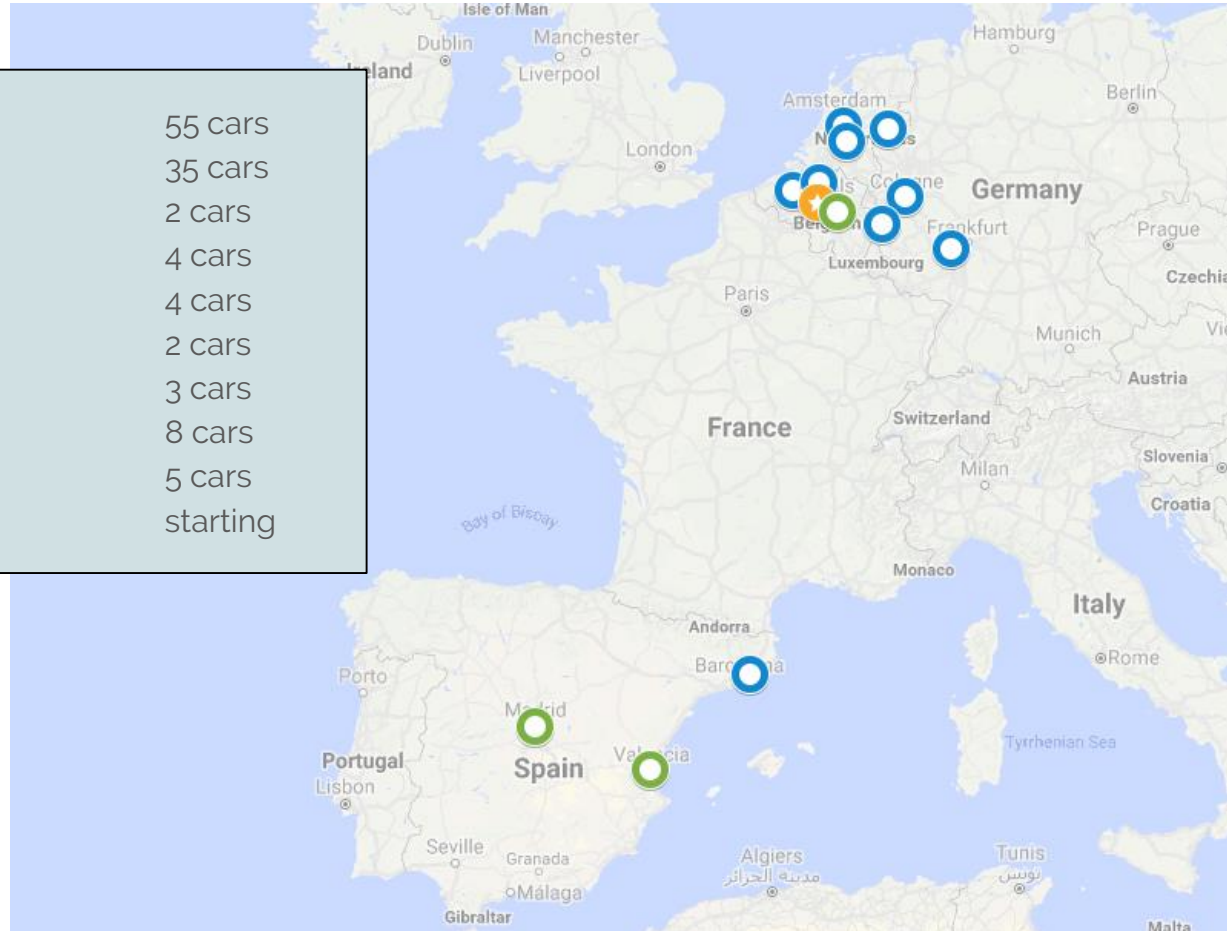


het
hilversumse energie transitie



The Mobility Factory Members today

- Partago (Belgium): 55 cars
- Som Mobilitat (Spain) 35 cars
- Courant d'air (Belgium) 2 cars
- Alterna (Valencia) 4 cars
- UrStrom (German) 4 cars
- Energiegewinner (Germany) 2 cars
- HET coöperatie (Netherlands) 3 cars
- Lochem Energie (Netherlands) 8 cars
- Coöperatie Auto (Netherlands) 5 cars
- Conecta Movel (Spain) starting



How is The Mobility Factory constituted?

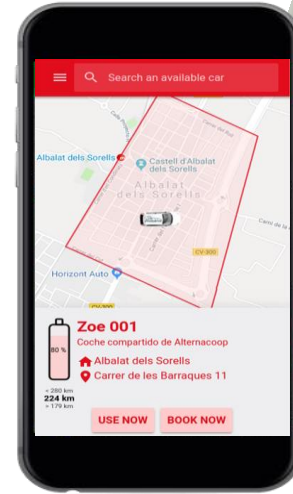
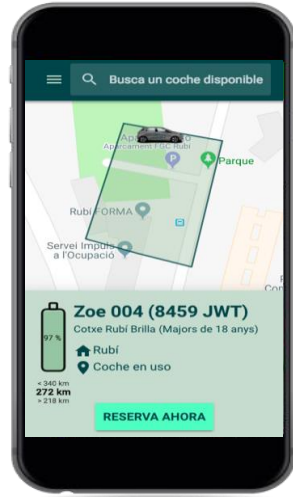
TMF: A European Cooperative Society (SCE):

- It is a legal entity registered in an EU country (Belgium) and aimed to facilitate cross-border activities.
- It allows its members to carry out common activities, while preserving their independence.
- Its members benefit proportionally to their profit and not to their capital contribution.
- For tax purposes, an SCE is treated as any other multinational company and pays taxes in the countries where it has a permanent establishment.

TMF: Purpose

- It provides a clear legal structure to share ownership of the assets of TMF such as the immaterial software code.
- It allows to share costs in a fair and transparent way.
- It lets the needs of the shareholders/members steer the developments of TMF.

The Mobility Factory's Complete solution



- It is a mature customizable platform with 3+ years of functioning in production environment among 10 cooperatives with +110 cars
- It supports a wide range of requirements which can be decided upon and prioritized by TMF members
- It has been developed with the focus on electric vehicles & renewable energy
- Its main target group are cooperatives

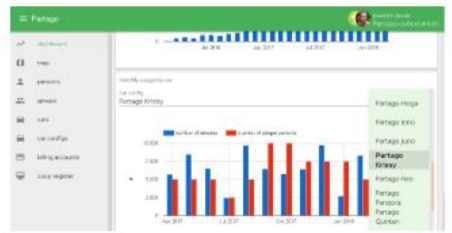
Interfaces connect to external services

E-carsharing APP



- Android & iPhone & Web-APP
- Customised and white label solution
- Reservation calendar
- Free-floating or fixed station cars
- Battery and charging status
- Digital key or badges for opening doors
- Filtering module to select cars
- Online payment integration
- Charging stations integration
- In-app chat

E-carsharing management tool



- Web-based tool
- User management
- Groups management
- Billing account management
- Fleet information
- Charging information
- Energy and usage stats
- Segment car availability for different user groups
- Mobile-first for on the road assistance and maintenance

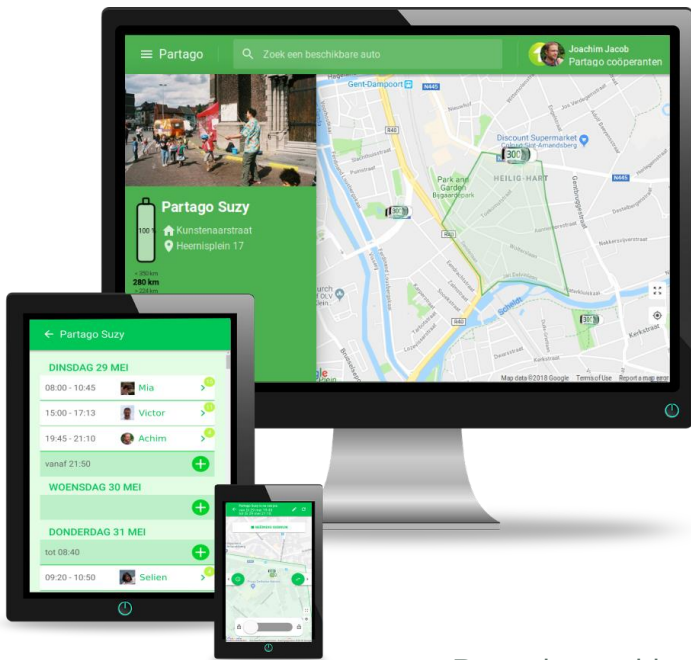
TMF

IT System of local user cooperative

- CRM SYSTEMS
- INVOICING
- MEMBER MANAGEMENT
- DATA ANALYZE

APIS





Developed by:



PARTAGO



Each member of The Mobility Factory SCE co-owns the IT Platform. Cooperative ownership and democratic decision making provides unique advantages:

- Together we share resources to realise a powerful platform, streamlined for serving local communities.
- We own our tools and do not depend on multinational IT platform companies.
- We control our data and decide who has access to it.
- We will maintain the critical know-how inside our organisations.
- We decide about new features to be implemented.

| | | |
|--------------------|---|---------------------|
| 2016 - 2017 | Start collaboration between Partago and Som Mobilitat; Platform goes live on local scale. | 10 cars / 2 coops |
| 2018 | Defining governance principles, financial plan, platform develops into multi-coop solution, foundation of TMF | 55 cars / 5 coops |
| 2019 | Commercial activity starts, provider contracts passed from Som Mobilitat and Partago to TMF. The collaboration principles put into practise. | 120 cars / 15 coops |
| 2020 | Ensure financial stability, raise capital for finance growth and further platform development by crowdfunding, give service to new user-members. Explore interlinked business opportunities (roaming between coops) and alliances. | 500 cars / 40 coops |

Initiate your own local e-car-sharing!
Contact details:



www.sommobilitat.coop
info@sommobilitat.coop



www.themobilityfactory.eu
info@themobilityfactory.eu



www.rescoop.eu
info@rescoop.eu





FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING

***Hydrogen: a
solution for
islands:***

BIG HIT

Enrique Girón
Enrique Troncoso
23th Jan. 2020



Strong public-private partnership with a focused objective

EU Institutional Public-Private Partnership (IPPP)



Fuel Cells & Hydrogen Joint Undertaking (FCH 2 JU)



Industry grouping
More than 130 members
50% SME



European
Commission



Research grouping
about 68 members

To implement an *optimal research and innovation programme* to bring FCH technologies to the point of market readiness by 2020



FCH JU programme implementation



Energy

- Hydrogen production and distribution
- Hydrogen storage for renewable energy integration
- Fuel cells for power & combined heat & power generation



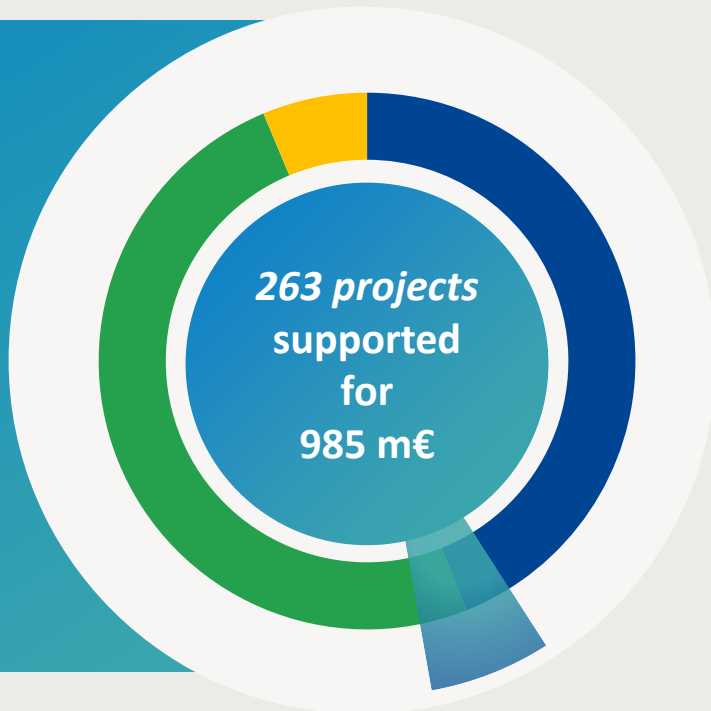
Transport

- Road vehicles
- Non-road vehicles and machinery
- Refuelling infrastructure
- Maritime rail and aviation applications



Cross-cutting

- E.g. standards, safety, education, consumer awareness ...



46 %



457 million euros

41 %



404 million euros
70 projects

6 %



58 million euros
43 projects

7 %



66 million euros
5 projects

Similar leverage of other sources of funding: 1 b€



Project Summary



- Project topic: Hydrogen Territories, H2020 FCH JU & Scottish Gvmt co-funded
- 12 partners from across EU + project supporters
- Main goal: demonstration of an integrated energy system based on hydrogen
- Project dates: 2016-2022
- Total project budget: [initially 10.9m€ - today circa. 13m€]
- EU/FCH JU grant contribution: [5m€]



CALVERA

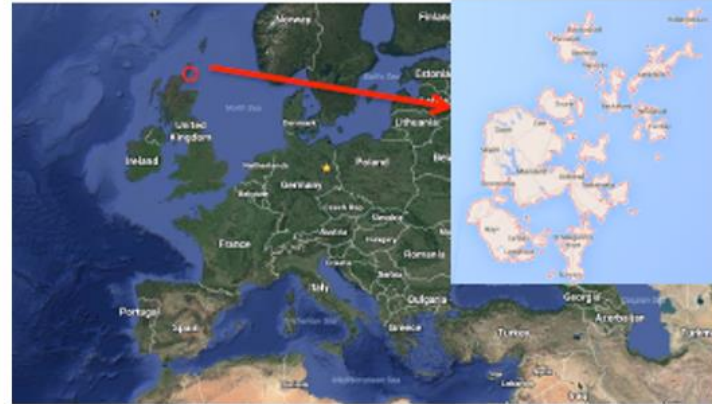




20 islands
~21.000 inhabitants



58MW RES
**47MW wind +
wave/tidal**



PROBLEM/NECESSITY

- Orkney-UK interconnector
30MW capacity
- Electricity grid overloaded
- 20-30% RES annual curtailment



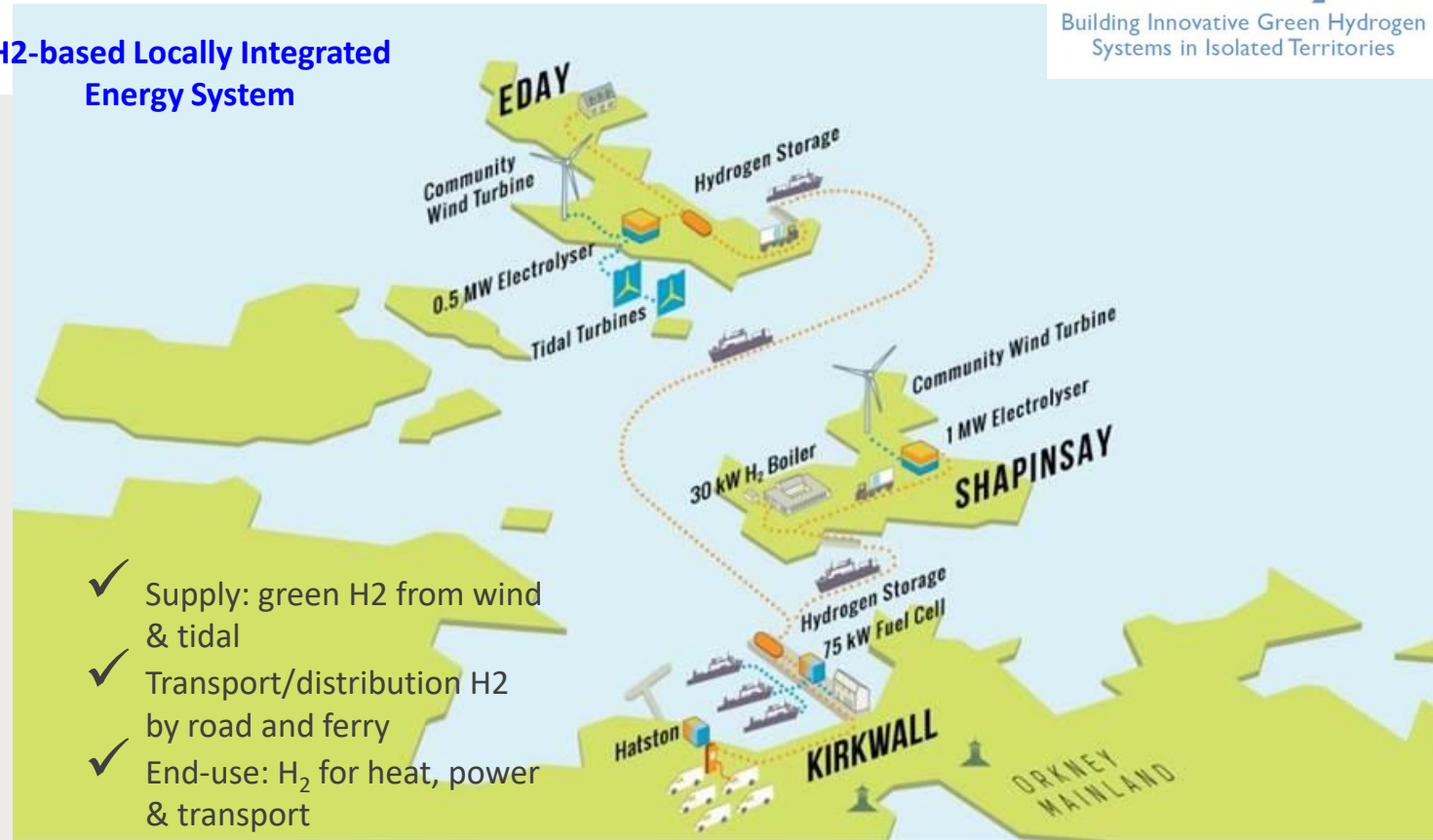
SOLUTION FOR ORKNEY

- Transition to local low carbon economy,
- Electricity, transport and heat demand
via hydrogen
- Local seasonal energy storage



Project Scope / summary

H₂-based Locally Integrated Energy System



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



- ✓ Stakeholder involvement – management of expectations, community involvement
- ✓ Operational competence - training, capacity building
(engineering, ferry crews, fire brigade/policy/emergency services)
- ✓ Financial & Business model (early stages/demo) – contingency, management of exp ectations
- ✓ Regulatory – H2 transportation on ferries - ADR, maritime certification, new standards created!
- ✓ Technical / Logistical challenges – timescale & budget flexibility
(remoteness, geography, climate, materials supply, marine environment)

Lessons learnt replicable to other projects & regions!

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

The screenshot shows the HTP software interface. On the left, there's a sidebar with 'Inicio', 'Portada', 'Advertencia de', 'ICS9', and 'La'. The main area has a large 'HTP' logo and several input fields: 'Enter infrastructure information for the hydrogen region', 'Enter financial information', 'Enter current infrastructure', and 'Enter curtailment information'. Below these is a 'RUN' button. Text on the right explains the tool's purpose and provides instructions for data entry.

ment/validation)

ions

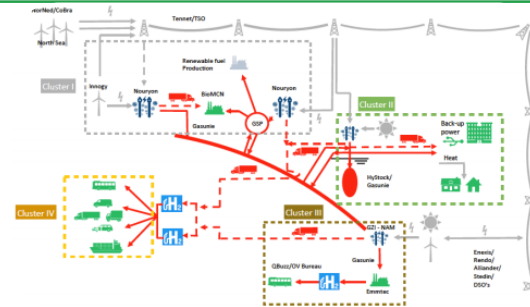
Interested regions & islands are welcome!



Next projects on Hydrogen for sectoral integration

Valleys and islands

- Call 2019: Valleys
- 20 M€ funding
- Selected project: HEAVENN
 - Hydrogen production from renewables
 - Use of hydrogen for road transport in buses and taxis
 - Use of hydrogen for ships
 - Use of hydrogen as feedstock for chemical industry



- Call 2020: Islands
- 10 M€ maximum funding
- Requested proposal
 - Island or isolated territory
 - Minimum 3 legal entities; minimum 3 Member States
 - 300 t H₂ produced and consumed in the island
 - Applications to cover transport and industry and energy sectors
- Call closure: April 21st

- Project Development Assistance tool for regions
 - Consultants for technical and legal support
 - 10 regions
 - Until February 27



FUEL CELLS AND HYDROGEN
JOINT UNDERTAKING

Enrique Girón

Project Manager

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FCH JU