



# EVERYWH2ERE

Making Hydrogen affordable to sustainably operate Everywhere in European Cities



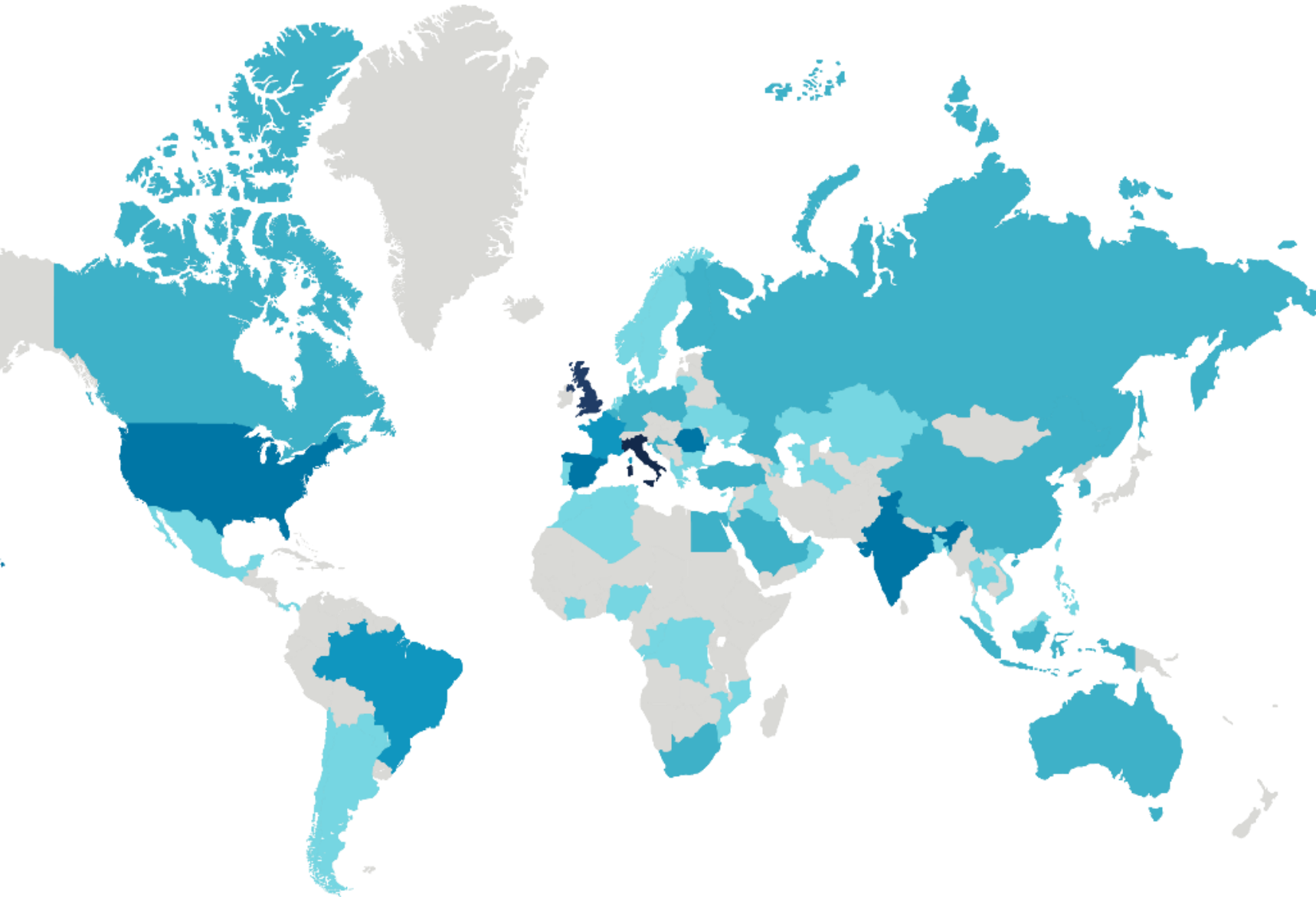
## Competence and Experience

### Tailored solutions for around 160 years

RINA provides a wide range of services across the Energy, Marine, Certification, Transport & Infrastructure and Industry sectors through a global network of 200 offices in 700 countries.

RINA is a member of key international organisations and an important contributor to the development of new legislative standards.

**RINA today**



**~ 4.000 People**

**200+ Offices**

**70+ Countries**

**LEVEL OF RINA PRESENCE:**





# Our Business Units



**Marine**



**Inspection & Field**



**Industry**



**Energy and Mobility**



**Infrastructure**



**Certification**

# RINA R&D&I

## A spotlight on Innovation



- **210+** Industrial Innovation related Regional, National and EU **funded projects**, delivered in the past 10 years
- **300+ M€ Global Value** of Industrial Innovation related **EU funded projects**, delivered in the past 10 years
- **4<sup>th</sup> Top Industrial Participant in FP7** across EU based on the number of Participations \*
- **2<sup>nd</sup> Top Industrial Participant in H2020** across EU based on the number of Participations \*\*
- **187 H2020 Participations** and **47+ M€ Net EU Contribution**
- **5000+** Partners in Industrial Innovation related funded projects \*\*\*

\* Final FP7 Monitoring Report

\*\* <https://webgate.ec.europa.eu/dashboard/hub/>

\*\*\* [www.researchranking.org](http://www.researchranking.org)

# Research

**Since '90s RINA is active in EU R&D Funded programmes, now moving from Horizon2020 to Horizon Europe framework.**

The Fuel Cells and Hydrogen Joint Undertaking (FCH JU) is a unique public private partnership supporting research, technological development and demonstration (RTD) activities in FCH technologies in EU towards the acceleration of their market introduction.

The three members of the FCH JU are the European Commission, fuel cell and hydrogen industries represented by Hydrogen Europe and the research community represented by Hydrogen Europe Research.

FCH JU is yearly investing around 100 M€ per year to finance innovation projects aiming to promote FCH technologies showcase and market roll out in energy and transport sector, also fostering initiatives at regulatory and social engagement level.

Following its Multi-Annual Work Programme (2014-2020) latest R&D key topics for FCH JU are the promotion of FCH technologies in industrial premises, in weakly connected scenarios (i.e. islands and valleys), in railway and maritime sector.

Since next 2021 FCH JU will become **“Clean Hydrogen Alliance”**



**RINA Role in the FCH JU:** participation to FCH-maritime committees and direct link with University of Genova (key member of Hydrogen Europe Research)



**TRL 8 – Plug and Play – Reliable**  
**0 emission – 0 Noise**  
**Interesting for Cities and Events' Organizers**

## **A DEMONSTRATION TO MARKET PROJECT!**

**Start Date:** 1 February 2018

**End Date:** 31 January 2023



## EVERYWH2ERE Objectives



**MO1:** Capitalize EU FC industry expertise and close to market products in automotive/backup power communication sectors, towards the design of reliable, easy to use transportable FC gensets (WP1)

**MO2:** Realization and demonstration of eight PEMFC transportable gensets (4x25 kW and 4x100 kW) integrated with pressurized H<sub>2</sub> storage (WP2-3-4)

**MO3:** Leverage demonstration campaign for the future techno-economical replicability of the FC gensets (WP5-6) – Realization of a Logistic Decision Support tool

**MO4:** Demonstration of economic viability, safety and environmental sustainability of the novel solutions (WP5-6) – Realization of replication feasibility studies and an E-Handbook for replication

**MO5:** Communication, dissemination and preparation of the future deployment of the new EVERYWH2ERE gensets through public and private stakeholders engagement (WP7) – Stakeholders and City Groups







## EVERYWH2ERE Challenges



- High TRL to be achieved: TRL 8
- An “orchestra of partners” to realize a single product: **FIRST OF ITS KIND!**
- **A pre-industrial project** (demonstration on the real field is required, but with some bureaucratic limitations like insurance/certification etc.)
- Logistic, permitting, environmental (at LCA/LCC level) aspects to be studied
- Proper contractual arrangements to be developed: **the importance of hydrogen origin!**
- **Dissemination and Stakeholders’ engagement is crucial:** a project that must be known by EU stakeholders and cities!
- A long but focused project





## EVERYWH2ERE

### An Industry Driven Consortium

This guarantees:

- Industrial and Market interest to project outcomes and marketability
- Facility to involve stakeholders
- Strong commitment to genset realization
- A common «project business» to be pursued made by «different actors' business»
- Ability to overcome contingencies



# Why EVERYWH2ERE H2 GENSETS?



The market is currently served by internal combustion engines (fed by diesel, compressed natural gas, propane etc.) and batteries. Compared with IC generators and batteries, PEMFC systems are:

	Fuel cell	diesel	battery
Reliability	+	-	+
Extended run time	++	++	--
Emissions	++	-	++
Noise	+	-	++
Efficiency	+	-	++
Ambient condition	+	+	-

## Key performance indicators

#zeroemission  
#zeronoise  
#fast start up  
#easy to connect and operate  
#low maintenance  
#efficiency above 50%  
#subzero start (-20°C)  
#reduced installation time  
#ATEX and normative compliancy





## GENSETS CHARACTERISTICS

- Two gensets sizes manufactured (25 kW and 100 kW)
- “Plug and Play”
- Pre-industrial prototypes
- Transportable gensets
- Based on H<sub>2</sub> Fuel cell
- H<sub>2</sub> storage control
- Safety devices

### Two boxes solution:

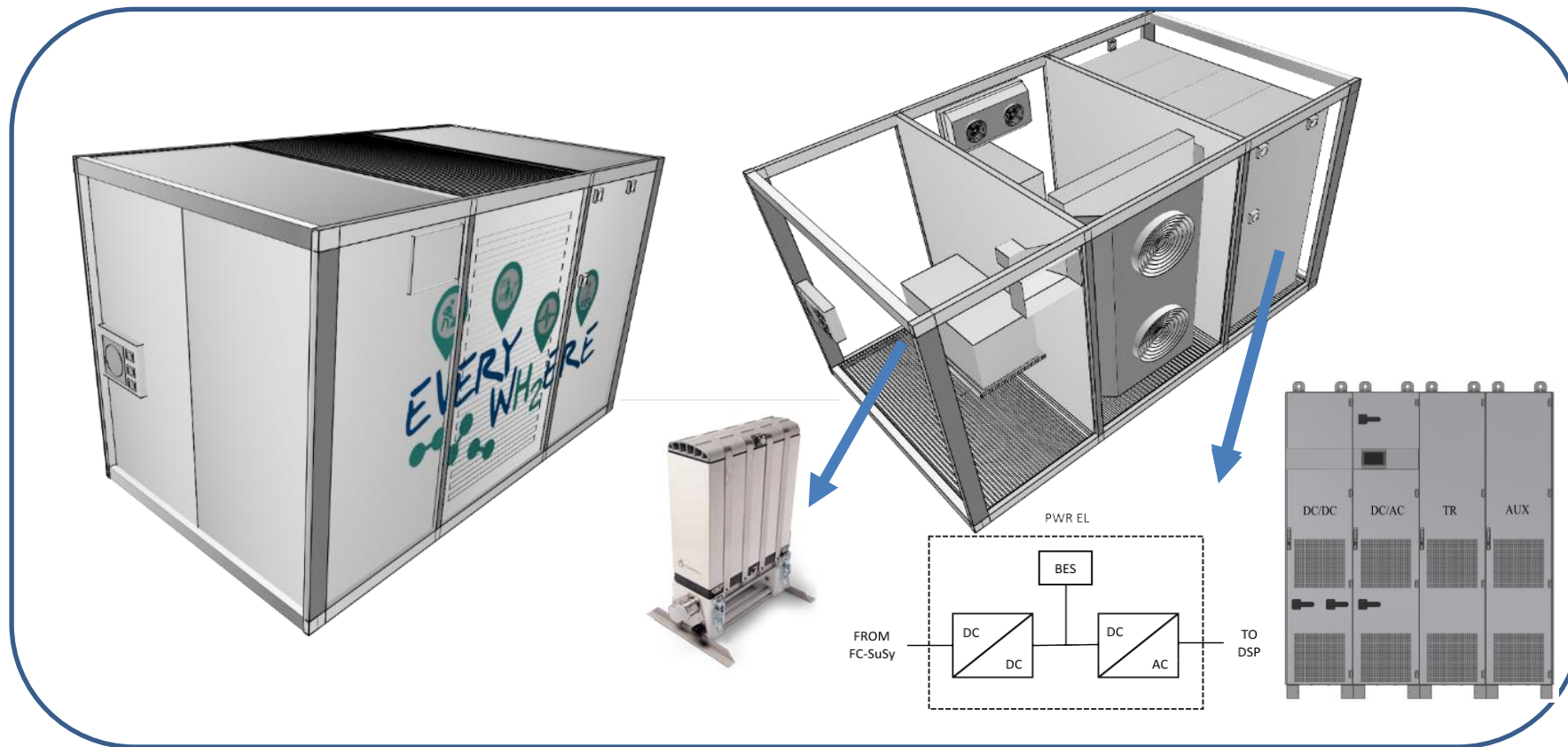
- H<sub>2</sub> tanks @350 bar
- FCPS: Not larger than a 20 ft ISO-container







In these years we made our renders....



This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 779606. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme, Hydrogen Europe and Hydrogen Europe research





# Reality!



Visit [www.everywh2ere.eu](http://www.everywh2ere.eu) and  
join a video tour of our gensets

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Reality!



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# EVERYWH2ERE: A demonstration to Market Project



## DEMONSTRATION IS CRUCIAL IN EVERYWH2ERE – In Construction sites and Events

**Construction Demosites Managed by ACCIONA**

**Music Festivals:** more than 25 LoS collected **by D1** *(and already engaged for 2020 events campaign unfortunately canceled due to pandemic situation)*

**Public Temporary Events:** **FHA** (1x25 kW + 1x100 kW + logistic budget) and **ENVI** (1x25 kW) received support from local authorities to test the genset at local events (Huesca Film Festival, Slow Food Festival etc.)



greenmusicinitiative







## DEMONSTRATION



### DEMONSTRATION WILL START in 2021

The prototypes (4x25 kW and 4x100 kW) will be tested in construction sites, music festivals and urban public events all around EU. These events will be important showcases to promote FC potential to a large audience in order to increase their social acceptance and public awareness. An active involvement of public authorities and industrial stakeholders will foster the spreading of FC gensets opening a potential market doorway towards viable EU cities and Hydrogen economy.

**WE ARE SEARCHING NEW EVENTS and OPPORTUNITIES TO TEST OUR GENSETS!**

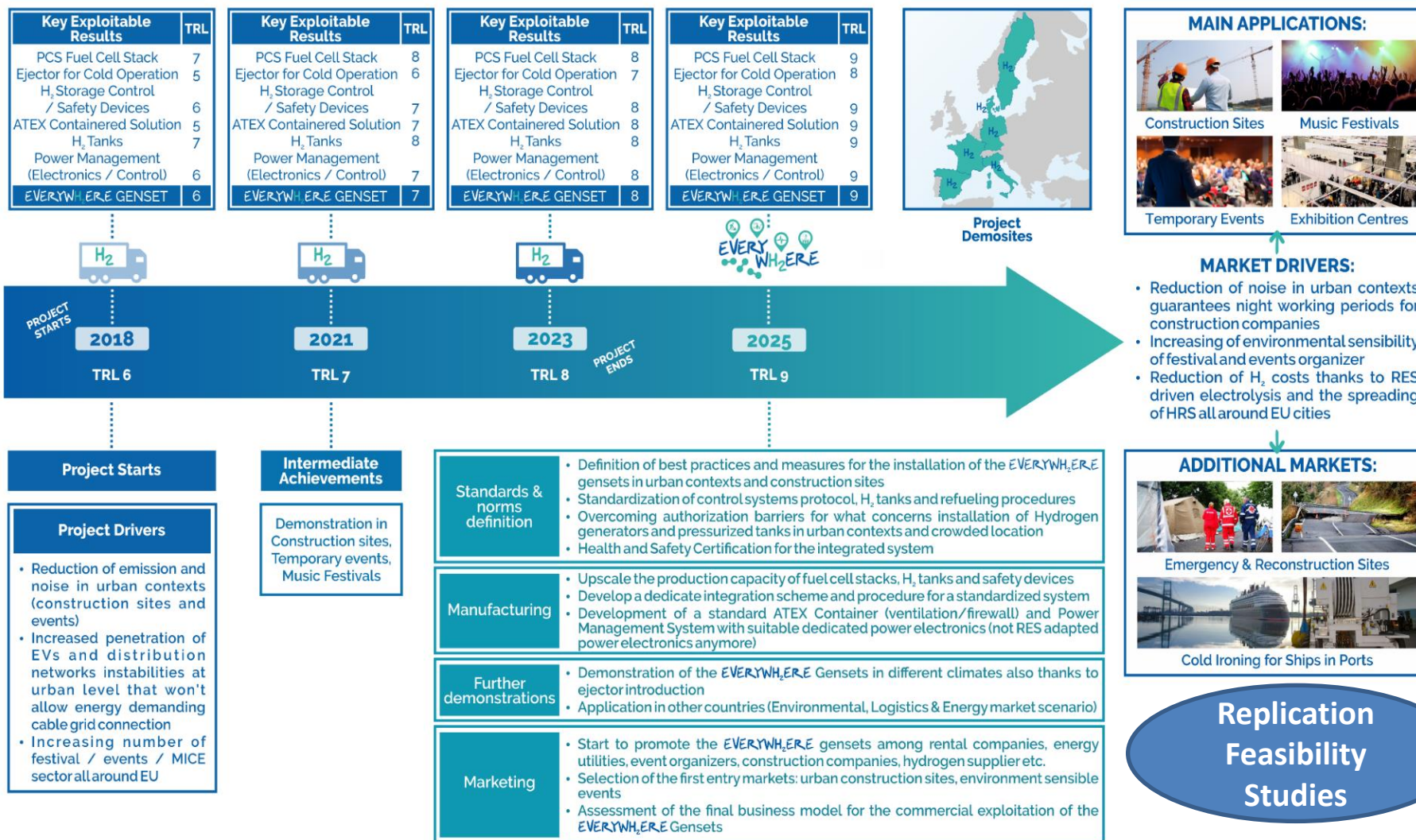


**Contact us for more details if you want to host the gensets!**





# EVERYWH2ERE: A demonstration to Market Project





## EVERYWH2ERE Stakeholders group



IN EVERYWH2ERE Two Stakeholders group are collaborating with the consortium  
**EVERYWHERE CITIES (ICLEI) and EVERYWHERE Industrial/Demo Support Group (FHA)**



### Main targets:

- **EVERYWH2ERE CITIES** – After Y1 workshop, we're currently organizing webinars also to analyze current bottlenecks/challenges towards decarbonization of local temporary power supply (link with FCH JU City and Regions Initiative). Join us to know more and provide your vision and maybe host our gensets!
- **EVERYWH2ERE INDUSTRIAL/DEMO SUPPORT GROUP** – Workshop within M48 after demonstration campaign starting and constant interaction to develop business models and best practices. Stakeholders from FC sector, event organizers, construction companies will be involved via questionnaire (D1 – M18) for market and stakeholders' interest assessment. Their support is crucial to foster replication and marketability.

## PLEASE JUST CONTACT US TO JOIN EVERYWH2ERE!





## Regions & Cities Interest Group



- ✓ **Subscription to a Regions & Cities newsletter** to receive in-depth coverage on how fellow regions and cities make use of hydrogen gensets in their temporary events
- ✓ **Opportunities to directly exchange and cooperate with other cities** and region on innovative policies for zero emissions, zero noise construction sites and other temporary events
- ✓ **Receive feasible and effective policy recommendations** to support your zero-emission targets
- ✓ **Potentially host the gensets** in one of your city event







# How to join EVERYWH2ERE



## STEP 1: GET IN TOUCH WITH US!

[www.everywh2ere.eu](http://www.everywh2ere.eu)

Follow us on Twitter, FB, YouTube, LinkedIn



## STEP II: Regions & Cities Interest/Stakeholders and Demo Group

Fill in our Expression of Interest

## STEP III: HOST A DEMONSTRATION!

Sign our letter of engagement and host a demonstration



*Be among the first cities to promote a society powered by Fuel Cells! A unique opportunity to promote your Sustainable Energy Action Plan and green identity!*

**PLEASE CONTACT US TO JOIN EVERYWH2ERE!**





# Making Hydrogen affordable to sustainably operate Everywhere in European Cities



## MISSION

Temporary diesel gensets are used everywhere in our cities (fairs, markets, construction sites, temporary events and concerts...) and Non-road diesel engines account for 5-10% of fine-particle pollution in urban environment. **Fuel cell (FC) can easily replace these technologies promoting 0 noise, 0 emission temporary generation.** The main objective of EVERYWH2ERE project is to demonstrate at TRL8 easy to transport “plug and play” FC gensets. Demonstration results will be capitalized for replication, business model, environmental and logistic analysis.



## PROJECT PARTNERS



FUEL CELLS AND HYDROGEN  
JOINT UNDERTAKING

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