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WP7 – “Exploitation, Dissemination, Communication, Stakeholders and Public Opinion Engagement”
D7.6 – “First Stakeholders’ and cities vision document”

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3

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Executive Summary

EVERYWH2ERE D7.6 – “First Stakeholders’ and cities vision document” has the aim to present the activities that EVERYWH2ERE project consortium rolled out in the first period of the project (M1-M30) to collect relevant inputs for a market/end-users oriented design and future business orientation. First EVERYWH2ERE Stakeholders’ vision has been built up thanks to stakeholders’ inputs collected via continuously interaction with the main interested entity. Report on the preliminary city and industrial stakeholders’ group activities (interviews and events) are hereby reported.

Two main groups have been setup: Industrial sector one (under ENVI coordination) and Region and Cities one (Under ICLEI coordination).

They are mainly composed by potential end-users (e.g. potential demosites for demonstration campaign coming from music sector and temporary events sector), industrial stakeholders (technology manufacturers and energy utilities) and cities and regions. The report describe how EVERYWH2ERE consortium is interacting with stakeholders to collect their relevant support and vision on the project.





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Abbreviations and acronyms

ATEX - ATmosphere EXplosive
CAPEX - CAPital EXpenditure
CCS – Carbon capture storage
CE – European Conformity
CHP – Combined heat and power
COC - Certificate of Conformity
DSO - Distribution System Operator
ESCO – Energy Service Company
FCH – Fuel cell hydrogen



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.



FCH JU – Fuel cells and hydrogen Joint undertaking
LoS – Letter of Support
TPED - transportable pressure equipment directive



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1. Introduction

This public report is part of H2020-FCH-JU project “EVERYWH2ERE - Making Hydrogen affordable to sustainably operate Everywhere in European cities” and it was prepared within the framework of Work Package 7.

EVERYWH2ERE aims to demonstrate the reliability of using FC technologies in temporary power gensets replacing current state-of-the-art solutions mostly based on diesel engines, thus opening a niche but relevant market for FC technologies. During the whole project 8 PEMFC (4x25 kw and 4x100 kW) equipped containerized “plug and play” gensets will be realized and tested through a pan-European demonstration campaign in a demonstration to market approach. The prototypes will be tested in construction sites, music festivals and urban public events all around Europe, demonstrating their flexibility and their enlarged lifetime. Demonstration results will be widely promoted and they will be helpful for the promotion of replicability studies (for the use of gensets in further end-user contexts) and for the definition of a commercial roadmap and suitable business model for the complete marketability of the gensets within 2025

Objective of the task T7.2 is to establish a stakeholders group involving industrial players operating in sectors crucial to the EVERYWH2ERE project, such as DSOs, energy utilities, gas suppliers, construction sites, event organizer, municipalities, rental companies, fuel cell and hydrogen manufacturers and other equipment suppliers that could support future project marketability also providing relevant feedback from the standardization and regulatory point of view.

In light of the possibility to benefit from the innovative results of the promising EVERYWH2ERE transportable power system, stakeholders are continuously involved during the project to discuss specific research results and exchange important feedback and opportunities, particularly analysing the permitting and health and safety standard requirements, the hydrogen supply and the contractual arrangements towards the definition of suitable business model for the replication of the EVERYWH2ERE gensets. Stakeholders will support the project with valuable and experienced commercially oriented insights towards the future integration into the market of the developed and demonstrated hardware and software solutions.

Two main stakeholders’ group are involved from contacts delivered from all the partners: the first is related mainly to cities and local authorities (Public Bodies), while the second one involves energy utilities, construction companies’ technology providers, event organizers: both of them will be setup and animated under the guidance of ICLEI ES (City) and ENVI (Industrial) thanks to the support of all the partners.

RINA-C, ACC, FHA, D1, ENVI are the main responsible for the collection of the evidences coming from the activities groups during the project development also delivering to stakeholders’ information about the project progress and intermediate results.

GENP and FRIEM also participating to specific stakeholders’ interaction activities related to the collection of inputs and expertise for the proper design of the gensets as well as ACC deeply interacted with local Spanish stakeholders relate to permitting and authorization aspects.





The main outputs linked to the first 30-months of the project are reported in this *First stakeholders' vision document* and will be updated in the *Final Stakeholders' and cities vision document* (M54).

EVERYWH2ERE City Group outputs come both from ICLEI network and expertise in cities' engagement and policy redaction and from FCH-JU public authorities-oriented activities.

FCH JU is currently supporting indeed the Regions Initiative which aims at supporting a number of regions in Europe to develop market opportunities for fuel cell and hydrogen-based solutions. Due to the time of this action EVERYWH2ERE will benefit of the outcomes of this initiative for future replication of the gensets and for the identification of urban requirements.



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2. EVERYWH2ERE Stakeholders Group

The D7.3 – “Dissemination & Communication Plan” reports a list of stakeholders or interest groups that are, from a broad perspective, any group or individual that may affect or be affected by the achievement of the project’s objectives.

During the first 30 months specific interaction, engagements, contracts of cooperation are initiated, formalized and thorough with various components of the target audiences shown in the table below.

	Target audience	objectives	Benefits from EVEWH2	HOW ENGAGEMENT
INDUSTRIAL STAKEHOLDERS	Event organizers	inform&involve in demo phase with specific agreement/committmnets	Direct involvement Business opportunities and business transformation Emissions reduction Sustainable events dissemination Noise reduction Training on hydrogen	Demonstration events Sending materials for your exhibition Actions with media and interest groups H2CORNER Launching event in Cologne for the Music Festivals direct connections with local event organizers via D1, FHA, ENVI, RINA_C
	Gensets Companies	inform&involve in demo phase with specific agreement/committmnets new business opportunities	Direct involvement Business opportunities and business transformation Emissions reduction Sustainable events dissemination Noise reduction Training on hydrogen	Demonstration events Sending materials for your exhibition Actions with media and interest groups Direct connection via GENP, FRIEM, RINA_C, ACCIONA, ENVI, FHA
	DSO Companies/Energy Utilities	inform&involve in demo phase with specific agreement/committmnets new business opportunity	Direct involvement Entering in a new market	Demonstration events Sending materials for your exhibition Actions with media and interest groups
	FCH players	inform&propose new business activities	specific interactions and cooperations	Demonstration events Sending materials for your exhibition Actions with media and interest groups H2CORNER Hannover Messe FCH JU events Hydrogen Events
	Standardization players	involvement in pre-demo phases	Direct interactions and cooperations/mainly benefits for EVEWH2 project	General information meetin/calls interactions
	Fire departments	involvement in pre-demo phases and demo-phase	Direct interactions and cooperations/mainly benefits for EVEWH2 project	General information meetin/calls interactions
	Hydrogen suppliers	involvement in pre-demo phases and demo-phase	Direct interactions and cooperations/mainly benefits for EVEWH2 project	General information meetin/calls interactions
	HRS owners	involvement in pre-demo phases and demo-phase	Direct interactions and cooperations/mainly benefits for EVEWH2 project	General information meetin/calls interactions
	Construction sites	involvement in pre-demo phases and demo-phase	Involvement/cooperation	General information meetin/calls interactions technical meeting via ACCIONA
	Clusters and sectoral organizations related to hydrogen	inform		General information Meetings with associations and other representative projects
Public Sectors	Region&cities, local authorities	inform&involve in demo phase	Direct involvement Emissions reduction Sustainable events dissemination Noise reduction Training on hydrogen	General information Demonstration events H2CORNER Launching event in in Brussels for Cities Participation in further potential small events/discussion rounds to be organized as part of the Regions & Cities Interest Group

Table 1. Stakeholders groups involved and engaged along the project



The D6.2 identified two Groups of actors: Industrial and Region&City.

The Industrial Group includes:

1. Event Organizers stakeholders 'group

The involvement/engagement of Event Organizers is crucial in order to formalize the demo-phase.

The group was just involved during the submission project phase with signed LoS and now it is continuously involved and the list of Events continuously implemented.

As preliminarily described, the involvement/engagement of Event Organizers is crucial in order to formalize the demo-phase and define all procedural steps to guarantee its smooth performance.

The direct involvement of Event/demonstration opportunities Organizers goes through a decision tree (D1.5 Temporary Events and Music Festivals demonstration calendar) which ends positively with the event selected and the Organizer's engagement.

The selection passes through the compilation of a "basic data collecting" survey, aiming at gathering information about the event (step 3), if event fulfils criteria to be selected as demo site, the Partner presents it to the rest of the Consortium (step 6) and in final the event promoter signs a Letter of Commitment (LoC) (step 8).

It is necessary to underline that the main partners involved in the demo-phase continuously updated the engagement of the main stakeholders and in particularly, after a first approach with the event organizer, and after the event promoter signature of a Letter of Commitment (LoC).

2. Genset Companies stakeholders' group

The involvement of rental gensets companies is crucial in order to implement events during all the demonstration phase but could also introduce them in a new sector as fuel cell market is.

This involvement could help the partners to develop a suitable contractual arrangement and business model for future gensets exploitation.

The Companies will be involved in all the demonstration phases and mainly during the results phase, it could help them in evaluating the fuel cell market and to include Fuel cell gensets in their market.





RENTAL COMPANY	market (EU, worldwide=ww)	URL	FC market
Aggreko	ww	https://www.aggreko.com	
Bredenoord	ww	https://www.bredenoord.com/en/	https://www.bredenoord.com/en/rental/specials/fuel-cell-generator-purity/ : There are two prototypes (5 kVA and 17,5 kVA) available that can be used for marketing purposes.
Firefly	uk	http://www.fireflyhybridpower.com/	
Tangent	uk	https://tangent.energy/	
Powerline		https://www.thepowerline.co.uk/	
The Powershop		http://thepowershop.eu/	
ZAP		http://www.zapconcepts.com/en/	
Boels		https://www.boels.de/	
EDMI International Machinery		http://www.edmi.es/index.php	
ATLAS COPCO	ww	https://www.atlascopco.com/es-es	
BARLOWORLD (Dealer of Caterpillar Inc)	FINANZAUTO	http://www.finanzauto.es/es/	
CGT_Caterpillar	ww	https://www.cgt.it/en/application/temporary-events-and-public-services	
Energy rental		http://www.energyrental.it/en/rental-power-generators/	
Intelligent Energy	UK	https://www.intelligent-energy.com/	Small scales PEMFC based equipment for events (lights, gensets, plugs etc.) max 5 kW
Areva	FR	http://www.arevah2gen.com/en/	Containerized PEMFC based gensets for back up power

Table 2. Rental companies

3. DSOs Companies/Energy Utilities stakeholders' group

The direct involvement in the project of IREN (ENVI linked third party), an important energy utility in Italy providing tailored solutions in different events confirm the importance of having on board final end users. During all the project these stakeholders will be contacted.

Among the energy services provided, Energy Utilities give also support in exhibitions and events where it is needed a temporary rental power, cooling and heating solution, with:

- The selection of the appropriate solution (diesel generator, medium voltage generator, ecc...) in terms of power output capacity, fuel consumption, soundproofing level, ease of maintenance and environmental concerns;
- The design of the temporary plant considering the integration with the already installed power systems / in parallel to the grid connection, or the design of a stand alone power generator;
- The installation of the generators and the operation service (ordinary and emergency maintenance)
- The evaluation of level of noise, emergency plan and fuel management.

The final objective of the involvement of DSOs is to propose new business opportunities, giving them the tools for a business transformation.

4. FCH players stakeholders' group

FCH players thanks to the top-level EVERYWH2ERE partnership at EU level (LINDE, PCS, MAHY are FCH technologies provider for a lot of industrial players at EU level).

The main objective is to create a contact network presenting project results through webinars thanks to the strong link with hydrogen community and FCH stakeholders.





5. Standardization players

During the first 30-months non-technological bottlenecks that could interfere with the demonstration and the replication of FC gensets was investigated considering the whole value chain of the temporary power supply: certification and standardization of all the subcomponents of the system, ATEX / TPED compliancy of the container and of the storage.

According to this point and following what emphasized in WP4 deliverables, the project partners had some interactions' with local Fire Departments (particularly in Spain and Italy thanks to ACC and ENVI – please check next section)) and with Standardization/Certification bodies.

What emerged during interactions with construction site managers (ACC) and also events organizers is the importance of a CE marking: getting a CE marking for this genset considering that not a specific technical normative on “hydrogen fueled genset” exists could be tricky.

It is necessary to underline that the process to obtain CE mark is not in the scope of the project, but that all the sub-components in the genset are CE marked. The genset can be indeed considered as a container “full of” CE marked components (Fuel Cell system, power converters, battery etc.). In order to guarantee the fact that EVERYWH2ERE gensets is realized via “Best practices” and completely aligned to CE Regulations and Directives, the consortium can provide a Certificate of Conformity (COC) related to the container and to all the components that are thereby included (from the FC SuSy to the main electric components).

Thanks to a good relation, interaction and Genset information exchanges with Julio de la Cueva of Puertos del Estado (one of “demonstration stakeholders” who aims to test EVERYWH2ERE Genset in the port of Tenerife), leader of OPS MASTERPLAN project¹ under financial instrument CEF, RINA-C has recently formalized an agreement for both collaboration and installation of the generator and for the implementation of a formal CE marking procedures involving SGS (<https://www.sgs.com/>).

SGS is the world's leading inspection, verification, testing and certification company. They are recognized as the global benchmark for quality and integrity. With more than 94,000 employees, they operate a network of more than 2,600 offices and laboratories around the world.

The core services can be divided into four categories:

Inspection: their comprehensive range of world-leading inspection and verification services, such as checking the condition and weight of traded goods at transshipment, help to control quantity and quality, and meet all relevant regulatory requirements across different regions and markets

Testing: their global network of testing facilities, staffed by knowledgeable and experienced personnel, enable you to reduce risks, shorten time to market and test the quality, safety and performance of your products against relevant health, safety and regulatory standards

Certification: they enable to demonstrate that your products, processes, systems or services are compliant with either national or international standards and regulations or customer defined standards, through certification

¹ <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/2015-eu-tm-0417-s>





Verification: they ensure that products and services comply with global standards and local regulations. Combining global coverage with local knowledge, unrivalled experience and expertise in virtually every industry, SGS covers the entire supply chain from raw materials to final consumption.

<https://www.sgs.es/en/our-company/about-sgs/sgs-in-brief/sgs-in-spain>

6. Fire departments

Fire regional departments are the main contacts to obtain authorizations, the main entity to involve during the installation and operation phases.

Each partner of EVERYWH2ERE, responsible of the demonstration in its Region, started the process of involvement of fire fighters.

The process to obtain permissions and authorization to the use of EVERYWH2ERE gensets is mainly linked to the H2 installations.

It is relevant to highlight that such permits are different country by country (even region by region, municipality by municipality) and they are usually required for diesel gensets as well. Permitting authorities are usually related to local municipalities and local fire departments, that obviously refer to national normative and HSE standards/best practices.

Such process will be facilitated by EVERYWH2ERE project demo kit: a folder of relevant project documents useful for both event organizer and permitting authorities that will be sent by EVERYWH2ERE consortium to the demo-event organization to start authorization and permitting activities.

Such activity is indeed completely up to the responsibility of demosite responsible organization (considering the “local” perspective of the actions) while EVERYWH2ERE consortium partners are available to technically support such phase.

FHA, for the events that had been scheduled for 2020 it started to interface with the local firefighters, so D1 also thanks to the support and contribution of the Goodlive Initiative.

ENVI, in relation to the events scheduled in the summer and then autumn in the Turin area, is interfacing, also through IREN, with the firefighters of Turin and its province.

ENVI and RINA-C contacted and interfaced, in order to understand the processes and approaches, also with the provincial command of the firefighters of Venice (Eng. Francesco Pilo). The intent to prepare a “National Technical Rule on portable H2 powered generators” along the project could be a very interesting output of the project.

RINA-C is helping FRIEM in the verifications and in the preparation of the documentation to be shared with the firefighters for mutual information regarding the validation tests to be conducted temporarily at FRIEM.

7. Hydrogen suppliers and HRS owners

LINDE will cover via EVERYWH2ERE budget part of the temporary events and demonstration in constructions site.

Via specific contractual approaches reported in D 4.3 Implementation plan, the event organizers would be able to contact directly gas suppliers in order to have the best solution for the event. ACCIONA contacted different suppliers also to define optimal logistics and supply price for the pilot (e.g. Carbueros Metalicos)





8. Construction sites and companies

Construction sites are also other stakeholders with a strong interest on the H₂-genset, performances and applications. Thanks to the involvement of ACCIONA, different sites will be contacted and informed on the genset as well as construction/facility management companies which are ACCIONA Customers, in order to further encourage the use of EVERYWH₂ERE gensets in future ACC Demos.

Furthermore RINA-C presented EVERYWH₂ERE in the ECTP to present it as a potential future solution to reduce the impact of construction sites, attracting interest from ECTP members.

Regarding ACCIONA demosite, it is necessary to underline that a previous site was identified, the Shopping Centre in Benidorm – Altamar, where ACC was already moving interesting discussion with local stakeholders.

Unfortunately, after some initial works on the site, also considering recent COVID-19 crisis for shopping malls sector, the client (shopping mall promoter UNIBAIL-RODAMCO) has cancelled the contract with ACCIONA and now ACCIONA is in contact with other potential candidates (reported here below).

Site Description	Location
400 viviendas de Valdebebas	Madrid
Estación Príncipe de Vergara	Madrid
20 Pozos línea circular – Metro	Madrid
Carretera Melide	Ourense
Nuevo Hospital de Ferrol	Ferrol
Estación Santiago de Compostela	La Coruña
Estación Ourense	Ourense

Table 3. Potential new construction sites

Clusters and sectoral organizations related to hydrogen.

Since EVERYWH₂ERE is a project of the FCH₂JU and it is obviously aligned with the different existing national initiatives in Europe in relation to hydrogen promotion (e.g. RINA-C and ENVI are strongly participating to H₂IT working groups, presenting EVERYWH₂ERE outcomes to Italian stakeholders).

Furthermore, working meetings with partners coming from different EU funded projects which can provide relevant knowledge to EVERYWH₂ERE are on-going (like HyLaw and HySea)..

City stakeholders' group (Regions & Cities Interest Group)

Considering the city as a living laboratory where to test FC gensets and technology, it allows also to disseminate project results and hydrogen technology to a very big audience, in order to increase public awareness about hydrogen and fuel cell technologies reliability and affordability.





The presence of ICLEI, a global network of local governments working for sustainability, will guarantee a strong interaction with EU local and regional authorities which play an important role for the promotion of these technologies through specific policy and regulatory schemes. The project results will be also promoted through webinars that will be addressed to both industrial and public stakeholders.

The “Upscaling Hydrogen Gensets in EU Cities” workshop took place back-to-back with the 9th General Assembly of the Regions & Cities initiative of the European Union’s Fuel Cells and Hydrogen Joint Undertaking (FCH JU).

With European cities driving the decarbonisation of transport, urban heating and cooling, industries and services forward, the workshop focused on how FCH technologies as a 100% clean alternative to diesel-based generator equipment can support cities in reaching their climate and energy targets, reduce emissions and noise and increase air quality.

This workshop offered:

- an understanding of how hydrogen gensets can be a viable alternative to diesel generators
- a platform to exchange on the necessary regulatory frameworks for deploying temporary hydrogen gensets in city areas
- the opportunity to speak about and promote own innovative decarbonisation measures

The workshop served as an entry point for becoming part of the EVERYWH2ERE Regions & Cities Interest Group to explore options for hosting hydrogen generator sets and to profit from tools and long-term recommendations generated throughout the project.





3. Industrial stakeholders' vision

The scope of the Industrial stakeholder's group is to collect from relevant business actors' inputs to drive design (WP1), demonstration and testing (WP4) and marketability (WP6) analysis. Logistics analysis would also benefit from gensets rental companies' knowledge in terms of cost and transport permitting evaluation.

3.1 Event's organizers (discussions with all events engaged)

Starting from all the LoSs collected during the proposal phase, the consortium, with a intensive engagement campaign, contacted and organized bilateral activities in order to guarantee some demos and time-by-time always better define demonstration responsibilities and steps.

EVENT
C'è FERMENTO
KAPPA FESTIVAL
FESTIVAL OCCIT'AMO
IHC (Italian Hacker Camp)
TERRA MADRE/SLOW FOOD
MELT! FESTIVAL-Ferropolis
WACKEN FESTIVAL
LOOLPALOOZA
PETIT CAMALEONS

Table 4. Event Organizers specific agreements for Events 2020

The table 4 reports the main events officially engaged for the summer period. Unfortunately, all of them were cancelled due the COVID19.

During the search of potential demosites in Spain, many events were contacted. Finally, 8 of them showed interest in the project by the moment and it was possible to gather detailed technical information about the Festival/Event from many of them in order to assess the feasibility of becoming demosites. Furthermore, Letters of Commitment and Letters of Endorsement were signed by Demanda Folk Festival and No Sonores Production (Petit Camaleons Festival). The rest of the letters are being pursued. Usually the organizers contacted are relatively small associations who are not especially active until they start organizing the next year edition of the festival/event. The singular situation this year due to COVID-19 has brought as consequence the cancellation of the majority of the events, so the contact with events' organizers in order to obtain their commitment is even more difficult.

During the search of potential demosites in Italy, many events were contacted. Finally, 10 of them showed interest in the project by the moment and it was possible to gather detailed technical information about the Festival/Event from many of them in order to assess the feasibility of becoming demosites. Furthermore, Letters of Commitment and Letters of Endorsement were signed by Slow Food for Terra Madre, Slow Fish and Cheese, Fondazione Bertani for Occit'amo and C'è Fermento, Movemet for Kappa Festiva and IHC (Italian Hacker Camp) together with IREN events in Turin.

During the search of potential demosites in Europe/Germany, many events were contacted also with the support of GoodLive GmbH. Finally, more than 10 of them showed interest in the





project by the moment and it was possible to gather detailed technical information about the Festival/Event from many of them in order to assess the feasibility of becoming demosites. Furthermore, Letters of Commitment and Letters of Endorsement were signed by ICS responsible of Wacken Festival and GoodLive as responsible of many events in Germany and EU.

It is necessary to underline that technical meetings were held directly with the organizers and their technicians involved in the management and planning of the event, with face-to-face meeting or via technical calls:

- with ICS Festival Service GmbH, responsible organizer of “Wacken Festival”. The meeting took place directly in Berlin after the EVERYWH2ERE project meeting (GA). At least 4 telcos were organized in order to discuss and solve logistics, permitting, identification of load.
- with Goodlive GmbH, responsible organizer of “MELT!”, “LoolaPalooza Berlin” etc.. The meeting took place directly in Berlin in the framework of EVERYWH2ERE project meeting (GA). One telco was organized in order to discuss and solve preliminary permitting details. They informed the consortium that they are in contact with German LINDE branch and they would be able to support the consortium regarding their expertise in festival permitting (in particular for what it concerns redaction of gensets emission and fire department permits). Goodlive is responsible of several events identified in Germany (“Melt Festival” and Loolpalooza).
- with Slow Food, “Terra Madre” organizer. Two meetings took place at their headquarter. Furthermore, ENVI carried out an inspection at the event in September 2019.
- with Movement, organizer of the “Kappa Festival”. Two meetings took place at their headquarter. Furthermore, ENVI carried out an inspection at the event in July 2019.
- With Fondazione Bertani, Organizer of “C’è Fermento” and “Occit’Amo”. ENVI visited his headquarter and also the possible location for the generator.
- With Italian Hacker Camp organizers, through 4 telcos in order to define specifics and help them with Fire Fighters interactions.
- With the organizers of Demanda Folk (Spain), several preliminary phone calls followed by visit of FHA’s technicians to the Festivals during 2018 and 2019 to have first-hand impression of the festival.
- With Petit Camaleons (Spain). FHA organized an on-line meeting in April 2020 to discuss the details.
- With Ascaso Film Festival (Spain), several phone calls and also a visit to one of the past editions to understand better the characteristics of the event.
- Poborina Folk (Spain) was also one of the first Festivals in showing interest in EVERYWH2ERE. Several online meetings were organized during 2018 and 2019.
- Nowhere (Spain) is the regional version of the famous Burning Man. The organizers contacted first the coordinator and since then several contacts took place to gather technical details and assess the feasibility of being demosites.

Exchanges with Events

DEMONSTRATION IS CRUCIAL IN EVERYWH2ERE – Why Music Festivals?

- ✓ Power is generally one of the five largest single production costs for a festival.
- ✓ The quantity of fuel consumed is often considered a fait accompli by festival managers.





- ✓ Initial research suggests that inefficient generator use is common at events in the UK.
- ✓ The main cause of fuel wastage is lack of information about requirements and lack of communication between contractors and festivals, festivals and suppliers.
- ✓ Power can represent up to 70% of an event's 'core' carbon footprint (core excludes audience travel and transport).
- ✓ Fuel costs are rapidly rising, and the energy market is forecast as increasingly volatile.
- ✓ The festival sector has a unique opportunity to contribute to carbon reduction, showcase new technologies, test them in rough environment and engage with audiences

What merged during all the dating is the high interest in learning about a new technology. Many organizers are interested in the high benefits of reducing emissions, but are not technically/regulatory aware of hydrogen gensets issues (most of the time events' organizer nominate a rental company/energy utility for this type of activity, thus not following them in first person). For the most part the topic of green hydrogen is very interesting.

D1 and RINA-C participated to different events in the framework of promoting EVERYWH2ERE Gensets in the Music Festival Sectors:

- C/O Pop Convention and Green Music Awards – 30-31 August 2018 – ENVI-RINA-C-D1
- GO Group Workshop – Prague – 1-2 April 2019 – RINA-C-D1
- Eurosonic Noorderslog – Groningen – 16-17 January 2019 – D1
- Reeperbahn Festival – Germany – 18-21 September 2019 – D1 (moderating a dedicated hydrogen session)
- InnoFest Session Amsterdam Dance Event – 18 October 2019 – D1

Such interaction with music sector also enabled the opportunity to open a new potential market related to “movie sets”: at this purpose EVERYWH2ERE have been presented in

- 4th Green Panel Discussion of Cannes Film Festival – 17 May 2019 – RINA-C
- “Debating the film industry sustainability session” at the Berlinale Film Festival – 21st February 2020 – D1

3.2 Rental company (CGT, Aggreko, Atlas Copco)

“Gensets rental companies” have been another relevant type of stakeholders for EVERYWH2ERE project, both for design aspects, regulatory aspects, marketability aspects (contractual arrangements).

CGT Edilizia is Italian leader in the sector of gensets rental and it provides customers of the world of Construction and Industry with the best rental, sale and technical assistance services based on a complete range of high-quality machinery. They are present throughout the national territory through a capillary network of direct branches and dealers, which is based on the personal commitment and technical preparation of each team member.

CGT Edilizia is the branch of CGT that deals with hiring generators for on-site and out-site events. In addition to the rental CGT follows and is responsible for the electrical planning of the events therefore with a high experience and possibility of direct contacts with the organization of the events.





After preliminary phone and email contacts, on 5 November 2019, RINA-C, ENVI, Genport and FRIEM visited the company based in Varedo.

During the visit it was possible to have technical suggestions and establish a good collaboration for possible events for which CGT is the technical manager.

The added value for CGT is to learn competence from the new technology and for the project to have new possibilities for the demonstration phase.

In addition, CGT takes care of the entire electricity supply of the Kappa Festival and follows events also in the winter phase, therefore with the possibility of covering even a period that during a preliminary analysis had seemed more critical.

Exchanges with rental company

Below the main aspects discussed and that merged.

HOW CGT/Other rental companies can help EVERYWH2ERE consortium?

- ✓ Support in the definition of current power supply habits
- ✓ Support in the identification of festivals energy demand profile (urban/non-urban)
- ✓ Identification of potential operational constraints (i.e. location of the gensets in festival area, hydrogen refuelling issues, permitting aspects etc.)
- ✓ Analysis of current gensets ownership/management models (contracts, costs etc.)
- ✓ Support during the testing phase putting in parallel the EVEWH2 genset with a traditional one and to monitoring the interaction

HOW EVERYWH2ERE consortium can help CGT/other rental company?

- ✓ Genset provided for free to CGT/rental companies
- ✓ Recipient manages demo independently: thanks to EVWH2, it increases its value proposition
- ✓ CGT/other rental companies can have access to project technical results and economical evaluations.

How EVERYWH2ERE can interact with CGT Edilizia - Collaboration details definition

- ✓ Would be CGT EDILIZIA interested to support us?
CGT is interested in doing it during demo-phase, identifying their best events: CGT to support and promote our gensets.
An NDA is available: single partners can consider to share even CONFIDENTIAL information (up to each of them), RINA-C shares deliverables/reports
- ✓ What will be CGT EDILIZIA role? Facilitator or full demo responsible (i.e. permitting)?
Under evaluation the involvement of CGT, but they are very interested to use the EVEWH2ERE genset and propose it at their clients.
What merged during the meeting is that more and more events need to reduce emissions and noise pollution. In particular, all events related to fashion and cinema are increasingly opting for total sustainability.
In particular CGT building is open to new frontiers, new technologies to be able to offer them to its interlocutors.
- ✓ What CGT EDILIZIA would need from EVWH2 Staff if following/promoting demo campaign?





In preliminary phase our demokit and in second stage to take part at the validation test, in order to know how manage the genset.

- ✓ What is in your opinion, from technical point of view, the best “dedicated service” in a festival/event to be powered by EVWH2 gensets?
To check event per event.

BUSINESS MODELS: CGT/other rental companies market perspective to support EVWH2

- ✓ What is in your opinion maximum costs to end user for a genset like our one?
- ✓ What are maximum reasonable CAPEX (€/kW) and LCOE (€/kWh)?
- ✓ The relevance of Green Hydrogen
- ✓ Considering all the previous aspects: how to effectively promote/launch on the market the gensets? New type of “emission saved contracts”?

Following up this November meeting and in accordance to CGT EDILIZIA Requests about a potential vision of future EVERYWH2ERE gensets cost, RINA-C and ENVI presented a "cost breakdown" of EVERYWH2ERE generators and a cost forecast by 2023 (end of project) - 2025-2030 - this forecast is based on the cost forecast reports of the Fuel cell technologies of the European Commission and the American Department of Energy.

Such calculation are hereby briefly presented and will be beneficial for further WP6 activities. All these values have been interestingly commented by CGT EDILIZIA, that, in any case, remarked the still relevant high CAPEX of the solution if compared with Internal Combustion Engine and Battery Based gensets.

Nevertheless, considering that the CAPEX usually represent a minimum voice of costs in a rental agreement/contract (as RINA-C presented during recent FCH-JU PRD 2019 and as validated/discussed with ENGIE during “stakeholders’ interactions”), CGT EDILIZIA can see a potential market particularly in a future where hydrogen supply would be more and more easier.

Based on the calculation, the current @25kW manufacturing cost is around 4.500€/kW without storage and the @100kW is around 3.100€/kW. Hydrogen storage and conditioning is around 10.000€.

Below the EVERYWH2ERE current impact of the components:



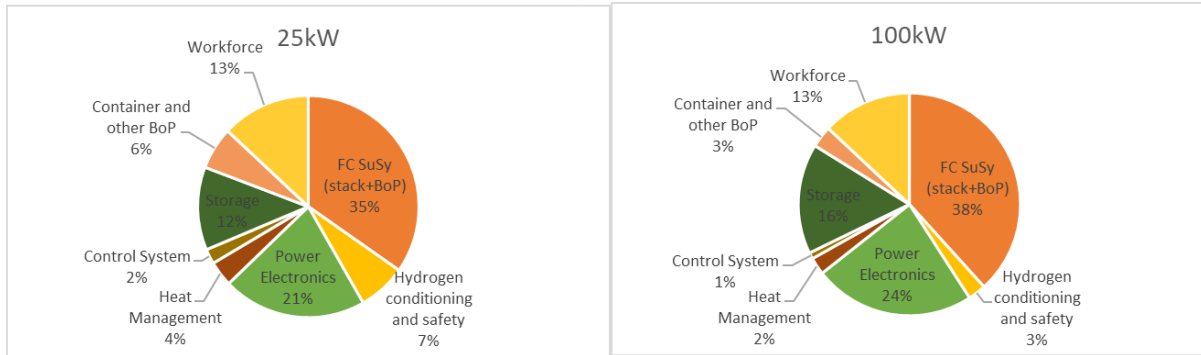


Figure 1: gensets cost distribution

Analyzing some previsions at 2025-2030²:

2025 COSTS

100 kW: 1600 €/kW – without storage

250 kW: 1200 €/kW – without storage

2030 COSTS

100 kW: 1400 €/kW – without storage

250 kW: 1000 €/kW – without storage

The costs aligned to EU PEMFC Stack cost previsions – 300 €/kW.

On the other hand, **Aggreko** is a global, industrial company based in Stockholm, Sweden, with approximately 39 000 employees and customers in more than 180 countries. Their market-leading compressors, vacuum solutions, generators, pumps, power tools and assembly systems can be found everywhere. FHA contacted them to gather information about rental cost for one and two months (see table below) and understand the sustainability of potential future contractual arrangements for EVERYWH2ERE Gensets.

Atlas Copco Group, apart from being involved in rental business, is also technology manufacturer and developer. The Group has a manufacturing facility in Muel (Saragossa, Spain) and is currently part of the Board of Aragon Hydrogen Foundation (FHA). FHA visited the facilities on 26 February 2019 in order to describe the EVERYWH2ERE project in detail and explore potential engagement of Atlas Copco. The representatives of Atlas Copco showed a great interest in the project, asking many questions about technical details and being interested in the benefits of Hydrogen for electricity production. After the meeting a visit to the facilities was organized. Since then the FHA has been in touch with them in order to keep the informed on the progress of the project and it is hoped that when the demo units are in place their engagement will be reinforced.

² Battelle Memorial Institute, January 2016, Manufacturing Cost Analysis of 100- and 250-kW Fuel Cell Systems for Primary Power and Combined Heat and Power Applications



Table 5: rental costs of traditional gensets

APPROXIMATED RENTAL PRIZE					
Rental period	ONE MONTH				
Prize per	CALENDAR DAY				
Working regime	24 hours/day	8 hours/day	Standby	Extra hour	secure
Machine					
Genset 40kVAs	76 €	48 €	34 €	3 €	6%
Genset 100kVAs	109 €	69 €	49 €	5 €	6%

Costs could decrease of around 10-15% for rental periods longer than one month.

3.3 Energy Utilities/DSO companies/temporary power services provider sector (IREN, ENGIE)

One of the most active collaboration developed by EVERYWH2ERE project is the interaction with ENGIE: such interaction started in Cologne during c/o POP Convention when Mr Arthur Baux from ENGIE participated to hydrogen session where EVERYWH2ERE project has been presented to EU Music Festival organizers.

Afterwards ENGIE interacted with EVERYWH2ERE In further 3 events

- Bilateral meeting ENGIE-EVERYWH2ERE in Genova, RINA-C Headquarters, on 19th July 2019 (RINA-C, MAHY, ENVI attending on behalf of project consortium)
- Participation to the “HYDROGEN SESSION” organized by D1 at REEPERBAHN FESTIVAL, in September 2019
- Bilateral meeting ENGIE-EVERYWH2ERE in Paris, ENGIE headquarters, on 12th November 2019 (RINA-C attending on behalf of project consortium)

As ENGIE is developing some transportable gensets via their own commercial partners and they are investigating the possibility to develop some “clean temporary power business lines”, the goal of the collaboration between ENGIE and EVERYWH2ERE are mostly related to the following topics:

- Analysis of potential joint demonstration opportunities
- Analysis of non-technological barriers to the use/development of FC based gensets (permitting, certification, regulatory framework etc.): a market analysis has been shared with ENGIE In March 2019
- Sharing of technical knowledge related to “zero emission” and clean energy technologies for temporary power application (Identification and benchmark of competitors of EVERYWH2ERE Gensets)
- Analysis of the market perspective and of potential contractual arrangements

Via ENVI linked third party, it has been also relevant to interact with IREN.

IREN operates in the sectors of electricity (production, distribution and sale), thermal energy for district heating (production and sale), gas (regasification, distribution and sale), the management of integrated water services, environmental services (collection and disposal of waste) and energy services.



IREN, as Energy Utility and ESCo, provides integrated solutions of energy efficiency combining building renovation in private and public sectors with thermal and technological management of buildings, energy monitoring systems and renewable energy solutions.

Based on these considerations the company is always very interested in innovative and ecofriendly energy system generation. From the design to the realization of a new/retrofitted energy system, the attention on low environment impact is one of the main technical aspects. Since EVERYWH2ERE project allows testing these devices in real environment, this would propose a good chance to:

- evaluate the operating performance of the device in different situations such as grid connected or stand-alone backup energy system;
- evaluate all the aspects from the authorization point of view for the installation and operation of the genset;
- further explore the local regulatory framework concerning hydrogen exploitation.

3.4 Interconnection with other H2-Projects

Thanks to the contact shared by EVERYWH2ERE Project Officer, RINA-C started since March 2020 a first interaction with Mr Julio de la Cueva of Puertos del Estado, leader of OPS MASTERPLAN projects under financial instrument CEF, before with some information exchanges and after with a formalization of an agreement for both collaboration and installation of the generator and for the implementation of a formal CE marking procedures involving SGS. OPS MASTERPLAN project aims at drafting a masterplan to provide on-shore power to ships at berths of Spanish ports. The project includes three pilots and adoption of various measures to facilitate rolling-out of OPS. The first completed pilot in the Port of Santa Cruz de Tenerife involves supply of some 75-kW power at low voltage 400V for a fast-ferry. Finally, thus the possibility of providing OPS to bigger ships by generating power on-site calls for the most environmentally friendly energy vector that is hydrogen.

The pilot's H2-OPS objective is to supply electrical power to a berthing ship with generation independent of the general network.

Indeed, the connection to the general network to supply the powers that merchant ships need are taxed with tolls whose price level and structure reflects the historic use of electric energy; these tolls make it difficult to apply electricity to mobility.

Thus, regardless of the necessary evolution of the electricity market regulation to favor said mobility, this pilot advances the experience of generating electricity 'in situ' even when its cost - given the current H2 economy as an alternative fuel - is even very superior. This in the conviction of the need to promote the growth of the market for this new fuel, and to encourage the use of FC.

This objective is considered strategic for the port system assuming the hypothesis of an unexpected requirement to provide OPS by European ports if the current Directive 94/2014 is revised in this regard.

A first estimation was performed: a need of 300 kg every 2 weeks, so 60 bottles ready for 350 bars could be covered using a single semi-trailer to carry the 60 bottles and parking it in a sheltered/covered garage located just aside the FC container. Then the bottles remain on the semi-trailer, and twice per month the semi-trailer with all bottles is driven from the garage to the charging facility in the Island, all the bottles will remain interconnected in the Port but disconnected while on the route.





Considering the number of bottles to be realized by MAHY in the project, it is currently foreseen to connect the gensets with a “traditional” hydrogen trailer to the system, to be refilled every two weeks.



Figure 2: Puerto of Santa Cruz de Tenerife



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.



Figure 3: H2-OPS installation

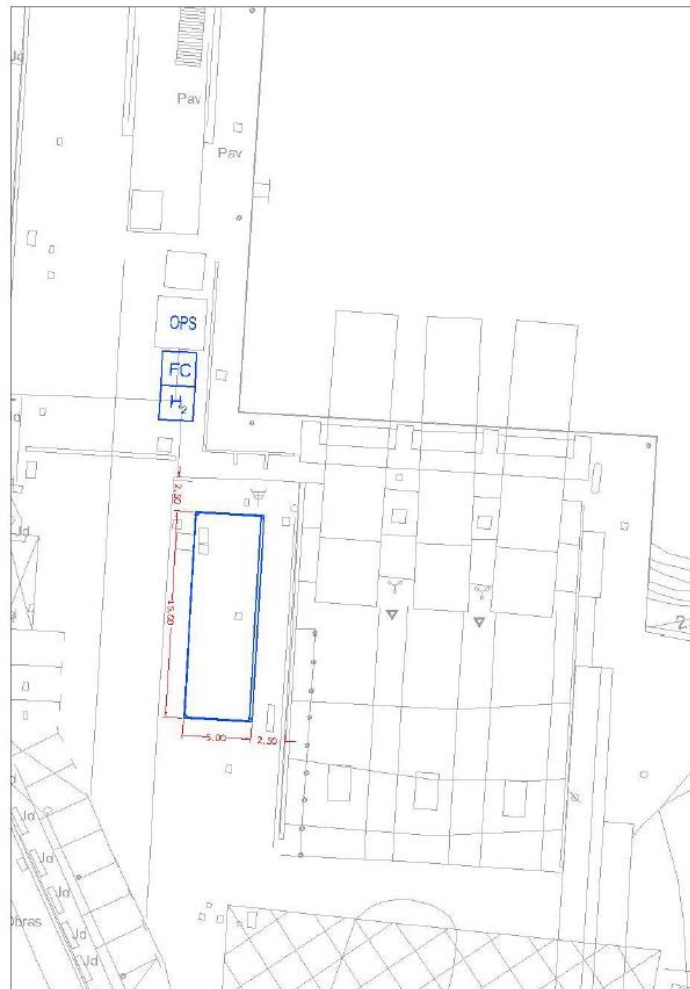


Figure 4: Existing OPS and the GENSET and the 5 x 5 x 15 garage for semitrailer

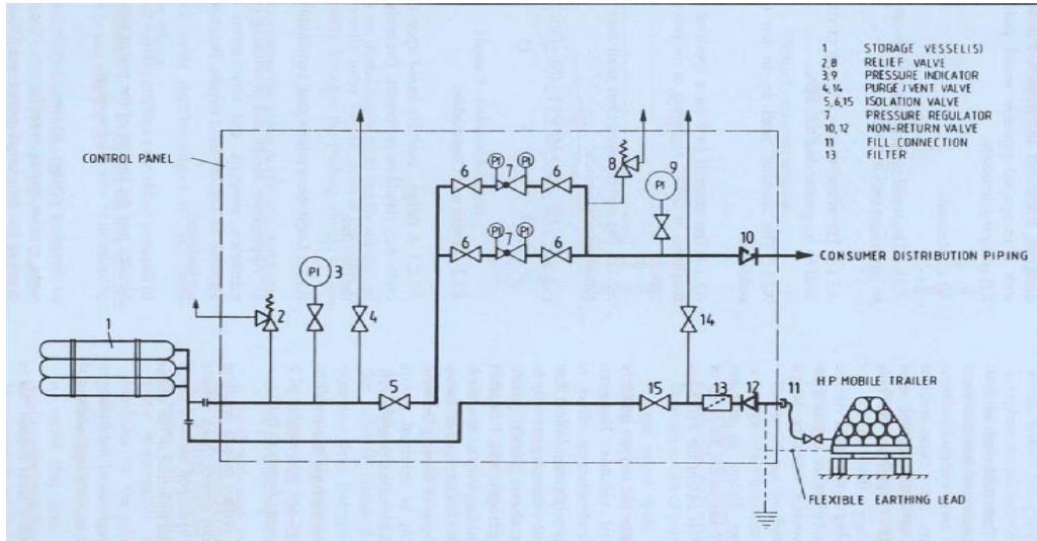


Figure 5: Hydrogen connections



4. Region&cities vision

As living lab for EVERYWH2ERE gensets, the role of cities has been recognized as crucial since the beginning of EVERYWH2ERE project, stimulating a proper interaction with city stakeholders.

4.1 EVERYWH2ERE – Regions & City Interest Group - ICLEI

What has been carried out?

The vision of the EVERYWHERE Regions & Cities Interest Group is to demonstrate both 25kW and 100kW gensets in urban contexts and to analyse the regulatory and political enabling framework for upscaling the use of hydrogen technology in European cities in general.

From the project's beginning, interest from local and regional governments in the gensets has been high considering also the fact that gensets were already introduced as a potential option during the FCH Regions & Cities initiative. In order to pursue the objective of this group, and to gather input for D 6.9, the following has been carried out.

- Communication of the added value of hydrogen gensets through the project's website as well as in several bilateral phone conversations with local and regional governments. The website has received a dedicated space for the Interest Group, including member profiles, benefits offered to group members, as well as a FAQ section regarding operation, safety, logistics, fuelling and price of the gensets.
- Organisation of a dedicated launch event "Upscaling Hydrogen Gensets in European Cities" carried out on 15 January 2019 in Brussels.
- Bilateral exchanges and phone calls to secure EoIs and to identify potential demo sites.
- Although originally not foreseen, the project considered it beneficial to set up a series of informal online meetings with members of the Interest Group to facilitate further knowledge exchange and networking. The first session was carried out on 10 July 2020 and will be followed up roughly every 3 months.

The Launch Event

The EVERYWH2ERE Regions & City Interest Group was launched during the workshop "Upscaling Hydrogen Gensets in European Cities" in 15 June 2019 in Brussels. It served the purpose of introducing an audience of particularly, but not only local and regional governments stakeholders to the EVERYWHE2RE gensets and to reflect on the regulatory and environmental framework conditions. At the same time, it provided the project team some good initial insights into potential demo sites. Attendees were invited to discuss, in an open World Café the following questions:

- Can hydrogen gensets be a viable alternative to diesel generators in urban temporary events?
- Can public tendering be an effective option for encouraging hydrogen gensets?
- Is data related to emissions from temporary gensets readily accessible and what is to gain from measuring such data?





- Would it be possible, according to municipal and regional regulations, to employ hydrogen gensets in EU cities?

The workshop, moderated by city network and EVERYWH2ERE partner ICLEI Europe explored the necessary regulatory framework for enabling an uptake of hydrogen-based generator sets (gensets) in cities for use in temporary events such as construction sites, music festivals and other public events. Not only have participants been able to reflect on their local circumstances in relation to other regions and cities, a keynote by the European Commission's Vicente Franco of DG Environment has put hydrogen gensets in context with EU Clean Air Policy and highlighted the importance of strong cooperation across all levels of government and the scientific and industrial community.

Panellists from the city of Oslo (NO), DG ENVE, Hydrogen Europe and the Region of Aragon (ES) concluded on the EVERYWH2ERE hydrogen gensets as a highly interesting option for cities, regions and companies alike to reduce their emissions despite the higher initial investment costs. Next to operating zero-emission and zero-noise, the gensets are a quick to implement technology with high public visibility specifically useful for showcasing local and regional sustainability ambitions.

Local and regional regulation, such as public tendering and procurement, are a powerful tool to accelerate the transition to non-diesel generator sets and zero-emissions machinery in general. This can be seen in Oslo where the city motivates the construction sector to apply zero-emission solutions, but also encourages other cities through international city networks such as ICLEI. By implementing beneficial policies and by establishing clear targets regarding air quality and emission reduction, cities are providing signals to the private sector that clean solutions are encouraged and that the necessary regulation will be in place. This is especially important considering the initial higher investment cost of hydrogen gensets compared to diesel-based generators. Political vision therefore prepares and incentivises investment.

However, it might not always be a matter of incentivising the private sector as existing red tape and complicated permitting procedures are often hindering efficient installations of hydrogen-based technologies in the city area. A lack of finance and capacity often stands in the way of local and regional authorities acting as a facilitator and for bringing different stakeholders together. The importance of facilitation was demonstrated by the example of the Aragon Hydrogen Foundation which has been set up by the regional government and brings together more than 70 members key to the regional economy ranging from industry, consulting, public administrations and associations to promote the use of hydrogen on a regional level and to provide policy and technological solutions alike.

Exchanges between Interest Group Members

Hosting a genset is, of course, one of the key arguments about why local and regional governments are joining the Interest Group. In order to prepare this demonstration several bilateral exchanges involving ICLEI, RINA-C and the potential host have been held. But the Interest Group also has the broader vision of understanding the regulatory and political framework conditions which govern the upscaling of hydrogen technology in European cities in general and hydrogen gensets for the use in temporary events in particular. It has therefore been decided to set up a series of online meetings to bring together Interest Group members to discuss the following questions and to give each city or region the chance to showcase its strategy on hydrogen (should this already be in place).





1. Hydrogen for a sustainable energy system - Complementary component or affordable mainstream?
2. Hydrogen in the urban context - How do national hydrogen strategies trigger opportunities for cities?
3. Building with hydrogen - How can hydrogen gensets contribute to making construction more sustainable?
4. Making music with hydrogen - How can hydrogen gensets contribute to making our festivals more sustainable?

The first in this series of meetings has already taken place on 10 July 2020, just two days after the publication of the new EU Hydrogen Strategy as well as the EU Strategy for Energy System Integration. A presentation of, particularly the first strategy, and its relevance for regions & cities served as the opening of the meeting. It was acknowledged that the EU Clean Hydrogen Alliance also calls on local and regional authorities to contribute. This first meeting narrowed the discussion down to these points:

- What exactly is the difference between grey, blue and green hydrogen?
- How affordable is hydrogen in the short to long-term and how can it be integrated into existing systems?
- What is the potential of hydrogen valleys for sectoral integration?

Having contributed from an EVERYWH2ERE perspective, the gensets were presented in this context by stating that they work with pure hydrogen in general, but higher environmental performance, particularly from an LCA point of view can be achieved with green hydrogen. Grey hydrogen is produced using fossil fuels such as natural gas (via reforming) and accounts for roughly 95% of the hydrogen produced in the world today. Blue hydrogen meets the low-carbon threshold, but is generated (via electrolysis) using non-renewable energy sources. Green hydrogen, not only meets the low-carbon threshold, but is generated using renewable sources such as solar and wind. During the demonstration phase, the aim is to fuel the gensets with as much green hydrogen as possible.

Regarding affordability, hydrogen technologies are already present and robust in some sectors of our cities and regions (e.g. buses, electrolysis plants, off-grid applications via back-up power FC systems). It can be seen that costs (initial high CAPEX) as well as regulatory aspects are usually the main-non-technical barriers to further upscaling.

Hydrogen valley can facilitate the exploitation of locally produced hydrogen also for multi-purpose aspects, among them the possibility to develop a local fleet/value chain of hydrogen gensets for temporary power application can further facilitate the possibility to use hydrogen locally.

The session saw the participation of: City of Rotterdam, City of Hamburg, Municipality of Ath, Interleuven, CluBE (on behalf of City of Kozani), 2-G (on behalf of city utility of Haßfurt), City of Haarlem, Aragon Region.

Participants reflected on the above questions particularly from the perspective of their local or regional strategies. Hamburg showcased the Northern German Hydrogen Strategy and how important it is for regions to collaborate on developing hydrogen technologies emphasizing also





the great interest from the industry to engage in this transition process. This is done is so called hydrogen clusters bringing together a diversity of producing and end-use sectors in close geographical proximity.

In Rotterdam, being in a similar position, a close network is very essential as well. Green hydrogen is already being produced to some degree. Hydrogen policy is put embedded within a greater holistic policy spanning the Roadmap Next Economy, Energy Switch (local energy and programme) as well as the Rotterdam Maritime Capital of Europe. In order to achieve emission reductions for the short term and to coordinate green energy inputs as well as considering hydrogen technology within the greater framework for urban sustainability. Rotterdam is also promoting a combination between blue (with CCS) and green hydrogen (via electrolyzers). A “Hydrogen Backbone” network will be used to make hydrogen available for other end-uses in the city context. Rotterdam will become a hydrogen hub by importing hydrogen and to export it into other parts in the Netherlands and other European countries.

The City of Haßfurt has promoted the development of a power-to-gas facility in order to turn excess electricity from wind parks into hydrogen for use in the natural gas networks, but also in hydrogen CHP facilities to increase grid flexibility. They have also installed a 8MW battery storage for peak phases. This example was great to highlight the importance and benefit of effective sector coupling. The thermal power of the CHP is used for a small heating grid connected to a local school as well as in a local industry area. The overall local grid is very efficient and using this integrated system has a very high rate of autarky.

The City of Ath has many cultural temporary events and is therefore very interested in hydrogen gensets in supporting the electricity grid. They are interested in the Rotterdam corridor approach as well as the Haßfurt example since they are also employing solutions related to biomass and are considering hydrogen as adding to the overall flexibility of the local grid.

Western Macedonia is facing a coal phase out by 2023 which requires a substitution of jobs and electricity. As a result, the regional government has set a path for hydrogen as an integral part with 1 GW electrolyser envisioned. This is also strongly backed by the national government. The local authorities are quite positive about it and the gensets are considered to greatly contribute to visibility and people’s acceptance. They are now looking into the production of green hydrogen from biomass. CluBE is also part of the European Hydrogen Valley Partnership and stated that it is essential to have a “hydrogen corridor” with surrounding countries to have an integrated approached e.g. regarding hydrogen mobility. Blending of hydrogen into the grid is also envisioned. Regarding the replacement of jobs and income a lot of transformation and retraining as well as attracting investments into other fields is envisioned. The experience of other regions is greatly appreciated. Three cities are running a joint district heating system where hydrogen can be part of the solution.

The intermunicipal association Interleuven has had no immediate experience with hydrogen, but hearing the other presentations, does see potential for supporting their member municipalities around this topic and to support replication of particular hydrogen technologies. They have a project where they are looking establishing a grid-independent zone in a industrial area. Here hydrogen technologies have a key role to play.

The City of Haarlem was glad to hear the examples of other Interest Group members and, since they are now starting their hydrogen journey, found the discussion inspiring.





The Aragon Region, being already strongly involved with the EVERYWH2ERE project, is a highly industrial region and is very specialised in renewable energy and has been working on hydrogen for 17 years. The Region has facilitated training of engineers and facilitated the exchange with many large industrial players in Spain and across Europe. Compared to 17 years ago the attention on hydrogen now is much higher and the Aragon Region, via the non-profit foundation (Hydrogen Foundation of Aragon) is well placed to respond to that. The foundation is owned by 70 stakeholders from the region and is working under 4 yearly hydrogen master plans providing an integrated approach to hydrogen development. These master plans are highly backed by the regional government to align the public policies with those of the foundation. Today 200 public and private entities from Aragon, but also from other European areas are collaborating on the new masterplan from 2021-2024. A significant amount of investment has already taken place in Aragon. Hydrogen is not just one technology, but an enabler for integration multiple technologies and can be used in small and large applications using local resources which do not create geopolitical issues. Aragon Region believes in hydrogen as part of the European Strategy and to meet the challenges of decarbonisation and climate neutrality.

The Piemonte Region, while not having been part of above-mentioned exchange, is highly industrial region starting from the beginning of 2000 with the first fuel cell bus and through the financing of some strategic projects relating to hydrogen. In addition, the Region also boasts a good entrepreneurial fabric of SMEs that operate on many components of fuel cell systems. The hydrogen lab of Environment park is the product of collaboration between public institutions and private companies to verify the business opportunities for energy production and storage and for the use of mobile and stationary fuel cell systems, with over 15 years of experiences.

A group of European Regions interested in developing hydrogen-based technologies has been established for some years, included in the European strategy S3 (Smart Specialization) This group, called 'Smart Specialization Platform - Hydrogen Valley', deals with multiple activities entrusted to different working groups, each focused on a specific topic linked to hydrogen-based technologies. On 22 November, Piedmont was assigned responsibility for the group that works on the development of hydrogen powered trains in Europe with the coordination of initiatives between the regions involved.

Presentation during World Hydrogen Rollouts Conference

ICLEI Europe has presented the project during an online conference on June 30 as part of a panel on Hydrogen in Regions and Cities. The presentation, which happened in coordination with the City of Hamburg (ICLEI member and joined as speaker), which is also engaging with the EVERYWH2ERE project, placed hydrogen gensets within the greater policy context governing the upscaling of hydrogen technologies on the local and regional level. It showcased several forward-looking developments and projects, including the potential of hydrogen valleys and the importance of regional coordination. This particular point was presented with slide contributions by Steinfurt County on how hydrogen technologies can be deployed for different end-uses, but also to increase flexibility and ways to include citizens in the role out of a regional hydrogen economy. Activities of the FCH JU regarding the promotion of hydrogen in regions and cities were also presented in coordination with the FCH JU.

Capturing interest through an EoI



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Both on the project website as well as through bilateral conversations, regions and cities are being made aware of the EVERYWH2ERE Regions & City Interest Group. An Expression of Interest (EoI) has been created to formalise the engagement and facilitate the potentially hosting of a genset. The EoI gives an overview of what the Interest Group entails:

- The opportunity to explore hosting an either 25kW, or 100kW hydrogen genset at a temporary event in your region or city;
- Receive updates and 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 policy tools for zero emissions, zero noise construction sites and other temporary events;
- Receive feasible and effective policy recommendations to support your zero-emission targets.

Stakeholders who signed the EoI

Currently, we received filled-in EoIs from:

- Steinfurt County, Germany
- Kozani Municipality, Greece (potential demo sites identified)
- Turin Municipality, Italy (demo sites identified)
- Rotterdam, The Netherlands (potential demo sites identified)
- Hamburg, Germany,
- Ath, Belgium, (potential demo sites already identified)
- Saldus, Latvia,
- Haarlem, The Netherlands

The following are engaged in the Interest Group Exchanges, but have not yet submitted an EoI:

- Haßfurt, Germany
- Interleuven, Belgium
- Hamburg, Germany
- Aragon Region, Spain





5. Next Steps and Interviews plan towards Demonstration, Business Analysis Campaign and Final Stakeholders and Cities vision

In the next months, priority will be given to:

- intensify iterations with stakeholders, both those already contacted so far and during the hiring of new ones also to be able to cover the demonstration phases in the next years of the project as well as to collect further insights for future gensets marketability;
- intensify interactions with Ports of Spain for aspects related to CE marking and demonstration in the port of Tenerife;
- collect suggestions, inputs and reactions during the first demonstration events through also appropriate questionnaires more frequently addressed to the event organizers;
- analyse from the results of the demonstrator's possible business models for all stakeholders;
- expand city stakeholders by increasingly involving cities and regions.

The next activities will be oriented therefore in considering all the stakeholders' group activities, recommendation and policy for FC genset promotion at city and industrial level and the results will be reported in the D7.9: Final Stakeholders' and cities vision document [54].

The consortium currently foresees future interactions via bilateral meetings/visits/telcos as done so far as well as to organize a potential "final stakeholders-oriented event", if possible, in the framework of a relevant clean energy event.

Webinars and web surveys (that have been used in the last months as "way of interaction" with stakeholders due to COVID-19 crisis) will be promoted as well.

