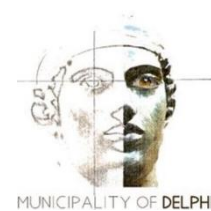


SMART solutions for HYdrogen potential AWAReeness Enhancing

NEWSLETTER 3. APRIL 2021

SMART-HY-AWARE aims to promote hydrogen-electric mobility by tackling the main infrastructural, technological (range anxiety related) and market uptake barriers, through the improvement of Policy Instruments linked to Structural Funds in Europe, addressing the **transition to a low carbon economy**. Specific sub-objectives of the project are:

- Exploiting the potential of hydrogen technologies for electro-mobility, involving the whole supply chain;
- Improving regional and local strategies which focus on the real needs for implementation, such as promoting the integration of new models of fuel cells;
- Increasing the efficiency of green propulsion in transport;
- Improving renewable energy grids to cut down electrolysis costs, and IT management applications to enable advanced planning of short-to-mid-term power productions, thus fostering the use of hydrogen power within distributed networks;
- Increasing the deployment and the accessibility to refuelling infrastructure for both public and private sector in urban and rural areas;
- Supporting the deployment of alternative fuel vehicles in public transport by setting up regional financial support schemes;
- Promoting and assessing new measures favouring public-private partnership (PPP) in e-mobility sector;
- Enhancing the capability of public Authorities in developing effective policies for reducing the carbon footprint of transport activities.





SMART HY AWARE DURING THE COVID-19 CRISIS

The third semester of Smart Hy Aware has been again highly impacted by the COVID-19 crisis. Travelling was still not allowed, so learning activities were carried out online. Particularly, monthly progress meetings were held, the third Steering Committee took place on the 11th of December, and the IRSV3 was organized by Lazio.

Other remarkable activities are the compilation of some Good Practices - we currently have three posted on our website; and the achievements of some of our partners who managed to include some modifications on their regional legislation in favour of hydrogen development and utilisation. In this edition of our newsletter you can find some information of our main activities.

IRSV3 – LAZIO REGION

The IRSV3 was organized by Lazio Region on the 1st of December. It was the first fully virtual site visit on the framework of Smart Hy Aware, but it was still a great success with more than 50 attendees.

The Head of the Housing Policies and Territorial, Landscape and Urban Planning Department from Lazio Region, Ms. Manuela Manetti, introduced the meeting by welcoming all the partners and highlighting the importance of hydrogen to decarbonize both public and private transportation.

After that, Ms. Eliana Cerroni explained the most recent contributions to the regional legislation related to hydrogen. In particular, the Regional Energy Plan now includes several amendments on hydrogen, such as the creation of energy districts inclusive of green hydrogen, the search for funds for sustainable mobility for hydrogen-powered transport, and the installation of electrolyzers. Moreover, Lazio Regional Government will set up a steering committee specifically focused on hydrogen, to attract financial investments and to speed up the development of a dedicated industrial chain.

Thanks to the participation of Lazio's regional stakeholders, several good practices regarding hydrogen were presented. This allowed the consortium to better know what Lazio Region is achieving within Smart Hy Aware and other projects on sustainable mobility.

Finally, there was an open debate about what are the main barriers that still impede a full introduction of hydrogen technologies as a common energy source, and what are the most urgent measures that need to be taken. Devid Porrello (Regional Councilor and Vice President of the Lazio Regional Council) thinks that one of the main obstacles consists of the absence of specific laws regarding the production, distribution and storage of hydrogen, and a bureaucracy that slows down its development. That is why it is necessary to introduce measures dedicated to hydrogen within the regional planning and programming tools.

Besides all of the above, it is essential to raise awareness among the population about the need to decarbonise mobility and that hydrogen could definitely help with that.



REGIONAL STAKEHOLDER WORKSHOPS

ARAGON

On January 26th the third Regional Stakeholder Workshop took place online. 18 stakeholders representing a number of public and private institutions (technological centers, local governments, clusters, companies...) from the region attended the meeting.



The lead partner gave a brief presentation of the Interreg Europe Programme, and also of the project and its objectives, focusing on the policy instrument that concerns the region. The activities that have been developed during the first year of the project were also briefly explained. The lead partner highlighted the importance of counting on the stakeholders during all the stages of development of the project, due to the fact that they are going to be one of the main beneficiaries of the improvement of the policy. That is why they play a key role providing their expertise on the field.

After that introduction, the Aragon Hydrogen Foundation explained some of the National and European Funds that could be of interest to stakeholders and the region to promote the use of hydrogen technologies. Currently, the use of hydrogen is a priority among the European and national strategic objectives to achieve a more sustainable society. Therefore, we must take advantage of this favourable context to develop and promote the use of hydrogen in mobility.

It was also announced that a Good Practice has been recently validated by the JS, and appears on our website. It explains a co-governance model to promote hydrogen in Aragon (Aragon Hydrogen Foundation). Stakeholders are committed to contribute with more initiatives that may be of interest to the consortium.

The main part of the meeting consisted of a brainstorming about possible pilot actions that could be tested in Aragon, funded by the Programme. These were some of the most interesting ideas:

- We should focus on four main axes: green hydrogen production, analysis of hydrogen demand, hydrogen vehicles and providing users with the associated infrastructure.
- Strong background of the automotive industry in Aragon. Analyse the needs they could have to produce hydrogen vehicles and its components.
- Find an alternative to HRS for remote areas, rural zones or small vehicles.
- Take advantage of the region's potential to exploit renewable energy (solar, wind...), to store the surplus in the form of hydrogen.
- We count on the expertise of European partners in the deployment of hydrogen buses.
- Be aware of all the process of hydrogen technologies development, from its cost-efficient production to the stimulation of industry demand.
- Need of reducing costs and to adapt and create the adequate infrastructure to solve the current distribution problems.



PROVINCE OF SOUTH HOLLAND

The province of South Holland joined the Smart Hy Aware project on the subject of the implementation of hydrogen powered public transport buses. Concretely, this regional project aimed at the implementation of 20 hydrogen buses, including the construction of a Hydrogen Refuelling Station (HRS).

Smart Hy Aware addresses hydrogen applications in mobility in an earlier stage of development for which policy measures are/may be needed to stimulate this development. From the start of the Smart Hy Aware project in August 2019 towards the end of 2020, the project moved fast forward, resulting in a contract for the delivery of the 20 buses and the finalization of a public tender for the construction of a HRS. By this fast forward movement, the project of 20 buses is less suitable for Smart Hy Aware since the policy measures have already been taken and the result – 20 buses in operation – will be there by the end of 2021.



Nevertheless, some activities regarding exchange of knowledge among the province and stakeholders have taken place this semester. After the bus OEM and hydrogen supplier were contracted, the province of South Holland organised meetings with the regional consortium existing of the hydrogen supplier, bus OEM, public transport operator and the province. But after realizing that the initial objective of the project should change, an important activity in semester 3 has therefore been the search for an alternative subject that can act as the local site project for the province of South Holland.



Within the province there is a high level of activity on the subject of hydrogen. It is strongly recognised that hydrogen plays a crucial role in the future proofing of the sustainable energy system and economy. With the harbour of Rotterdam as strategic hub in the region that connects logistics with Antwerp and the German Ruhr area, there is a big challenge to reduce emissions of greenhouse gases by the logistics sector. Within this context, there is the idea to decarbonize the fleet of 1,000 logistic trucks operating in the triangle Rotterdam - Ruhr area - Antwerp. Hydrogen can and must play a

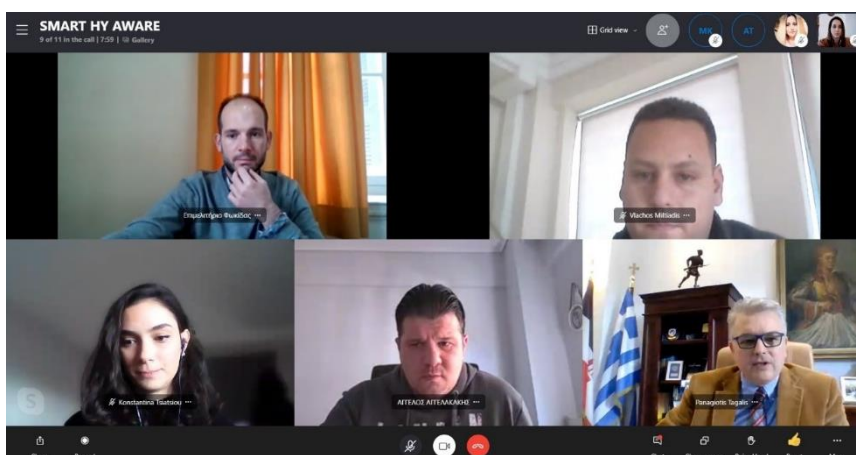
significant role in decarbonizing the logistics sector since alternative zero emission solution (batteries) are inadequate for their application in heavy-duty transportation. Thus, the concrete aim is to have 1,000 hydrogen trucks on the road by 2025 and further increase this number.

This is the new context in which Smart Hy Aware activities will be developed. This re-definition of the project in the region has started this semester, with some virtual meetings addressed to introduce the project to internal stakeholders. Concretely, on the 21st of January, the province virtually met with the “kenniscluster International Goederen Vervoer” (cluster of professionals working in the field of international transportation of goods), and the “afdeling Mobiliteit en Milieu” (department of Mobility and Environment). Apart from that, a new consortium group is being formed with Air Liquide, Port of Rotterdam, Province of South Holland and Holthausen, to address the new topic of hydrogen trucks.



MUNICIPALITY OF DELPHI

On the 29th of January the third virtual Regional Stakeholder Workshop was organized with 12 stakeholders attending, including representatives of the regional Government of Central Greece and the Municipality of Delphi, the Hellenic Institute of Transport, the local Chamber of Commerce and Industry, regional Technical Chamber, and also other cooperatives.



After welcoming the participants, Delphi partner presented the state-of-the-art of the use of hydrogen in Greece, and also some practices that partners of Smart Hy Aware are doing in their regions about hydrogen's use in mobility.

The main objective of this third meeting was to present to regional stakeholders what Municipality of Delphi intends to achieve within Smart Hy Aware project. To this end, researchers of the Hellenic Institute of Transport (HIT) from the Center for Research and Technology Hellas (CERTH), explained what are the future regional plans regarding hydrogen, and the possibilities to produce it in a sustainable and renewable way from olive groves biomass.

In the framework of Smart Hy Aware, Municipality of Delphi will evaluate the use of hydrogen in the public fleet and for tourism purposes. The regional action plan will include the steps that need to be carried out to implement the use of hydrogen, and how it could be produced from biomass, thus creating a circular economy. This study has just started this semester and its different phases were explained to stakeholders. In brief, it will consist of the following steps:

- Evaluate the potential of the region to produce renewable energy from olive groves biomass.
- Evaluate the possible methods and cost to produce hydrogen from biomass.
- Compilation of good practices from other regions to implement hydrogen electrification and evaluation of their applicability in the region of Fokida.
- Evaluation of the use of hydrogen vehicles in the public fleet and for the movement of tourists in Natura areas.
- Compare different technologies for hydrogen fuel cells and HRS and evaluate their costs.
- Evaluate the best location for HRS.

RSW3 showed that stakeholders appreciate the significance and potential impact to the environment and economy that Smart Hy Aware and its results could provide to the region. Municipality of Delphi intends to influence local and regional policies to introduce hydrogen mobility in the next Smart Specialization Strategy for Greece, to fund actions and infrastructure related to hydrogen and its use in transport as an energy carrier.

The meeting ended with a common discussion and open debate among all the attendees.



ABERDEEN CITY COUNCIL

During Semester 2, a number of organisations were offered the opportunity to be involved in a partnership under the Smart Hy Aware umbrella to undertake a joint hydrogen demand fleet review in order to encourage hydrogen vehicle uptake. The fleet review will assess which of the organisation’s vehicles can be converted to hydrogen over the next 5 years, and will be carried out by the consultant Cenex.

On the 4th of September, ACC hosted the inception meeting with those stakeholders. Scottish Enterprise and Opportunity North East were also present at the meeting. Discussions centred around the fleet data required to undertake the review, and the tasks Cenex would complete in order to produce a final report.

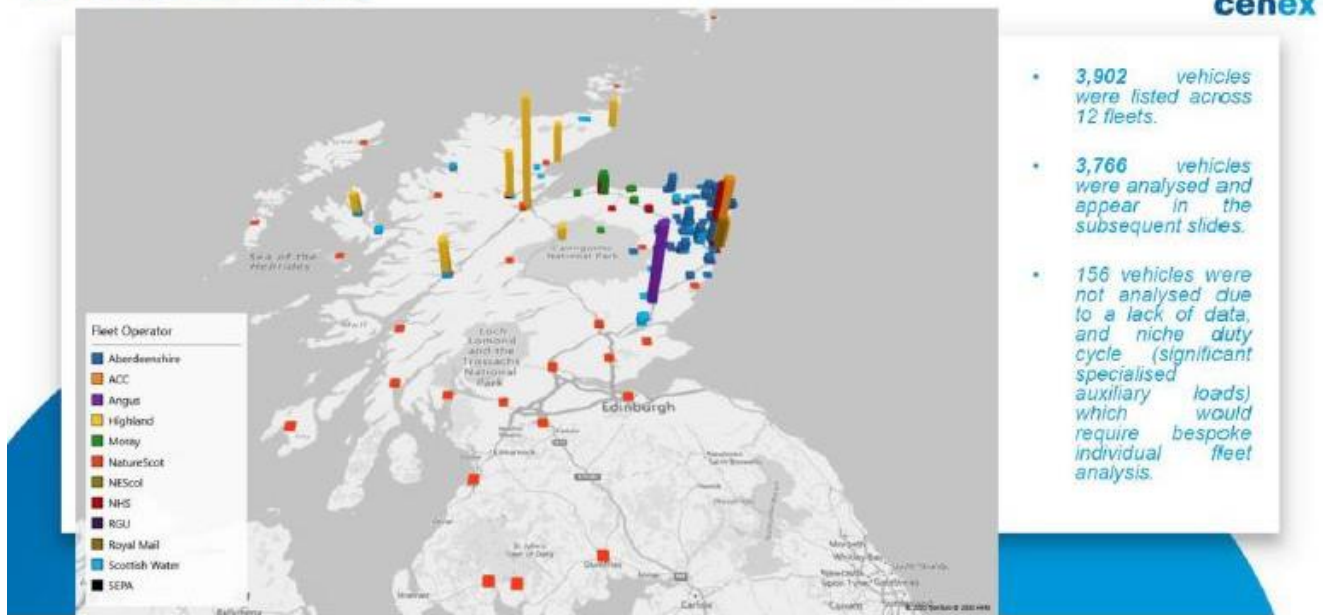
On the 1st and 9th of December, ACC presented the main findings and challenges to their stakeholders. One challenge that was revealed was that access to right-hand drive hydrogen vans and trucks in the UK will be difficult, due to Original Equipment Manufacturers focusing on the larger left-hand drive European market.

- Aberdeen City Council
- Cenex
- Aberdeenshire Council
- Angus Council
- Highland Council
- Moray Council
- NESCOL
- NHS Grampian
- ONE
- RGU
- Royal Mail
- Scottish Enterprise
- Scottish Water
- SEPA
- SNH

Introductions



WP1 – Vehicle Locations. All Fleets



ACC attended the Scottish Hydrogen and Fuel Cell Association Annual Conference, which facilitated knowledge-sharing between stakeholders in the hydrogen and fuel cell industry. ACC also gave a presentation to 10-year-old-students on hydrogen technology and the vast possibility of its uses such as transport or heating. An additional presentation was also given at the AberGoGreen Webinar showcasing Aberdeen’s journey towards a hydrogen energy transition and projects such as the Smart Hy Aware fleet study.



PANNON BUSINESS NETWORK

RSW3 in Hungary was organized in two rounds: one meeting with regional policy makers on the 3rd of November, and another one with external hydrogen experts on the 10th of November. Both meetings were oriented to present the project and its activities, the currently achieved results and studies such as the setting the scene report, and to start the compilation of ideas to develop the regional action plan.

In the first meeting, PBN's team presented the project to representatives of Vas Country Authority. Concretely, they presented the main objectives of the project, the methodology and the already achieved results (both on PBN and partnership level). They also discussed with them the setting the scene report, so Vas Country regional Authority could be informed about the current hydrogen mobility initiatives of the partnership. Finally, some ideas were discussed on how to develop hydrogen mobility situation both in the region and in the country.

In the meeting with hydrogen experts, PBN also presented the project, its main objectives and currently achieved results from a more technical point of view. They also shared its participation on the National Hydrogen Technology Platform activities and working groups, and the setting the scene report of Smart Hy Aware. After that, hydrogen external experts gave their view on hydrogen topic within the region and the country. The meeting ended with a joint discussion about next steps and future plans within the region.

Apart from the involvement of regional stakeholders, PBN has made another important achievement this semester. The promotion and implementation of hydrogen appears in a strategic document at a local level named "Szombathely 2030", thanks to PBN's participation in Smart Hy Aware. Concretely, this document describes some envisaged actions to promote hydrogen – mainly with mobility focus - by 2030 in their city. Within the plans that are envisaged, it is worth highlighting the installation of up to 14 HRS by 2030 in Hungary, one of them in Szombathely. Furthermore, the policy document suggest that tourism might be the area in the county where a hydrogen-fuelled mobility project might be implemented as a pilot project. In later steps, hydrogen-fuelled vehicles might appear also in everyday public transport. A [website](#) has been created where the main goals of the strategy are highlighted.

Regarding the budget, approximately 5.5 million EUR is planned to achieve the above-mentioned H2 goals, which might be financed by European funds.



was demonstrated.

PBN also attended a high-level national event organized by the National Hydrogen Technology Platform with more than 120 attendees. In this workshop, prestigious experts and national policy makers gave presentations about the current situation, developments and future plans of hydrogen usage in mobility in Hungary. Participants were informed about current and planned Platform's activities. Besides, experts talked about the flagship hydrogen projects from all over the world, as well as good practices on EU level. Finally, the first H2-powered boat, developed by a Hungarian company,

In Semester 3, PBN finalised a professional video where policy makers and experts talk about the current status and initiatives of hydrogen mobility in Hungary. It can be seen on our Youtube channel.



UPCOMING EVENTS

In the fourth semester, it was foreseen to organize the IRSV4 in Delphi. However, the current global situation due to COVID-19 crisis will not allow international travel, so the consortium decided to organize a virtual IRSV4 instead. Due to the delays in the starting of the specialised study in Delphi, the consortium decided to postpone this site visit, so that some results will have been achieved by then. We are working on an alternative virtual site visit instead. Other project activities such as RSWs will probably continue taking place online.

Regarding Regional Action Plans, regions will develop an initial draft which will contains what each region expect to achive within the Smart Hy Aware RAP. This way, all the consortium will be aware of what is being done in other regions and what expertise they could gain from others.

Smart Hy Aware consortium agreed to submit a proposal to organize a virtual workshop in EU Regions Week 2021, to present some of our activities and good practices. Green hydrogen is currently a key priority all over Europe, so we find it as a great oportunity to increase our visibility and disseminate our good practices.

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