NEWSLETTER Nr.02

November 2012

Content

MobyPost ID

Title

Mobility with hydrogen for postal delivery

Programme

Fuel cell and hydrogen Joint undertaking — Call 2009

Duration

01/02/2011-01/02/2014

Main objective

MobyPost aims at developing a novel sustainable mobility concept that proposes to meet the challenge of experimenting a whole system combining a carbon neutral vehicle with a technology based on a solar hydrogen fuel cell system. This is what we call the solar-to-wheel solution.

Partner countries

Germany, Switzerland, Italy, France

Editorial

Dear Readers,

This is No 2 of the **MobyPost** Newsletter ready for you! The last three months have seen a couple of important events and deadlines for our project. For instance, the **MobyPost** project has passed half-time (18 months), a critical point, at which the project's achievements during the first period are evaluated against the goals set. Get informed about the feedback of the project review in this issue !

Further, the results presented at the 18M partner meeting in late September showed that after an extensive period of planning, definition of requirements and standardization procedures the project was just at its starting block to take off for the production of the **MobyPost** vehicle and the construction of the infrastructure sites ! Exciting to see all partners so committed and keen to head on ! Read more about the current progress of the project on page 3.

This issue also includes the report of Mobilis 2012, which took place the 13th and 14th of November in Mulhouse (Alsace). The Mobilis is an event on transportation and mobility, which we consider to be one of the most important channels to promote **MobyPost**. Have a look at upcoming events for the next 3 months, too !

Like in issue N°1, we want to share our Partners' view and opinion about the project with you. Today we are pleased to present in our "Partner's backstage-section" an interview with our partner David Colomar from EIFER (Germany). EIFER (European Institute for Energy Research) is strongly involved in the implementation of the refueling infrastructure, which is an essential part of the global idea of **MobyPost**.

Finally, to further supplement the information of the first newsletter, we have also searched for more initiatives or projects thematically related to the **MobyPost**idea. This section may provide you a taste of the worldwide efforts towards alternative solutions in mobility, energy and transport !

Apart from the newsletter, we kindly invite you to also regularly consult our website :

www.mobypost-project.eu

Enjoy reading !

Yours sincerely,
The **MobyPost** consortium

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Projects Progress

As announced in the previous edition of our newsletter, we now have concrete results that have been shared amongst the consortium. First of all, on the vehicle's design side, the power train of our FCEV is running since this summer on a test bench in the UTBM laboratory. This test bench allows developing and checking the compatibility of the components, the energy management laws, the efficiency of the whole system, but also anticipating, thanks to the degraded modes analysis, the possible faults of the power train. In parallel, the first prototype has been manufactured by Ducati Energia, who is about to start the drivability tests in their own facilities, in Bologna.

MobyPost infrastructure project on a postal site

On the infrastructure side, the conversion work on existing sites is about to start within the coming months, according to the detailed implantation schemes that exists thanks to the work of all partners, but also thanks to the subcontractors who are deeply involved in the project: the architects, the control organization and the PV generator designer (Urbasolar).

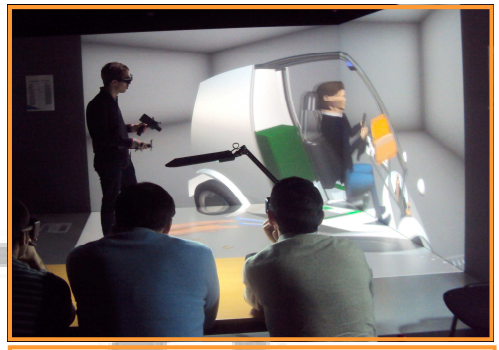
Past events

18M partner meeting, 25-27 of September 2012, Belfort Montbéliard, France

The fourth partners meeting of the **MobyPost** project was organized end of September by the partner UTBM – Université Technologique de Belfort Montbéliard over three days. This meeting was at first the occasion to share and level information amongst the consortium, as since the beginning of the year two working groups are constituted, one being centered on the vehicle design, the second on infrastructure design.

Then, technical progress was clearly explained by the UTBM teams, with the demonstration of the electric power train of the **MobyPost** vehicle running on a test bench. This allowed discussing technical questions in direct! In the same way, the progress on ergonomics and styling was tangible thanks to the visit with the ERCOS team of the IRTES-SeT laboratory where the virtual vehicle in 3D was presented along with the scale 1 mock-up of the cock-pit.

Finally, the last day, spent on La Poste site for **MobyPost** experimentation, allowed a really important and interesting meeting focused on infrastructure design, the facilities built for **MobyPost** including the refueling station, and the related safety aspects.



Virtual platform (IRTES-SeT ERCOS)

Electric power train on test bench

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Review meeting, 24th of October, Brussels, Belgium

Our project reached its mid-term at the end of July 2012. Therefore, we submitted to our funders an activity report for this first period of the project. This report gathers and explains the contribution of all the partners to the success of the project. Then, the consortium was invited to the FCH JU in Brussels to explain in person the project's life: our working organization, our realizations so far, but also the difficulties we have encountered and the main challenges that we are facing or will face.

This day was really important for all of us, as it allowed demonstrating the consortium's strength as well as its motivation. We were also reaffirmed the stakes underlying the project, and we have seen once again the will and support of the EC for the hydrogen technologies as a way to decarbonizes our economy and environment.

The FCH JU has welcome the consortium in Brussels

Mobilis, 13th & 14th of November, Mulhouse, France

Again this year the **MobyPost** consortium was present for the ninth edition of the Mobilis event that took place in Mulhouse middle of November. Were actively involved in this event::

- UTBM, who organized the stand, presented the **MobyPost** power train, as well as other electric vehicles developed in various projects. The main laboratory of the IRTES involved in the **MobyPost** was presented: the SET, with two teams, CCE and Ercos.
- La Poste, in particular Eric Gauthier who explained our project in a roundtable discussion dedicated to the emerging hydrogen industry.
- IPV, who disseminated the **MobyPost** project during these two days, to French, but also European visitors.

More information (pictures, interviews) will be available soon at :
http://www.mobilisconference.com/fr/exposition-mobilis-2011/expo-2012.html

IPV & UTBM team members, Mobilis2012

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Interview David Colomar—EIFER

What is the main mission of the institute? What special research topics does your department focus on ?

EIFER has been created in September 2001 as a European Economic Interest Grouping (EEIG) between French energy company EDF and German KIT (Karlsruhe Institute of Technology) with the aim of establishing joint research projects. As such, EIFER is an international institute, at the interface between research and industry. The research center is focused on technical, environmental and economic questions on sustainable energy management and is organized into 3 main domains: Cities and Territories, Economics of Energy Systems and Environment, and Resources and Decentralized Production, the latter of which I'm involved in.

Our department, in particular, is concerned with innovative technologies of energy generation, storage and smart energy distribution. We focus on a decentralized approach, i.e. the interactions between many small power plants and users in a large network. For instance, we're investigating solutions for the integration of different energy resources, the remote control and the monitoring of a network of power generation units.

What is EIFER's strategy in terms of bridging the gap between energy research and industrial application ?

In fact, there is a big gap between what is working "in the theory" and what is technically and economically feasible "in the real world". Field trials or demo-projects, if you want, can help to bridge this gap. EIFER, being placed at exactly this interface between research and industrial application, wants to meet industrial scale needs and therefore fosters activities at the demo level. Let me give you an example: fuel cell (FC) driven CHP (combined heat and power). Creating a "virtual power plant" by combining and remotely controlling a number of micro plants would allow for more flexibility in energy supply and logistics. The FC technology for this application , however, is not yet fully mature for out-of-lab use. Here, demonstration projects are necessary to reveal whether a trade-off between the local needs of the end user and the remote control of a utility is feasible.

Short profile

David Colomar

Since 2009 David is research engineer for micro-CHP systems and hydrogen technologies and is responsible for demonstration projects in the domain "Energy Resources and Decentralized Production „of EIFER.

David obtained his degree in Energy and Environment technologies at the engineering School of Lyon, France. He specialized early in the field of hydrogen and solar energy technologies, among other during study visits in the UK and Germany.

What are, in your opinion, the main obstacles for the deployment of alternative energy solution in our society today ?

Basically, the lack of a long term energy policy. Let me explain: The period of time that is covered by national aids is typically too short to encourage investors for long-term capital assets. It simply does not provide a sufficient level of confidence on the long run. When a government changes, the new-comers often modify or cancel the programs of the predecessors. These "stop-and-go" policies have a very negative impact on the industry and the applied research, that is to say, the domains which could generate new jobs. By the way, this is not only for investors, but also for start-ups, which need stability to grow up.

In this regard, funding on the EU-level might be more sustainable, because a European strategy could be independent from short-term political issues at national level. This is why initiatives like the FCH-JU (that supports **MobyPost**) are of such importance.

Yet, there's another important point: public acceptance. At EIFER a dedicated group of technical and social scientists is concerned with the socio-economic aspects of new energy sources and their integration. Their insight is an important input for the technical project work, too.

Do you note a change in attitude towards increased acceptance of renewable energy deployment as a consequence of recent political decisions in Germany ("Energiewende") ? And in practice, does it have any consequences for EIFER's activities ?

In a way, yes. We note that there is increasing interest from all across Europe for sustainable energy solutions.

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This is particularly visible at small scale level, for example, municipal utilities. The local communities are becoming aware of the importance of energy. They want to be active players of the future energy system. For us, this has a direct impact on our activities. In future, EIFER will probably have more and more collaborations with cities and territories. This requires transversal skills, from the technical expertise in energy technologies to social sciences, to understand the behaviour of people and the economic constraints of local communities.

How did you become aware of the possibility to join the consortium of the MobyPost project? What was your motivation to join? What were your particular interest in and expectation from participating ?

IPV (France) and EIFER representatives met at a conference, where they discussed current work and project ideas. IPV suggested EIFER to participate in **MobyPost** with activities related to the hydrogen infrastructure. In fact, EIFER is keen to participate in projects dealing with hydrogen applications for industrial partners. La Poste has a strong involvement in e-mobility. However, battery vehicles cannot meet all their needs, because the autonomy of these vehicles is limited. **MobyPost** provides an original solution to the specific requirements of this industrial sector: combining the numerous advantages of electro-mobility with the good storage potential of hydrogen, which increases the autonomy of the vehicle fleet. Moreover, the refuelling concept was designed from the beginning as a fully-integrated solution in the buildings of La Poste, which enables to use photovoltaic generators as a green energy source.

Integration of hydrogen technologies into buildings and cities is just in line with EIFER's vision. Above all, we are quite excited about **MobyPost**, because it is the first project within our hydrogen & fuel cell research with such a strong focus on early markets.

There are plenty of thinkable solutions for the implementation of clean/renewable energy. What are the advantages of hydrogen and fuel cell technologies ?

The answer has to be worked out at a case-to-case basis for each application. Talking about e-vehicles, there are two predominant technologies: the battery and the FC driven car. These are not necessarily competing; their use rather depends on the application. While batteries are more suitable for short distances, their storage capacity is today the largest drawback. On the other hand, FC technology meets the need for long distance travels with short refuelling times.

Do you think that vehicles equipped with hydrogen, similar to those developed for MobyPostwill be easily accepted by the professional users, the public or possibly even by private users? Isn't hydrogen too dangerous ?

This is a really interesting point, since we are often confronted with this question. Think that until the 1950ies, in France, the so-called "town gas" was used for street lighting, heating and cooking in many towns like Paris. Although town gas is a mixture that contains more than 50% hydrogen, there was no significant incident. Yet, hydrogen suffers from a bad reputation. So, what can we do about it? I believe that informing the public and the users – in our particular case the postmen – comprehensively at an early stage of the project is vital. In this regard UTBM has already done a good job by performing extensive surveys among the postmen and before starting the trials, we will have dedicated training of the users of the vehicles and the refuelling stations.

But the best way to get the acceptance for a new technology is, of course, to be irreproachable on safety. In **MobyPost**, we have dedicated special tasks to safety issues in order to meet all necessary standards and to reduce any source of potential risk.

What is your long-term vision concerning the MobyPostconcept ? Do you think it may have an impact on a wider deployment of hydrogen-driven vehicles ?

Historically, the three main sectors of the energy system (electricity, heat and transport) were considered as independent domains. Progressively, people understood that it was possible to take advantage of the combination of heat and power and the first "co-generation" plants were developed. Now, we would like to push this further and integrate the transport in a global energy system. You could think of using excess power from local energy providers during low consumption phases for the operation of electrolysers supplying hydrogen to refuelling stations, for example. On the other hand, a hydrogen service station could be equipped with a stationary fuel cell or a small turbine to produce peak electricity. Each service station could become an "energy hub" contributing to the stability

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of the global energy system. From the economic point of view, the supply of one refuelling station would represent additional electricity consumption comparable to about 1 000 households ! This represents a large new potential for renewable energies.

What is EIFER's vision on your own activities in the field? Would you go for similar initiatives or projects like MobyPost, possibly even at a larger scale ?
We definitely would do so! With regard to **MobyPost**, we are learning a lot about the interaction between on-site electrolysers and grids and how to integrate all components. There's still room for optimization, which we would be happy to pursue in future work. More generally speaking, we are very interested in activities related to remote control strategies and the integration of decentralized generation and consumption units in a global energy system, which is a key issue towards sustainable urban development.

Many thanks, David !

Initiatives

ERA-**N**ET **T**RANSPORT (**ENT**) is a European network built by several national ministries and supporting organizations in the field of transport research. The ERA-NET TRANSPORT pre-dominantly serves to the owners and managers of transport research programmes. By facilitating cooperation among publicly financed transport research programmes it is ENT's goal to improve the outcome and quality of transport research in Europe. The main mechanism is seen in the structuring of the European Research Area (ERA) for Transport. Since its kick-off in 2004 the ENT has applied a work structure that consists of today 23 Action Groups, within which concrete research funding cooperation are organize. The topics range from railway research, intelligent logistics, road safety, noise effects, alternative fuels to, of course, electric Mobility.

Find out more about it @ :
http://www.transport-era.net/action-groups.html

MobyPost says : because the website is a useful repository of knowledge for transport related topics and, therefore, an interesting source of information.

Latest news: November 7th 2012.
The German weekly newspaper "DIE ZEIT" has published an article, in which it reports that German municipalities show ever increasing interest in the use of electric vehicles, however, at a leasing model base. The paper quotes the Federal Association for eMobility (Bundesverband eMobilität (BEM)). According to the BEM, they receive inquiries from municipalities on daily basis, arguing that there was a great potential of saving costs, not only related to fuel, but also due to lower requirements of maintenance among others.

This link leads you to the article + comments on it (unfortunately, only available in German) @ :
http://www.zeit.de/auto/2012-11/elektroauto-dienstwagen-leasing

MobyPost says : because may hint at another possible way to bring e-vehicles closer to the public.

We are looking forward to Newsletter No 3!
You, too ?
Sincerly,

MobyPost consortium

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