MOBI.EUROPE

PUBLISHABLE SUMMARY

Final Version

mobi europe

cip competitiveness and innovation framework programme 2007-2013

1 The MOBI.Europe Project

MOBI.Europe – Integrated and Interoperable ICT Applications for Smart Connected Electro-Mobility in Europe – is an integration project based on ICT systems that aims to guarantee interoperability of electro-mobility services across countries and the smart integration of electric vehicles into the transport and energy systems, and to ease users' adoption of electro-mobility solutions.

Electro-mobility initiatives are currently running across Europe, at national, regional and city level. Fragmentation of technological and business solutions represents the biggest risk to the creation of a truly pan-European network. Portugal and Ireland have the two first national-wide networks for electro-mobility, the city of Amsterdam has one of the most ambitious citywide programs and the region of Galicia benefits from a strong auto-industry environment. In France, Renault is one of the first OEMs to have a comprehensive strategy for the introduction of EV into the automobile market. Partners of MOBI.Europe are then key stakeholders in Europe and are engaged in contributing to the harmonization of technological and business solutions to the electro-mobility market through the interchange of information and standardization of communication protocols.

The MOBI.Europe pilots will contribute to the standardisation and openness of the electric vehicle ecosystem through a System of Systems (SoS) approach, establishing open interfaces between them and allowing for the exchange of information, setting the basis for a pan-European network of services associated with electro-mobility, whilst respecting national and local differences. Within the scope of the Project, the systems and services that will be tested are:

- International cross-country roaming;
- End-users services;
- Smart charging;
- Integration of home and public infrastructure;
- Track of CO_2 emissions from mobility;
- Creation of integrated web portal, mobile applications and on-board equipment interfaces;
- Mobility services (e.g. car-sharing, parking).

Four pilots are the core for the demonstration of the standardisation of openness of the electric vehicle ecosystem. They are Portugal, Ireland, the region of Galicia (Spain) and the city of Amsterdam (the Netherlands). Currently, these four pilots have almost 4.000 charging points in operation and over 1.400 pure Electric Vehicles in circulation. Until the end of 2012, the network registered close to 25.000 charging operations, making of the MOBI.Europe network one of the biggest in the world.

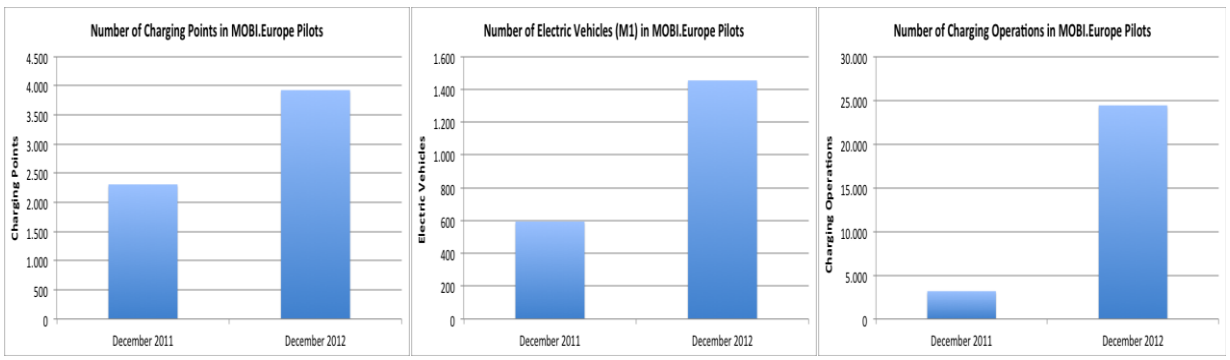

Fig. 1 – Number of Charging Points, Electric Vehicles and Charging Operations in the MOBI.Europe pilots

2 Work Performed and Main Results Achieved So Far

During the first year, the focus was to produce a common understanding of the status and challenges of the on-going initiatives comprised in the Project and to produce the ICT framework and interoperability guidelines, as well as the high-levels pilot specifications. Those deliverables were produced successful and are now the starting point for year-two of MOBI.Europe, where the interchange of information and harmonization of technological solutions and business requirements will be tested. At the same time, MOBI.Europe promoted strong cooperation efforts with the other CIP projects (SmartCEM, MOLECULES and ICT4EVEU), FP7 projects (Green eMotion) and private initiatives (Treaty of Vaals and eMI3) reaching other stakeholders in the search for a common understanding of electro-mobility in Europe.

2.1 Market Review (WP 2)

The "Market Review" – Deliverable 2.1 (DL 2.1) – gives an operational view of Electro-Mobility through analyzing the status of electro-mobility in Europe. Eight countries are described individually, the five of MOBI.Europe and three other considered key. They are: Portugal, Spain, France, The Netherlands, and Ireland, of MOBI.Europe; and Germany, England and Norway.

For each country the following items are described:

- Current Situation Regarding Electro-mobility in the country
- Initiatives on Electro-mobility
- Policy / Regulation Regarding Electro-mobility
- Stakeholders Electro-mobility
- Technologies in Place

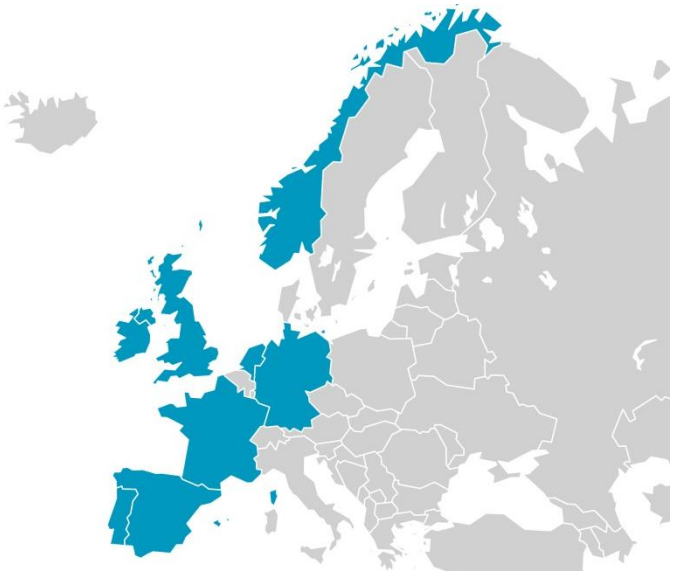

Fig. 2 – Countries described in the Market Review

Within the EU countries considered in the market review the differences of development of electro-mobility are considerable. It is clear however that the introduction of full electric vehicles in each of the countries markets is still embryonic. Despite (fiscal) incentives in several countries sales volumes are only a small fraction of new car sales in any of the countries. It is unlikely that the economic and financial crisis is the only reason why initial estimates for numbers of electric cars 2012 are not reached. Other reasons may well be the limited number of different electric cars available as well as the technical performance (range). The new electric vehicle models that are going to be introduced into the market may change this. The introduction of plug-in hybrid may awaken broader market interest for electric driving as well as for larger sales percentages.

In all the countries considered there are considerable activities to introduce charging points in the public domain. The costs related to the installation and grid connection of these charge points can however create a bottleneck for a market model and thus for an introduction of a large number of (public) charge facilities.

At the moment of the market review, two European infrastructural solutions for standard charging exist ("Type 2" and "Type 3"). Both of which have been standardized at the international level within the catalogue of IEC 62196-2 standards, approving them in terms of safety and security. A significant number of countries in Europe have accepted the IEC Type 2 socket as the standard for home and public charging with mode 3 charging. The European Commission set "Type 2" plug as the European standard in its clean fuel strategy of January 2013. Since different car manufacturers use different standards for high-power AC and DC charging was also no recommended standard for fast charging during the market review.

Drivers of electric vehicles are not able to recharge in different countries since there are no standards for any interoperability and identification, which leads to billing obstacles. In Portugal, the Netherlands and Ireland there are interoperability agreements on national level. There is no online overview of all charging points in Europe at the time of the market review. This shows the importance of open data and the need of a good overview. In all countries in Europe electro-mobility pilot projects have been initiated the last few years. It is a very dynamic market. New figures, ambitions and incentives are published frequently. The market review is a 'snapshot' taken of a very dynamic European electro-mobility market between April and July 2012. It could be wise to repeat the review in a later stage.

2.2 High-level ICT Framework and Pilots Specifications (WP 2)

The work performed within the scope of WP2 during this first year focused in describing the systems of each pilot (e.g., architecture, technology, business models, normative) and, considering the constraints identified, define with all partners' reference architecture for MOBI.Europe. Two deliverables were created to achieve these objectives: High-level ICT Framework Specifications (DL 2.2) and High-level Pilots Specifications (DL 2.3).

The High-level Pilots Specifications aimed to describe the systems currently in place in each of the pilots in Portugal, Spain, Ireland and the Netherlands. It includes the list of pilot systems and services, logical and system diagrams, identifying interfaces, protocols, formats, technologies being used, and, also, standards already adopted. The High-level Pilots Specifications have been input for the High-level ICT Framework Specifications. Besides the different partners also agreed on criteria to be respected when setting up the reference architecture:

- The reference architecture should be the least intrusive possible to each pilot;
- The reference architecture should be business model independent (i.e., to cope with any business models already implemented locally or that will be implemented in the future);
- Decentralization and delegation of responsibility, rather than having an entity overseeing the management of a central system or any other aspects relative to local pilots, implying that boundaries should be clearly defined.

The first final version of MOBI.Europe's reference architecture is now under revision.

2.3 ICT Interoperability Guidelines (WP 3)

The specifications tasks within the scope of WP3 have started prior to have a closed version of the reference architecture. At this level the aim was to create low level specifications capable to support the development of MOBI.Europe's interoperability mechanisms. With this objective it was created the ICT Interoperability Guidelines (DL 3.1). These guidelines were based on High-level ICT Framework Specifications (DL 2.2) and address the following points:

- Solution Context: describe the approach to integration messages;
- General Guidelines: describe the approach to transport, security, service orientation and protocol issues;
- Specific Guidelines: specify mandatory services for interoperability framework.

Several work sessions were undertaken with technical partners to discuss and create this specification. The guidelines due date was impacted by the delay of reference architecture. Currently, the ICT Interoperability Guidelines is under revision by the consortium. In the scope of this work package it was also executed the installation and pre-configuration of project infrastructure, which will support the configuration of all Critical Software environments (development, quality and production) and storage areas.

2.4 Kick-off of Pilots (WP 4)

Real-life testing and impact assessment started in M11 and is currently dealing with the methodology for assuring the harmonization of the measurement methods for indicators such as avoided CO2 emissions due to EV. Data has already being collected in the four pilot sites and during the first year of MOBI.Europe close to 25.000 charging operations were performed in the almost 4.000 charging stations. A car-sharing pilot was deployed in the city of Vigo and is already in use by citizens. The challenge is now to implement the results from WP2 and WP3 and connect all the four pilots in a single network with common communications and business standards.

Fig. 3 – First char-sharing service deployed by MOBI.Europe (Vigo, Spain)

2.5 Reaching Out (WP 1 and WP 6)

MOBI.Europe has an active website (www.mobieurope.eu), Twitter and LinkedIn accounts, Facebook page and YouTube channel. They are opened to the public and used to disseminate the project concept and main achievements, as well as to connect with other initiatives. Two issues of the newsletter were already published. These channels are part of a communication strategy defined in the Communication Plan, a chapter of DL 1.1 – Project Global Plan.

During 2012, MOBI.Europe has reached out and cooperated with other initiatives. INTELI and ESB have signed the Treaty of Vaals, creating the first European Clearinghouse for electro-mobility in Europe. The two and RENAULT are also part of eMI3, an interest group on standardization that brings together the most relevant stakeholders in Europe. MOBI.Europe has been working together with Green eMotion (an FP7 funded project) on the creation of a common stakeholder's management approach. It has also cooperated strongly with the other CIP projects on smart-connected electro-mobility.


Fig. 4 – Signature of the Treaty of Vaals