News letter

sm@rtCEM

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Editorial

Welcome to smartCEM! It is my pleasure to introduce and to present our contribution to accelerating the market take-up of electric vehicles in Europe.

smartCEM brings together 27 partners in 7 European countries, across 4 pilot sites. Service providers, vehicle manufactures, energy providers, local authorities, research institutes, international organisations and association representing users, extremely motivated in promoting electromobility, all come together to identify concrete solutions to existing deployment challenges.

When we started working together we had two basic questions in mind:

1. Do electric cars offer substantial opportunities for citizens and companies?
2. What can we do to accelerate the adoption of electric vehicles in our cities?

It is true that, so far, electric cars have failed, due to their high cost, low range and poor infrastructure.

But we are firmly convinced that some of those barriers can be easily removed: certainly not the price, which depends mainly on the possibility to reduce the costs of batteries and increase of their capacity.

But with the introduction of communication and information technology, aspects like range anxiety and comfort can be sensibly reduced right now.

We have identified 5 integrated services that will be implemented in 4 pilot sites covering all modes of transport. You will also learn more about the smartCEM services on **www.smartcem-project.eu** and in the next issues of this newsletter. We want to demonstrate that electromobility can be a valid alternative for our cities and for consumers; for individual mobility and for collective mobility; for the mobility of passengers and for the mobility of goods; for urban and interurban mobility.

In Barcelona smartCEM will focus on motorcycles, an innovative sharing system; in Gipuzkoa project partners will combine urban & interurban car sharing facilities, while in the capital of the area (San Sebastian) we will focus on hybrid bus services.

In Newcastle smartCEM will implement its services on the existing electric vehicles fleet, and finally in Turin we will combine delivery vehicles and car sharing practices. We will gradually present the pilot sites in our newsletters, starting with Newcastle and Gipuzkoa – San Sebastian in this issue.

Editorial - continued

The European Commission has set a comprehensive strategy to reduce CO_2 emissions from new cars, to ensure that the EU meets its greenhouse gas emission targets under the Kyoto Protocol and beyond.

To supporting the EC strategy aimed at reducing CO_2 emissions, smartCEM aims to:

◊ to prove that user acceptance of electric vehicles can be increased by at least 15% thanks to ITS applications;

◊ to demonstrate to local authorities and fleet operators how much transport efficiency can be optimized, and consequently how much saving can be gained;

We know it will not be an easy task. But we are also convinced that we have new opportunities ahead:

◊ Oil gets more expensive and the alternatives become more attractive.

◊ Local authorities understand that they can play an important role in nudging the use of low carbon vehicles (the interview with David Quarmby, RAC Foundation, on gives a clear picture of this aspect).

◊ Customer awareness of "green" vehicles and green lifestyle has never been higher than today.
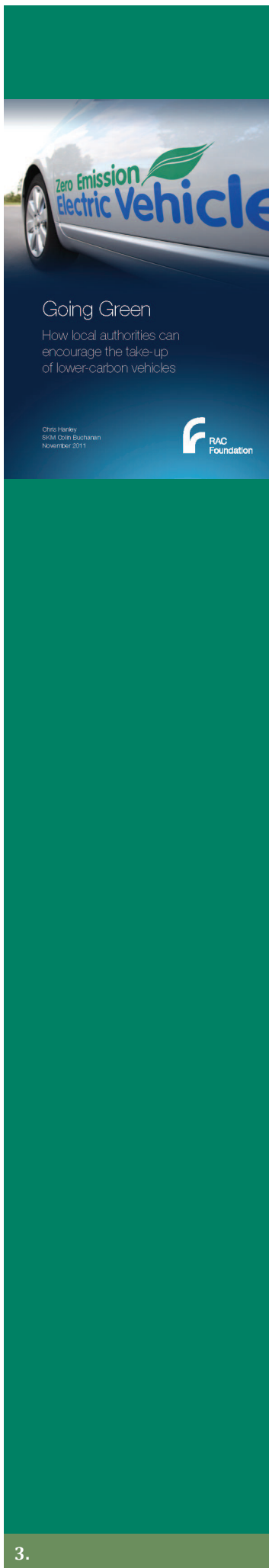
But we need some deployment enablers. We strongly believe that through the integration of information and communication technologies people can see electric vehicles as part of everyday life, bringing to electric vehicles all the comfort and usability of a conventional car. How will we do this? By implementing and integrating a combination of technologies aimed at improving routing and guidance, according to the specific requirements of the electric vehicles; making driving style more efficient; optimizing journey and connecting the electric vehicles with all the public transport options available; making the infrastructure more efficient (booking, payment, etc.); and implementing an innovative vehicle-sharing management service.

We need more visibility for electromobility to build consumer awareness. And we are sure smartCEM will bring to the streets a new Smart Connected electromobility.

Fernando Zubillaga,
smartCEM project coordinator

INTERVIEW with David Quarmby, Chairman of the RAC Foundation:

Electric Vehicles deployment and role of the cities

The RAC Foundation is a transport policy and research organisation which explores the economic, mobility, safety and environmental issues relating to roads and their users. The Foundation publishes independent and authoritative research with which it promotes informed debate and advocates policy in the interest of the responsible motorist.

What can towns and cities do to encourage EVs?

Towns and cities have a range of powers at their disposal to encourage EVs – installing different types of charging points at different locations, providing free or reduced parking rates, giving EVs access to bus lanes, introducing schemes like Low Emission Zones or road pricing, and exempting EVs from them – the list goes on. But not all of them are easy to implement, either financially or politically.

Which of these instruments is the most effective in your view?

Given that limited range, and indeed 'range anxiety', is seen as one of the main barriers to EV uptake, the provision of the right kind of charging infrastructure has to be a key ingredient to up their numbers.

Installing charging points in residential areas, workplaces and shopping centres – places where cars are parked for longer periods of time – will enable people without access to off-street parking to charge their vehicles. It will therefore be important for towns to make appropriate, longer-term plans, for example by setting minimum standards for charging points in new developments to make sure that EVs are future-proof.

But there are also other effective instruments. Although a blunt and perhaps more controversial instrument, the provision of free parking for EVs can be a real incentive for people to switch, especially in cities like London where parking is very limited and expensive.

On the whole I would say the most effective way is to have a mix of policy levers which complement each other and are in line with local needs.

Are there any downsides to any of these instruments?

Of course – as is the case with almost any policy.

Take parking, for example. Although local authorities aren't allowed to use parking as a revenue-raiser, at least in the UK, the reality is that many authorities rely on parking revenues as a main source of income. Providing free or reduced parking rates jeopardises this income that is so vital for the provision of all kinds of local services.

And then there is the issue of conflicting policy aims, where councils want to reduce car travel, for example, but at the same time need it because it often coincides with economic activity. Also, cities are aware of the social implications – they must work towards maintaining mobility and not hinder access for those who cannot afford EVs or other lower-carbon vehicles, generally lower-income households.

Going Green

How local authorities can encourage the take-up of lower-carbon vehicles

Chris Hanley
SKM Colin Buchanan
November 2011

RAC Foundation

smartCEM

What are the challenges cities are faced with when trying to promote EVs?

Like all of us, towns and cities are feeling the financial squeeze, which makes it difficult for them to justify costly investment in EV infrastructure when there are other, perhaps more immediate pressures for them to deal with.

Take for example public procurement. Local authorities are keen to lead by example and showcase the latest and greatest in green vehicle technology, but their fleet managers simply cannot justify spending a huge cost premium for EVs, particularly when the benefits of low running costs only really kick in years later. No fleet manager ever got fired for buying a diesel!

There are also some significant barriers in the mind of the motorist – partly real, partly imaginary – about the purchase and use of EVs, and these should be acknowledged by any authority seeking to promote and encourage EV use. These barriers include high initial cost (due to battery cost), a concern about residual values, 'range anxiety' and the availability of charging facilities (especially for those living in apartments without street parking). Most of these issues are beyond the ability of cities to mitigate.

Does this mean that cities should sit back and wait for the EV market to develop?

Not at all – on the contrary in fact. But I think we must accept that there is a limit to what towns and cities can achieve on their own, given that many of the barriers are largely beyond the control of local authorities. What they can do, however, is implement policies that affect the driving public in their daily lives, for example parking and charging their vehicles.

Cities can take action to promote lower carbon vehicles generally – preparing the way for EVs when they become more acceptable to the mass market. Measures which are related to the carbon emissions of the vehicle – such as graduated parking charges, access limits and so on – will encourage the adoption and use of hybrids, including plug-in hybrids and range extenders. The adoption of EVs should not be progresses as an 'all or nothing' approach: realistic forecasts envisage EV market share still being very modest in 20 and 30 years' time, and a much higher proportion of vehicles are expected to some form of hybrid.

Can you think of a town or city which has been successful in promoting EVs, which others can learn from?

There are several – the obvious ones are London or Newcastle in the north-east of England. Very early on, the North East invested in a number of infrastructure and R&D projects, as well as trials to test how users adapted to EVs. With its commitment to install around 1,300 charging points it aimed to be the first UK region with a comprehensive charging infrastructure. Just to provide some perspective: this compares with several thousand pure EVs on the UK's roads today.

But it's worked – Nissan has located its EV and battery manufacturing plant in Sunderland in the North East.

Paris also has big plans: the target is 1,000 charging points and 3,000 vehicles in the Ile-de-France region. Already today Parisians can use around 250 EVs (and 250 charging stations) through the Autolib' scheme.

I think we need to accept that not every city needs to be a frontrunner when it comes to EVs. In the early days the focus should be on supporting local champions through initiatives like the 'Plugged-in Places' scheme in the UK, where the government has given match funding to certain local authorities and other local actors to install the necessary charging infrastructure. It is about bringing the right people together and exploiting local political leadership.

PILOT SITES presentation

NEWCASTLE

North East England is the first region in the UK, and Europe, to put itself firmly behind the commitment to reduce CO_2 emissions. All 12 local authorities in the region have signed up to the European Covenant of Mayors and in 2010 the UK Government recognised the leading role that the North East of England was playing in the development of low carbon technologies and gave the region a 'Low Carbon Economic Area' status for the UK.

To achieve its aim of reducing CO_2 emissions, the North East is pioneering the development of electric vehicles in the UK, with 44 electric vehicles have been equipped and 175 EV charging points deployed throughout the region through the regional authority. This infrastructure is set to expand to 1300 charging points by 2013.

The Newcastle pilot site in the SmartCEM project will thus be based on the existing knowledge about electric vehicles. More specifically, the activities will implement the eco-driving driver interface of smartCEM into these vehicles.

Working in cooperation with Newcastle University, a key research and technical partner supporting the development of EV technologies in the North East Region, Newcastle will be an important pilot test where to implement smartCEM services considering that by 2013, the North East region will be home to over 1,300 charging points, at key locations on streets, in car parks, at residential and commercial locations such as retail and leisure facilities.

Short facts:

● Available vehicles (buses and cars): 44 electric cars

● Available charging points: 174 currently, but will increase to 1300

GIPUZKOA-SAN SEBASTIAN

Electromobility is not only about private car and urban mobility. smartCEM aims at demonstrating that public transport and interurban connections can be offered by electric vehicles.

In the Basque region of Spain, smartCEM will pilot a hybrid bus as well as an electric car sharing scheme.

San Sebastián is a compact coastal city of about 185.510 inhabitants, located in a metropolitan area with around 436.500 inhabitants on the Spanish Atlantic Coast. The central city lies in a bay between two hills. Half the population lives in flat areas on the river banks of the Urumea river and the other half in hilly areas.

The Basque government mobility survey of 2006 recorded 733.888 trips of more than five minutes, made by residents in the Basque region with the origin or destination in the San Sebastián municipality, thus local partners have fairly detailed understanding of mobility patterns in the city.

Gipuzkoa – San Sebastian pilot site will use two bus routes in San Sebastian and one Lion's city MAN hybrid bus in order to contribute to electromobility in urban areas.

Integrated to that, the pilot site will pilot an EV sharing application: considering the mobility patterns of the area car-sharing services represent an efficient solution to reducing the number of cars in the streets and making private mobility greener.
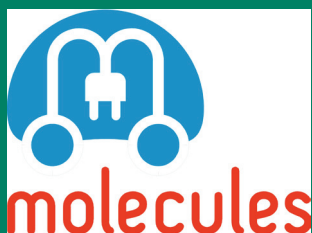
At this pilot site, the EV car-sharing application will be running on urban and interurban scenarios. There will be FEV and HEV car-sharing vehicles driving during the operation phase.

Short facts:
- Available vehicles (buses and cars): 1 hybrid bus, 30 electric vehicles
- Available charging points: 33

INFO from other CIP projects

MOLECULES project

Environmental threats in cities, nonrenewable resource scarcity, and financial restrains are posing huge challenges to society. People's In the future people will be much more conscious of time spent in transit, energy use, costs and environmental implications and will look for more sustainable alternatives to private motorized transport modes. Electromobility holds the potential to tackle these challenges, yet there is a need for coordination between the recharging infrastructure, the electric vehicle and the overall mobility schemas of a city or interurban road network.

EU's project MOLECULES will aim to use ICT services to help achieve a consistent, integrated uptake of Smart Connected Electromobility in the overall framework of an integrated, environmentally friendly, sustainable mobility system. At the same time the project will address the challenge of integration by identifying a number of common ICT service categories and integrate them on an open architecture. Services comprise for instance pre-trip and on-trip planning and optimization including the electric vehicle's energy use and charging, as well as vehicle to grid connectivity.

How will MOLECULES do this? The project proposes a user-oriented strategy where the common beneficiary of most of the services is the citizen. Several large scale pilots will take place in Barcelona, Berlin and Grand Paris (Marne-la-Vallée and Neuilly-sur-Seine). According to the specific context of each of the demonstration sites, MOLECULES will offer the public alternative electromobility modes of transportation supported by ICT technologies (e-bikes, e-cars and e-motorbikes) and will seek to engage the public sector in integrating Smart Connected Electromobility services and technologies in their transport systems.

Are you involved in Smart Connected Electromobility projects in your company, institution or public authority? Would you like to learn more about MOLECULES's demonstrations and be informed about the project's results? MOLECULES is setting up an Interest Group of stakeholders to act as an open platform aimed at maximizing the involvement and contribution of the widest possible community of potential users of the project results. You can follow MOLECULES on LinkedIn.

MOLECULES is supported by the Competitiveness and Innovation Programme (CIP) and will run for three years from 2012 to 2014. The project consortium comprises 10 partners from 5 different European countries and is formed by experts in the field of mobility and transport, and stakeholders from the public and private sector.

MOBI.Europe

MOBI.Europe is an integration project based on ICT systems that aims to guarantee interoperability of electromobility services across countries (roaming) and the smart integration of electric vehicles into the transport and energy systems.

MOBI.Europe puts users at the centre, providing them with universal access

to an interoperable charging infrastructure independent of the electricity provider and of the region. Its 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. MOBI.Europe will set the basis for a pan-European network of services associated with electromobility, whilst respecting national and local differences.

At the end of the project, the goal is to allow users to drive an electric vehicle (EV) across different countries using compatible mobile applications and enjoying integrated services associated with electromobility, such as car-sharing, reservation of charging points, or services related to parking. Other objectives of the project are to promote and demonstrate energy efficiency in mobility through smart charging and the seamless integration of electric vehicles with the transport system.

MOBI.Europe composing initiatives share the same view of focusing on users and promoting clean energy sources, while accelerating the process for smart-connected electromobility in Europe. Currently the Project relies on a network of 1,850 charging points and on 1,200 electric vehicles on the road.

MOBI.Europe interoperability standards will be tested and implemented in four European Countries at a city, region and also national level. Pilots will take place in Portugal, Ireland, Amsterdam (Netherlands) and Galicia (Spain). The MOBI. Europe project will use services already provided by national and local initiatives and provide interfaces to integrate them in a large-scale pilot, namely:

End-user services: The Project will provide mobile applications capable of operating in both modes, online (connecting users with the electric-vehicle infrastructure and other modes of transportation) and offline (allowing users to use it, for example, for authentication and authorisation). A web portal and on-board navigation system will give valuable information to users, and tools to monitor and assess the environmental footprint associated with mobility will be also provided;

Mobility services: MOBI.Europe will demonstrate integrated car sharing and electric vehicle parking services in its pilots. However, other services may be identified.

ICT4EVEU

Navarra regional government is leading ICT4EVEU: ICT services for Electric Vehicles. Its objectives are to achieve full integration of electric vehicles in Europe's public transport system and to reduce CO2 emissions, particularly in urban areas.

The ICT4EVEU project aims to improve the services offered to public and private electric vehicles user. The initiative promoters intend to achieve this goal by implementing ICT services that integrate the various management systems in operation within the infrastructure/recharging stations, control centers and vehicles.

This project will run for three years and over 2012-2014 the main services it aims to develop include systems to allow users to book charging points in advance, to integrate a variety of user payment methods; to create an interactive

map of recharging stations for drivers, to establish an interconnected network of recharging stations and provide users with access to recharging data; to set up a an SMS notification service and facilitate communication with energy suppliers.

Users will be able to access all of these services online from PC and smartphone.

Meanwhile, in terms of technology the scheme aims to create an integrated network of recharging stations; to integrate use of various devices (vehicles, laptops and smartphones) within the network; to establish a general management system for vehicle recharging infrastructure that includes charging-point monitoring and maintenance; to create a suitable front-end for users; and to create a tool to verify each electric vehicle unique ID.

The ICT4EVEU project comprises three pilot programmes that will be put into practice in the cities of Bristol (UK), Ljubljana and Maribor (Slovenia) and Vitoria and Pamplona. Each programme aims to meet the specific needs of these urban and inter urban areas.

The programme for Bristol aims to provide a transport solution for almost half a million users who commute to and travel within the city every day. The scheme is designed to foster electromobility and provide the high-speed interlinked infrastructure needed to encourage greater take up of electric vehicles.

In the case of Ljubljana and Maribor the idea is to develop new services on top of the existing charging infrastructure and to roll out some of them to neighbouring cities in the region. Once the project has been implemented, citizens travelling within this area will have easy access to recharging infrastructure. Creating genuinely operational electromobility will require greater interconnectivity and scalable design so that the solutions adopted can be exported elsewhere. This particular pilot scheme is being closely monitored by Austrian observers.

Meanwhile, the pilot programme that is being deployed in Vitoria and Pamplona, between which traffic is heavy, is based on developing a General Management System for electric vehicle infrastructure that will guarantee mobility between the two cities. This will required providing genuine service interconnectivity for electric users, as well as roaming services to facilitate billing between the companies managing the infrastructure.