



1ST NSG MEETING MINUTES
2 April 2014
Room ADELAIDA, RACC Headquarters
Barcelona, Spain

ATTENDEES

Public Administration

- Heriberto Muñoz, Ajuntament de Barcelona (Barcelona City Council), Department of Hàbitat Urbano, depended upon for all questions concerning electromobility.
- Mariona Coll Raurich, Generalitat de Catalunya, ICAEN (Catalan Institute of Energy), Industry and Transportation Unit.
- Jaime Ruiz, ALEM (Local Energy and Climate Change Agency of Murcia), partner Ele.C.Tra, municipal energy management, topics concerning mobility, energy conservation and climate change.
- Francisco Cárdenas (coordinator, Ele.C.Tra), Mercedes Vidal (technical coordinator, Ele.C.Tra), Jordi Abadal (energy department), Moisès Morató (energy coordinator), David Andrés (air quality, emissions and noise department), BCNecologia, Urban Ecology Agency of Barcelona.

Civil Society

- Ana Fernández, AMM-Asociación Mutua Motera (Mutual Motorbikers Association), association that protects the rights of motorcycle users. Areas of action: insurance, national motorcycle driving school, road security.
- José Manuel Jurado, CCOO, coordinator for environmental and mobility matters at one of the most important union organizations in the country.
- Carlos Benito, BACC-Bicicleta Club de Catalunya (Bicycle Club of Catalonia), association that represents the cyclist in Catalonia, administrative and social representation.
- Ricard Riol, PTP-Promoció del Transport Públic (Association for the Promotion of Public Transport).
- Josep Laborda, RACC-Reial Automòbil Club de Catalunya (Royal Automobile Club of Catalonia). Coordinator of telematics application projects and European projects ITS of the Foundation of the RACC. Coordinator of the pilot project Barcelona SmartCEM.

Business

- Timo Buetefisch, Cooltra, motorcycle rental company. They have 3.000 motorcycles, 500 electric motorcycles (largest electric fleet in Spain). They have both single-day contracts as well as long-term business contracts with courier services, home delivery services, administration (ICAEN), IESE (more than 60 electric motorcycles users with recharging stations), etc.
- Álvaro Arrúe, IDIADA, services for the self-propulsion of engineering, testing, and approval. Takes part in SmartCEM project, in data acquisition and evaluation of Motit.
- Jordi Sala, URBAN RESILIENCE, startup infrastructure for infomobility.
- Eva Español, Edenway, engineering-consulting: innovation in urban transformation, sustainable mobility.

1. PRESENTATION OF PROJECT ELE.C.TRA

A. Mercedes Vidal introduces herself and lays out the plan for the debate session

B. Round of introductions

C. Mercedes Vidal presents Project Ele.C.Tra

It comes from a concern about pollution problems in cities due to traffic, congestion, private vehicle space occupation, effects on health and quality of life.

Objective: promote electric motorcycle use via shared use services as part of the solution to problems of congestion, pollution, etc.

Why the electric motorcycle? It has an important role in the broader terms of sustainable mobility. It is not a universal solution but it is a key part in solving the problems mentioned. Furthermore it is a new technology in a growing market. In cities with large motorcycle fleets (30% of all vehicles in Barcelona), the potential to bring about change towards electric mobility is very high.

Ele.C.Tra is an exchange project between different cities; it does not anticipate investment in infrastructure. Exchange and cooperation of best practices between participating members, of distinct contexts, finding elements of transferability. 11 members, 8 European countries, a budget of 1,3 million, 3 pilot cities: Florence, Geneva, Barcelona. Phases of the project: Analysis of existing electromobility and a survey in each city about patterns of mobility and availability for electromobility and sharing systems. Planning pilot experiences for the shared electric motorcycle. Making and drawing conclusions. Obtaining a catalogue of experiences for other cities.

NSG role: Promote a dialogue about electromobility between relevant parties (institutions, businesses and civil society) in order to identify its potential and its risks, and the transmission of the experiences of Barcelona and Murcia.

D. Mercedes Vidal explains the organisation of the debate into two differentiated blocks, the first about electric mobility in cities and the second about the implementation of an electric motorcycle sharing system.

2. BLOCK I OF THE DEBATE: ELECTRIC MOBILITY IN CITIES

Mercedes Vidal opens the debate: the main problems of mobility in cities are rising energy consumption, loss of urban habitability, pollution, noise, visual intrusion, accident rates, unfair allocation of public space, etc. What solutions does the electric vehicle have to offer?

Topics of the debate: advantages and disadvantages of the electric vehicle, how to promote the change from a traditional fleet to the electric vehicle, problems like lack of awareness, the cost or charge of batteries, light electric vehicles, the role of the electric bicycle, electric motorcycle, the needs of the electric vehicle market, etc.

Jaime Ruiz asks why electric mobility has not finished being installed, why it has not emerged.

Do you think it is necessary that government institutions promote more electric vehicles, run more awareness campaigns or support local campaigns? The problem is that people do not know the advantages to having an electric motorcycle that they can rent. In Murcia, 3 businesses rent at interesting prices. Renting eliminates parking problems, maintenance, and contributes to quality of life. They make no noise, they do not pollute, and they can be parked anywhere. The lack of awareness on behalf of the community is a problem. An effort must be made on communication campaigns.

Timo Buetefisch explains that he has had an electric motorcycle for 12 months and every day 3 people stop him out of curiosity, clearly demonstrating their lack of awareness. His motorcycle rental business in Barceloneta offers the same price for gasoline and electric, but people pick gasoline. Customers (locals and tourists) have a fundamental fear of being stranded and it is difficult to change a mentality that has no foundation in reality (motorcycles can go up to 60 km in a day, and they go a maximum of 14-15 km a day in the city). The business is bigger with businesses that have fleets of vehicles than those that have individual people. Reason: they do the math and make huge savings. Moreover, businesses (courier services, for example) receive public funds for using electric vehicles. 2 things are asked of the government: 1. That they take responsibility for the infrastructure (some 20 customers a month return their motorcycle because they are happy with the product but have found that the stations do not work). It is important that recharging stations work. 2. That they increase their own use of electric vehicles. Police, for example, should use electric vehicles. Making more purchases or public renting.

Ricard Riol says that like other new modes of transportation it is logical to finish implementation despite initial setbacks. The same will occur with the electric vehicle. It is already an everyday reality in China, for example. We need to overcome the issues of security and reliability with the electric vehicle. The electric motorcycle, with respect to gasoline, and in contrast to the car, is an absolutely inexpensive mobility product, which is not good for road safety and public space occupation. Switching from the conventional motorcycle to the electric assumes a

higher cost at first, but lower in the long-run. The reliability of the recharging points is important. The government should get involved, guaranteeing the effectiveness of the public tenders. It is necessary to add the development of the private electric vehicle to the strategy of mobility and global electrification (trains, trams, etc.). It is very different to focus on electrifying the private vehicle fleet instead of fitting this into a policy of sharing, integrating electromobility into a more sustainable general model of transportation, strengthening public and shared use. Overall, we are in a process that is just now beginning and electric mobility will continue expanding with the decline of oil. Right now the advantages of the electric motorcycle are not so great because the conventional motorcycle enjoys a very good position and is treated very well: it can park where it wants, it pays less in taxes, it does not follow the rules. This is a problem for the electric motorcycle because it takes a lot to get started.

Jose Manuel Jurado moves for an evolution of the modal system of transportation towards one based on the intensive use of public and collective transportation and the reduction of traffic and the single-driver car. Just switching from combustion to electric is not a sufficient solution to solve the current problems of pollution, congestion, city traffic and climate change. What is interesting is the idea of networks for sharing this type of vehicle.

Jaime Ruiz, with relation to the role of government, responds to Timo that he agrees with the importance of proper maintenance of recharging stations on public roads and of the use of electric vehicles in public services, by hiring businesses in the public sector that have a % of EV in their fleet.

Heriberto Muñoz indicates that for contracts for public cleaning, streetlight or traffic light conservation, a % of EV are required. Today there are some 300 in the fleets of these services in Barcelona. Air pollution from PM₁₀, CO₂, NO_x, noise and vibrations are fundamental problems for local governments, but at the time for planning solutions for a more sustainable mobility, like the promotion of the EV for example, all the stations and infrastructures cannot be the responsibility of the government. Initially yes, the government should lead the change towards electromobility, including taking on the price of electricity so it is free for EV users, but overall its role will have to change and public tenders will be similar to those of other government services, already consolidated (public streetlights, for example). It has to plan how to manage these points in the long-term. He cites the example of Santander, where the local government installed 20.000 sensors for noise, pollution, and parking. Today 40% of the sensors do not work well and the amount of information and data is so large that the government cannot process it. Other solutions for processing and maintenance outside of government have to be considered, as well as what this implies for the market. This could mean the creation of new business.

Josep Laborda points out that the RACC has observed that users demand the government supply the charging stations, maintenance and free electricity. This is not sustainable.

Timo Buetefisch adds that he believes that people should pay for energy in the same way that people pay for gasoline.

Josep Laborda believes that government has the role of a promoter to encourage sustainable mobility, as well as a moral role. But at the end of the day this is a private initiative that should expand and manage it, and fill the city with electric vehicles. Yes, the function of the station must be demanded of the private operator, but people should pay for the service and energy. He speaks about current problems with recharging a vehicle at home. Problems in communities of neighbors where it is necessary to install a meter if someone wants to buy an EV and charge it at home. He proposes incentives like, for example, the electric company installing a meter for free for buying an EV.

Timo Buetefisch, with relation to the development of the electric market, explains that the manufacturers of electric motors have a complicated financial situation. There are many smaller companies instead of a single large manufacturer who could make a truly competitive vehicle for both the user and manufacturer, which today does not exist.

Ricard Riol proposes reconverting the current gas stations into “electrolineras”, or electric stations. It is the responsibility of the private sector. The local government cannot bear this responsibility; only negotiate with the energy sector. A sector must be created, like fossil fuels, which give results at the economic level. He agrees that there are many small investors that do not recover their investment that they make in the production of their motorcycle. It is necessary to reinvent the motorcycle sector. To introduce more elements from the bicycle sector than before. And also take advantage of the Bicing experience with respect to sharing. Perhaps we should talk more about the light electric vehicle, and not of the electric motorcycle, given that occasionally the difference is quite small. Perhaps there is no need to associate electricity with a concrete mode of transportation like the motorcycle but rather with a strategy for global mobility based on electrification and sharing.

Carlos Benito highlights that the electric bicycle means benefits in some concrete cases like trips along hills, or for sectors of the population with more limited physical state. But on the other hand, the main problem of the normal bicycle is multiplied with the electric one: theft and street parking. The other problem is the price, since the bicycle user at the urban level looks for a light, practical, and cheap vehicle. Currently the local government is talking about an electric Bicing system, but at first glance it looks like it would not make up for the higher cost of maintenance, acquisition price, vandalism, etc.

Heriberto Muñoz remembers the problems Bicing had: cost, a majority of displacements for going downhill and not uphill (increasing the demand for redistribution of bicycles to keep all stations well supplied), etc. The electric bicycle can solve downhill - uphill displacement but it will have to look for solutions to vandalism (possibly lockers to protect them). All of this is being considered by the government, who is going to promote the electric bicycle, but while keeping in mind that it cannot be a huge display like Bicing due to its higher cost.

Ana Fernández points out that the large volume of motorcycles in Barcelona makes it so there are fewer emissions than if all of private mobility were in cars, helping mobility and disagreeing with Ricard with regards to being a well treated vehicle. She points out that many parking spots are poorly located, poorly marked, and that also motorcycles are big targets for theft and vandalism. She supports the electric motorcycle in order to reduce pollution. It is very suitable for internal displacements throughout the city. In addition conventional motorcycles that consume less are being made every day. All this could complicate the change from conventional to electric.

Álvaro Arrúe speaks about topics on energy, about smart grids and the concept of vehicle to grid (exchange of energy from an electric vehicle connected to a recharging point that could give energy to the grid and take energy from it depending on changes in demand). It is a private business model for electrical grids that creates this buying and selling of energy. He also believes it is necessary to reiterate the differences between the motorcycle and the electric car. He believes that prejudices towards the electric car are affecting the acceptance of the electric motorcycle. Here we have not had a business model like that of Tesla in the USA that has publicized knowledge about the electric vehicle.

Eva Español says that the energy advantages of the EV are obvious, but it is necessary to consider which users it can capture. If it moves users away from bicycles or public transport to the electric motorcycle, this is not very positive.

Ana Fernández brings up the issue that new electric motorcycle users are not always trained to drive motorcycles, which can create safety problems. The promotion of the electric motorcycle solves some problems, but it must be kept in mind that it also generates others.

Heriberto Muñoz points out that for the local government the mobility model has some guidelines, and its priorities are, by order of importance: pedestrians, bicycles, public transport, shared private vehicle, and conventional private vehicle. Concerning energy he insists that a change of energy model is necessary.

3. BLOCK II OF THE DEBATE: THE IMPLEMENTATION OF A SHARING SYSTEM FOR ELECTRIC MOTORCYCLES

Mercedes Vidal opens the debate: she brings up questions about the implementation of a sharing system for electric motorcycles. How to increase the acceptance of this vehicle via a sharing system? The concept of sharing implies less occupation of public space. The alternatives to motorized vehicle ownership are not very popular. How can we promote them? There must be a before and after to Bicing. Associated changes in mentality are in motion: carsharing, carpooling, etc. Who are the potential users for electric motorcycle sharing. How to capture users so as to maximize energy savings and reduce pollution, which are the objectives of Ele.C.Tra? Recharging infrastructures: replacement of batteries or recharging stations, public or private financing, single operator or market liberalization? Impact of the service on tourism? How to deal with the issue of accident rates?

Ricard Riol explains that over 10 years ago his association launched the 1st carsharing business in Spain which started as a public investment (regional and local government). They did not substitute the private car for carsharing, they tried to capture people that use cars less than 10.000km a year and want to associate it with public transport. They observed a large reluctance to give up ownership of what we use in order to share. It is characteristic of our country, and also present in other consumer goods. They observed that they did not capture people who mostly use a private car, but that they did avoid, for example, the purchase of a 2nd car for occasional use. They also captured users from public transport. He believes that the key would be a flexible philosophy for the shared electric vehicle: try not to convert it into daily transportation, promote sharing more for the occasional, one-time, and short trip, as a complement to public transport. Variable metering as a function of time of day could also be promoted (to avoid massive movements of motorcycles at the same time) as well as off peak recharging. Metering integration is also a good strategy for sustainable mobility. Not promoting massive private vehicle use despite being electric due to the issue of accident rates, pollution, defense of public space in the city, integrating it as a complement to a strategy of sustainable mobility. Avoiding the risk of capturing public transportation users, which is negative. He maintains that this strategy fits in with the sharing system that Ele.C.Tra proposes.

Timo Buetefisch believes in the idea of sharing but that the problem is its effectiveness. He states that he knows of no sharing initiative that is profitable (Car2go, DriveNow...) At the user level they have success, but they need subsidies from the automobile industry. Furthermore sharing systems would need a minimum of 1.000 motorcycles to work and guarantee a motorcycle on every corner to go from one door to another.

Mariona Coll points out the importance of the bicycle as an element for maintaining the physical and mental health of the population, and the electric bicycle could make it so this positive effect is lost.

David Andrés points out that the displacement in higher parts of the city is complicated with the bicycle and that the electric bicycle can help.

Carlos Benito highlights the importance of improving quality of air and quality of life in cities. This can only be achieved by reducing the number of cars and switching over to electric. He agrees with Ricard with the risk that an electric motorcycle sharing system could displace users from public transportation.

David Andrés points out that traffic is the main source of pollution in the city, both from NO_x and other particles and from noise. The electric motorcycle can provide benefits in this respect. He points out the importance of it being silent. He does not believe that the car user switches to the electric motorcycle.

Ana Fernández notes that many people also feel insecure because they lack training in how to drive a motorcycle.

Ricard Riol confirms that in Barcelona there has been a switch from car to motorcycle due to easier parking and lower costs. He believes that de incentivizing mobility in cars is only possible with the use of metering barriers: congestion charges, low emission zones, green areas (pay for street parking, more expensive for vehicles in passing than for residents). It deals with, more than promoting new modes of transportation, de incentivizing others. At the end of the day, picking what way to travel depends on the general cost, which is composed of the time invested and the price (out of pocket). It is necessary to increase the price for modes of transportation that pollute more.

Francisco Cárdenas believes that in order to achieve a more sustainable mobility the electric vehicle is not enough. It is necessary to keep in mind that the electric vehicle does not produce emissions where it is used but that the nonrenewable energy that moves it only relocates the problem of emissions. Furthermore the previous emissions from the exhaust pipe are only one part now that the circulation of the vehicle itself causes other types of emissions (bearing, brakes, resuspension of particles, etc.). It is possible to achieve the European levels of emissions with the same displacements, but there must be a change in the way in which it is done: drastically reducing the private vehicle and increasing public transportation. He also believes that it should be done starting with metering barriers. The motorcycle has gone through the roof in Barcelona. In addition to strengthening it it must be converted into the electric and shared motorcycle. The problem of accident rates is the biggest problem for motorcycles. Electric or not, it must be kept in mind that the motorcycle, which represents 4,5% of movement within the metropolitan area of Barcelona, makes up 35% of the accidents.

Heriberto Muñoz cannot imagine electric transportation in the future without the use of renewable or residual (metro breaking) energy sources. There must be change in paradigm. What users will switch to the electric motorcycle? Some from public transportation, but few (there are many older users, as well as children). Few private motorcycle users as well, they will use it as a complement and won't get rid of their own. The issue of motorcycle accident rates is a serious problem that could slow

down the use of the electric motorcycle because encouraging motorcycles a lot could increase the number of accidents. Vehicle maintenance is important. Private motorcycle users take good care of their motorcycles. A sharing system should also. The government is putting some safety measures into effect (for example, school roads).

Ana Fernández continues with the issue of safety, and the importance of road education, lack of experience and education. She thinks that people who sign up for sharing will come from tourism and motorcycle owners, but keeping their vehicle, especially those inside the city. Also those with a B-level driver's license (non-motorcycle specific) can switch to sharing, and this could increase safety issues.

Josep Laborda talks about a study at RACC about accident rates of motorcycles in Barcelona and points out that its fundamental cause lies in bad driving habits. He does not believe that this project can try to take on all the problems associated with accident rates because it is such a complex issue, and not specific to the electric motorcycle. Motorcycle sharing can cause amateurs to use motorcycles, which is bad, but in contrast to this it is also bad if you want to build up sharing. With respect to maintenance, it is in the hands of the fleet operators and a certain level of minimum regulation or obligation must be demanded from sharing businesses out of safety.

Ricard Riol makes a reflection about the dangers of silence EV.

Álvaro Arrúe notes that there are projects in motion to deal with this issue.

David Andrés adds that if one does not hear the EV it is due to an excess of ambient noise in the city, mostly caused by other motorized vehicles.

Mercedes Vidal makes the way to the conclusions, which Francisco will do as coordinator of the Ele.C.Tra project.

4. CONCLUSIONS

Francisco Cárdenas, as coordinator of the Ele.C.Tra Project in the Urban Ecological Agency of Barcelona, recollects the main points of discussion from the debate by way of conclusion (see separate document).