

# **Electromobility Guide for Local and Regional Authorities**

**Committee of the Regions**

**Intergroup**

**“The future of the automotive industry in  
our territories”**

**December 2015**



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## FOREWORD

The Automotive Intergroup (AI) was created in 2009 within the Committee of the Regions and it is composed nowadays of about 40 members, elected representatives of regions and municipalities from Austria, Belgium, Estonia, Finland, France, Germany, Ireland, Italy, Poland, Portugal, Slovakia, Spain, and United Kingdom.

Among the objectives of the Intergroup are the following:

- Exchange of experiences among the territories about different issues concerning the automotive sector (e-mobility, financing of infrastructures, market measures, industry support, etc).
- Contact and exchange of views with the European Institutions and other stakeholders.
- Foster the contacts among the automotive clusters of the regions involved.

The elaboration of this guide is thus a collaborative attempt to collect basic information and best practices and it is an example of the exchange of experiences about the different members.

Since July 2012, Castilla y León Region holds the presidency of the Intergroup and as such has coordinated the elaboration of this guide. Taking into account Castilla y León experience that approved in 2011 a Regional Strategy for e-mobility<sup>1</sup> and issued in 2013 a regional guide to help the development of e-mobility at local level<sup>2</sup>, we wanted to extend this experience to the other Automotive Intergroup members and add their contributions to the guide.

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<sup>1</sup> [Estrategia Regional para el Vehículo Eléctrico – Castilla y León](#)

<sup>2</sup> [Guía del vehículo eléctrico para Castilla y León](#)



# **Electromobility Guide for Local and Regional Authorities**

## **Part 1**

### **Basic information for the development of E- mobility at local and regional level**

- 1. Objectives of the Guide**
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## **1. Objectives of the Guide**

The aim of this electro-mobility guide is to be a practical document to foster the deployment of electric vehicles and the elaboration of e-mobility strategies among European local and regional entities.

This guide doesn't intend to replace any European or national regulation or strategy. On the contrary, it takes the European framework into account and it intends to collect basic information and practical experiences from different local and regional entities to facilitate the deployment of electric vehicles and local and regional e-mobility strategies.

In a short period of time, the environmental friendly electric vehicle will become a key mobility element by reinventing the way we consider the movement of people and goods in urban environments and its vicinity.

Electric mobility is the result of the combination of activities from different actors such as public administrations, suppliers, parking operators, companies with transport fleets, private car owners, installers, suppliers of mobility services, etc.

This guide is divided into two different parts. The first one recalls the main European legislation for e-mobility and presents basic concepts for the deployment of electric vehicles and the development of e-mobility strategies.

The second part collects some examples of local and regional measures that have helped the deployment of the e-mobility in different municipalities and regions. There are examples in different fields such as infrastructure, public awareness, market measures and incentives.

## **The European framework**

Several European pieces of legislation and strategies build up the European framework concerning the Electric Vehicles. The main of them are:

- The 2009 Directive of the European Parliament and the Council on the promotion of the use of energy from renewable sources that sets a market share target of 10% of renewables in transport fuels.
- The European Strategy for Clean and Energy Efficient Vehicles (2010)
- The CARS 21 and CARS 2020 Action plans (2010-2012 and 2012-2014)
- The Clean Transport Package (2013) that includes the very important Directive 2014/94 of the European Parliament and the Council of 22 October 2014 on the deployment of alternative fuels infrastructure.

The Directive 2009/28/EC on the promotion of the use of energy from renewable sources sets that the Community and the Member States should strive to reduce total consumption of energy in transport and increase energy efficiency in transport increasing the share of electric cars in production and producing cars which are more energy efficient and smaller both in size and in engine capacity<sup>3</sup>.

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<sup>3</sup> [Directive 2009/28/EC](#)

The European Strategy on clean and energy efficient vehicles has been established with a threefold aim: to promote a new industrial approach, based on clean and energy-efficient vehicles; the deployment of alternative propulsion technologies by the European industry; and the creation of a green economy based on sustainability and support the decarbonisation of transport<sup>4</sup>.

The CARS 21 and CARS 2020 Action plans were designed to make policy recommendations to support the competitiveness and sustainable growth of the European automotive industry. The deployment of vehicles with alternative powertrain concepts is considered one of the key characteristics of a strong and competitive automotive industry<sup>5</sup>.

One of the recommendations included in both CARS 21 and CARS2020 action plans was the elaboration of a set of guidelines for clean vehicles incentives that was finally issued as a European Commission Staff Working Paper in February 2013<sup>6</sup>.

The Directive 2014/94 on the deployment of alternative fuels recharging and refuelling infrastructure establishes a common framework of measures for the deployment of alternative fuels infrastructure in the Union in order to minimise dependence on oil and to mitigate the environmental impact of transport. It sets out minimum requirements for the building-up of alternative fuels infrastructure, including recharging

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<sup>4</sup> [Strategy Communication](#)

<sup>5</sup> [Cars 2020 Communication](#)

<sup>6</sup> [Guidance on financial incentives for clean and energy efficient vehicles](#)

points for electric vehicles to be implemented by means of Member States' national policy frameworks as well as common technical specifications for such recharging points and user information requirements.

The European Union also undertakes monitoring activities for fact-based policy-making at all levels and collects best practice and coordinated data through the Clean Vehicle Portal<sup>7</sup> and the European Electromobility Observatory<sup>8</sup>.

## **Electric vehicles**

- **Electric vehicle description**
- **Comparative with conventional vehicles**

This section presents the main characteristics of the electric vehicles and their potential compared to conventional vehicles.

### **Electric vehicles**

EV, as defined by Directive 2014/94, means a motor vehicle equipped with a powertrain containing at least one non-peripheral electric

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<sup>7</sup> <http://www.cleanvehicle.eu/>

<sup>8</sup> <http://ev-observatory.eu/>

machine as energy converter with an electric rechargeable energy storage system, which can be recharged externally.

Electric vehicles are classified (as well as the rest of motor vehicles) by the Directive 2007/46/CE of the European Parliament and the Council of 5 September 2007.

There are different kinds of EV depending if the propulsion is completely electrical or if it is combined with a combustion motor. The kinds of EV are the following:

- BEV - Battery electric vehicle: It is impelled by an electric motor instead a combustion one. The vehicle has a rechargeable electric battery.

- EREV - Extended range electric vehicle: It uses an internal combustion engine to power an electric generator that charges the battery system in a linear process — the engine powers a generator, which in turn charges the battery.

The internal combustion engine only charges the batteries.

- HEV - Hybrid Electric Vehicle: it uses a small electric battery to supplement a standard internal combustion engine and increase fuel efficiency by about 25 percent from conventional light-duty vehicles.

- PHEV - Plug-in Hybrid Electric Vehicle: it is also a dual-fuel car in which both the electric motor and the internal combustion engine can propel the car. It has a larger battery pack that is charged directly from the power grid, increasing the amount of electric power available to the car.

Electric vehicles have a unique set of components. The main elements are the electric motor and battery of energy storage. The batteries supply the power, which comes from the recharge by a cable, from an external source or deceleration of the vehicle, where the engine acts as a generator. The range of the vehicle will directly depend on the capacity of the battery, the type of journey (flat, irregular, urban, etc.), driving style, and the accessories used (lights, heating, air conditioning, wipers, etc.).

Manufacturers indicate an average range of full recharge of 150-190 Km for Battery Electric Vehicle (BEV). Nowadays, the battery technology for electric vehicles has made great progress and these batteries do not suffer from the so-called "memory effect", which reduced its capacity when not discharged completely. Therefore, they can be recharged fully or partially regardless of the remaining charge.

### **Comparative with conventional vehicles**

Nowadays, electric vehicles are not yet a perfect substitute of conventional vehicles. Nevertheless they are a good alternative for urban and intercity transport routes. The continuous development in the field of EV in recent years has led to progressive price reductions, increased autonomy in the batteries, and higher capacity of the engines. In addition, the cost of EV consumption is much lower than a fuel vehicle, which makes the EV more competitive. Other advantages of the electric vehicles are the low atmospheric and acoustic emissions, its reduced consumption of fossil fuel, and its possible use of renewable

energy. The Clean Vehicle Portal contains a lifetime cost calculation for all kind of vehicles<sup>9</sup>.

## **Infrastructure description and technical recommendations for the development of recharging points**

### **Charging stations**

A charging station (CS) is the system composed of one or more recharging points which connects the EV. It is from this point that the communication with the management system (MS) is initiated.

Recharging point means an interface that is capable of charging one electric vehicle at a time or exchanging a battery of one electric vehicle at a time;

A normal power recharging point is a recharging point that allows for a transfer of electricity to an electric vehicle with a power less than or equal to 22kW, excluding devices with a power less than or equal to 3,7kW which are installed in private households or the primary purpose of which is not recharging electric vehicles and which are not accessible to the public;

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<sup>9</sup> <http://www.cleanvehicle.eu/>

A high power recharging point is a recharging point that allows for a transfer of electricity to an electric vehicle with a power of more than 22kW.

Recharging point accessible to the public is a point to supply an alternative fuel that provides Union-wide non-discriminatory access to users.

### **Development of recharging points**

According to Directive 2014/94 Member States shall ensure, by means of their national policy frameworks, that an appropriate number of recharging points accessible to the public are put in place by 31 December 2020, in order to ensure that electric vehicles can circulate in urban/suburban agglomerations and other densely populated areas, and where appropriate, within networks determined by the Member States. The number of such recharging points shall be established taking into consideration, the number of EV estimated to be registered by the end of 2020 as well as best practices and recommendations issued by the European Commission. Member States shall also take measures to encourage and facilitate the deployment of recharging points not accessible to the public.

Furthermore, Member States shall ensure that normal power recharging points, excluding wireless or inductive units, deployed or renewed as from 18 November 2017, comply at least with the technical specifications set out in the Annex II (type 2 and combo 2 connectors).

Annex II of the directive establishes the technical specifications for recharging points:

- Normal power recharging points for motor vehicles:  
Alternating current (AC) normal power recharging points for electric vehicles shall be equipped, at least with socket outlets or vehicle connectors of type 2 as described in standard EN 62196-2.
- High power recharging points for motor vehicles:  
Alternating current (AC) high power recharging points for electric vehicles shall be equipped at least with connectors of type 2 as described in standard EN 62196-2. Direct current (DC) high power recharging points for electric vehicles shall be equipped, at least with connectors of the combined charging system Combo 2, as described in standard EN 62196-3.

The recharging of electric vehicles at recharging points accessible to the public shall, if technically feasible and economically reasonable, make use of intelligent meters.

Operators of recharging points accessible to the public are free to purchase electricity from any Union electricity supplier. The operators of recharging points shall be allowed to provide electric vehicle recharging services to customers on a contractual basis. C

Concerning the business models related to the charging exhibit a wide diversity and are based on the status of the charging point:

- Recharge in public car parks where they perform the installation and pay a fee to the owner.

- Recharge at stations in the public road.
- Recharge private parking.
- Recharge at facilities other than the above (car parks, shopping centres, next to gas stations, etc.).

## Aid schemes for electromobility

Many national, regional and local authorities have introduced aid schemes for clean or energy efficient vehicles. These incentives are intended to promote the purchase and use of cleaner vehicles, the adopted schemes show significant differences in the way they are implemented and in the types of vehicles that are promoted by the schemes.

The European institutions concerned by the fact that the benefits could be outweighed by the significant differences in such incentives across Member States and go into detrimental effects on the functioning of the Internal Market, presented in March 2013 a set of **Guidance on financial incentives for consumers to purchase fuel efficient vehicles**<sup>10</sup>. These are indispensable in order to encourage coordination of demand-side measures adopted in Member States and ensure they do not violate the principles of the Internal Market and are in full compliance with the existing State aid rules.

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<sup>10</sup> [Guidance on financial incentives for consumers to purchase fuel efficient vehicles](#)

According to these Guidelines, incentives may support the market uptake of energy-efficient vehicles in two ways:

- Through a pull-effect by enhancing demand for those vehicles from consumers
- Through a push-effect by making it more attractive for manufacturers to supply vehicles that benefit from those incentives

Incentives are most effective when both effects can be triggered. The first effect will apply to vehicles that meet the defined criteria and are offered in the market, including on smaller markets. The second effect, however, will only be effective if a critical market mass is created providing sufficient leverage to justify specific development and/or equipment from manufacturers.

The Guidelines are divided into two parts presenting obligatory and recommended principles.

- **Mandatory principles**

All financial incentives granted by authorities on different levels in Member States must comply with the Treaty on the Functioning of the European Union, and in particular with the following guiding principles.

a) Non-discrimination

Incentives must be non-discriminatory with regard to the origin of the product concerned. They should avoid favouring only the sale of vehicles of domestic manufacturers and should not include vehicle characteristics which could discriminate against similar vehicles coming

from other Member State(s) than the one, where the incentives are applicable.

b) Community type-approval legislation

Incentives must be compatible with the Community type-approval legislation, which provides for the mandatory technical requirements for new vehicles. In particular, they should not *de facto* impose requirements which are not obligatory in type-approval legislation and selected on the arbitrary bases as it might lead to a discriminatory character of the scheme.

Example:

Binding the financial incentives for vehicles with an additional requirement related to a specific NO<sub>2</sub> emission (not measured during the type-approval process) would not be considered in line with the Guidelines.

c) State aid rules

Incentives must be compatible with Treaty provisions on the State aid. As set out in Article 87 of the EC Treaty, granting State aid by a Member State is prohibited unless it is compatible with the common market. Therefore, Member States must assess whether the intended measure qualifies as a State aid and if this is the case, they must comply with the notification obligation under the State aid rules.

d) Notification under Directive 98/34/EC

In accordance with Directive 98/34/EC, technical regulations have to be notified at a draft stage. Technical regulations include so-called de facto technical regulations which are *inter alia*:

"technical specifications or other requirements or rules on services which are linked to fiscal or financial measures affecting the consumption of products or services by encouraging compliance with such technical specifications or other requirements or rules on services;

Technical specifications or other requirements or rules on services linked to national social security systems are not included." (third indent of the second subparagraph of point 11 of Article 1 of Directive 98/34/EC).

As they are linked to compliance with certain technical requirements (for example CO<sub>2</sub> emissions) financial incentives that are based on these requirements are de facto technical regulations within the meaning of the Directive thus triggering the obligation to notify such draft measures under Directive 98/34/EC. This notification will be treated in accordance with the procedure applicable under that Directive.

**- Recommended principles:**

In addition to the mandatory principles mentioned above and in order to limit the fragmentation of the internal market and maximise the effectiveness of the financial incentives across the EU, it is highly recommended that Member States introducing these incentives also apply the recommended principles.

a) Technological neutrality

Incentives should not be limited to vehicles equipped with a specific power-train or auxiliary technology. This would be discriminatory with

respect to other vehicles with the same environmental performance. Such an approach would leave room for granting financial stimulus to technologies or products selected on an arbitrary basis, create difficult definition problems and create an unlevelled playing field.

Example:

Incentives which are granted for:

- Vehicles with a specific eco-innovation (ex. start-stop system),
- Electric vehicles (and not to hydrogen vehicles, both having zero vehicle emissions of CO<sub>2</sub>),
- Hybrid vehicles (but not to other vehicles with the same CO<sub>2</sub> performance) should be deemed incompliant with the Guidelines.

b) based on common performance-criteria Instead of technology-based criteria, incentives should therefore be available for all new vehicles with a desired environmental performance. Since the Guidelines refer to the CO<sub>2</sub> emissions, the common reference will be then a value measured in a common and objective manner during the homologation procedure and laid down in the certificate of conformity of a vehicle. In order to limit the diversity of criteria used, it is proposed that this criterion is the reference for granting financial incentives.

Example:

Schemes which are based on a different driving cycle than the one used for the type approval homologation process (currently NEDC) for defining CO<sub>2</sub> emission performance would be considered incompliant with the Guidelines.

c) proportionality

In order to ensure fair treatment of vehicles with similar performance and maximise the effectiveness of the incentives, it is also proposed that the incentive is granted proportional to the performance. It is recognized that the application of thresholds can be a way to provide sufficient transparency for the customer, however, it would be recommended to apply the steps in such a way that the difference in incentive above and below threshold is limited and that the existing number of thresholds is sufficient to ensure a proper level of proportionality.

Examples of financial incentives that would a priori be in line with the above principles:

Example:

Substantial incentives for all vehicles with CO2 performance below X g/km (but no incentive for vehicles with CO2 performance just above this level) would be a priori not in line with the above principles.

d) size of incentive

In order to reduce the risk that the incentive is used for subsidising manufacturers, the size of the incentive should not exceed additional cost of technology. This would need to be demonstrated by assessing which vehicles are capable of qualifying for the incentive and comparing them with a relevant benchmark vehicle. It is recognized, however, that a given CO2 performance may be reached by a variety of technologies and vehicle configurations.

Example:

Providing financial incentives for an electric vehicle which is higher than the price difference between a vehicle with an electric powertrain and

a comparable in type, size and features vehicle with an internal combustion engine should be avoided.

e) link to CO2 limits in relevant EU legislation

Implemented thresholds for the financial incentives should take into consideration the CO2 emission limits defined by the relevant EU legislations. It would be recommended to incentivise vehicles which emissions outperform the target values presented in the CO2 regulations on emissions of passenger cars and vans.

Example:

A scheme incentivising the purchase of vehicles with a CO2 emission value below the threshold of the 'super-credit' (instead of choosing an arbitrary limit not linked to the relevant EU legislation) will be highly recommended.

## **2. Local and regional e-mobility strategies**

Many European local and regional authorities have put in place several e-mobility measures but not so many have developed e-mobility strategies. These take into account different mobility aspects in a holistic approach<sup>11</sup>.

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<sup>11</sup> Some European projects have analyzed how to develop e-mobility strategies at local level, such as for instance the [ELMOS project](#) ; [E-mobility strategy outline for Carinthia](#);

The actions proposed in the local or regional strategies will allow to adapt the urban environment to the electric vehicles. It will be made by encouraging the use and the change of behavior habits of citizens in terms of mobility, which at the same time will allow the simultaneous use of electric and conventional cars and the transition to the first ones.

Taking everything into account, local and regional administrations will promote a new culture of mobility involving both the urban environment as the suburban, which are the most favorable for the development of electric vehicles. Thus, this new form of mobility, more environmentally friendly, allow the optimization of the urban environment. That will result in the improvement of the air quality and in the reduction of the noise pollution and the greenhouse gases emissions.

### **Possible content of a local-regional e-mobility strategies:**

- Set up of a e-mobility task force
- Diagnosis of the starting situation
- Planning the potential demand
- Identification and evaluation of possible measures to facilitate the use of electric vehicles
- Implementation of measures (regulatory measures, business models, public awareness measures, etc)
- Monitoring the measures
- Information campaign about the results of the strategy

The set-up of a e-mobility task force (or similar) that would include all the relevant actors for e-mobility in the municipality or region and that includes citizen participation is an essential element to set up a e-mobility strategy.

It is also essential to count on experts to make the diagnosis, the identification and evaluation of possible measures.

Concerning the **identification of possible measures** that to be taken at local or regional level, these could include the following, depending of the degree of local and regional competences in each case:

#### **Regulatory measures:**

Regulatory measures can be crucial for the development of e-mobility. It will certainly depend on the degree of competences of each local or regional authority. The support can be either direct (referred to the use of vehicles and charging stations) or indirect (to discourage the use of polluting vehicles).

To promote the use of electric mobility municipalities and regions may modify existing regulations or approve new ones. Local regulations related to mobility issues may deal with aspects such as the movement of vehicles, parking surfaces, loading and unloading, movement restrictions in certain areas, etc.

Other complementary measure could be either tax reductions (i.e. in the motor vehicle tax) or the implementation of green taxes. The discussion about the implementation of green taxes to vehicles with higher

emissions or to permit the access to downtown areas to some vehicles, as it already happens in some European capitals, is under way.

**Business models for electric vehicles:**

Regions and municipalities have a scarce economic capacity to support the installation of recharging stations. The self-financing of a network of recharging stations is not easy, at least in the short term, because it is necessary to maintain reasonable prices due to the small volume users. Therefore, public-private partnerships for the installation and maintenance of the stations are essential. Agreements between public administrations and utilities or automotive companies are the best solution to develop a first minimum recharging infrastructure.

The setting-up of public fleets of electric vehicles in the different municipalities and regions is also a business model that could be developed. The acquisition and renewal of such public fleets serves as an example for people and shows that the electric vehicles have become a reality. Electric vehicles not only represent a reduction of energy consumption measured in kWh with the consequent economic saving, but also a reduction of the maintenance costs due to the fewer moving parts that the electric motors own compared to combustion ones.

Public entities can also encourage the acquisition of e-vehicles fleets in private companies, large and also medium and small, which would help companies to save money in the medium and long term and reduce pollution.

When possible, depending on their budgetary resources, public administrations can foster the acquisition of e-vehicles by individuals.

### **Public awareness measures:**

An essential part of the strategy should be the specific public awareness measures to enlarge the knowledge about this kind of vehicles and their global benefits.

There are different possibilities to raise public awareness: the promotion of public fleets; information campaigns addressed to different target groups; information tools such as comparative tables for conventional and electric vehicles, etc.

Many of the European cities and administrations have developed programs to introduce children and young people on the use of electric mobility. These programs show them the advantages of electric vehicles and raise awareness about the importance of mitigating the effects of climate change and pollution.

This way, new generations will know the benefits of the EV usage, being more willing to purchase a new electric car in the future. In addition, these trainings are complemented with information about road safety issues and prevention of risk behaviours.

With respect to the **monitoring of measures**, it is recommended to establish a centralized tool in which all the information related to measures and results can converge.



It is recommended to distinguish among public fleets, private fleets of companies and their charging points located on its installations and private vehicles and charging points installed by individuals, both in houses and buildings.

It is also recommended that the monitoring of the recharging points is done according to the charging methods installed, types of connectors supported and characteristics of voltage, current, etc.



# **Electromobility Guide for Local and Regional Authorities**

## **Part 2**

### **Local and regional good practices**

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## **Part 2**

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**Electromobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**1. Regional Authority:** Castilla y León

**2. Name of the initiative:** implementation of the electric vehicle charging network

**3. Good practice field:**

The electric vehicle constitutes a reality more and more relevant in the urban mobility of nowadays and it is important to work hard in order to overcome barriers derived from the lack of autonomy of the current models. It is necessary for urban areas to have a minimum number of charging points so, in order to create this charging network, the main charge (complete charge) is expected to be done in origin (at home) or in destination (at work). Our proposal is focused on that "opportunity charging", for those moments where the vehicle is not running in the meantime between the domicile and the final destination. The Pilot Project was launched in the cities of Valladolid and Palencia.

**4. Content:**

**VYP RECHARGING PILOT PROJECT:**

Regional Ministry for Economy and Employment (Consejería de Economía y Empleo de la Junta de Castilla y León), Valladolid City Hall, Palencia City Hall and IBERDROLA signed a collaboration agreement to develop this Pilot Project, agreeing a budget of €276,000 entirely addressed to implement the electric vehicle charging network in Valladolid and Palencia. The final aim is the promotion of the sustainable mobility, supporting the growth of the automotive industry, key business sector for the Region of Castilla y León.

In the framework of the Pilot Project 44 recharging points have been implemented: 34 in Valladolid and 10 in Palencia, all of them distributed through 16 and 10 charging stations, respectively; their locations and technical qualities are described within the attached Annexes.

A Communication Plan of the Pilot Project has been already created and it has been presented both in Valladolid and Palencia and also in exhibitions and fairs related to electric mobility matters. In the same line, the Project has been also included within the national data base for the Integral Promoting Strategy of the Electric Vehicle in Spain: [www.movele.es](http://www.movele.es)

### **VYP RECHARGING PILOT PROJECT ANALYSIS**

Based on the results of a study done at the beginning of 2013 about the number of potential users and the impact of these recharging stations, the conclusions are the following ones:

- 1200 uses were confirmed
- Consumption in the stations with communication: 2200kWh
- 22,000 km made with that electric energy
- 4,400 less Kg of CO<sub>2</sub> emissions to the atmosphere
- 65 registered users in the Pilot Project
- Between August 2012 and February 2013 we noticed an increase of the number of users up to 27, which represents more than 70%

According to the information provided by the Innovation Regional Agency, in 2013, those 34 recharging public points implemented in Valladolid registered 1,386 recharges, with an estimated consumption of 6,548 kWh, implying a reduction of 13,286 Kg in CO<sub>2</sub> emissions.

Regarding technical assistance, here below the most relevant conclusions on this issue:

- The use of the recharging points is really high taking into account the electrification mobility levels at national, continental and international stage
- This “opportunity recharge” has been well received by users
- A very low percentage of drivers use recharging points as long-duration stations
- Since drivers of the vehicles participating in the Pilot Project change constantly, the number of incidences has increased because of users’ misuse. All these misuses have been collected to be addressed to fabricants, in order to provide better technical assistance in the future and to be prepared for these incidences
- Installation costs have been appropriately adjusted to the budget

- Exploitation costs have been higher than expected; in order to reduce these costs the next objective is to create SIM cards

Improvement proposals:

- To establish an action plan addressed to those situations when a user detects a misuse in the recharging stations.
- To establish an action plan for SIM cards delivering
- To collect users' feedback
- In case of incidence, to generate an information chain to look quickly for a solution and to avoid the same mistake in the future
- To modify communication frequency in the recharging stations to guarantee that data transfer is included in the flat fee contracted by each of both cities.
- To take advantage of the existing communication infrastructure to offer added value services: to facilitate corrective maintenance, to improve the management system, to create apps in order to know the status of the recharging points in real time, interoperability with other national projects, to identify and authenticate users, new business models, new management systems and to consider the creation of a booking system

## **5. Partners:**

- Regional Ministry for Economy and Employment of Castilla y León  
*Consejería de Economía y Empleo de la Junta de Castilla y León*
- Regional Energy Agency (EREN)  
*Ente Regional de la Energía (EREN)*
- Valladolid City Hall  
*Ayuntamiento de Valladolid*
- Palencia City Hall  
*Ayuntamiento de Palencia*
- IBERDROLA

## **6. Financing:**

Budget: €276,000

## **7. Comments:**

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**MORE INFORMATION ON THE VYP RECHARGING PILOT PROJECT**

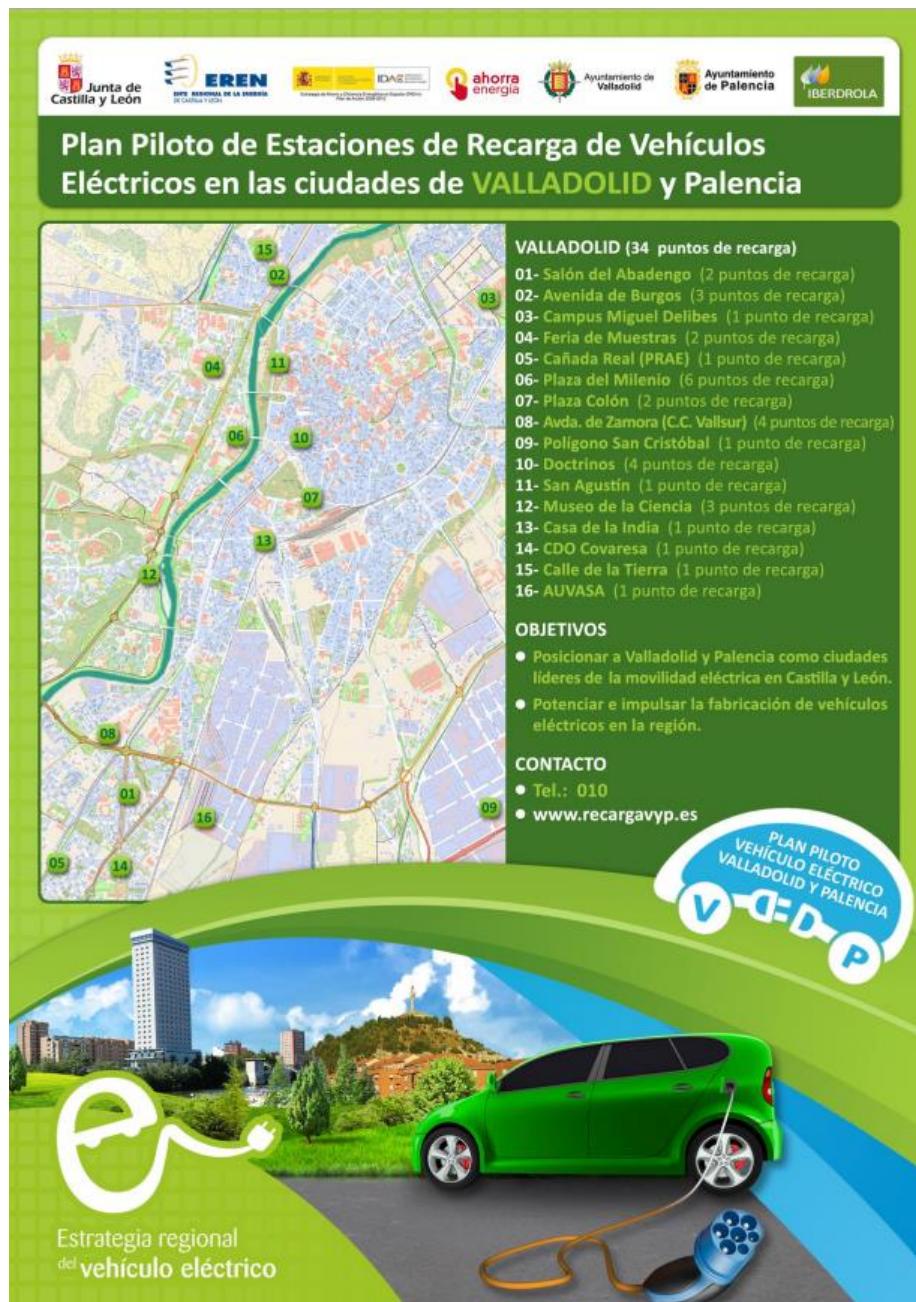
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[https://www.facebook.com/recargavyp/info?tab=page\\_info](https://www.facebook.com/recargavyp/info?tab=page_info)

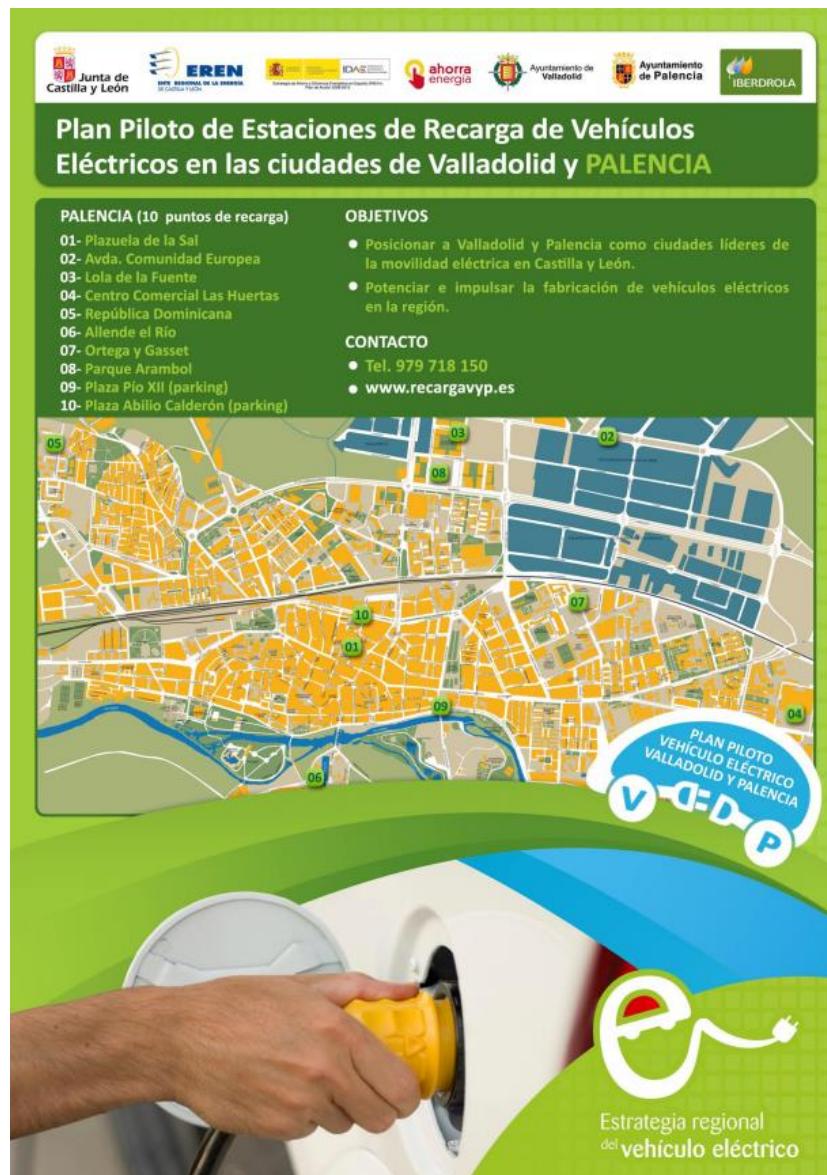
<http://www.vehiculoelectrico.jcyl.es/>

## ANNEXES

### A.1. LOCATION OF RECHARGING POINTS IN VALLADOLID



## A.2. LOCATION OF RECHARGING POINTS IN PALENCIA



## **Electromobility Guide for Local and Regional Authorities**

### **Part 2**

#### **Local and regional good practices**

##### **1. Local or regional authority**

Barcelona City Council, AMB (Barcelona Metropolitan Area) and Catalonia Government.

##### **2. Name of the initiative**

LIVE

Public-Private

**Live**



Platform

##### **3. Good practice field/s (infrastructure, training, financing, etc.)**

PPP - Regional EV Strategy: Infrastructure, EV demand, Policies, Communication, Economic promotion.

##### **4. Content :**

LIVE Platform (Logistics for the Implementation of the Electric Vehicle) is an open public-private platform that promotes the use of electric vehicles as an opportunity to position Barcelona and Catalonia as an excellence center of innovation in electric mobility on a worldwide scale and to promote economic development in the area.

It is a partnership where all actors of the sustainable mobility sector interested can participate, they benefit from the accumulated knowledge, networking and representation of the platform but also participate actively. Members participate and lead Technical Committees and Working Groups to achieve the objectives set up by the steering committee of the platform.

It is being a key tool to:

- **Support** coordinated actions and activities of the **public administration** through market knowledge and financing.
- **Promote Business Development.**
- **Position Internationally** the brand linked to Barcelona Electric Mobility.

It particular focuses its activity on 5 action lines:

- **Communication & knowledge:** LIVE carries out and cooperates in different communication and awareness raising actions aimed at the citizens and the business sector, and also helps improve the visibility of the members of the platform and their projects on sustainable mobility. The objectives of this line of action are raising awareness to increase the demand and make the LIVE platform and the territory a reference in sustainable mobility at international level through the exchange of knowledge.: Expoelèctric, Barcelona International Motor Show, EV Battery Fòrum, SmartCity Expo & World Congress, EVEcosystem), EVS27 (27th Electric Vehicle Symposium- 2013).
- **Public Policies:** LIVE works with the Public Administrations to provide support in the improvement of public policies and, thus, benefit sustainable mobility, through the following tasks:
  - Supporting the coordination and definition between plans and policies of different administrations and administration levels.
  - Representing common interests before other State and European administrations.
  - Detecting the needs of the Sustainable Mobility Sector and create a constant dialogue.

Barcelona and Catalonia are pioneers in EV support policies and have a wide range of [EV incentives](#) such as Obligations of EVs in Public Procurement, tax benefits, parking Rate at 0 € on street regulatory areas, free tolls, possibility to use High Occupancy Lanes and specific vehicle and infrastructure economic incentives.

- **Infrastructure:** To promote the use of alternatively powered vehicles it is essential to have an infrastructure of battery charging and supply points which is broad enough, operational and easy to find. From LIVE we support the deployment of public and private electric charging in Catalonia through:
  - a. Unifying and updating all the information of charging points.

- b. Studying the technical and economic feasibility and the possible business models of the electric power charging points and maintaining a dialogue with.
- c. Developing a tool to find the best locations for fast charging stations (with technical and financial criteria).
- d. Working towards the interoperability of the infrastructures and the simplification of their use.

Catalonia region has **more than 600 electric charging points** in more than 250 locations of which 15 are Fast charging and 52 are Semi-fast charging points. The objective for 2016 is to have **40 Fast charging stations (50 kW)** in Catalonian main cities and corridors.

- **Vehicles and Fleets:** LIVE promotes the introduction of sustainable vehicles both in private and public fleets, as well as the development of its own vehicle market and mobility services. For example some of the initiatives carried out by LIVE in this line of action are:
  - Viability and potential studies and demonstrators in both public and private fleets.
  - Promotion and good practices within fleet administrators and operators; and organising sessions aimed at niches of specific sectors.
  - Monitoring of the sustainable vehicles market and EV market penetration.
  - Introduction of electric vehicles in public administration fleets and services.

There are **more than 4.000 electric vehicles** registered in Catalonia by May 2015, 400 of which belong to public fleets. Catalonia represents **more than 30% share of the Spanish EV market**.

- **Industrial Transformation:** LIVE is seeking economic growth, entrepreneurship and development in the sustainable mobility sector of the territory through the following actions:
  - Monitoring the initiatives in the territory and the international benchmarking.

- Promoting networking between companies of the mobility sector and other key agents.
- Guidance and advice on new business models.
- Establishing the necessary synergies and links with strategic groups and entities
- Promoting and publishing the main technology and services suppliers in the sustainable mobility ecosystem.
- Supporting research and development in companies through consortiums; funding initiatives at a European, national and regional level; and organising events related to technological innovation.

## **5. Partners**

Board members:

- Barcelona City Council: initiative founder and executive director of the platform, also acts as link with the municipality departments and projects.
- Catalunya Government- Industry Department: it has the double role of promoting business generation related with the EV and to promote energy efficiency and diversification in Catalonia region.
- Catalunya Government- Infrastructure and Sustainability Department: has the role of planning regional infrastructures and achieving emissions and noise levels reduction.
- SEAT, NISSAN, RENAULT, VOLKSWAGEN-AUDI (car manufacturers): as industry representatives provide knowledge and requirements from industry as well as commercialization initiatives and partnership opportunities.
- BSM (Barcelona Municipal Services) manages key mobility services related with EV such as parking lots, city parking spaces, and electric bike public schemes.
- Gas Natural Fenosa (utility) as electricity and natural gas utility has a role of representing the interest of the utilities.
- ACS (construction and service provider) electric charging service provider and ITS expert.
- TMB (Barcelona public transport operator): pioneer in integrating electric buses in Barcelona.

Collaborators: Representatives of all the Electric Vehicle value chain: (Endesa, Circutor, RACC, Evectra, Urbaser, Avancar, Cimalsa, Simon, Car-bus, Urbaser, Alphabet, Creafutur, Calidad Pascual).

## **6. Financing**

LIVE has a yearly budget that comes mainly from the provisions of its members, depending on the category of the member (director or collaborator) has different quotes of participation. For 2015 the budget for internal action is approximately 220.000 €. More over Platform LIVE acts as a focal point of sharing and coordination of action for all its members. The investments of LIVE members in electric mobility from 2012 in Catalunya have been reported to be more than 300 million euros.

## **7. Comments (obstacles, recommendations, etc.)**

Some lessons-learned and discovered through this project are:

- The strength of the platform is the combination of its members' capabilities and knowledge that has been achieved through:
  - ✓ The leadership of Barcelona City Council and dedication of the local, metropolitan and regional representatives
  - ✓ The representation of most of the local private stakeholders of electric mobility private sector.
- The availability of an appropriate vehicle offer and Charging Infrastructure are necessary but not sufficient conditions to ensure the success of the deployment of the electromobility in a territory. A holistic approach is needed covering as well: communication and awareness, accompanying public policies, economic and innovation promotion.
- Infrastructure and business models in the cities have to be open to the participation of big and small companies and different technical solutions can coexist but inter-operability between them is a must. Standardization and data sharing

becomes an urgency, not only for the European market but also for the rest of the world.

- The deployment of Rapid Charge Infrastructure is necessary for professional drivers to cover a day operation.

Other comments:

- The project won Prix TERRITORIA. Award from French Government to LIVE as the most innovative Public Project of Europe in 2011.
- Barcelona became a referent city in electric mobility and got the seventh position in the ranking of most successful cities in the promotion of electric mobility elaborated by the International Energy Agency:  
<http://www.iea.org/publications/freepublications/publication/name,31983,en.html>
- Barcelona city council and LIVE platform was selected worldwide as one of the 50 Big Ideas shaping the future of electromobility for the Electric Vehicle Initiative 2014 EV City Casebook:  
[http://www.cleanenergyministerial.org/Portals/2/pdfs/EVI\\_2014\\_EV-City-Casebook.pdf](http://www.cleanenergyministerial.org/Portals/2/pdfs/EVI_2014_EV-City-Casebook.pdf)

**Additional Information:**

Project presentation video:  
<https://www.youtube.com/watch?v=el2inDfIGqY>  
Project website: [www.livebarcelona.cat](http://www.livebarcelona.cat),  
Project twitter: [@LIVEprojectBCN](https://twitter.com/LIVEprojectBCN)

**Electromobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**1. Local or Regional authority**

Bretagne Region (Regional Council).

**2. Name of the initiative**

Green Vehicle Bretagne (Véhicule Vert Bretagne).

The aim of the Green Vehicle Bretagne programme is to foster innovative solutions for carbon-free mobility.

**3. Good practice field/s (infrastructure, training, financing, etc.)**

This program is divided in 3 parts:

- Industry and entrepreneurship: enable the emergence of collaborative R&D, industrial and entrepreneurial projects;
- Mobility: accompany the change of mobility practices towards a global chain of mobility for the benefit of the users of the territories;
- Energy: integrate mobility into the management of smart grids and develop new business models.

**4. Content**

The objective of the mobility part of the programme is to initiate a start-up policy to deploy electromobility over 3 years and with digressive means. This policy was implemented in different ways with public and private investments.

Another objective of the programme was to coordinate the regional mobility ecosystem and design ad-hoc communication tools to federate all key players around the regional deployment of charging infrastructure for electric vehicles and the dissemination good practices.

Context:

The Bretagne Region aims to become an exemplar of low carbon mobility, and the Regional Council adopted in June 2011 the ambitious Green Vehicle Program as part of its energy transition policies. The programme provides financial support for the development of a large-scale territorial experimentation to foster new mobility practices and solutions, such as the deployment of recharging stations for electric vehicles. The programme also meets the challenges of the necessary adaptation of our society in the fight against climate change and the energy challenge.

Since the very beginning of the programme implementation (end 2012), a participatory approach was also encouraged through a large campaign for stakeholders engagement, in order to engage a real networking dynamic of electromobility in Bretagne.

In order to keep the installation of recharging stations on track and to optimise the regional network with public money, the regional council launched in 2013 a study with two objectives: provide local authorities with guidance and tools to trigger a major deployment while ensuring consistency and homogeneity on the regional scale as well as the eligibility for public funding through a state aid launched on January 10, 2013, for deployment of recharging stations for electric vehicles.

In order to ensure the harmonisation and coherence at the departmental and regional levels, the operational deployment of the network of recharging stations is supported by the four energy distribution authorities, which have been authorized by local municipalities to operate the recharging stations.

**Actions deployed:**

1. Development of a guidance scheme for the deployment of the network of recharging stations and other infrastructures. These tools made the Region's ambition visible and concrete. The designed installation strategy was then positively received and adopted by contractors and energy distribution organisation authorities (EDOA).

This regional network covers all territories, not only the big municipalities or towns. It needs also to meet different usages. Thus, the offer of recharging infrastructures for electric vehicles in Bretagne should be

comprehensive of all different needs. That's why all involved stakeholders, from the municipalities to the businesses, should participate to the programme and benefit from this dynamic.

**Partners:** Regional Council of Bretagne & Bretagne Développement Innovation.

**Financing:** Regional Council of Bretagne.

2. Meeting with and involvement of the contractors in the regional project to be declined in their departments. These bilateral meetings should help the regional deployment of infrastructures, also thanks to the engagement of the energy distribution organisation authorities with regard to local planning and deployment of new services when recharging will be possible.

**Partners:** Regional Council Bretagne, Bretagne Développement Innovation, Crétiv, ADEME.

3. Organisation of a technical meeting between contractors and project managers. This event enabled the contractors to meet technical and economical stakeholders, as well as allow for the common definition of technical specifications and deployment.

**Partners:** Regional Council Bretagne & Bretagne Développement Innovation

4. Organization of a regional steering committee for the deployment of charging infrastructures for electric vehicles. The operational deployment is coordinated in the same time frame by the local governments, with the help of all local contractors to be able to demonstrate a regional scale project. Between T2 and T3 2014, all four energy distribution organisation authorities got a favourable answer from the Agency for Environment and Energy Management for subsidies to install 955 charging points for a total amount of around € 12M.

**Partners:** Regional Council Bretagne.

**Financing deployment:** 50% ADEME, 20% EDOA, 20% Regional Council Bretagne, 10% municipalities.

5. Design and realisation of the Breizh Mobility Tour (BMT) to give more visibility to/communicate about the network of local charging stations in Bretagne. The objective is to showcase local initiatives and to encourage meetings between mobility professionals and to provide final users with decision making tools in order to integrate electrical vehicle in their car fleet.

Thanks to its economic approach, the BMT is capable to demonstrate that an EV can cover plenty of professional usages as well as the competitiveness of e-mobility (TCM / TCO) compared to tradition fossil fuel mobility solutions.

The realisation of a BMT demonstration is done in collaboration with local players (energy distribution organisation authorities, Chamber of industry and commerce...): conference-debate (testimony of local professional users of EVs, Bretagne's network to enable regional roaming, vehicle offer and technological maturity, business models...) ; local car dealers offer the opportunity of EV test drives ; networking opportunity are also offered.

**Partners:** Bretagne Développement Innovation, Regional Council Bretagne, ADEME, Créativ, local players (Chamber of commerce and industry...).

**Financing:** ADEME, Bretagne Développement Innovation, sponsorship.

6. In parallel to the regional initiatives, the State has launched a label for operators to install and operate recharging stations on public spaces benefiting from exemption land taxes. Beginning of 2015, the Groupe Bolloré (Blue Solutions) has become a national operator. Thus, Bretagne implemented a consultation with all local stakeholders and the national operator to ensure coherence between public and private networks of charging points in Bretagne and also to guarantee common technical specifications for an integrated management / operation to the benefit of final users.

**Partners:** Regional Council Bretagne, Bretagne Développement Innovation, EDOA.

## **5. Partners**

**Regional Council of Bretagne**, local authority promoting the deployment and guidance scheme of the regional infrastructure for EV and coordinating the negotiations with the national operator.

**Bretagne Development Innovation** (BDI), the regional agency for economic development and innovation, promoting the Bretagne Green Vehicle Program to support the automotive industry. Coordinator of the Breizh Mobility Tour.

**Energy distribution organisation authorities** (EDOA): four departmental entities exist in Bretagne whose members are the departmental municipalities who delegated their competency. All four EDOA are the main deployment contractors in Bretagne.

**ADEME**: National Agency for Environment and Energy Management, whose purpose is to conduct research and innovation programs, raise awareness of environmental issues, etc. ADEME provides subsidies with regard to large-scale EV infrastructure deployments and supports local initiatives.

**Créativ** is an association with a close link to the Chamber of Commerce and Industry of Bretagne, helping regional companies and start-ups with their innovation strategy. Créativ is partnering with the Regional Council and BDI to disseminate the initiative among the entrepreneurial ecosystem.

## **6. Comments (obstacles, recommendations, etc.)**

This dynamic was made possible by:

- A strong political support through the Bretagne Green Vehicle Program
- The design of a regional deployment scheme of charging infrastructures for EVs.
- The establishment and the coordination of local ecosystem to showcase all initiatives.
- The involvement, since the very beginning, of the contractors EDOAs.
- The national funding operated by ADEME which reduces the financial involvement of local authorities.

The involvement local authorities in the BMT initiative, allowing to reach out for local stakeholders to demonstrate technical and economic feasibility of electromobility.

**Electromobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**1. Local or Regional authority**

The Nord-Pas De Calais Region (France) decided to become a pioneer region on the electric vehicle development. This ambition fits perfectly with the « third industrial revolution », a master-plan co-designed by the regional stakeholder and economist Jeremy Rifkin, in order that the Nord – Pas de Calais Region become a post-carbon Region.

**2. Name of the initiative**

The Region has launched, in november 2011, a regional development plan for electric vehicles, in order to capitalize on the potential of the regional automobile production (the Kangoo ZE is manufactured in MCA in Maubeuge, some charging stations DBT are manufactured in Douai...).

**3. Good practice fields**

**Regional electromobility development plan**

a) Tools:

- Requirements specification for the stations ensuring interoperability (definition of the functional and technical characteristics of the stations and of the services to be rendered).
- Requirements specification for the client reference system (description of the customer path, of a common IT tool and of a common pricing policy).
- Regional communication tool available for local authorities.
- Regional chart (deployment definition, compliance with the standards, electric vehicle promotion, electric vehicle projects).

b) Infrastructure:

- Goal: 10 000 electric vehicles for 4 Million inhabitants:

1250 normal to accelerated charging stations (3 to 22kW – 8 to 1 hour to charge) minimum ratio required by the French State: 1 charging station for 6000 inhabitants  
40 fast-charge stations (43 to 50kW).

## **4. Content**

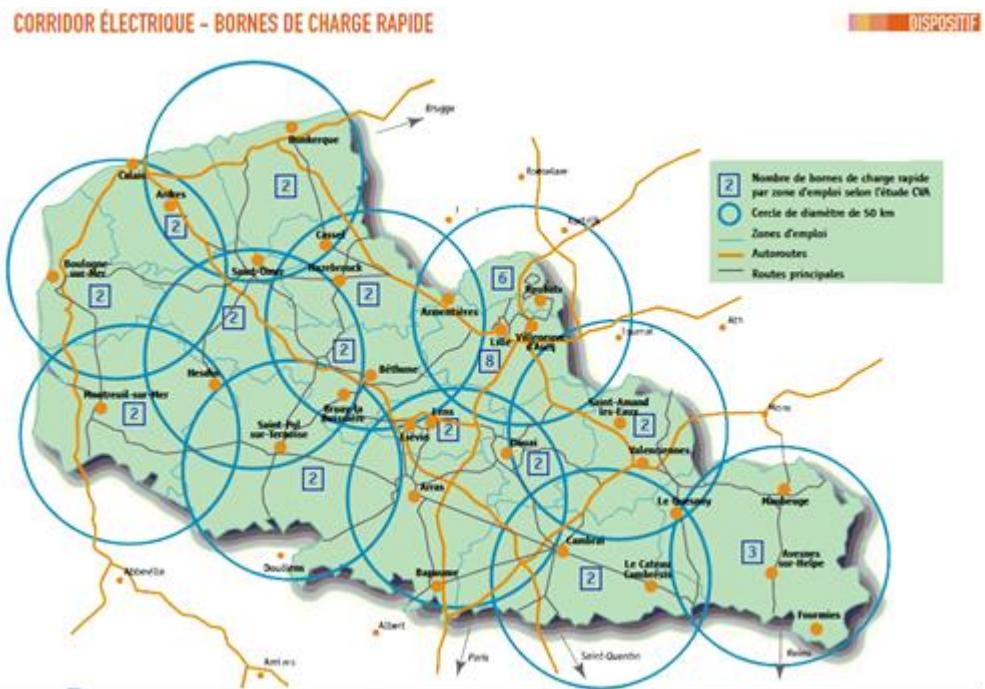
The aim of this plan is to support local authorities with developing an interoperable charging system, homogeneous in the whole regional territory. Our target is to have 10 000 electric vehicles operating in the region by 2016 (which will represent 0.45% of the regional automotive fleet) and 27 000 vehicles by 2020 (1.2% of the regional fleet). This pace of development is coherent with the development of the sector.

The Nord-Pas De Calais Region is committed to electric mobility through a global strategy to support the development of electric vehicles. The aim of this strategy is to provide a regional public service, ensuring access to charging stations to all kind of vehicles without any subscription.

Cf : Directive UE/94/2014

This strategy, that aims to develop electromobility at the regional level, relies on 3 innovative tools:

- A « Regional charter on electromobility » that summarises the cross-cutting principles of the Region in its coordination role of territorial projects.
- A regional financial support to electric mobility initiatives and projects from sub-regional territories.
- A “Regional electromobility development plan” that identifies the areas on which the uses of electromobility will be developed. This plan is based on a diagnosis of the the regional capacity.



## 5. Partners

<b>1st stage (2013-2014)</b>	<b>2nd stage (2015, ongoing)</b>	<b>3rd stage (After 2015, to be determined)</b>
<ul style="list-style-type: none"><li>- 5 EPCI [public inter-municipality cooperation establishments] du Pays de Saint-Omer</li><li>- Agglomération Maubeuge Val de Sambre</li><li>- Communauté d'Agglomération du Boulonnais</li><li>- Communauté Urbaine d'Arras</li><li>- Ville d'Hazebrouck</li></ul>	<ul style="list-style-type: none"><li>- Communauté de commune Cœur d'Ostrevent</li><li>- Communauté d'agglomération du Douaisis</li><li>- Communauté de commune Flandre-Lys</li><li>- Valenciennes Métropole</li><li>- Communauté de communes des trois-Pays</li></ul>	<ul style="list-style-type: none"><li>- Métropole européenne de Lille</li><li>- Communauté d'agglomération du Cambraisis</li><li>- Communauté s'agglomération de la porte du Hainaut</li><li>- Communauté d'agglomération d'Hénin -Carvin</li><li>- Communauté de communes du Caudrésis et du cartésis</li><li>- Communauté de communes du Pays de Marmal</li><li>- Communauté de communes du sud de l'Avesnois</li><li>- Communauté de communes du Cœur de l'Avesnois</li></ul>

## **6. Financing**

First stage (2013-2014) : 133 stations installed for a total cost of 3 262 000 € funded by the Region (978 000 €) and ADEME, the French national agency for environment (1 613 000 €):

- Second stage (2015, ongoing) : 129 stations installed.
- Third stage (after 2015) : to be determined.

## **7. Comments (obstacles, recommendations, etc.)**

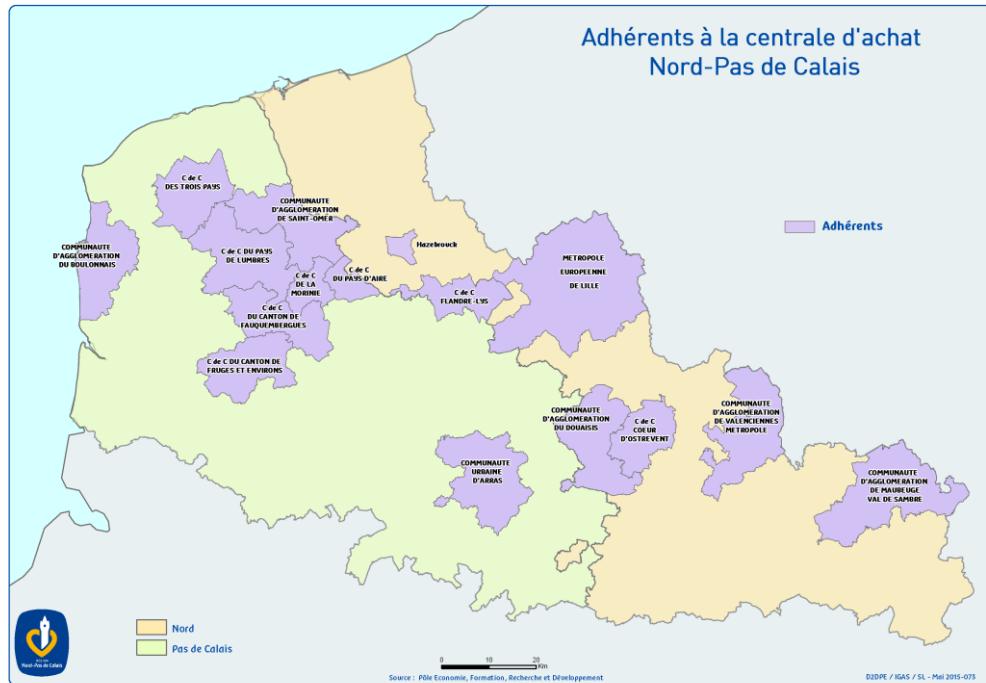
The coverage of the local territory is entrusted to the EPCI [public inter-municipality cooperation establishments]. The ratification of the Charter by the sub-regional territories allows the regional coordination.

The establishment of an electromobility purchasing office.

a) Tools:

- ✓ Launch of a regional platform on 26 February 2015, in order to mutualize the tools and systems and to homogenize the electric vehicle deployment throughout the regional territory, at reduced cost.
- ✓ Possibility for members to use two public procurements, in order to take advantage of reduced prices thanks to the importance of the orders.
- ✓ 1 public procurement for the supply, installation and maintenance of charging stations.
- ✓ 1 public procurement for the operation of the regional network (monitoring, payment etc...).

b) Partners:



In conclusion, the advantages of the “Regional electromobility development plan” are the following :

- Access for all kind of vehicles, no matter the model.
- Access for all type of users, no matter his method of payment.
- Control on charging price in the whole region.
- Balanced territorial development.
- Control of the upgradability.
- Cost control for maintenance and for installations in the long run.
- Control on public property: the local authority chooses where to locate the charging stations on its territory, (ou : is responsible for electing where to locate charging facilities).

- Cut of public expenses thanks to the mutualisation of operating costs (estimation : approximately 100 € / month/ charging station for the monitoring, communication, electricity consumption, maintenance).
- Collective commitments in the long run.

**For more informations on Nord-Pas De Calais's strategy (in french):**

[https://www.nordpasdecalais.fr/jcms/c\\_47364/le-vehicule-electrique](https://www.nordpasdecalais.fr/jcms/c_47364/le-vehicule-electrique)

**Contact :**

**Laurent CANDELIER**

(Project manager electric vehicle- Language FR)  
laurent.candelier@nordpasdecalais.fr  
Phone : +33 (0)3.28.82.82.82  
Région Nord-Pas De Calais  
151 avenue du Président Hoover

**Stéphane GERBAUD**

(Head of Brussels Office) Languages FR-EN-SP  
stephane.gerbaud@nordpasdecalais.fr  
Phone : +32 (0)2 .230.30.81.  
Nord-Pas de Calais Europe –Brussels office  
Rue de la Sciences 14

**Electromobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**1. Local or Regional authority:**

Flemish Government and Innovation Funding Agency IWT

**2. Name of the initiative:**

Living lab Electric vehicles (2011-2014)

**3. Good practice field/s (infrastructure, training, financing, etc.):**

Public funding and support for investments in charging infrastructure and purchase of electric vehicles for testing and demonstration of e-mobility technologies, knowledge diffusion.

**4. Content**

In 2011-2014, Flanders' innovation agency IWT funded this initiative that was aimed at stimulating innovation and testing open real-life infrastructure for electric vehicles in order to stimulate adoption of e-mobility in Flanders. As a result of a call for open innovation platforms launched in 2011, Flemish government approved five consortia to be funded. Each of the five platforms addressed specific problems to test, validate and demonstrate infrastructural investments for electro-mobility: electric vehicles, charging infrastructure, testing and monitoring real-life user behavior, energy related services and smart mobility concepts. A Program Office served as a central contact in charge of the

management and coordination of the platforms and to diffuse the outcomes. In this way, they also promoted Flanders as e-mobility region on the European level, and participated in EU initiatives, e.g. Green eMotion, eMI3, etc.



Each of the innovation platforms developed business cases for this new, emerging market:

- (1) the **EVA platform** focused on the public access of charging infrastructure. Coordinated by Flanders distribution system operator Eandis, they promoted electric vehicles for local municipalities in a starters' guide for electric vehicles.
- (2) The **iMOVE platform** was coordinated by the multinational Umicore and monitored by means of dataloggers electric vehicles in large company fleets.
- (3) The **OLYMPUS platform** was managed by the Belgian railways holding NMBS and introduced in a Blue Mobility System intermodal transport solutions (electric bicycles, scooters and cars in a sharing scheme) in four cities. They looked for smart charging infrastructure at railway stations using current energy capacity for charging the electric vehicles. NMBS

also deployed an open service platform connecting all mobility stakeholders to give public transport users, via apps or MOBIB card, access to different transport modes. Together with Belfius Auto Lease they developed innovative formulas to lease electric company cars used in combination with other public transport modes.

- (4) Siemens coordinated the **Volt-Air platform** that integrated e-mobility in micro grids and studied in a micro grid environment the role that electric vehicles can play to reach an optimal energy level.
- (5) The **EV TecLab platform** led by Punch Powertrain focused mainly on the technological development of components like electric engines, batteries, inductive charging, ... in heavy-duty electric vehicles (electric trucks, vans, busses).

## **5. Partners**

In total, more than 70 partners, Flemish companies, service providers, system operators, researchers, local governments and public actors actively participated in the living lab partnerships for innovative processes, products and services to accelerate roll out of electric vehicles.

## **6. Financing**

The living lab EV received altogether 16,25 million euros public funding for setting up the open test infrastructure. For the further research and technological developments in this living lab, the five platforms could

also apply for other public support within the other IWT programs (R&D support, SME programme, innovative procurement, etc) or European funding. The platforms started up more than 50 projects.

## **7. Comments (obstacles, recommendations, etc.)**

More information on [www.proeftuin-ev.be](http://www.proeftuin-ev.be)

**Electromobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**1. Local or Regional authority**

- Government of Styria | [www.steiermark.at](http://www.steiermark.at)
- ACstyria Autocluster | [www.acstyria.com](http://www.acstyria.com)

**2. Name of the initiative:**

Strategy Clean Mobility (CMOB), E-Mobility Model Region Graz and E-Mobility Styria

**3. Good practice field/s (infrastructure, training, financing, etc.)**

- Research, Development and Engineering (Industry)
- Networking
- Infrastructure
- Research and development of systemic solutions
- Awareness
- Promotion and financing of e-mobility solutions for companies and private sector

**4. Content**

The region of Styria follows a systemic approach in the field of e-mobility. On the one hand **ACstyria** as the region's Mobility-Cluster organization fosters the research and development of e-mobility-solutions in the industrial and economic sector as well as on building up a network of partners and enterprises in the field of e-mobility. Its partners **E-Mobility Region Graz** and **Energie Steiermark** focus on the development of integrated e-mobility solutions for the region as well as on the promotion and financing of e-mobility

vehicles for companies and private households; and the dissemination of vehicle and battery charging infrastructure respectively. All three organizations work on the raising of awareness for the topic as well.

### **ACstyria Autocluster | Description and Activities in CMOB**

The ACstyria Autocluster is Austria's premier automotive and mobility cluster. It comprises more than 220 innovative partner companies from the fields of Automotive, Aerospace and Rail Systems. Within the context of Styria's economic strategy for the year 2020, ACstyria Autocluster is striving to position Styria as an automotive region where innovative technologies and sustainable solutions are created with the aim of reducing environmental pollution from the mobility sector. Different concepts of e-mobility play a major role in this Clean Mobility (CMOB) strategy.

- Events and workshops on e-mobility
  - o More than 20 business lounges and technology workshops on the field of e-mobility and/or eco-powertrains from 2012 to 2015
- Projects on E-Mobility
  - o 2012 | Competence Survey on Clean Mobility in Styria: Identification of more than 90 companies with know-how in e-mobility and/or eco-powertrains
  - o 2014 | Project Smart City: Research on and development of a model of efficient individual urban mobility
  - o 2014 | 2CV Hybrid 4x4: Remodeling of a Citroen 2CV as a hybrid car as a project for students (agegroup 17-18 years)
  - o 2015 | Project 3R4eCars: Life Cycle and Reverse Supply Chain Analysis for eCars (Reuse, Remanufacturing, Recycling)
- Promotion of young talents and scientists
  - o Projekt 'Technic-Grandpa': Bringing children in elementary school in contact with e-mobility by building solar-powered model-cars
  - o Annual ACstyria Clean Mobility Award

- Raising awareness by means of public and target group communication
  - o Media relations
  - o Communication with target audiences

### **Energie Steiermark Mobility | Description and Activities**

Energie Steiermark Mobility is a division of Styria's leading energy supplier. It focuses mainly on the promotion of e-mobility in general, and the development of charging infrastructure in particular. Energie Steiermark Mobility also holds a veritable fleet of e-vehicles.

- Development of a growing infrastructure for public vehicle and battery charging
- Establishment of a fleet of e-vehicles for easy and cheap rent in urban and regional mobility
  - o 3 types of E-Bikes with rental costs of EUR 10,00-20,00 per day
  - o 6 types of E-Cars (VW e-Golf and e-up!, BMW i3, e-Smart, Renault Twizy and Zoe) with rental costs from EUR 39,00 to EUR 99,00 per day
  - o E-Scooter with rental costs of EUR 25,00 per day
  - o E-uCarver (smart urban micro e-scooter) with rental costs of EUR 15,00 per day

### **E-mobility Region Graz | Description and Activities**

At the moment there are eight model regions for e-mobility in Austria. The E-Mobility Region Graz comprises Styria's capital Graz and its surroundings with more 1.200 square kilometers and over 400.000 inhabitants. Its main aim is the promotion of e-mobility as a smart and sustainable solution for urban and regional mobility. The « Modellregion für Elektromobilität Großraum Graz », also “e-lectric mobility in Graz”, was initiated in 2010. 80 municipalities around and within Graz as well as commuters are covered. The main tasks of the model region are subsidy management of electric vehicles and charging stations, introducing electric vehicles in transport systems, as well as creating new creative

business models and building innovative mobility solutions in cooperation with public transport and services.

### **Projects and initiatives of the e-mobility model region in Graz:**

#### **1 – Electric mobility in residential areas**

The focus of this project was to reduce the amount of vehicles in residential areas in cooperation with partners from different fields (IT, building, etc.) and the integration of all building contractors and the City of Graz. Different opportunities to succeed are listed in the following: to build only 1 parking lot for each apartment, to campaign (e)-carsharing, to prepare information about all means of transport via displays, apps, and to integrate future mobility solutions in the construction of today (this should be regulated with contracts), etc.

#### **2 - Tests, trainings, sensibilisation**

Within this project electric mobility was tested in small, middle and huge events in municipalities. Workshops and trainings for car dealers were also conducted. In order to raise awareness it is important to offer people the opportunity to test electric mobility and to get to know all advantages.

#### **3 – Urban electric-delivery-services**

This project dealt with requirements of delivery services and challenges in logistics in Graz. The pilot project and the integration of electric vehicles in car fleets supported the reduction of CO<sub>2</sub>-emissions. Additionally, an App was created to evaluate the mobility behavior of delivery services in order to ensure a successful implementation in the future.

#### **4 – Interoperable charging-station-management**

As part of this project, four superchargers were installed in order to close the gap between four model regions in Austria. Moreover, a driver software for these charging stations was developed by our partners. Consistent payment in all model regions should be reached.

#### **5 – e-mobility for commuter traffic**

A major obstacle, especially in rural areas, is to get to work without the use of a privately owned car. This project focused on affordable,

environmentally friendly packages, where electric vehicles are included. Examples are shuttle services, sharing, leasing or connections to public transportation.

### **6 – Floating fleet- e-bike lending stations with electronic bike locks**

Within this project, the usability and attractiveness of riding hired e-bikes should be increased. For this reason a bike lock system controlled through a smartphone app – floating fleet – was tested as part of a pilot project in Graz. The prototype already exists and will be further developed.

**Other important projects, were the e-mobility took a leading position, but not within the model region in Graz**

#### **1 - KombiMo II – Combined mobility in Graz (e-carsharing and e-taxi)**

Project partner like Holding Graz Kommunale Dienstleistungen GmbH and the Holding Graz devision of public transport, Energie Graz GmbH & Co KG, Quintessenz Organisationsberatung GmbH and FH Joanneum Gesellschaft mbH analysed the feasability of combined mobility in Graz. The focus of this project is to ensure 24/7 mobility through e-carsharing and the use of e-taxi fleets. Those will be offered in addition to public transportation.

#### **2 – Urban Mobility Lab**

Within this project the economic feasibility of an Urban Mobility Lab was examined. Future challenges should be solved together – in cooperation with all parties involved in traffic in Graz.

#### **3 – Intelekt**

The Province of Styria and the e-mobility Graz GmbH built a roadmap as an initiative for developments in the field of mobility.

#### **E-mobility model region overview:**

- Promotion and financing of e-vehicles for companies and private use

- More than 330 e-cars in the region
- More than 150 e-cars partly funded by E-mobility Region Graz
- Promotion of private, semi-public and public charging infrastructure
- More than 80 events on e-Mobility since 2011
  - e.g. eMobility expo at Graz main square
  - mobility information days
  - eBreakfasts
  - etc.
- 2012-2014: Project KOMBIMO
  - Project on combined mobility and modal split in the urban and suburban region of Graz with integration of Car-Sharing and e-Taxis
- 2015: Multi-Modal Hubs
  - Establishment of mobility hubs with the integration of public transport, Car-Sharing, E-Taxis and public charging infrastructure at three points in the city of Graz
- 2015: Project MISCH
  - Establishment of a corridor of charging infrastructure alongside the Highway A2 in cooperation with Wien Energie, Energie Burgenland, EVN, Energie Steiermark, Energie Graz
- 2015: Project Mobility Lab Graz
  - Set up of a research project on the management of commuters from the peripheral regions of Styria to Graz and vice versa

## **5. Partners**

- ACstyria Autocluster GmbH | [www.acstyria.com](http://www.acstyria.com)
- Energie Steiermark Mobility | [emobil.e-steiermark.com](http://emobil.e-steiermark.com)
- E-Mobility Region Graz | [www.emobility-graz.at](http://www.emobility-graz.at)  
Further partners: Province of Styria, City of Graz, Holding Graz Kommunale Dienstleistungen GmbH and Holding Graz devision of public transport, Energie Graz GmbH & Co KG, Quintessenz Organisationsberatung GmbH, FH Joanneum Gesellschaft mbH,

Graz, university of Technology, BGS Projektentwicklungs- und Baubetreuungs-GmbH, GIGATRONIK Austria GmbH, SOREX GmbH, StadtLABOR Graz, NTT Data

## **6. Financing**

- **ACstyria** is partly financed by SFG (Styrian business promotion agency) and its partner companies
- **Energie Steiermark Mobility** is a private company on the free market
- **E-Mobility Region Graz** has been financed by the European Union up to 2015. There are three groups of national and regional subsidies. For investments in electric vehicles and charging stations the percentage of 30 % is subsidized, while subsidies with the percentage of 40 to 80 % for research projects are approved, depending on the size of a company. The third group are other investments like PV-plants (up to 30% of the investment). All together about 5 to 6 million of subsidies were approved to the projects of the e-lectric mobility in Graz.

## **7. Comments (obstacles, recommendations, etc.)**

On the whole, the region of Styria and especially the city of Graz and its surroundings have spent much effort into raising awareness on e-mobility and especially on integrated mobility solutions. In addition to the growing awareness for clean mobility, the number of electric vehicles in the urban area was multiplied and the growing charging infrastructure makes the use of e-mobility solutions in Graz and its surroundings fairly easy. Combined with the well-planned public transport and the high rate of bicycle-use in Graz, the development of the city is remarkable.

In order to foster this development it is important to identify all relevant target groups and exert a thorough analysis. The requirements of individual target groups play a key role. The strategy of each project should be oriented to these requirements. An advantage of the region Graz is the highly concentrated automotive industry, which leads to new initiatives for the mobility of the future. Moreover, through collaboration with economy and

research it was possible to integrate master theses and bachelor theses into the projects. Another key task is to have an interdisciplinary approach when it comes to work with partners from different fields and the integration of target groups. New contacts and exchanges with them should be established and developed.

The Styrian Automotive and Mobility industry is at the forefront of clean mobility, putting not only huge efforts in R&D for sustainable powertrains and e-mobility solutions and realizing numerous research projects together with Styria's universities and universities of applied sciences; but also realizing e-mobility as a successful business case over and over again. This way has to be pursued in the future, since Graz has to cope with a high amount of fine dust due to its geographic position.

**Electro mobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**1. Local or Regional authority**

Birmingham City Council

**2. Name of the initiative**

A City Blueprint for Low/zero Carbon Refuelling Infrastructure

**3. Good practice field/s (infrastructure, training, financing, etc.)**

Regional low/zero Infrastructure development strategy (see link as below) provides an integrated approach for developing all energy vectors, including electro mobility, CNG/LNG & LPG gas, bio-fuel and hydrogen infrastructure requirements and business demand, supporting city and regional policy, communication and economic business case promotion.

[http://www.makingbirminghamgreener.com/wp-content/uploads/2015/02/BCC-City-Blueprint\\_Feb-2015\\_FINAL\\_online-version.pdf](http://www.makingbirminghamgreener.com/wp-content/uploads/2015/02/BCC-City-Blueprint_Feb-2015_FINAL_online-version.pdf)

The City Blueprint for Low Carbon Fuel Refuelling Infrastructure sets out the infrastructure needed to support the deployment of low and ultra-low emissions vehicles in Birmingham. The report was widely disseminated to vehicle users and fuel suppliers, and leading directly to the first wave of infrastructure deployments in the city , including electric infrastructure development focussing on public sector take-up ;electric taxi-only charge point infrastructure deployment planning taking into account current electric capacity requirements and future -proofing through renewable energy production requirements for electro mobility and operation of other low carbon refuelling alternative infrastructure requirements eg electrolyzers for hydrogen production, storage facility

requirements, low carbon fuel station (CNG, LNG & LPG) pump operation facilities.

## **4. Content**

The City Blueprint for Low Carbon Fuel Refuelling Infrastructure defines the infrastructure needs for low and ultra-low emissions vehicles in Birmingham. It built on previous work such as the Birmingham Connected 2020 Transport Strategy (Birmingham's Strategic Urban Mobility Plan), and provides a detailed geographical blueprint for deploying infrastructure for electric as well as hydrogen, gas and biofuel vehicles.

- **Defining the 'state of the art' for low carbon vehicles** – the Blueprint sets out the current state and future trends in the low and ultra-low emission vehicle sector, highlighting the availability of models, their costs and performance, and benefits for fleet operators. This greatly increased the awareness and interest of prospective buyers in low emission vehicles during the consultation phase, by providing a single, comprehensive reference guide to all available options.
- **Quantifying the demand for low carbon fuels in Birmingham** – extensive consultations were carried out with fleet operators to quantify the number of low emissions vehicles they are likely to operate now and in the future. Critically, this also included their likely locations in terms of driving patterns and their operating base, which provided clear insights into their infrastructure needs, as well as emissions reductions at local air quality 'hotspots'
- **Mapped the infrastructure needs at specific city locations** – the study identified the number of electric charging and low carbon refuelling points to meet users' needs, and also defined specific locations for this infrastructure. This map-based blueprint has been invaluable in providing a shared vision of infrastructure needs to planners, fleet operators and fuel suppliers, allowing rapid progression to real-world deployments following the publishing of the blueprint

The blueprint made clear recommendations to Birmingham City Council and private sector stakeholders on how to support the next phase of deployments. Implementation of the actions has already begun, with a detailed feasibility study for 4 CNG/LNG stations at specific locations in the Birmingham area already underway, in addition to ongoing work on retrofitted taxis to reduce air quality in key areas of the city. More specifically, 5 Birmingham City Council buildings are now set to have fast charge points with leased EV vehicles currently being procured. The first Birmingham City Council employee has recently had their home based small van work vehicle changed to an EV van with a charge point facility installed at their home.

For Birmingham, in considering the infrastructure development requirements for electro-mobility, it is critical to recognise this development as part of a mixed economy for low/zero carbon refuelling options that are relevant to different vehicle sizes and duty cycles, recognising the relevance of the electric infrastructure to mobilise other low carbon fuel options (eg production of hydrogen, maintaining storage facilities and pump operation facilities). The 'City Blueprint' is innovative in a number of ways.

Firstly, the use of a mapping-based approach rather than only considering infrastructure needs at a city level greatly increased its impact. It allowed fuel suppliers and infrastructure providers to understand constraints on deployment locations (e.g. the availability of gas connections at different pressures for CNG stations was mapped based on National Grid data), as well as understanding the numbers and locations of named fleets likely to provide a base load of fuel demand for the stations. By making deployment opportunities real in this way, the study has generated significant interest from infrastructure operators and fuel suppliers, allowing a rapid transition to feasibility studies and deployments. The use of mapping also provided Birmingham City Council and its planning teams with detailed information of where infrastructure will be needed. This allows future planning applications to be assessed in terms of their compatibility with the blueprint, ensuring

that each new deployment is consistent with existing ones and that they form a coherent network that provides maximum convenience to vehicle users.

Secondly, the study combined a detailed assessment of the supply of low carbon vehicles (e.g. introduction dates into different vehicle classes and sizes), with a bottom-up estimate of deployments in each of the major fleets in Birmingham based on workshops and interviews. This approach provided significantly more robust estimates of future demand from real decision makers than simple forecasting based on the annual growth rate of the market, which in turn provides higher confidence to infrastructure investors on likely fuel demand and hence profitability.

Finally, the study was innovative in the nature of the consultation with local stakeholders. Early outputs of the work, such as the roadmaps of vehicle availability and costs, were used as inputs to the workshops with fleet operators. This allowed the workshops to educate users on vehicle opportunities and infrastructure developments at the same time as gathering data on their likely deployment plans, helping to build interest from an early stage in the study. The data on likely vehicle purchases was in turn used in discussions with infrastructure operators. These clear investment opportunities led to very close engagement from several providers, ensuring access to high quality data for the analysis and building momentum towards real deployments.

Blue Print strategy provided the baseline for next stage electro mobility strategic feasibility study developments;

- 2 major electric taxi-only rapid charge hub facilities at Birmingham's New St Station and at Tyseley Energy Park based on the A45 main route to Birmingham Airport. This will be supported by on street 'taxi-only' charging facilities within the city centre and within key sites within outlying community sites.
- Through the ELIPTIC EU programme investigation and feasibility studies will be developed to analyse the alignment of electric bus infrastructure and routing requirements with the current development of the electric infrastructure being developed for the

electric tram. At present, a new city centre tram line is being installed in the city centre of Birmingham. With plans for electric-only buses, as part of bus operator fleets being discussed, issues about electric capacity to be able to run buses are a current concern for bus operators, and therefore stalling further developments. Potentially buses that operate in zero emissions mode within the 4 miles of the city centre could possibly be recharged using the tram infrastructure. Further, Birmingham City Council, working with Bus Operators, has started to investigate the possibility to introduce battery electric buses as a proportion of the fleet within the city centre and key routes into the city. The strategic positioning of charging stations is perceived to be one of the most important prerequisites for demanding / requesting the employment of electric buses from the operators (private companies) that are active in Birmingham. To approach this planning issue, BCC participates in the Climate-KIC project "Municipal E-Bus Planner 2", which commenced in August 2015. The project will analyse the bus networks of 5 different European cities and assess the technical feasibility of substituting conventional fuel buses by battery-electric ones by trialling an innovative planning and optimisation approach, considering the local specific operational peculiarities. Mun-E-P 2 aligns well with ELIPTIC on the timescale as it will also last 3 years.

## **5. Partners**

Birmingham City Council commissioned Element Energy (who are specialists in low carbon infrastructure development), who managed key inputs from AMEY, Arriva, Asda, Birmingham and Solihull Taxi Alliance, British Gas, Carillion, Centro, Coca Cola, Commercial Group, FTA, Heart of England NHS Foundation Trust, Howard Tenens, John Lewis Partnership, Marks and Spencer, National Express, Network Rail, nPower, Royal Mail, Sainsbury's, Star Cars, University of Birmingham, UPS, Veolia, West Midlands Police, BRC (GB) Limited, Cenex, Dearman Engine Company, EBRI – Aston University Business School, Gas Bus Alliance, Gasrec, Severn Trent, Transport for London and Western Power Distribution.

## **6. Financing**

This project was financed through Climate-KIC EU funding.

## **7. Comments (obstacles, recommendations, etc.)**

During the study itself, dissemination of early results and Birmingham's overall low emission vehicle strategy was achieved through workshops and bilateral interviews with local stakeholders, including fleets, infrastructure operators, local equipment providers and Council teams. This ensured early buy-in to the project and led to high profiled interest in the final report. A widely publicised launch event was held in March 2015.

**Electromobility Guide for Local and Regional Authorities**  
**Part 2**  
**Local and regional good practices**

**EXAMPLE 1**

**1. Name of the regional authority**

Poitou-Charentes

**2. Initiative Name**

Deployment of electric vehicles in the region

**3. Area of good practice (infrastructure, training, financing, etc.)**

Assistance for the acquisition of electric vehicles

**4. Content**

As part of an economic development strategy to support innovation and create jobs that cannot be outsourced in particular through Environmental Excellence, the Poitou-Charentes Region has focused on strategic segments such as electric mobility. It is also a response to the global challenges of climate change by reducing greenhouse gas emissions.

Indeed, with more than 15,000 jobs in the third industrial sector of the region, the development of electric vehicles is at the core of innovations in the mechatronics sector. More than 50 companies either from the Poitou-Charentes region or established there conduct business in industrial automation, wiring and electrical, electronic and electro-technical technology, and precision mechanical engineering with world leaders in traditional, hybrid and electric vehicles, including Leroy Somer, Saft, Schneider Electric, Heuliez Bus, Saintronic, and others.

Therefore the challenge for Poitou-Charentes is to propose and promote the development of new forms of mobility and the necessary evolution of behavior vis-a-vis individual vehicles.

This commitment **is part of the implementation of the Regional Plan for Sustainable Mobility** and notably resulted in 2011 in the creation of the

Regional Fund for the Development of Eco-Industries and Electric Vehicles (FRDEIVE) with € 12 million to support:

- the acquisition of electric cars, scooters and bicycles (VE);
- the deployment of charging infrastructure;
- energy storage;
- the development of new services and modes of travel including car sharing;
- research.

As such, the strategy developed by the Region aims for electric roaming or travels throughout the territory of Poitou-Charentes. This involves contributing:

- to the significant increase in the acquisition of electric vehicles;
- to coherent territorial coverage with charging terminals adapted (fast, normal) to different types of travel;
- to the systematic consideration of interoperability;
- to the development of management and control systems of electricity networks;
- to the consideration of the storage problem.

For a rapid and massive increase in the acquisition of electric vehicles, the Region has:

- introduced a financial support plan open to all;
- equipped high schools with 100 electric vehicles ensuring promotion and awareness of the educational community and young people;
- modernized its own vehicle fleet with EVs;
- developed a car sharing service of electric vehicles (32) through the creation of the SPL RegionLib.
- created a cluster of electric mobility to support industrial development and innovation.

## **5. Partners**

Companion Policy of the State and the Region to support the acquisition of electric vehicles.

## **6. Financing**

Since 2009, 1018 vehicles have received regional support for a total amount of aid of € 2,535,069.

The Region contributes, to date, a fixed amount of aid of € 1,000 per electric car in addition to the environmental bonus of € 6,300 and the aid of € 3,700 for turning in a diesel vehicle over 14 years old.

## **7. Comments (obstacles, recommendations, etc.)**

The regional aid in addition to very strong national aid helps households access the electric vehicle market. The sum of these two purchasing aids clearly makes the electric car supply competitive with respect to thermal mobility over 5 years.

### **EXAMPLE 2**

#### **1. Name of the regional authority**

Poitou-Charentes Region.

#### **2. Initiative Name**

Deployment of electric charging infrastructure for electric and hybrid vehicles in the region.

#### **3. Area of good practice (infrastructure, training, financing, etc.)**

Infrastructure, finance: aids the implementation of charging infrastructure of electric vehicles.

#### **4. Content**

In a very rural area with a low-density urban fabric, the challenge was to deploy, across the entire territory, a network of charging terminals.

This strategy materialized by:

- **The Regional Strategic Plan to deploy charging infrastructure** with a **target of 3000 charging points by 2017**. It applies to communities but also to businesses with the installation in particular of fifteen rapid automated payment terminals;

- A financial support mechanism for the deployment of charging infrastructure and new mobility services;
- A first regional Call for Expression of Interest to enable the Poitou-Charentes area to mobilize the national funding for Future Investments and get the strong involvement of local communities; The Region presented a collective file<sup>12</sup> with 11 communities or Public Institution of Intermunicipal Cooperation as partners. **These 11 communities represent 746 towns, more than one million inhabitants, and plans to deploy 883 charging stations**
- A second Call for Expression of Interest (CEI), in September 2014, increasing the deployment of new charging stations especially in blank areas still not covered (Charente and Charente-Maritime) and to install rapid charging terminals offering better service for roaming;
- Multi-partner commitments to ensure interoperability and the structuring of electric roaming for subscribers of different services in place. From now on, customers of several networks will benefit from a commercial subscription shared between operators. This interoperability also includes Vendee, a department in the neighboring region of Pays de la Loire.

Poitou-Charentes already has a network of more than 300 charging stations including a hundred for car sharing services.

From 2012 to 2014, 58 terminals, meaning 111 charging stations, were supported for a total of more than € 604k by communities and innovative businesses.

109 new charging terminals, meaning 218 new charging stations for an investment of € 1.3 million are being scheduled.

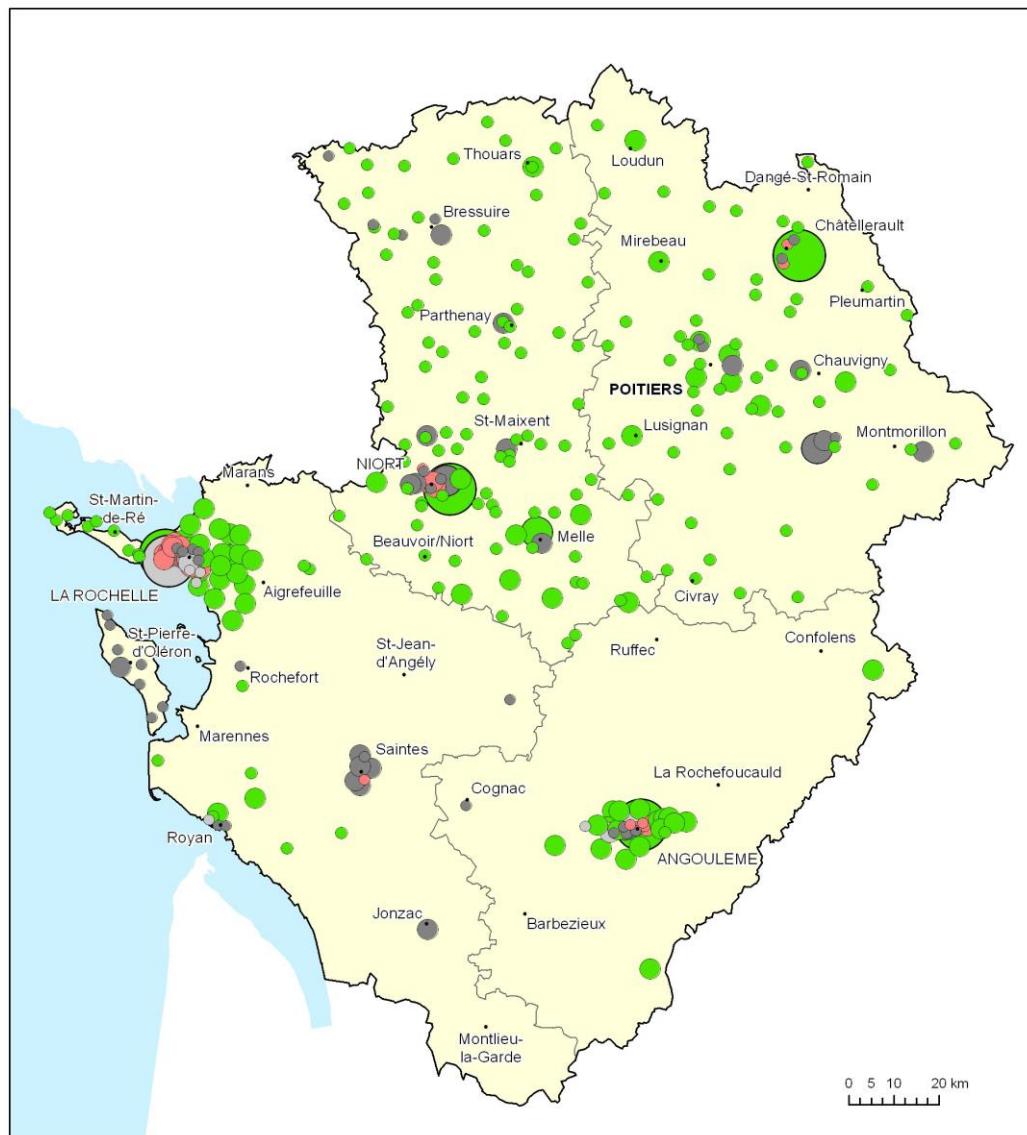
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<sup>12</sup> Positive opinion on January 17, 2014 - funding of 50% meaning € 2,690,074 from Future Investments and of 20% meaning € 1,084,251 from the Region

<b>Year of scheduling</b>	<b>Number of beneficiaries</b>	<b>Number of terminals</b>	<b>Number of charging stations</b>	<b>Amount of investment in k €</b>
2012-2014	18 communities and businesses	58	111	604
2014-2015	11 communities	443	883	5,421
2015	12 communities and businesses	109	218	1351
<b>TOTAL</b>		<b>610</b>	<b>1212</b>	<b>€ 7376 k</b>

The map below shows the current and projected deployment of charging terminals.

**DÉPLOIEMENT DES INFRASTRUCTURES DE RECHARGE  
POUR LES VÉHICULES ÉLECTRIQUES EN POITOU-CHARENTES**  
Février 2014



**Nombre de bornes**

○ 1

○ de 2 à 5

○ de 6 à 10

○ de 11 à 52

**Nature**

AMI

Accès privé

Accès public

Autopartage

**632 bornes soit 1197 points de recharge dont :**

- 94 pour les services d'autopartage
- 50 en accès privé
- 170 en accès public
- 883 prévu dans le cadre des 13 collectivités lauréates de l'appel à manifestations d'intérêt national

Source : Région Poitou-Charentes (février 2014)

© Région Poitou-Charentes 2014

## **5. Partners**

Europe Companion Policy (2014-2020 FEDER / FSE), the State (Future Investment Program managed by ADEME) and the Region.

## **6. Funding**

The operations are supported by the Region, the State through the Future Investments program managed by ADEME and Europe through the 2014-2020 FEDER / FSE fund. € 5 million has been committed.

## **7. Comments**

In order to promote electric roaming, the aid is conditional on the effective supervision of the terminals.

GIREVE, the National Group for Roaming Electric Vehicle Charging, a national player of reference, unites the Caisse des Dépôts et Consignations, major car manufacturers, and major producers and players in the French electricity sector. It aims to facilitate access to electric charging, to make it transparent and open (interoperability), to streamline the different types of use and payment (reservation, ticket systems, electronic banking, etc.).

The oversight of a supervisor will enable interoperability of systems and the deployment of ticket systems as needed.

This group aims to represent France at the European level in this area.

### **EXAMPLE 3:**

#### **1. Name of the local authority**

Societe Publique Locale Poitou-Charentes Auto-Partage [Poitou-Charentes Car Sharing Local Public Company] (joint stock company with a Board of Directors).

[www.regionlib.fr](http://www.regionlib.fr)



## **2. Initiative Name**

Deploying a car-sharing service of 100% electric vehicles across the region.

## **3. Area of good practice (infrastructure, training, financing, etc.)**

Infrastructure, service, interoperability: implementation of an interoperable and intermodal regional system of electric vehicle sharing.

## **4. Contents**

The Poitou-Charentes Region has decided to set up a car-sharing service of 100% electric vehicles over its territory. This approach is at the crossroads of three major policies of the Region: economy, transportation and the environment.

Save: the electric car has played a role in the turnaround of the local automotive industry.

Transportation: provide solutions to ensure the continuum of mobility when stepping off trains, intermodality and interoperability and to serve the changes in mobility habits

The environment: the electric car contributes greatly to zero particle emissions and significantly lower carbon or NOx weight of km traveled.

Regionlib, [www.regionlib.fr](http://www.regionlib.fr), is a 100% electric car-sharing regional company established in 2012 as a Local Public Company. It is a joint stock company with share capital of € 385,000. (90% of the capital for the Region). Its launch strategy: deploy in medium-sized cities such as Saintes, Niort and Chatellerault and in businesses.

Service features in September 2015:

- 35 cars (Mia, Zoe, Kangoo, NoSmoke): Half of the fleet in the city, half in companies
- 275 users (100 in the city)
- 200 subscribers (75 in the city)

- over a service period of one month:
  - 40% of subscribers use the service during the month
  - drive 10,000 km, or 1.25 t of CO<sub>2</sub> not emitted
  - make 450 reservations
  - rent the cars for 3300 hours in the city

These are short-duration uses (2 hours in the city approximately) for small travel distances (average of 20 km in the city). The objective is that the car changes hands as much as possible during the day.

### **Marketing**

The target users are households with more than 2 cars, the objective being that they give up one, and they car share. Of course the service is also for users who drive very little or rarely, or those who are wondering about purchasing a vehicle.

Car sharing, which is not simply car rental since it is intended for subscribers, makes it possible to communicate with a community of users; social tools like Facebook and Twitter are used a lot to share, facilitate, and promote this new mobility.

### **The different types of car-sharing managed**

A car-sharing model is implemented in companies and other organizations in order to do car-sharing in the day as part of work and do car sharing in the evenings and on weekends with company employees. As such carpooling between work and home is promoted. In this context the system is at the service of Corporate Travel Plans.

In total the company manages and experiments with 5 activities:

- car sharing in the city using car sharing stations with electric cars
- electric charging in the city, using these same stations with one or more places dedicated to charging subscribed vehicles exterior to the services
- car-sharing in companies for the benefit of the company and its employees. This solution promotes carpooling and brings a real environmental solution to commuting between home and work (majority of daily trips).
- car sharing in tourism establishments: cars used less during the summer in cities are assigned to campsites or other tourist residences, to offer a mobility solution. This also makes it possible to

- discover electric cars in a holiday atmosphere. This also makes it possible to imagine ecological slow tourism journeys.
- rural car sharing has been tried with great difficulty and reluctance on the part of people who do not give up their car or mobility solution.

The national interoperability (excluding Groupe Bollore) of REGIONLIB has been acquired commercially via the national network Citiz.

In terms of access to charging terminals, a partnership with the GIREVE group is being finalized. Intermodality is promoted especially by the benefit of subscription to Regionlib, very reduced or free for subscribers of the TER and urban buses.

This policy of offering new mobility is not a substitute for other means of public transport. Its mission is the discovery of electric mobility, a return to organizing and planning one's travels (I anticipate, I reserve, I drive, I return the car). This functional economy also makes it possible, by the fact of paying only for what one drives, to save a lot of money.

## **5. Partnerships**

In the capital of the company: Poitou-Charentes Region, departments of Deux-Sevres and la Vienne, Metropolitan areas of La Rochelle, Saintes, Angouleme, Niort, Chatellerault.

## **6. Funding**

The operations are supported by investments by the Region. The operation is balanced between remuneration for the provision of public service and the service's own revenues. This small structure is based on a balance sheet total of € 1 million and revenues of € 500 k.

## **7. Comments**

This contemporary mobility, which cannot be a substitute for public transport solutions, makes it possible to introduce new forms of mobility and interaction between different modes of travel.

## **EXAMPLE 4**

### **1. Name of the regional authority**

TVE Company (Tour Véhicules Électriques) [Electric Vehicle Tour]



### **2. Initiative Name**

Tour Poitou-Charentes Véhicules Électriques (TPCVE) [Poitou-Charentes Electric Vehicle Tour]:  
Electric car rally  
<http://tour-ve-poitoucharentes.com/index.html>

### **3. Area of good practice (infrastructure, training, financing, etc.)**

Promotion, awareness, communication, demonstration

### **4. Contents**

Since 2010, the Poitou-Charentes Region has supported the private communication company: Tour Véhicules Électriques [Electric Vehicle Tour] (TVE). After using two Eco and Mobility vehicles in the 2010 Monte Carlo New Energies Rally, TVE organized in Poitiers the Electric Vehicle Pioneer Rally in 2011 and then the 2012 and 2013 Poitou-Charentes Electric Vehicle Tour (40 participants, 13 brands and 18 different models this year) and the 2013 Moselle European Electric Vehicle Rally.

In 2014, TVE carried out 3 Electric Vehicle Tours: a department-wide tour, the Vendée Electric Tour; a region-wide tour, the Poitou-Charentes Electric Vehicle Tour; and a cross-border rally, the European Electric Vehicle Rally (Moselle, Germany and Luxembourg).

Thus, the Poitou-Charentes Region and EDF have been partners since the first day of this initiative, which deploys a promotional activity strictly in line with the regional electromobility policy: promotion of electric vehicles, deployment of charging terminals, demonstrations of new uses, effectiveness, efficiency of electric mobility, renewable electricity, slow tourism, etc.



In 2015, the Poitou-Charentes Electric Vehicle Tour wanted to demonstrate that:

- There is indeed an operational network of charging terminals across the territory, and promote the interoperability of charging systems.
- The Energy Transition and Green Growth Act concerning the local production of electricity using an increasingly renewable mix is developing in all territories. For this, the rally offers industrial tourism oriented toward different modes of production of electricity and promotes the link between electric vehicles / charging infrastructure / electricity generation.

The competitors drove more than 180 km per day for a total distance of 350 km between the towns of Cognac and Poitiers.

40 cars were involved in this eco-driving Rally for communities, businesses including manufacturers and dealers and clubs, networks and associations of companies using electric vehicles.

This rally is for 100% electric vehicles. Some plug-in hybrids and electric vehicle extenders can participate in the Showcase Tour.

Cars: Nissan Leaf et E-NV200, Kia Soul, BMWi3, Peugeot Ion, Renault Fluence, Zoe and Kangoo, Citroen Berlingo, FAM F-City, Tesla

Categories: CHADEMO charging, Over 19 KW normal charging, fast charging, Utilities, Less than 19 KW

At each milestone, electric car demonstrations and tests are open to the general public.

## **5. Partnerships**

Poitou-Charentes Region, Electricity Company EDF, car manufacturers.

## **6. Funding**

The 2015 budget of TPCVE is € 75 k excluding tax, with a financial contribution from the Poitou-Charentes Region of € 22 k.

## **7. Comments**

Over the years, the vehicle fleet has significantly increased the diversity in the supply of electric vehicles, but also the daily vehicle range.

With a first rally that could rely only on electric recharges of 3 kVA, we find in its latest edition that the new electric vehicles need accelerated or fast charging raising the question of the ecological balance of each kilometer driven.

