

Success of electromobility in France: strong political involvement and effects

Marie Castelli¹, Joseph Beretta²

¹*Genral Secretary, Avere-France, 22 avenue Jean Aicard 75011 Paris, France*

²*President, Avere-France, 22 avenue Jean Aicard 75011 Paris, France*

Summary

With more than 100 000 electric vehicles on the road, France is the first European market. This success is based on a strong political involvement since 2007. This paper aims at explaining the impact of the progressive rise in political support and its effects on the market.

1 Introduction

1.1 Avere-France: the national association for the development of electromobility working hand to hand with public authorities

Avere-France is a professional association founded in 1978. It is a member of the AVERE European network. As a centre of information and expertise, it gathers and represents more than 140 entities, such as vehicle and equipment manufacturers, research centres, consultancies, municipalities, urban mobility services providers or professional users of electric vehicles.

Its main objective is to promote the use of battery, plug-in hybrid and fuel cell electric vehicles - individually and in fleets and for priority uses – in order to achieve greener mobility for cities and countries.

The main activities to achieve these objectives are related to lobbying, communication, networking, monitoring, and participation in French sustainable transports policy making.

Its main activities regard:

- Communication and promotion of electric mobility
- Lobbying towards national and local public authorities
- Creation of synergies in the French electromobility sector
- Workshops and meetings on specific topics (such as subsidies on vehicles, interoperability, access to private and public charging points, batteries improvement...)
- Cooperate with AVERE
- Organize and implement actions to promote its members.

Thanks to its expertise, Avere-France has been a strong partner of French policy makers for years. It has accompanied it in the identification and thinking on solutions on every stake faced by electromobility today.

1.2 Origins of the French national political support of electromobility

Since 2007, and the *Grenelle de l'Environnement*, the growth of electric mobility has been a priority for French authorities. At that time, the observation was clear: the advantages of the electric vehicle to the challenges of sustainable development are indisputable.

Indeed, French authorities asserted electric mobility represented an opportunity in a multitude of fields:

- fight against global warming
- combating air pollution
- energy independence and trade balance of France
- green growth and related jobs

Since then, that France has launched into active support of electric vehicles whose effects are now visible. This policy applies both to vehicles, of all types, and to charging points.

Indeed, French authorities have developed a large scale of policies regarding electric vehicles, progressively addressing every stakes faced by the industry.

2 A 360° policy addressing every stakes of electromobility development

The scope of public policies developed since 2008 in France covers all aspects of electromobility growth:

- Prices of the vehicles for people
- TCO
- Public network of charging infrastructures
- Private infrastructures
- Public transports
- Benefits for EV users

2.1 Vehicles

2.1.1 The ecological bonus

The most important support given to sustain electromobility is the ecological bonus. Since 2007, it is indeed possible to benefit from a subsidy on the purchase of an electric vehicle.

This measure has been created as a way of reducing the price of electric cars and make it competitive compared to ICE vehicles. It is financed by the penalty applied to the most polluting vehicles. This is

basically the polluter pays principle. The malus comes to feed a dedicated envelope in the state budget, which allows the creation of subsidies for the purchase of an electric car.

The subsidy amount is revised every year during the Finance Act. This implies that its amount has evolved a lot since its launch. Basically we went from a grant of 7 000 euros initially, to 6 300 euros until the end of 2016.

Since 2017, the bonus is at 6000 euros for electric light vehicles (M1, N1) and at 1 000 plug in hybrids. There are of course conditions to respect:

- Be an individual or professional living or established in France
- The vehicle must be new
- It must be kept for at least 6 months and have travelled 6000 km before being sold
- If rented, it must be at least for 2 years
- The amount of the grant must not exceed 27% of the purchase price

In 2015, this bonus has been completed by a “superbonus.” It allows anyone who scraps a light vehicle registered before 2006 to benefit from:

- 4 000 euros extra grant for an electric vehicle
- 2 500 euros for a plug in hybrid

In 2017, new subsidies have been created to support the electric two wheels market. L-category vehicles (scooters, motorcycles, tricycles, quadricycles) have been entitled to a bonus of 250 € per kWh of battery embedded, the whole grant being limited to 1 000 euros.

Again, there are criteria. It is necessary to:

- Be an individual or a professional established in France
- Hold the vehicle for at least 1 year
- Have an engine power of more than 3kW
- Vehicles using lead-acid batteries

A last bonus of 200 euros has been created in February 2017 for electric bicycles. Strong criteria have been imagined to avoid financing low quality materials:

- It is limited to 20% of the purchase price of the vehicle
- The bike must be held for at least 1 year

The following are excluded from the scheme:

- Vehicles using lead-acid batteries
- Vehicles having an engine power of more than 3 kW
- Individuals who have already benefited from a subsidy

2.1.2 Taxation of companies' vehicles

Besides, the government realized that it was more expensive for companies to have an electric vehicle rather than an ICE. This unfavourable TCO is due to the low purchase price and favourable taxation of diesel cars especially and can only be overcome if an electric vehicle is highly used.

As a result, a series of tax incentives have been put in place to help improve the business model of electric vehicles for companies:

- 100% electric vehicles are exempt from tax on company vehicles
- Companies can have up to € 30,000 of amortization of the price of a 100% electric car deducted from their corporate tax and 20 300 euros for a plug in hybrid. While it's only 18,300 euros for ICE.

2.1.3 Development of low emission cars among public fleets

Since 2012, administration and local authorities are strongly advised by the government to buy at least 25% of clean cars, defined as electric and hybrid, when they purchase new vehicles. The energy transition law, voted in 2015, has strengthened this measure by creating an obligation of buying 50% of low gas emission vehicles (defined in the law as electric cars or engine cars with low emissions of and CO₂ and pollutants, whose levels will be regulated by a government decree) when there is a fleet renewal for the government, local authorities and associations, national companies, renting companies and taxis.

Electric buses are also pointed by the French legislation. Indeed, by 2018, all public transport operators will have to have at least 50% of “low emission buses” (electric, hybrid, gas or hydrogen) in their fleets renewal.

2.1.4 Crit'Air certificates

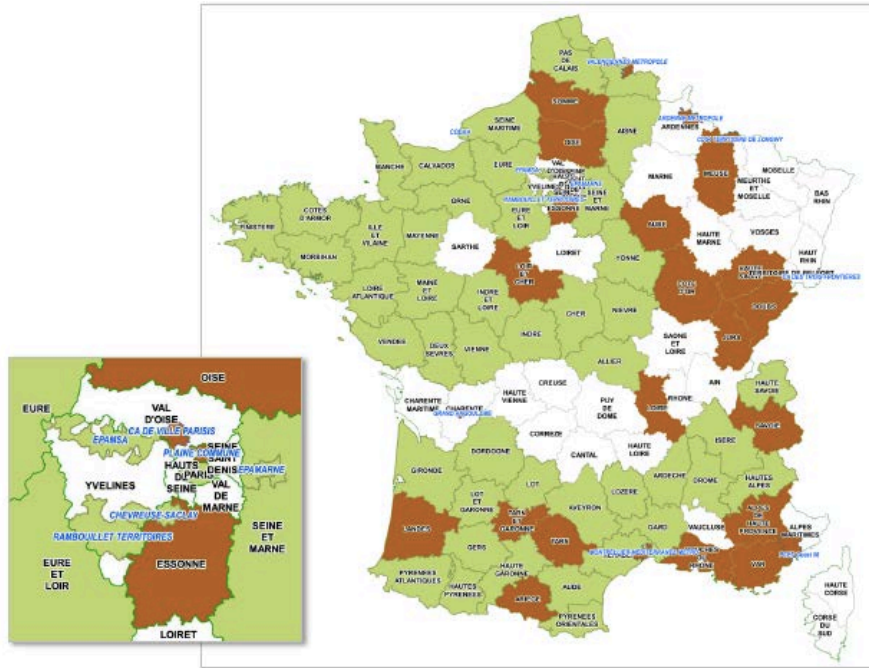
A final advantage has been put in place on electric vehicles. It is called the “air quality certificates”. These are vignettes created by the Ministry of the Environment. They make it possible to identify the level of pollution of the car. Ultimately, the idea is that access to polluting city centres will be banned through this system. The mayors actually have the power to create restricted areas, known as low emissions zones, and can use them for identification. Today, Paris and Grenoble already have created their low emission zones.

2.2 Charging infrastructures

On the other side of the cable is the charging point. And here again, the French government realized that it was necessary to act and put in place several solutions to facilitate the transition to electromobility.

2.2.1 Financing public infrastructures

For the public network, an envelope of 60 million euros was released under a program called “the investment for the future”. The idea: offer local authorities to finance 30 to 50% of their projects of charging points networks, depending whether they install fast or normal charging points. The strategy being to orientate them towards normal charge in order not to stress the grid. And it worked: more than 20,000 public load points are being deployed. Almost all the territory is to be covered.



In addition, in August 2014, the State created a “national operator” status for private projects. The principle is that if a company has a project on more than two regions, which ensures a balanced territorial network, it can benefit from the exemption from payment of the royalty for occupation of the territories of the communities. And that improves the economic model of his project.

Today, 3 projects have been accessed this status:

- The “16K” project of Bolloré (16 000 slow charging point all over France)
- The rapid charge corridor along the Rhone valley of CNR (56 fast charging points)
- The “Corridor” project of Sodetrel (200 fast charging points on highways)

2.2.2 Private infrastructures

Because buying his load point in addition to his car is not always obvious, funding assistance has also been put in place for individuals.

First, a “right to plug” was introduced in 2014. This means that there is no obligation to ask permission of the co-owners to install a terminal in the common part of an apartment building. As soon as you pay for everything, you only have to inform them at the general meeting.

Besides, people can benefit from support to finance their infrastructure:

- A tax credit of 30% of the cost of the purchased equipment
- A subsidy covering 50% of the cost of their installation if they live in a collective buildings. This program, called ADVENIR, can go up to 1660 euros if the charging point is shared.

These two aids, tax credit and Advenir, are cumulative.

Companies also benefit from this Program up to 40% of their investment. The grant for professionals can go up to 1860 euros if the charging point is accessible to the public.

Finally, a decree was published on 12 January 2017 to lay down the essential rules for the harmonization of recharging in France:

- Plug Standards

- Location of charging point
- Access and interoperability of publicly accessible charging points
- Payment
- Qualification of installers

2.2.3 New buildings

The French government also decided to prepare the future. Since 1 January 2017, all newly constructed buildings must be "compatible with charging point installation". Basically, this means that they have to provide the ducts, cable trays and power reserves necessary for the future connection of charging stations.

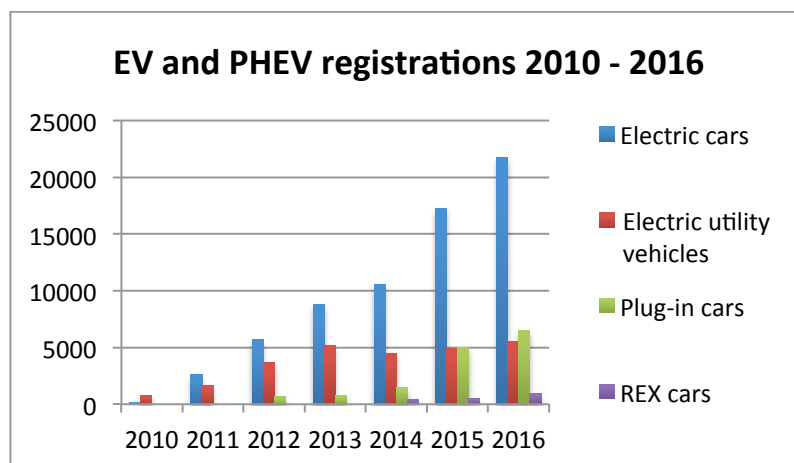
The mandatory pre-equipment rate varies according to the buildings and the size of the car parks.

Capacity	Type of parking				
	Housing	Service	Industrial	Public service	Theatres and shopping centres
< 40 parking spots	50% of the parking spots	10% of the parking spots	10% of the parking spots	10% of the parking spots	5% of the parking spots
> 40 parking spots	75% of the parking spots	20% of the parking spots	20% of the parking spots	20% of the parking spots	10% of the parking spots

3 Consequences: Market and uses

3.1 Evolution of electric vehicles sales in France

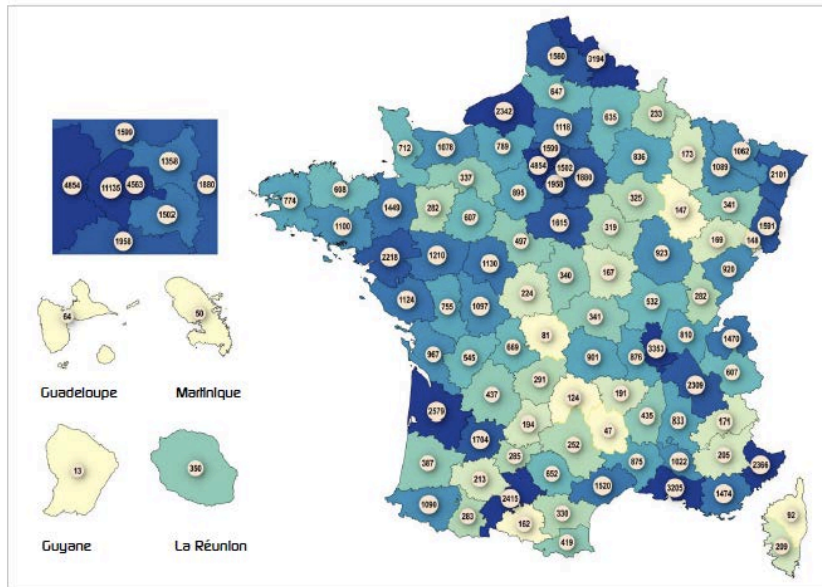
The effects of the public incentives on the prices of electric cars and charging infrastructures are notable since 2010. Indeed, even if the volumes are still too little to enable the sector to live without subsidies, the market is constantly growing at an impressive rhythm. With 27 307 100% electric vehicles registered in 2016, France is the first European market.



3.1.2. Local disparities

In spite of this dynamism, there are still strong local disparities. Most of them can be explained by gaps on the local incentives and charging infrastructures level.

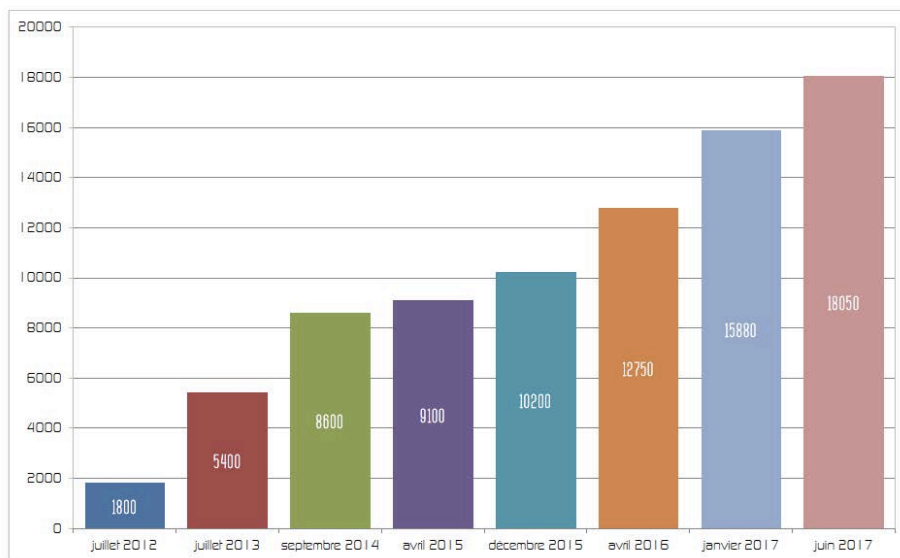
EV registrations since 2010 per department



3.2 Charging points

3.2.1 Public networks

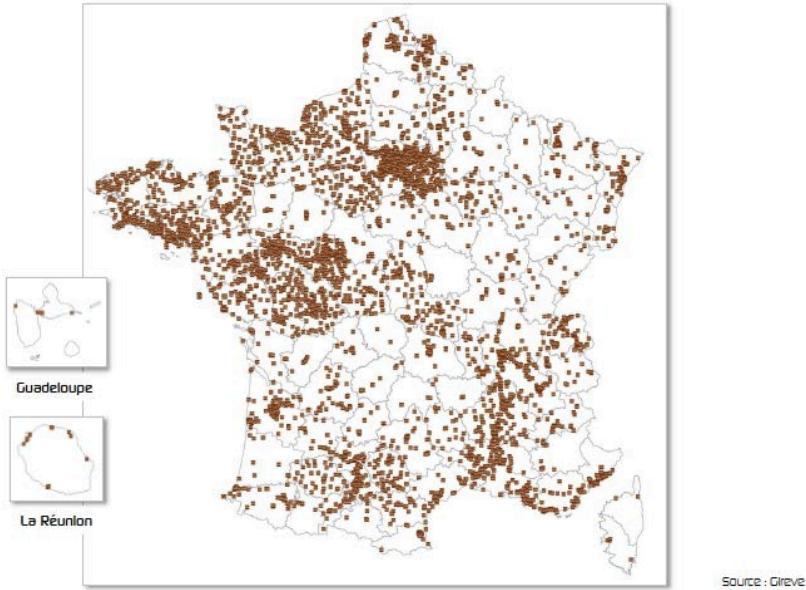
Number of accessible charging points in France, June 2017



Source : Greve

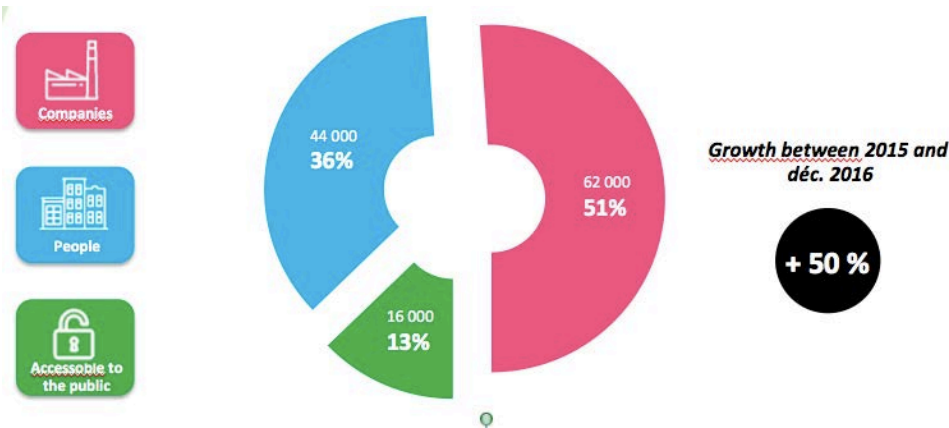
In June 2017, there were around 18 050 charging points accessible to the public for around 110 000 electric cars in France. The whole territory is covered and several projects are still implemented.

The localisation of the charging points depends on both public and private initiative. The West is better covered.



3.3 Private charging points

Even if public networks are developing fast, it is the private sector that is the most dynamic. In April 2017, there were around 122 000 charging points, 87% of them being private.



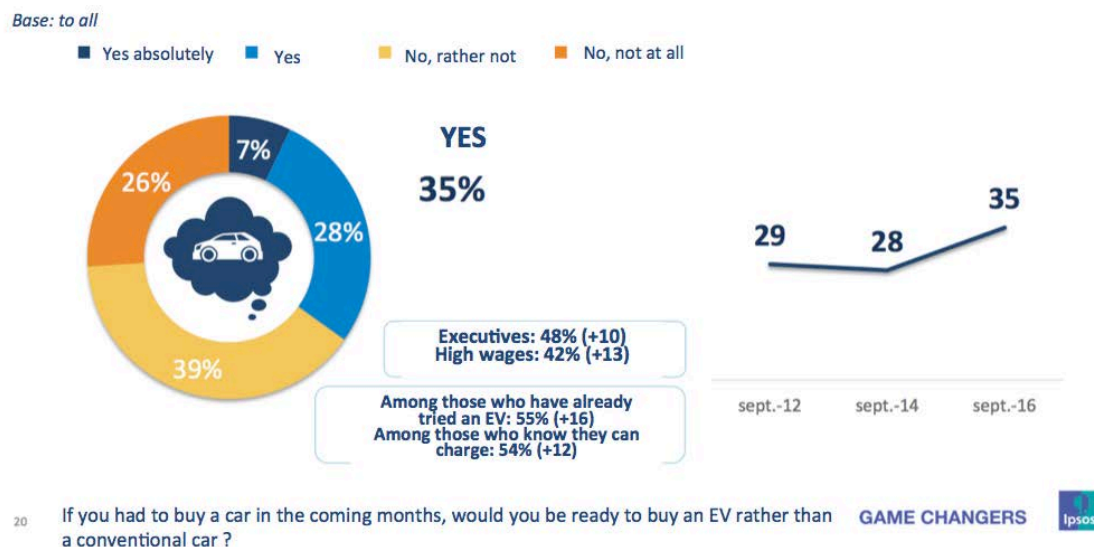
5 Conclusions

5.1.1 National and local political support: the key of success

In that positive framework, Avere-France and its partner, Mobivia, have ordered a survey in order to capture how the French perceive the electric mobility. This study is the third edition of an operation launched for the first time in 2012. It consists of both barometrical elements and new inputs about the relations between the French and electric cars. The aim was to determine whether the market growth and the political support had an impact on the French's willingness to buy an electric car.

According to the survey, the French are more and more inclined to electric cars: the image of EVs has improved and spread in the society, charging is not as much of an issue as before. This has to be connected to the evolution of the context, which, through events and legislation, has raised concern about environmental issues.

Intentions of buying an EV increases, especially among those who have already tried one and who know they can recharge it



5.1.2 Challenges

But the studies shows that the French still tend to overestimate the range they need, which is ten times more than the distance they actually drive a day. They also think that electric vehicles are really expensive and feel a lack of information on the topic. Indeed, they wish to know more about where to find charging points, how to charge, the technology, the costs...

In that context, this highlights how important explaining electric mobility is. It is one of the main issues to tackle to make electromobility evolve from a niche to a mass market. The EV ecosystem has not answered all the French's questions yet. The interest people demonstrate towards electric cars after they have tried one prove tests and awareness campaigns are the best tools to carry the French on the road of electric mobility.

Price may become the first obstacle on the way to the mass market. The coming second-hand vehicles will also be part of the answer to lower the purchase costs of EVs.

Authors



Marie Castelli, 32 years old, is the General Secretary of Avere-France since 2013. She is considered as one of the French electromobility sector experts in France. Before that, she was a consultant in a public affairs consultancy where she was specialised in energy issues.



Joseph Beretta, 63 years old, is the president of Avere France since 2012 and vice president of AVERE since 2014. After 40 years spent in the electric and car industry, and 3 years working for the French ministry of Research, he is one of the world's experts of electric vehicles, both on a technical, industrial and political point of view.