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The social construction of the market for electric cars in France: politics coming to the aid of economics

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Abstract: With so many questions being raised nowadays about the future of the global automobile industry, electric cars have tended to be viewed as an increasingly desirable sustainable solution for the sector. Encouraged by many states in Europe and across the world, this market – devolved from electrical technology – is slowly taking shape and has a serious chance of achieving future growth for the first time in its history. The present article tries to identify operational factors in the construction of the market for electric cars in France, highlighting the crucial role played by the state and public policy in the emergence of the new branch and in the construction of its demand. It also shows the definitional and symbolical conflicts which have structured debates on the future of the electric car and its commercial implications. Grasping these processes is decisive to understanding the current situation and the importance of representations on market building.

Keywords: electric car; sustainable development; green politics; political work; politicisation; new marketing strategy; French automobile market; Renault; France.

1 Introduction

The mass marketing of electric cars in Europe is a topical subject driving much current debate about the future of the automobile industry. In and of itself, this market does not yet exist. Moreover, its creation runs up against a host of daunting technical and economic constraints. Nevertheless, a great deal of political and media enthusiasm for

electric cars can already be observed in several European Union countries (France, Germany, Spain, Ireland, etc.). The conjunction of certain structural elements in this industry – as highlighted in recent research by the GERPISA group (Freysenet, 2009; Jullien, 2010) – together with the mediatisation of electrical solutions at different levels of governance in Europe, has slowly given shape to a hypothesis that used to be little more than a fantasy: within 20 years the electric car might account for a significant proportion of global automobile sales. Although no one can be sure of the future, more and more people adhere to the notion that ‘the future will be electric’, adding a new dimension to a technology that is already more than 100 years old (Shacket, 1979; Mom, 2004; Kirsh, 2000). As has already occurred on several occasions in the history of the electric automobile, many contemporary observers are particularly optimistic when predicting the product’s future penetration rate (Ernst & Young, 2010; J.D. Power and Associates, 2010; McKinsey & Company, 2011), with most advancing idea that the price of oil is a growing constraint that will lead to changes in user behaviour and household consumption choices. Although many studies (Centre d’Analyse Stratégique, 2008) and previous attempts to force this product on the automobile market have demonstrated the difficulties inherent to electric cars ever becoming a mass product (Fréry, 2000; Midler and Beaume, 2009; Bonnaure, 2009), certain leading automakers still view it as a potential alternative to the internal combustion engine thanks to technical improvements in lithium-ion battery technology. Among the carmakers most involved in developing electric cars on a mass scale, the French company Renault now offers a complete range of cars that operate almost solely using battery power⁴ and has invested more than €4 billion in this area. Benefiting from a comfortable position in its domestic market (22.19% share in France in 2010, excluding Dacia⁵) and from strong links to the French state (which has a 15.01% capital stake in the company⁶), the carmaker has turned France into a laboratory both for its marketing actions and for the rise of electric cars. Renault has also tried to develop its product range in Israel and Denmark through its partnership with Better Place but France remains the leading outlet for its ‘Z.E.’⁷ programme, both because of the commitments that the French state has made to facilitate household demand⁸ and also due to the bulk purchase of 100,000 vehicles by private companies and public institutions in France. These specifically French characteristics justify our focusing analysis on this one country. Currently, Renault is trying to create a market out of nothing by using persuasion and marketing instruments that are relatively new in the world of the automobile. Through the ‘political work’ of its managers (Jullien and Smith, 2008a, 2008b) – whereby Renault has tried to change the rules of competition in the national but also European automobile markets – and also through the product’s politicisation and active mediatisation, the company has attempted to spawn a new market that is not only driven by the vehicle’s technical, dynamic or commercial considerations but also relies on social and political aspects that go beyond a consumers’ economic rationality. By adopting a multidisciplinary approach at the intersection between economic sociology and political science, the goal of this paper is to begin explaining the processes at work today in the production and the take-off of this market.

First, however, we need to define our take on political science’s contribution to the analysis of market construction. In line with numerous studies in the fields of economic sociology and political science (Commons, 1934; François, 2008, 2009; Fligstein, 1996, 2001; Granovetter, 1985; Jullien and Smith, 2008a, 2008b), the present article is based on the idea that understanding a market means taking a transversal overview that accounts for the relevant economic problems’ different aspects and translates their complexity with

accuracy. Several French studies on these markets have already shown how important intermediate mediations (purchasers, advertising specialists, salespersons, etc.) are in defining the commercial relationships found here (Cochoy, 1999), along with the paramount importance of the ‘equipment’ required to operate in such markets (Garcia-Parpet, 2007). Note also the structuring role that institutions (understood here as a set of stabilised rules and norms) play in defining supply and demand (Karpik, 2000). Furthermore, studies by Fligstein (1996, 2001) have shown that this is a market structured by cognitive and formal rules that condition exchanges, the organisation of competition and the distribution of property rights. Such rules exist to reduce risk and uncertainty to avoid excessive competition. Contradicting traditional neo-classic economic thinking and rational choice theory, Fligstein has shown that the main driver for this market is not in fact competition, which generates uncertainty and destabilises existing positions, but dominant organisations’ development and preservation of local orders that lead to the stabilisation of social and power relationships (which the author calls ‘conceptions of control’). By so doing, Fligstein highlights the major role played by public authorities and private parties in the creation of markets and in the development of mechanisms and fields of action. Public authorities are no longer described here as neutral judges operating above companies but as entities that are constantly interacting with them. They are also embodied in rules defined on behalf of actors who depend greatly on the dominant groups’ interests. The diversity of coalitions between employees, companies and the state has created different kinds of market institutions reliant upon political and cultural contexts that are specific to each country. Fligstein’s approach reveals the complexity of the interrelationships between state and companies, showing that public action does not have to be a top-down process based on choices made by a particular entity. Instead, economic logic, public action and policy might be deemed intrinsically linked with economic agents’ behaviour, meaning that it is based on more than an individual organisation’s search for maximum profits. The idea here is that companies implement collective strategies to maintain long-term profitability. In this way, Fligstein’s approach enables one to generate a more accurate understanding of the interactions between companies and states and reveals the cognitive processes at work in markets.

Although all such studies offer analytical matrices that can be used to account for the construction of a market for electric cars, to portray the whole range of potential situations accurately there also seems to be a need for some other approaches that are specific to political science. If we agree that a ‘conception of control’ exists for the automobile sector, how might we explain the strategic differences between the two main French carmakers, Renault and PSA?

Where PSA’s behaviour matches what its German competitors are doing in terms of conducting research into new driving systems (hybrids, downsizing, and fuel cells), Renault has been happy to focus on building electric cars and does not research hybrid engines. Given the way in which the electric car market is constructed nowadays, the strategies being pursued by France’s two leading carmakers therefore run counter to both the thesis of a global stabilisation of exchanges and that of the emergence of a unique solution for this industry. Currently, Renault, PSA and the French state are working hard to define frameworks for apprehending industrial problems at this level. Given the role that the state plays in this definition effort, it is useful to see which tools are appropriate for analysing public action. Lagroye’s (2003) classical studies on politicisation and more recent approaches such as the ones developed by Jullien and Smith (2008a, 2008b)

demonstrate quite accurately how certain industrial actors can force the market to move in one direction by intervening in the problematisation of public policy, the definition of problems and the construction of the kinds of representations and frameworks by means of which an industry is apprehended. In addition, studies by Orléan (1992) on the ‘contagion of beliefs’ show why certain strategic choices are based on anticipations that do not accord with the hypothesis that people’s criteria are purely rational. In some situations, “operators act based on sentiments or beliefs that are not fully justified by the information available to them” (*ibid.*, p.685) and the representational frameworks circumscribing a particular strategic option are more important in producing a change or a market than economic rationality alone. Defining an approach in terms of social beliefs highlights the fact that in a given society, the meaning attributed to a technical object and its expected uses are key to understanding the market. As shown below, this is particularly apparent in the electric car market.

Drawing from the above-mentioned studies, in this article we therefore try to demonstrate how and why certain economic choices are made even when they do not respond to traditionally rational economic logic. As we will discover, electric cars have suffered from a deficit in legitimacy, with the production and dissemination of new systems of beliefs being indispensable preconditions for the market’s construction.

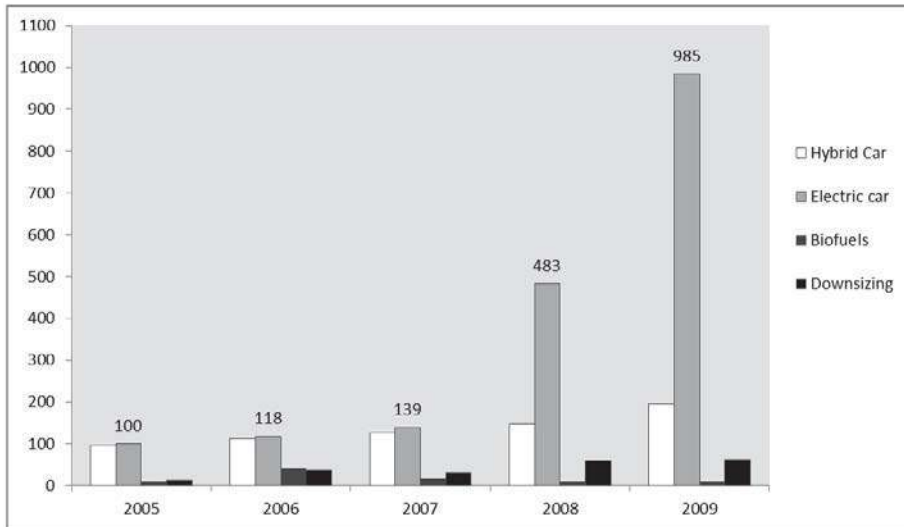
- 1 several phases involving the mediatisation of this technology can be identified and have enabled an initial understanding of the product by consecrating its renaissance
- 2 this phenomenon is accompanied by the marketing work that Renault has done, where the company has attempted to associate electric cars with the general challenges that it is currently facing by gearing its advertising effort more towards a certain conception of the world and a system of beliefs instead of towards the product with its own technical specificities
- 3 this kind of advertising in turn facilitates the topic’s politicisation and treatment by political arena
- 4 in this way, electric cars have been legitimised in the eyes of the public and are being consecrated by the advent of an industrial development plan and by the affirmation of a ‘demand’ that is meant to sustain this market in the future.

2 Mediatisation and modification of beliefs

Starting in early 2008, an observable attempt was made to modify people’s beliefs in the suitability of a mass transition to electrical driving systems. The intense communications strategy that Renault started to pursue right after announcing its partnership with the start-up Better Place – together with electric cars’ great mediatisation in comparison with other so-called ‘clean’ technologies – launched a process of changing people’s representations and constructing new frameworks for apprehending the automobile. Through a study of the French written press since 2005, we found that the number of articles containing the term ‘electric car’ began to increase significantly from early 2008 onwards and has continued to rise ever since. Between 2005 and 2008, stories about electric cars were anecdotal and only concerned a few local initiatives or experiments with car fleets such as Dassault Industries’ CLEANOVA tests or Bolloré S.A.’s BlueCar project. Most pre-2008 articles were relatively critical of the idea that electric cars might

become mass items, judging their performance as too limited in comparison with their cost and systematically highlighting problems such as perceived lack of autonomy, infrastructures or qualified maintenance workers.

Figure 1 Changing number of articles containing terms such as ‘electric car’, ‘hybrid car’, ‘bio-fuels’ and ‘downsizing’ in French newspapers from January 2005 to December 2009



Source: Based on our calculations using Factiva

As this chart shows (Figure 1), the number of articles discussing electric cars rose from 139 in 2007 to 483 in 2008 and 985 in 2009. This significant growth is asymmetrical given the number of articles covering other technological solutions such as hybrid cars, bio-fuels or downsizing. In addition, the major mediatisation of one technology compared to others is particularly meaningful insofar as this happened at a time when the automobile industry was headline news. Given the decline in new car sales caused by the credit crunch, French carmakers requested state aid to come to grips with their financial difficulties.

The situation was aggravated by oil prices skyrocketing until the barrel of Brent hit almost \$145 in July 2008⁹. The argument of oil dependency and annual fuel costs started to rise to the top of the political agenda, with an article from *Le Monde* newspaper dated 22 January 2008 noting that, “With the price of a barrel of oil having practically quadrupled since 2002 and growing awareness of CO₂ emissions’ climate change effects, conditions are ripe for electric cars to finally emerge”. This quote deployed most of the rhetoric that the Renault group was already using to seduce states and consumers, thereby affirming the suitability of its product strategy: reducing dependency on oil offers substantial geopolitical advantages given the way crude prices have fluctuated since the beginning of a decade. Similarly, cutting CO₂ emissions made it possible both to fulfil the commitments that the European states made at the Kyoto conference and also to acquire renewed political legitimacy in a context where ecological sensitivities were rising in Europe and worldwide. Lastly, by reducing local emissions of pollutants and providing

an alternative to the internal combustion engine, electric cars could be depicted as responding to concerns about urban and noise pollution, an argument that was particularly attractive for mayors of large municipalities. Alongside this, has been Renault's cooperation with Better Place and the political success of this project. As a veritable experimental laboratory for its electric car development programme and offering a life-size demonstration of how states can encourage the transition towards 'clean cars', the Israeli experiment seemed to offer evidence of the project's feasibility. The promise that 115,000 Fluence Z.E could be sold over six years to Better Place¹⁰ sealed the deal by proving the reality of a demand that had not always existed. Thanks to this first agreement, Renault was able to proclaim the strength of its mission in France and Europe.

Positioning itself on its competitors' periphery and highlighting its ability to source lithium-ion batteries through its alliance with Nissan¹¹, Renault decided to break with the status quo by not promoting a new product but instead a new relationship to electric-propelled automobiles. Rather than promoting the product, the new marketing communications tried to 'educate' consumers to get them to accept its legitimacy and learn how to use it.

3 A new kind of corporate communications seeking to 'educate' consumers and legitimate the product

Given the many technological problems relating to the electric car and the difficulties in imposing new modes of mobility in a highly competitive market, a strong argument has been made for an extremely slow transition towards the new technology. Over the medium term, this would only be feasible if there were a profound modification in people's vision of the 'car' as an object. To educate¹² and prepare this market, Renault implemented a costly and ambitious communications strategy partially aimed at modifying people's beliefs and preconceptions about electric cars¹³. The group invested heavily in communications (and was ranked all media combined as France's leading sponsor in 2008, 2009 and 2010¹⁴) in an attempt to pave the way for the electric car's arrival in the marketplace. The aim here was to 'convince' and 'reassure' people about the car and its technical potentialities while renewing the company's image. The logo accompanying the brand carried the strapline 'drive the change' from 2008 onwards, intimating that the group saw itself as a change actor pushing so-called 'clean' technologies and wanted to include consumers in this change process.

This was accompanied by a modification in the design of 'Z.E' range products and ancillary services, with Renault offering to rent its batteries instead of selling them. The idea was to free consumers from having to pay to obtain and maintain the component that would be the cornerstone of electric car, while ensuring the economic viability of the model (given that a battery costs somewhere between €10,000 and €15,000). By portraying itself as an actor interested in changing mentalities and behaviours, Renault's arguments coincided with the three pillars of sustainable development: the electric car is for everyone (social responsibility); it produces no local pollution and little CO₂ (ecological responsibility); and its energy efficiency means that consumers save money (economic gains). This rhetoric meant that the company's discourse could be tied to the broader paradigm of sustainability, and that its ideas might therefore be transplanted onto the debate that was already raging in the public and political spheres.

Alongside this, Renault invested in new media and ICT (devoting 15% of its communications budgets towards this end) and developed numerous social network and new communications accounts, including Renault-ZE.com, the ‘Social Media Hub’ network, Renault Live Twitter and Renault ZE live (all run by full-time webmasters) together with Facebook pages, youtube clips and dedicated sustainable mobility websites (<http://www.sustainable-mobility.org>) run in conjunction with the *Institut de la Mobilité Durable*, an entity born out of the partnership between Renault and AgroParistech, a French university centre. The goal with these investments was that the company wanted to be in sync with early-adopters, younger generations and technology lovers who use the internet on a daily basis. It was also a way to communicate via capillarity: by attracting younger populations, the brand could achieve resonance in the households where they live and thus contribute to changing its image. These investments in social networks do not give the impression of having commercial objectives because there are no explicit commercial advertisements for the Renault brand. Moreover, the website <http://www.sustainable-mobility.org> is explicitly turned towards reflection on new mobilities and contributes to promote and to building new representations of cars and the brand’s involvement in sustainable development. Being the first carmaker to clearly take into consideration the problematic of urban mobility, its action contributes to build new representations which Renault’s managers believe could become predominant in the future. Rounding out this approach has been Renault’s organisation of a number of ancillary events (Road Show Z.E, LeWeb10 on the Paris docks, gala events in its Champs Elysées showroom, etc.) where it displayed the product to future consumers, making it more accessible and concrete and answering potential questions from those customers who might be most interested in it.

This communications strategy gave shape to a fully fledged representational framework, which managers consider is a necessary step in getting people to accept the electric car as a marketable product. Similarly to what happened with aeronautics, the electric car appears to some as an ‘invention for which there is no need’ [Chadeau, (1996), pp.42–43], meaning a product that generates both its own operational framework as well as its modalities of usage even as it legitimises itself as an object worthy of being marketed. The work done to get captured consumers to change their mentalities and the desire to have the debate focus not on the vehicle’s dynamic characteristics, as is traditionally the case in the automobile industry, but on the surrounding environmental and political contingencies helped Renault to legitimise its own approach, product and forecasts. The company’s avowed objectives were in fact an invitation to its message’s recipients that they should opt for a broader vision and view its ‘desire for change’ as a commitment transcending the product’s purely commercial dimension. This aspect is fundamental since it provides a partial explanation for the enthusiasm that people in France have had, and continue to have, for the electric car despite uncertainties about its business model and daily use. Based on this new conception of the automobile, many actors who used to be considered quite marginal¹⁵ started to think that it might be profitable to invest in the technology and began to commit openly to electric cars. As noted by Keynes (1971) in a situation of uncertainty, rational calculations are not always useful since what counts are social beliefs. All in all, it is not very important whether Renault’s predictions (a global market share of 10% within 20 years) turn out to be accurate. What is crucial is that the actors involved in its efforts believe in what it is doing and invest enough to make things happen. The carmaker’s whole strategy seems to be based on this postulate. This being the case, the early decision to associate state

authorities in the definition of the challenges facing the industry (based on the politicisation of the electric car) meant that the chosen solution could portray itself as something that was legitimised publicly, giving the company a competitive advantage in a market that did not even exist yet.

4 De-technicisation enabling a politicisation of the debate

As mentioned above, Renault's communications work helped to generate new interest in electric technologies, thereby constructing a new social demand while raising questions about how our Western societies relate to the automobile. Setting the debate in a sustainability context has produced certain effects:

- firstly, it meant that Renault's new driving system strategies should be viewed in the broader context of environmentalism and sustainable mobility so that its discourse could reach a bigger audience and be listened to by populations that might otherwise be very hostile to the dominance of the automobile and its pre-eminence in contemporary lifestyles (i.e., green groups, local car sharing associations, residents associations, etc.)
- secondly, it changed Renault's brand image and made the company appear more 'engaged' and interested in promoting the 'general interest'.

By portraying its electric solution as a global approach congruent with the general interest, Renault's programme presentation argued that it was in the French state's interest to encourage electric cars for economic and environmental reasons:

"Public assistance will probably be necessary at the beginning to offset the extra that people must pay to buy an electric vehicle. This assistance can be justified by the reduction in France's oil bill, which it is important to remember matches the sum total of our trade deficit (circa €50 billion). Of course, there is also our need to cut CO₂ emissions." [Pélata et al., (2010), p.19]

In other words, because the market economy by itself is incapable of achieving a radical change in the automobile and give the massive development of so-called 'clean' technologies, civil society and state authorities should support their initiatives because it is in their economic interest to do so, but also because environmental engagement of this kind is politically legitimised.

By changing the dominant design of the vehicle – meaning the management of innovation and the scales of value that structure the automobile industry – and by modifying this scale of values, Renault is therefore offering a different vision of the car, no longer depicting it as an object of distinction or a prop for individual self-image but as a simple means of mobility (Midler and Beaume, 2009). Placing itself above questions of profitability and profits has been a change in register designed to change the locus of key debates. Renault have been shifting innovation-related industrial risk onto public authorities by using a political rhetoric strategy where the debate's terms of reference focused on politics instead of economics. Unable to solve the main technical problems associated with the electric car, the carmaker turned its argumentation towards 'new mobility', leading to a 'de-technicisation' of the debate and translating

technical problems that are complex and inaccessible for non-specialists into commonsense terms. This de-technicisation was feasible because the car was being portrayed as an instrument of mobility. At that point, the commercial 'game' no longer involved discussing whether electric cars are capable of performing as well as internal combustion engines but instead of getting users and public authorities to ponder on what kind of social models and mobility they want to develop in the future. It is thanks to Renault's use of this register of communication and 'political work' that the subject became politicised.

The purpose of 'political work', as defined by Smith and Jullien, is to produce certain agreements and a redistribution of power between companies while defining the competitive rules under which they operate. With this redefinition of the borders of the sector, the companies are to some extent regulating their industry's destiny by closing the door to potential new entrants. Rules being produced in this way will, however, require arbitrages regarding the attribution of rights, with the companies driving the change being the only parties capable of doing this. Hence, the need to resort to regulations and legitimisation systems that have been defined within spaces that are political in nature, meaning that reliance on the state becomes strategic at this level (Fligstein, 1996). This is achieved through a politicisation process that allows certain companies to acquire additional symbolic and cognitive resources guaranteeing their position in the system. Here, the term politicisation means the process of politicising a question, problem or discourse, i.e., having it taken over by actors with sufficient influence to turn it into an object of debate on the political, institutional or media scene (Lagroye, 2003). For actors participating in this process, the goal is to re-qualify issues by mobilising state authorities and using the rhetoric of general interest to transgress the traditional spaces of competition and help develop public policy. Renault can be considered at this level as the implicit promoter of a new form of competitive interactions, one specially focused on the 'public' dimension of a good and an industry as a whole. This is a change in the dominant design of both the car and the business model, as well as a redefinition of the political sphere's influence on a particular industry. By proactively holding and defining debates and becoming political, Renault is in the process of forging some of the rules that will probably condition aspects of the future relationships between automobile industry actors.

By operating in this way, Renault has obtained a new audience for the electric car and ensured that the product's standard bearers include a number of government actors (especially Jean-Louis Borloo, French Minister of Environment and Christian Estrosi, French minister of industry) as well as local elected representatives ready to take part in debates about the suitability of electro-mobility as a solution for mobility. Combining social demand with the issue's politicisation created a situation that was unprecedented in France, one where competition between the two big national carmakers was no longer organised around technical and commercial arguments relating to engine capabilities or vehicles' dynamic characteristics but instead around political rhetoric where the state serves as a key arbiter in the legitimisation of one technological position or the other. By turning public policy into a place where problems are solved and solutions found, Renault was able to generate initial demand guaranteed by the state even as it continued to receive support in the guise of incentives.

5 Construction and legitimisation of demand: the production of public policy as a new space of opportunity for new comers

As Cohen (1996) has already demonstrated with his concept of ‘French home bias’, there is a historical tendency in France to try to develop ‘national champions’ working out of the home market. This Gallicisation of the country’s industrial policy is overt, with the October 2009 implementation of a ‘carbon-free vehicles’ plan – applying decisions taken at the *Etats Généraux de l’Industrie* – confirming the state’s willingness to define orientations in the industry. To ensure that Renault (and to lesser extent PSA) obtain substantial outlets for electric and hybrid vehicles, the government implemented a relatively ambitious development plan aimed at generating economies of scale over the medium run and preserving the French automobile industry’s competitiveness by creating a French electric and battery-propelled car branch, thus providing long-term support for the country’s technological advance in this domain.

The plan had several levers: assistance in funding carmakers’ development programmes; funds for carmakers’ internal banks; funds guaranteeing loans to suppliers and subcontractors; modernisation funds for automobile components makers; a national agreement covering part-time unemployment in the automobile sector; and support for branch-wide innovation. One of the plan’s main objectives was to spawn the kind of French battery branch that might complement (and indeed be indispensable) to the development of hybrid and electric driving systems. Towards this end, the government came up with nearly €1 billion to fund the necessary transition. Grossomodo, the ‘carbon-free vehicle’ programme can be broken down into two main sectors of activity involving the simultaneous development of supply and creation of demand. Its purpose was to build up research and innovation capacities through these funding programmes while stimulating demand by creating public and private sector purchasing consortia benefiting from a €5,000 car wreckage scheme.

For the French government, the political challenge was twofold. Supporting carbon-free vehicles is an opportunity to participate in the battle against climate change but also a way of restructuring the automobile sector following the credit crunch through the creation of a new branch capable of generating new jobs. What seems evident in the design of this plan was the priority given to electric cars. Modestly called the *plan véhicule décarboné* (‘carbon-free vehicle plan’), this so-called ‘Borloo’s plan’ was strongly geared towards ‘fully electric’ vehicles. Even if the buyer’s bonus applied to both electric and hybrid vehicles featuring rechargeable batteries and emitting less than 60 g of CO₂/km¹⁶, the specifications of the 100,000 vehicles that were supposed to be purchased by the private companies and other institutions targeted in the plan were geared towards electric cars. In other words, this first boost of oxygen turned the electric car into a commercially viable object. By placing its trust in electric technology, the French government legitimised the product and sparked interested by a number of public and semi-public sector actors, notably local authorities.

Transposed to the local level, issues such as electro-mobility and electric cars’ suitability in an urban context revealed a social demand that had already existed for several years among consumer associations. The strong role that politicians gave to associations like AVERE that existed to promote electric cars¹⁷ (Rapport du Sénat, 2011) also enabled a bottom-up legitimisation that led in turn to the proliferation of consumer

whose visibility increased thanks to the product's new resonance as the Borloo plan was being implemented. As already demonstrated by Burr (2006), this process of using consumer associations to legitimise demand is essential in understanding a market that is in the process of being created.

This 'bottom up' legitimisation of the product and its uses, complements the work of partnership and alliance-building between manufacturers and new actors positioning themselves in this emerging market. These two dimensions of 'political work' describes by Smith and Jullien, are particularly observable in this case and could have a strong impact on the industry's orientation. At the same time, new initiatives are developing, led by players that were previously on the fringe of the automotive market: battery producers, tyre manufacturers (Michelin and its 'active wheel' technology), suppliers, rental companies and mechanics, electricians, telecommunication operators and, above all, car sharing and alternative mobility associations and companies – many players entering the discussions and the definition of the industry's problems. The appearance of these new players is generating new synergies, which may enable new ways to access electric mobility and more rapid mass production of the technology. By challenging a traditional vision of the car mainly based on dynamic quality, adaptability and individual property, other car manufacturers are now trying to limit their penetration of electrical vehicles by the creation of suitable services, notably by investing in mobility offers (*Mu* by Peugeot, *Simplicity* by Citroën,...). However, these investments are marginal and even carmakers are not investing seriously in them. More fundamentally, the 'new deal' of the automobile system is changing the game within alliances and partnerships which can no longer be ignored by actors seeking to define sustainable mid and long term strategies.

6 Conclusion – repositioning competition through new beliefs: market consecration or simple strategic realism?

As demonstrated by André Orléan, people will believe that a risk exists whenever they deviate from the general consensus regarding a product. In other words, economic rationality forces agents to take stock of peers' behaviour. As such, rational individuals will interpret fellow operators' positions, with each being likely to modify their own behaviour depending on the credibility of the parties they observe. Given this interdependency between operators, the concept of 'imitative rationality' is useful for our analysis. Whereas most actors in the automobile sector did not believe in Renault's suggested solution before 2008, there is no doubt that most reacted to the events caused by the implementation of certain political instruments and began adopting a more favourable and interested view of electric cars from the end of 2009 onwards. As this article has highlighted, understanding the social and political processes at work in the new market's production and legitimisation is indispensable if we are to truly understand the changes affecting today's automobile industry. We may not be able to predict the future of a product that is still relatively absent from the marketplace but the industry's current debates about its technology are very useful in understanding carmakers' strategic turnarounds.

With the economic crisis of the last couple of years, a number of old beliefs have lost their validity and the uncertainty generated by carmakers' economic hardship has produced a new context, one that is more conducive to the emergence of new ideas and new concepts. As authors such as Aggeri et al. (2009) or Freyssenet (2009) have shown,

faced with structural (the over-capacity and the reduction of the European market) and cyclical (the loans crisis and decreasing sales in Europe and in other parts of the world) problems operating on the world wide car market, automakers have been forced to completely renew their product lines. These deep-rooted changes are completely novel for the automotive industry, which had been accustomed to historically stable functional specifications and product characteristics. Indeed, for over one hundred years the technology used for cars has never been fundamentally challenged. Albeit significant improvements occurring in the last thirty years, increasing its efficiency, the ICE remained the same. Furthermore, commercial guidelines and principles based on prestige, social differentiation and ever-increasing dynamic qualities, were never really put into question. Automakers, in particular, have always kept control over the definition of their product characteristics, the way it should be commercialised and ultimately over market structures. However, the economic crisis has lately revealed the exhaustion of this industrial model. The rise of the BRIC and of their demand of oil, and the growth of the Chinese market, provide new frameworks of apprehension of the industrial problems which generate the conviction amongst many actors that is necessary to act right now. Whereas previous attempts to commercialise the electric car as part of the continuity of what was traditionally practised in the industry, the current situation and its social and political context appear favourable to the general implementation of the product.

With the way in which the market for electric cars is being constructed today, carmakers (like politicians and consumers) have started a battle about defining the future of the automobile. Within this conflict, the party that can impose and legitimise its vision of the world will probably be the one to dominate market performance. Taking a position in debates about new driving systems and judging the usefulness of one technology versus another already constitutes, in and of itself, a full scale industrial challenge. It is within this cognitive battle about the future of the industry that states will likely have a crucial role to play. Indeed, it is no doubt within the political arena and the capacity of states to develop genuine industrial policies that the future of the electrical vehicle will be decided.

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Notes

- 1 'Transition towards and ecological economy?', research project financed by the French ministry of transport and environment and under the direction of Bernard Jullien.
- 2 'European government of industries', research project financed by Agence Nationale de la Recherche (FR) and under the direction of Andy Smith.

- 3 'Institutional changes and trajectories of socio-economic development models', research project financed by 7th Framework Program (EU) and under the direction of Yannick Lung.
- 4 Currently, there are four models with only two being marketed in 2011: Fluence and Kangoo Z.E, which are electrified versions of internal combustion models bearing the same name. The next two models, which will start to be marketed soon, are Twizy and ZOE, specially designed to be electric.
- 5 Source: CCFA.
- 6 Source: Renault.
- 7 This is the name given to the Renault programme that is specifically based on electric cars. The initials signify Z.E mean 'zero emissions' (cf. <http://www.renault-ze.com>).
- 8 A super bonus of €5,000 for the purchase of the vehicle emitting less than 60 g of CO₂/km.
- 9 Source: IFP.
- 10 Source: Renault.
- 11 Through the Nissan/NEC joint-venture, which went under the name of Automotive Energy Supply Corporation (AESC).
- 12 The interviewees and the group's press statements all highlighted the idea that consumers should be 'educated' to change their habits and no longer fear the vehicles' supposedly lesser autonomy.
- 13 Along these lines, Renault put together a 'wall of preconceived ideas' to explain and explore various criticisms of the electric car. <http://www.renault-ze.com/fr-be/l-electrique-au-quotidien/le-mur-des-idees-recues-61101.html>.
- 14 Source: TNS Media.
- 15 Car share companies, tire makers, garages, telecoms operators, short and medium term rental agencies, etc.
- 16 Rapport du sénat (2011).
- 17 *Association des Véhicules Électriques Routiers Européenne* (Association of European Electrical Road Vehicles).