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*Les moteurs de l'innovation et les facteurs de sa pertinence. Un regard sur la
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What Drives Innovation and How Its Relevance is Established. A Perspective on Electric Vehicle Promotion in La Rochelle and Gothenburg : 1989-2000

Les moteurs de l'innovation et les facteurs de sa pertinence. Un regard sur la promotion des véhicules électriques à La Rochelle et à Göteborg : 1989-2000

Marika Rupeka

Introduction

- 1 Contemporary innovation, defined in the broad sense of political and sociotechnical change, is deemed necessary to solve social, environmental and economic issues, all at once. Promotion of infrastructural renewal at the territorial level fits into multiple agendas of players which have very different understandings of what is needed and why. This conflictual dimension is inscribed into the epistemic identity of innovation and has impacted the historic evolution of research approaches since the early XXth century (Flichy, 1996; Marié, 1996; Alter, 2000). In recent publications, economic historians have demonstrated the links tying the work of Joseph Alois Schumpeter, the founder of innovation economics, and the writings of sociologist Gabriel Tarde (Djellal, Gallouj, 2015). Interest in the specific conditions for change was engraved in Tarde's definition of innovation; understanding where and why innovation came to disrupt the routine of imitating past practice was the centrepiece of his theoretical stance (Tarde, 1890; 1993: 48). Initially, Schumpeter's work was driven by similar desires: to understand the process of industrial advance by studying the reasons for and the mechanisms of "creative disruption" throughout the XIXth century. Soon, however, more operational motives came into play, specifically, focusing on the replication/re-iteration of innovation

processes, thus widening the disciplinary gap between economic and sociological approaches. Hence no contemporary research can do without placing itself within this theoretical and methodological debate.

- 2 Throughout the post-war period, strongly governed by the paradigm of growth, economic science continued to focus on the process of sociotechnical change within organisations as well as the industrial sectors of entire countries. An assumption that organisational and technological innovation was useful if it enabled efficiency, quality gains or the expansion into new markets was at the heart of research designs, the main point of which was to understand the conditions for the transferability of acquired knowledge in one territorial and/or organisational context to another. Little attention was paid to the underlying motivations and/or rationales for innovation until the 1980s, when identifying local singularities in innovation processes increasingly preoccupied research fields governed by economic perspectives. Then again, today we find ourselves in a context somewhat similar to that of earlier XXth century as the desire to transfer lessons learned from one context to another is central to the financing and implementation of urban innovation experiments.
- 3 Throughout the inter-war and the post-war periods, other social science disciplines have advocated the need for a better understanding of the motives that drive institutions to implement organisational and technological change. Such concepts as *reinvention*, developed by American scholars in the late 1970s, demonstrate the increasing tendency to underline the role of contextual singularities in shaping and reshaping new tools and systems that reign our institutions and enterprises (Rice, Rogers, 1980). European scholars, in parallel, have developed historiographic approaches achieving similar results and demonstrating the localized (time and space-bound) and changing nature of innovation diffusion throughout urbanized areas (Lepetit, Hoock 1988). Even though some common patterns could be established, sociotechnical change was shown to never spread in exactly the same way throughout markets and territories. Studies on user contribution to reshaping innovation feed into the same line of scholarly debate; these stipulate that innovation always undergoes a process of reinterpretation to fit the needs of the individuals and social groups located in a specific place and period of time (Marié 1996; Oudshoorn, Pinch, 2003).
- 4 Today, demonstrating the relevance of sociotechnical change to specific social groups and territories is a major component of funding authority discourses in Europe and overseas. The high stakes involved demand that territorial innovation is made useful to all players concerned, which, in turn, requires constant compromise. An interesting field of study is the so-called “green” technology sector that European countries have developed in parallel to other territories worldwide. It provides insights into the complex motivations that drive contemporary innovation, blending together economic perspectives, environmental policies, energy production strategies, territorial marketing efforts and so on. In France and Sweden, the desire to ensure self-sufficiency of national energy production has driven the development of alternative fuel for transportation since the 1960s. Within a decade, French nuclear power generation capacities became the foundation of institutional narratives that backed electric vehicle development; in 1974, a specialised inter-ministerial group was established to understand how these “favourable conditions” could be used to foster industrial advance¹. In Sweden, national organisations initially favoured research and development on various liquid and gaseous fuels (ethanol, methanol and natural gas, biogas and biodiesel). By the end of the 1980s, city councillors

and local public transport operators all around Europe were testing electric vehicles, gas- and ethanol-propelled buses and vans². Only around the early 1990s, in Northern Europe as well, electric vehicles became bearers of political agendas which coupled national energy security strategies with environmental health issues. This resulted in the materialisation of ambitious experiments in urban territories: in France since the 1970s, and from the early 1990s in Sweden. Today, in both countries institutional discourse offers a three-fold argument. First of all, it is claimed that the choice to pursue transport electrification is systemically tied to energy production processes, which, in France, are mostly nuclear-based; and correspond to a mix of renewable sources in Sweden. Secondly, both countries argue that the massive roll-out of electric vehicles is part of their political strategy to decrease greenhouse gas emissions within the transportation sector (SOU, 2013; France Stratégie, 2017). And lastly, scientific approaches to evaluation (notably technology life cycle analyses) enable national institutions to vouch for the relevance of electric vehicles used nation-wide in urban, suburban and semi-rural territories.

- 5 To offer a better understanding of these contemporary drivers of innovation, this research paper goes two decades back into history by means of a parallel case study on electric vehicle promotion in the urban agglomerations of Gothenburg and La Rochelle. We ask why these territories innovated and how they determined the relevance of electric vehicles, and find that there are (at least) three different perspectives from which the pertinence of technological solutions is argued: 1/ the local political history perspective, 2/ the international (consensus) perspective, 3/ the individual (user and non-user) perspective. On all three levels by means of motivations, attitudes, vocabularies, and methods corporate cultures and agendas translate into the narratives arguing the relevance of territorial innovation.

Electric vehicle placement within historic narratives on local environmental health policies

- 6 In La Rochelle and in Gothenburg, political discourses in favour of “clean vehicles” as a relevant alternative to internal combustion engine passenger and utility cars emerged in the second half of the 1980s. Two parallel narratives accompanied these early initiatives: clean vehicles were part of a regional economic development strategy and an important tool within the implementation of environmental health policies.
- 7 Since the mid-1980s, the Poitou-Charentes region had been struck by an economic downturn due to the closure of two large industrial activity sites. When asked about city council’s plans to address the crisis, Mayor of La Rochelle Michel Crépeau responded: “We have to focus on helping small and mid-sized companies, as they will provide workplaces in the years to come. We have to innovate. But innovation is not something that La Rochelle has been fearful of!”³ The regional authority and the La Rochelle Agglomeration Community had promoted electric vehicles by using mostly locally-manufactured passenger cars and vans within the municipal fleet since 1986. However, a consensual discourse on electric vehicle promotion as a tool for regional economic development crystallised no sooner than in June 1993, when the Regional Directorate for Industry, Research and the Environment announced that Poitou-Charentes had the chance to become a “test region” (DRIRE, 1993). The strong focus on economic development perspectives was decisive for small companies which lived off the regional market, such

as Perrotin electric scooter company and SEER⁴ electric car manufacturing firm. By that time, providing support to small industrial companies has become a national strategy, in line with which pilot cities were the “decisive locations for acquiring experience with new technology”⁵.

- 8 Regional economic development was not the initial motive for electric vehicle promotion in Gothenburg, as, in the 1990s, this rationale was strongly pushed by biogas promotion teams within the city council (Fogelberg, 2000). Scientific evidence from international and local universities served as proof to demonstrate the negative effects that internal combustion engine vehicles had on human health⁶ and founded the environmental health narrative as a strong motive to promote both biogas-propelled and electric vehicles as daily means of urban transport for the entire agglomeration. Being simultaneously pursued as two halves of a single municipal policy, these alternative solutions gradually developed a competitive dynamic (Ahlbäck, 2003).
- 9 In their public discourse, local authorities systematically referred to a municipal history of environmental health policies, arguing that these were nationally the most advanced. In the 1950s, when the Swedish State did not yet provide guidance on air quality management, Gothenburg city council and its partners had turned to the World Health Organisation for advice on how and where to establish the type of atmospheric pollutants to be measured. Accordingly, a network of monitoring stations was implemented in cooperation with local medical personnel. A decade later, municipal services took up the responsibility to monitor air quality on a regular basis, benefiting from public money (at 30%) and industrial funds (70%), which were provided notably by the automobile manufacturer Volvo⁷. Local public authorities continued to cater for an improved air quality by means of re-planning the city, restricting car traffic and promoting the safety of pedestrian and cyclist movement. By the mid-1980s, Gothenburg authorities argued that significant progress had already been achieved, and an improved urban life was on the way⁸. Owing to its rich knowledge base, Gothenburg city council portrayed electric (and biogas) vehicle promotion as yet another tool to make amends for the negative effects of modernity.
- 10 La Rochelle began air quality monitoring more than a decade later than its Swedish counterpart, in 1971, in response to citizen protests against critical levels of air pollution. Environmental health policies were led simultaneously with a strong social equality and territorial attractiveness agenda, which translated into political action favouring pedestrian and cyclist movement in the historic city centre. Soon, a citizen committee was established in view of implementing these political innovations and ensuring their correspondence with land use principles⁹. By the early 1970s, La Rochelle Chamber of Commerce proudly wrote to the Mayor: “(...) the city centre has never been so attractive as it has become during the past few years; the charm of the old town, its monuments, streets, and the urban refurbishment effort of several local shopkeepers are part of the reason [for its attractiveness]”¹⁰. Later on, La Rochelle Mayor Michel Crépeau and the city council made use of initiatives and ideas acquired and developed with experts that Crépeau became acquainted with during his mandate as Minister of the Environment, between 1982 and 1983 (Simon, Hoogma, 1998). This professional network enabled La Rochelle to bundle electric vehicle promotion strategies with local environmental health policies. By 1993, La Rochelle city council considered that the validity of electric vehicles was “scientifically proven” and “publicly recognized”¹¹. Local efforts to integrate electric vehicles into environmental policy remained important in the early 1990s when the

narrative was widened to include scientific evidence in favour of electric vehicle use as a “healthy” alternative to the internal combustion engine vehicle (Frybourg, 1971; Laffitte, 1993).

- 11 In this context, national institutions played an important role indeed, as their mission to lobby technological development ensured the general coordination of innovative action on the territorial level. “Electric vehicles can be valuable instruments in the implementation of local environmental health policies” - such was the message that the French Energy Management Agency conveyed to many French public authorities on the occasion of a national survey with 400 municipalities¹², revealing that few city councils actually used electric cars as part of their fleet (AFME, 1991). Several months later, the French State published a call for proposals providing funding to municipalities that wished to study conditions of electric vehicle use and to purchase cars for municipal fleets. Among the 22 laureates was La Rochelle, where city councillors had already acquired experience with electric vehicle use, even if these were manufactured at an artisanal level.

Promoting electric vehicles as Pan-European tools to improve urban living conditions

- 12 In both cities, Gothenburg and La Rochelle, narratives in favour of electric vehicles crystallised in a context where national and international institutions began pursuing similar goals. Since the 1970s, international environmental action had left its mark on the industry, fostering the development of a new productive sector - that of “green technologies”. In 1992, the International Energy Agency began to promote cooperation among its member states by means of a collective research and development programme. Within this framework, Swedish institutions had expressed a desire to share knowledge acquired through national projects and to develop an impact assessment methodology in view of monitoring how electric vehicle development affected energy generation, the environment and the transport sector. French institutions contributed to the same programme, and, additionally, suggested to work on technology evaluation methodologies¹³. International knowledge sharing practices were increasingly trusted to provide territories with the right framework for electric vehicle use, and, more generally, the utilization of “green technologies” as the centrepiece of environmental policy implementation processes.
- 13 In 1990, La Rochelle and Gothenburg became members of the European association CITELEC for cities interested in electric vehicles, created a few months earlier with the support of the European Commission as part of its agenda to promote industrial activities. The association elevated narratives supporting electric vehicle usage to another level. The topographic, demographic and spatial conditions of European cities were seen as the prerogative for clean (locally non-polluting) and silent vehicle promotion. In this context, city councils were made responsible for the experimentation with this technological novelty, as well as its monitoring and evaluation as part of a collective strive towards “an improved urban life”¹⁴. As expert and partner to local public authorities, CITELEC analysed, from a general perspective, how electric vehicles could be used in small, mid-sized and large cities. Among its duties was to “study the needs of cities and municipalities”, to “inform them regarding “the performance and

characteristics of electric vehicles”, to help them implement “the necessary infrastructure”, to “offer adapted solutions”, and to “study the impact of electric vehicles on traffic, the environment and urbanism”¹⁵. Providing a “blueprint for the electrified city” was a task for the long term, when roll-out of electric vehicles would reach a critical mass (Liccardo, Magetto 1992). Although the unexpectedly slow rhythm of electric vehicle roll-out did not allow to reach this final goal, in the short term, CITELEC fulfilled its missions by means of different promotional and scientific events. Annual demonstrations known as the “12 electric hours” were hosted in various cities across southern and central Europe: in La Rochelle, Brussels, Padua, Namur, Hertogenbosch, Grenoble, Oxford, Torino, Rotterdam... From 1992, ongoing data collection had been underway in view to compare annual industrial progress, as various models from European manufacturers were tested. However, the main point of these events was to convince the general public that electric vehicles were the right choice given the urban morphology of European historic city centres with dense built environments, narrow streets and valuable architectural heritage (fig. 1).

- 14 In parallel to demonstration days in CITELEC’s member cities, efforts to pursue electric vehicle roll-out resulted in the organisation of an international rally from Oslo to Gothenburg. Inspired by corporate attitudes and methods for product marketing, Norwegian and Swedish public energy companies staged this impressive territorial-level experiment hoping to increase the general acceptance of this new technological tool for short and long-distance travel¹⁶.

Figure 1: Tests with electric vehicles in the framework of the promotional event « the 12 electric hours of La Rochelle », organized by CITELEC in 1990.

Source : La Rochelle Municipal Archive.

© Charente Association for the Promotion of Electric Vehicles, La Rochelle city council.

- 15 Another part of CITELEC's activities consisted of organizing scientific symposia. On the occasion of the 1992 International Electric Vehicle Symposium in Florence, industry and academy representatives were encouraged to meet city councillors in view of discussing lessons learned from ongoing territorial experiments. The French team, with representatives of car manufacturing companies, the French Parliament and the National Energy Management Agency, demonstrated the synchronized efforts to support narratives on the central role of small towns. La Rochelle and Metz were "pilot cities of electric mobility", the centrepiece of the national transport development vision. Noteworthy to add that, by the early 1990s, Michel Crépeau had become the first acting president of CITELEC. Among project leaders attending the Florence symposium were Stefan Liljemark from Gothenburg city council and Jacques Mollard from La Rochelle Agglomeration Community (CITELEC, 1992). During other international events as well, representatives from La Rochelle and Gothenburg municipalities found themselves sharing knowledge on the functional details of electric vehicle and charging infrastructure use among themselves, with city councillors from other countries worldwide, as well as with industrial players and international agencies (OECD, 1992). Henceforth, the exchange of municipal know-how about the pragmatic aspects of new technology implementation took place world-wide. From one city council to another, comparative efforts resulted in the diffusion of specific policy measures that facilitated electric vehicle implementation.
- 16 In his inaugural speech to the 1993 Electric Vehicle Symposium in La Rochelle, Mayor Michel Crépeau announced: "A pioneering city, an urban laboratory, and today, a pilot city, we had bet on the future of electric vehicles at a time when few municipalities believed in this solution. (...) I think we have acquired followers, and even been caught upon... so all the better¹⁷" By the mid-1990s, La Rochelle had begun cooperating with the Canadian city of Saint-Jérôme in view of transferring its expertise regarding electric vehicle use as part of a collective transport service¹⁸. Soon, Saint-Jérôme city councillors organized automobile exhibitions, parades, thematic and media events, as well as "green" rallies, and established a local research centre for environmentally-friendly vehicles as a counterpart to La Rochelle's Centre for applied research and evaluation of electric vehicles¹⁹. Saint-Jérôme municipality led and supported the research centre's activities in cooperation with local and international corporations during a ten-year long period. Today, the Canadian centre functions as a fully autonomous unit, while its model institution has long since disappeared.
- 17 Historically, discursive strategies employed by the municipality of La Rochelle had more impact on the collective imagination than those of Brussels, Tours, or Amsterdam, where in quantitative terms, electric vehicle promotion had actually gone much further. Today, the Dutch capital is mainly regarded as a cycling city, and only rarely as a major electric vehicle promoter even though its network of electric charging stations is globally the densest²⁰. In La Rochelle, noteworthy action in favour of electric vehicles stopped in 2014, with the departure of former mayor Maxime Bono. Since then, municipal discourse has rather focused on promoting the bicycle and public transport as alternatives to the private car. In Gothenburg, narratives in favour of electric vehicles are developed in a new paradigmatic context, with local research and development institutions (essentially the Chalmers University of Technology) working to fulfil ambitious national goals regarding climate change. The Gothenburg energy company recently announced the

creation of 260 new charging stations all around the urban agglomeration, hoping that visibility of infrastructure will finally convince people to purchase electric vehicles²¹.

Seeking user voices to prove that electric vehicles can transform urban environments

- 18 Enabling industrial companies to test products and services as a reward for their heavy investment was part of the deal that Gothenburg and La Rochelle municipalities accepted in return for acquired experience of innovative vehicles and infrastructure. A central task in both territories was to verify whether electric vehicles could replace the household's second car, identify the people concerned, outline the needs of these people, as well as their expectations from the industry. This inquiry was translated into evaluation methodologies mobilizing qualitative and quantitative instruments of a "market study" approach that corporate players were accustomed to use.
- 19 In Gothenburg, the "Project 200" as a single electric vehicle promotion initiative ran between 1992 and 1999 in three gradual stages, under the leadership of Volvo, with vehicles provided by French manufacturers. It was financed and run collectively by the Municipal Transport department, the local energy company Göteborg Energi, the national energy company Vattenfall, and the Municipal street maintenance company Gatubolaget. In La Rochelle, several projects took place during the same timeframe. 1/As previously mentioned, in 1992, la Rochelle city council took part in the national programme for electric vehicle testing within municipal fleets. 2/From 1993 to 1995, the French automobile manufacturer PSA Peugeot-Citroen and the French national power company EDF cooperated with the city council aiming to test the technological performance of electric vehicles and charging infrastructure, as well as public's satisfaction with specific industrial products. 3/In 1995, a two-day programme of experiments with electric vehicles provided the possibility to do another market study. 4/From 1995 to 1998, La Rochelle Agglomeration Community and the local public transport company STCR²² implemented an experimental electric vehicle and scooter sharing scheme "Electric Autoplus" as part of its intermodal mobility service system. 5/In 1998, the La Rochelle Agglomeration Community launched a call for proposals to create a more permanent version of the sharing service scheme. A consortium consisting of the car manufacturer PSA Peugeot-Citroën, the transport company Via Cariane, and the telematics firm Alcatel CGA Transport was commissioned to carry out a preliminary study, and to implement the infrastructure itself. 6/In 1998, the La Rochelle Agglomeration Community and its corporate partners acquired European funding to participate in the "Elcidis" project, which aimed to test the use of electric vehicles for delivery purposes in the historic city centre.
- 20 In the spirit of a business approach, monitoring and evaluation was mainly developed from two perspectives: the study of "user behaviour" (the interaction between people and technology) and the analysis of "technological functionalities" (the compatibility of technological objects and systems).
- 21 "User behaviour" was studied in great detail through questionnaires and travel diaries in which drivers: a) provided information on the distances travelled daily and the purpose of their trips, b) gave feedback on their perception of electric vehicle use as an alternative to the conventional car, and c) revealed whether they felt that the need to charge the

vehicle once in a few days demanded a new behaviour to be adopted. Noteworthy to add that “user education” was an important aspect of the project team’s activities. The Gothenburg-based “Project 200” demonstrated that having developed a close relationship between the project team and users during the initial phase (1992-1993) enabled to acquire a very detailed feedback (Hammarlund, Iivari, Liljemmark, 2000). In both territorial contexts, project leaders sought to monitor the public’s satisfaction with hardware and software products provided in the framework of urban experiments. Technological functionalities and design features were evaluated by means of questionnaires and telephone surveys, enabling to understand what kind of improvements people expected from the industry. In addition to gathering information from users, data was collected by means of electronic equipment inside the vehicle (this is the case of “Project 200” in Gothenburg and “Elcidis in La Rochelle). In contrast to data generated automatically, which was deemed unusable, information provided by users revealed trustworthy and therefore served the needs of the project (Hammarlund, Iivari, Liljemmark, 2000; EC, 2002). For instance, acoustic comfort inside the vehicle and its impact on the driving experience is an interesting example of interactions between user experience within an urban experiment and the potential industrial developments that could follow. In Gothenburg, “lack of noise from the engine” was appreciated but gradually became considered as a more and more disturbing factor, as it was felt to endanger pedestrians and cyclists (Hammarlund, Iivari, Liljemmark, 2000). How this knowledge was used by industrial partners remains yet to be established. In La Rochelle, evaluation teams did not provide evidence on any negative effects of “silent” driving, but rather claimed that it made people feel “less aggressive” to others involved in traffic, and that this “new relationship” between the vehicle, the driver and the surroundings had made urban living more “convivial” (PSA, EDF, La Rochelle, 1995). It was claimed that electric vehicles fostered a behaviour which corresponded to the spatial conditions of La Rochelle urban agglomeration with its narrow streets and mineral environments which enhanced the sense of extreme proximity between spaces for pedestrians and motorized traffic (fig. 2, fig. 3). Users’ favourable comments portraying electric vehicles as environmentally-friendly modes of transport (both from the ecological- and the urban setting perspective) further appeared as inspiring sources for product advertising. In several promotional leaflets issued shortly after the 1993-1995 experiment with 50 electric vehicles, PSA Peugeot-Citroën argued that users’ positive experience enabled to re-integrate the generic technological object into the momentary reality of the city.

Figure 2: Electric vehicle charging infrastructure on the Verdun square, La Rochelle, 1995.

Source : La Rochelle Municipal Archive.

© Sogedex, La Rochelle city council.

Figure 3: Electric vehicle sharing scheme “Liselec”, a station in central La Rochelle, 1999.

Source : Anne Chané's personal archive.

© Frédéric Le Lan, La Rochelle Agglomeration Community.

- 22 Users' subjective interpretations of the relationship between the driver, the vehicle and the city had become slogans, within which the promise for a better urban life had come true²³. Inspired by this revelation, during the following months, automotive manufacturers set up a two-day test programme in view of better identifying the

potential consumers. Over 100 individual satisfaction questionnaires were filled in by people who tested driving electric vehicles for the first time (Ziegler, 1995). Specific attention to promoting the user's image with relation to the technological object became a central aspect in electric vehicle promotion strategies. In their recruitment efforts, project leaders in La Rochelle (during the 1993-1995 experiment with 50 electric vehicles) and in Gothenburg ("Project 200") contacted potential users through local automobile distributors, calling on individuals' and companies' sense of 'environmental responsibility' and the desire to look "innovative" in comparison to others. In Gothenburg, insisting on the positive image of this technology enabled to convince firms participating in the project to buy the vehicles they wanted to test. Although a similar approach was developed in La Rochelle, not having obliged people to purchase vehicles during the experimental phase made it difficult to sell these products after the "magic" of the test period had faded.

- 23 In line with these image considerations, electric vehicle charging infrastructure was positioned in visible and central locations: in front of the city theatre in Gothenburg (fig. 4), and at the heart of the old port of La Rochelle (fig. 2, fig. 3), thus affirming the presence of "green technology" in the city scape. Monitoring the use of electric charging stations was a means to test their technological performance, and to understand how users reacted to the presence of charging stations in public space. Despite there being only one fast charging station (fig. 4), Gothenburg project team monitored its use in a very similar way to work carried out for the 3 fast-charging and 9 slow-charging stations in La Rochelle (fig. 2). Evaluation processes in both territories demonstrated that electric charging infrastructures had a symbolic value rather than that of real use. Studies revealed that users of electric vehicles mostly charged their vehicles at home or at work. Nevertheless, charging infrastructure remained an important tool in the expression of political support in favour of electric vehicle promotion. The material design of charging stations was part of the narrative on a new kind of transport solution for the urban environment, where a contrast between the new (high-tech industrial products) and the old (architectural heritage) created an efficient demonstration of the new vision of European cities where product and territorial marketing was blending together. The visual impact that these infrastructures had on public space was casually observed through photographs, and determined through isolated questions within user surveys. How the general public (the so-called non-users) perceived electric vehicles and their charging infrastructure remains yet to be established. For several years, the presence of a sole station in the city centre probably did not provide sufficient grounds for a perception study to be undertaken. When asked about the impact of electric vehicle promotion strategies on the city scape of Gothenburg, the project leader replied that effects were minor²⁴.

Figure 4: Inauguration of the first fast-charging station in Gothenburg, in 1993.

Source: Stefan Liljemark's personal archive.

© Municipality of Gothenburg.

- 24 In La Rochelle, the 1992 “pilot city” project seems to have addressed the spatial conditions for innovation. However, documentation relative to these efforts is for some reason no longer held in municipal, regional or national archives. Thus, the sole trace of studies on the interaction between urban morphology and the new infrastructure can be found in the framework of the “Liselec” electric vehicle sharing project. Accessibility of the site, its overall visibility, the demographic parameters, the presence of facilities in the surrounding area, the volume of traffic on roads nearby, the presence of competing services, tourist attraction sites and workplaces, and the overall movement of people in the area – these are some of the categories against which the relevance of 20 different locations in La Rochelle agglomeration was studied (Cegma Topo, 1999). Among the 6 sites reserved, most were located close to many cultural and commercial facilities which conveyed the attractive image that La Rochelle city council desired to promote through urban refurbishment (fig. 3). How users of electric vehicles and other city dwellers or visitors (so-called non-users) perceived the choice of locations and the effect of these new technological objects on public space was not subjected to study in the framework of the project. During the implementation process, this issue was addressed by a sole institution – the architect in charge of preserving historical heritage in the Maritime Charente department, who strongly recommended diminishing the visual presence of charging infrastructure. With this aim in mind, the project team and the architect collectively decided upon the manufacturing of special Corten steel caps (fig. 3), which was claimed to re-create a homogenous city scape. In the space of this visual demonstration, architectural heritage, urban street materiality and technological objects blended into a single palette of colours and surfaces, a locally accepted design solution.

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NOTES

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23. PSA and EDF advertising leaflets from La Rochelle Municipal Archive.
24. Electronic letter exchange with Stefan Liljemark, October 2017.

ABSTRACTS

For the past few years, in France and in Sweden, electric vehicle promotion has been pursued as part of a political strategy to decrease greenhouse gas emissions within the transport sector, thus tackling climate change. From a general perspective, transport electrification is presented as a relevant technological choice given the structure of electric energy production processes that are nuclear-based in France and correspond to a mix of renewable sources in Sweden. It is believed that the complexity of environmental impacts can be assessed fully through technology life cycle analysis. Beyond the climate and environmental health discourse there is also a strong motivation to conquer new markets by means of “green” technologies. What binds these motives and how do they affect urban territories? To shed light upon this inquiry, this research paper offers a parallel case study on electric vehicle promotion strategies in Gothenburg and La Rochelle urban agglomerations in the 1990s. By asking why territories innovate and how they determine the relevance of specific organisational and technological solutions, the aim is to contribute to an historic scholarly debate on the need to study motives that drive territorial innovation as much as the transformation process itself. This research paper reveals that there are (at least) three different perspectives from which the relevance of technological solutions for specific territorial contexts is established: 1/ the local political history perspective, 2/ the international perspective, 3/ the individual (user) perspective. On all three levels by means of motivations, attitudes, vocabularies, and methods corporate cultures and agendas translate into the narratives arguing the relevance of territorial innovation.

En France et en Suède, la promotion des véhicules électriques est depuis quelques années poursuivie en lien avec les politiques de décarbonisation du secteur des transports, et, par-là, les efforts de lutte contre les changements climatiques. Basée sur le nucléaire en France et sur une combinaison d'énergies renouvelables en Suède, la structure de la production énergétique permet aux institutions nationales de juger l'électrification des transports comme un choix pertinent. C'est notamment grâce aux analyses de cycle de vie que les estimations d'impact environnemental sont déduites. Au-delà du discours sur le climat et la santé environnementale, se poursuit une forte motivation de conquérir de nouveaux marchés par la technologie « verte ». Quels liens pouvons-nous établir entre ces motivations et quel est leur impact sur les territoires urbains ? Pour y répondre, cet article de recherche propose une étude parallèle de stratégies de promotion des véhicules électriques à Göteborg et à La Rochelle au cours des années 1990. Questionner pourquoi les territoires innovent and comment l'intérêt des transformations sociotechniques est établi nous permet de rentrer dans un débat historique sur la nécessité d'étudier les motivations qui poussent les territoires à innover autant que les processus de transformation. Cet article démontre qu'il existe (au moins) trois différentes perspectives par lesquelles on argumente la pertinence d'innover : 1/la perspective de l'histoire politique de la ville et de la région, 2/la perspective internationale, 3/la perspective de l'individu (de l'utilisateur). À ces trois niveaux, les cultures organisationnelles et les intentions des entreprises se traduisent dans les discours sur l'intérêt de l'innovation territoriale, et ce en matière des motivations, des attitudes, du vocabulaire et des méthodes.

INDEX

Mots-clés: diffusion de l'innovation, expériences territoriales, infrastructure, conditions de vie urbaine, santé environnementale

Keywords: innovation diffusion, territorial experiments, infrastructure, urban living conditions, environmental health

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