E-mobility in Germany: White hope for a sustainable development or Fig leaf for particular interests?

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ABSTRACT

The opportunities and limitations of electrically driven mobility are currently widely discussed in public debates on vehicles and future transport. E-mobility has by and large been communicated in the context of sustainable mobility and its central idea is an urban e-car. Questioning the hype for this technology, this paper presents the development of the hegemonic discourse of e-mobility focusing on the actors involved. The study is based on a media analysis of selected German print media. The various phases of the e-mobility discourse were reconstructed by the detailed study of thematic focuses brought about by various actors such as politicians, electric supply companies and traditional automotive industry, and by the temporal distribution of the articles dealing with e-mobility. In addition the actor configuration is clarified by reference to the statements of the actors in the articles. The phases in the e-mobility discourse can be explained by a certain constellation of actors and how they manage to enforce their claims and interests. While the government plays a prominent role in the current development of the e-mobility discourse, the change of the automobile industry’s common position towards the electric vehicle and the rising interests of the power supply industry also play an important role. Finally, the paper reveals the internal and external driving forces of the e-mobility discourse and evaluates whether it is promoted in a sustainable way.

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1. Introduction

Since 2009 e-mobility has become very much in vogue. After a first hype in the 1990s, the topic has been rediscovered. The central argument for e-mobility is that the electric car will contribute to sustainable transport development. In the public debate, e-mobility is presented as the ultimate solution to nearly all transport problems. However, the field of transport policy stands out for a distinct gap between the programmatic goals formulated by transport policy and the real transport development (Schöller-Schwedes, 2010). For example, in 2001 the first White Paper on Transport by the EU Commission endorsed sustainable transport development while now, ten years later, the second White Paper on Transport has had to admit that “the transport system is not sustainable” (COM, 2011, 4).

Against this background it seemed to be imprudent to believe solely in e-mobility respectively the electric-car as the breakthrough for a sustainable transport development which dominates the public debate. In this article we critically analyse this discourse. Following “The Argumentative Turn in
Policy Analysis and Planning” (Fischer and Forester, 1993), we take a close look at the e-mobility discourse by an actor-based analysis, showing who is talking about e-mobility, how and with what interest. We are particularly interested in answering two questions. First of all, is the recent discourse substantially different from the discourse of the 1990s? And, if so, can the recent e-mobility discourse contribute to sustainable transport development?

We first explain our understanding of a policy discourse which is based on a neo-Gramscian approach and includes the notion of hegemony. Second, we present our methodical approach which is to apply critical discourse analysis to newspaper articles and other public documents from 1990 to present. By comparing the e-mobility discourse of the 1990s and its current renaissance we gain understanding of the themes of the recent discourse and its current relevance. Finally, we analyse the actors involved in producing these discourses (Schwedes, 2011). We will show how the e-mobility discourse today seems to have been established successfully, while the earlier one failed to have much impact at the time. We evaluate the two discourses on the basis of quantitative and qualitative data: (1) The number of articles dealing with e-mobility, (2) the consideration of arguments to topics central for electric transport (e.g. energy, environment) in relation to particular sociopolitical events (e.g. political decisions, technological innovations), (3) and the development of the actors’ positions and actor constellation, build the explanatory approach to identify commons and differences between the two discourses.

2. The meaning of discourses and hegemony for social development processes

Within the social sciences discourse analysis is attracting increasing attention (Keller et al., 2010, 2011). This paper is based on a critical discourse analysis (CDA) approach (Wodak and Meyer, 2009). Although here are different approaches within CDA, there is a common understanding of what is meant by ‘critical’ (Kendall, 2007): not ‘being negative’ in a common sense meaning, but rather ‘sceptical’ about easy solutions or dogmatism represented in public discourses. The argument goes that discourses are expressions of, and attempts to exercise power and therefore hide possible alternatives. The starting point of our analysis is our scepticism about the dominant e-mobility discourse, which offers the e-car as the solution for a sustainable transport development. CDA is based on the assumption that discourses are not solely expressions of social practice, but in being institutionalized, regulated and linked to actions, they produce societal acceptance of arguments and, in so doing, exercise power (Jäger and Jäger, 2007, 19, 34). For example, Schmidt underlines the special meaning of discourses for establishing reform strategies in the welfare state. She shows that social reforms can neither be explained solely with the divergent constellation of interests of different actors, nor with the analysis of institutional strongholds forming public opinion: ‘discourse matters’ too: “From the 1970s onwards, countries more or less successfully managed their adjustment to external economic pressures not only because of their greater or lesser economic vulnerabilities, their greater or lesser institutional capacities, and their better or worse policy responses, but also because of their more or less convincing legitimising discourses” (Schmidt, 2000, 309). Accordingly, we are applying CDA which understands discourses and material and social structures as social conditions which have to be continually and mutually reproduced by the actors involved. Material and discursive practices are mutually related and, therefore, should not be analysed separately (Fischer, 2003).“Describing discourse as a social practice implies a dialectical relationship between a particular discursive event and the situation(s), institution(s) and social structure(s) framing it. A dialectical relationship is a two-way relationship: the discursive event is shaped by situations, institutions and social structures, but it also shapes them” (Fairclough and Wodak, 1997, 258). In our analysis of the e-mobility discourse we have therefore related this discourse to the social conditions articulated by the specific interests of the social actors and the relevant material conditions such as technological development, markets, etc.

We furthermore use the concept of hegemony developed by Antonio Gramsci to analyse how the e-mobility discourse “struggles for ‘leadership’” (Bollinger and Koivisto, 2001, 1258). We assume with Levy and Egan (2003) that a hegemonic discourse is always competitive and therefore it is in many respects fragile. First, an external perspective shows the existence of subordinate discourses included in the hegemonic discourses of sustainable transport; they can be former dominant lines of discourse which the recent hegemonic discourse took over. Beside the continuing old discourses, new subordinate discourses can exist parallel to the hegemonic one. These may be able to unfold further and assume power to challenge the hegemony, or they will be absorbed by the existing hegemonic discourse. Alternatively, old discourses may eventually experience a renaissance: which one of these developments unfolds depends on the particular social power relations. “Hegemony therefore means a power relation between a temporal domination of a discourse by means of power on the one side and simultaneously existing competing discourses which are subordinated on the other side. […] Thus social consensus is always just a hegemonic commitment where certain positions are privileged before others” (Dingler, 2003, 178). As our comparison of the current e-mobility discourse with a similar discourse in the 1990s will show, the social setting as well as the actor configuration have changed. As a result, the current discourse seems to be much stronger than the previous one and can be described as hegemonic, even it is contested.

However, the fragility of a hegemonic discourse does not merely appear from an external perspective. A permanently unstable situation is also revealed by an internal view on the development of the discourse. A hegemonic discourse achieves reconciliation of the different interests of actors involved in its constitution, independent of how they justify their motivations. This implies that each actor is continuing to pursue his particular interest: there is a permanent potential for destabilisation of the dominant discourse. A hegemonic discourse can thus be described as a far-reaching pattern of conviction. From an external point of view, the hegemonic discourse reaches to its borders where subordinate discourses
cause friction. From an internal perspective, the hegemonic discourse reaches out towards divergent interests. The differences might be reconciled by compromises, but they cannot fully be dissolved. In describing the different actors of the hegemonic e-mobility discourse and their particular interests we will demonstrate the dynamic and fragility of the hegemony of the e-mobility discourse.

3. Methodology

Critical discourse analysis seeks to analyse structures and mechanisms in discourses. In analysing lines of argumentation appearing in the discourse as ‘objective truth’, contradictions are revealed and alternative options can be identified. In our study we used the analysis of texts published in printed mass media to understand the structure and development of the hegemonic e-mobility discourse in Germany. In representing, discussing and assessing developments, convictions and events in the fields of science, politics, and everyday life, the media express the societal discourse and contribute to the establishment of present knowledge and convictions perceived as truths by general public (Jäger and Jäger, 2007, 28).

The examined articles from the selected print media are analyzed as fragments of a single discourse, focusing on which e-mobility topics are included and what actors are involved.

Unlike linguistic discourse research, we did not make a detailed text analysis of the discourses as such. Rather, we followed social science discourse research: we start with a social problem (unsustainable transport development) and consider the discourse as part of this wider problem. In particular, we compared the recent e-mobility discourse with a similar one from the 1990s which had few real consequences. In order to identify whether the present e-mobility discourse is substantially different we demonstrate changes in the content and position of the actors involved by comparing the two discourses. We also present a chronicle of events which proved to influence the development of the discourses by analysis of the media (Jäger and Jäger, 2007, 26 ff.).

The discourse analysis shows the interplay of certain events and other social processes such as the development of hegemonic discourses (Diaz-Bone, 2006, 81).

The media analysis is based on articles appearing between 1990 and 2010 in three German national daily newspapers, one weekly newspaper and one news magazine. Measured in terms of the print run and circulation range, these five print media represent societal discussions from which we can deduce past and present e-mobility discourses. For a further substantiation of the actors’ position in the development of the discourses, we relied on other publicized documents. They include primary sources produced by the actors, i.e. statements about e-mobility in business reports, press releases and programmatic federal government statements. Finally, we also searched academic literature in the areas of economics and transport research for evidence on the actors’ positions toward e-mobility.

Firstly, potential articles were selected by comprehensive research in the electronic archives of the German print media using the following search terms: electric mobility, electric vehicle, electric car and electric engine, and including synonyms. The articles were then classified into three orders: articles of the first order are characterized by an in-depth discussion of e-mobility. Articles of the second order refer to e-mobility but they deal with it only superficially and without critical discussion. In the articles of the third order single search terms appear but it is not their main topics, for instance the economic stimulus package was the main topic and e-mobility was mentioned as one objective among others. Altogether this research in the newspapers and magazines revealed more than 1000 articles between 1990 and 2010. Upon closer examination, 674 of these fell under the first and second order. Finally, 383 articles were identified of the first order. These articles were chosen for detailed analysis. In case of unclear statements, articles of the second order were used for further clarification.

In this media analysis actors and topics were inductively grouped with respect to their position in the articles and weighted according their quantitative appearance, for example the number of namings of certain topics and the number of contributions of certain actors. As the most meaningful actors has proved the automotive industry, the power industry, politics and the so-called “new” stakeholders, which in the process of electrification of drives are pushing into the field of the automotive industry. Although during the research process further social actors from different areas were identified, like science and research, the petrol industry and environmental agencies, when compared to the main actors they played a marginal role in the development of the discourses. The relevant categories of the discourses we identified were environment, energy, alternative engine technology, battery technology, and charging infrastructure. Subsequently the articles of the first order were coded with this actor- and theme-specific category system, using a software tool for textual qualitative content analysis. The quantitative and qualitative analysis was related to each other to give a coherent picture.

4. Two e-mobility discourses compared – look back into the future

The quantitative overview of the articles of high relevance between 1990 and 2010 shows two peak phases. The first peak phase is located in the beginning of the 1990s and flattens in the middle of the 1990s. It is followed by a few years of rest. The second peak started in 2007 and is still ongoing (see Fig. 1).

The media analysis showed that the e-mobility discourse of the 1990s was motivated by the coincidence of an international economic crisis of the automotive industry as well as a peak in the environmental debate (Haipeter, 2001; Radkau, 2011) (see Fig 2). From the government point of view the pressure of the economic crisis and the environmental problems should be solved by innovations of the automotive industry (in this context in the field of electric vehicles). Car manufacturers were pushed and subsidised to invest in new engine technology. A main event instigating this discourse was the Zero-Emission-Vehicle-Mandate in California. In the early 1990s problems of air pollution made the US State of

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3 For more details Schwedes et al. (2011).
California pass the Zero-Emission-Vehicle-Mandate which forced car manufacturers to develop electric vehicles (Westbrook, 2007). The German press covered this policy initiative extensively. It was described for example as “the most courageous environmental regulation of that time for the world’s most powerful industry lobby” (Die Zeit, 07.07.2008). At the beginning the mandate exerted positive effects: American car manufacturers like General Motors and Ford increased their efforts in the field of electric vehicles. In 1996 GM presented the EV 1, an electric vehicle manufactured in series with a range of up to 100 km, and in later versions up to 200 km. European and Japanese car manufacturers were also engaged in developing electric vehicles during this time. Germany, for example, started a research project with 60 electric vehicles on the island of Rügen in the year of 1992, at that date the largest field test of its kind worldwide (Hoogma et al., 2002). Because of lawsuits by the traditional automotive industry the Mandate was nearly completely abolished in 2003 after several relaxations (Collantes, 2006). In a parallel development, in 1996, after the end of the research project on the island of Rügen, the German government reduced their efforts in the field of electric vehicles because of ecological concerns. Due to the fact that renewable energies had not been considered for the provision of electricity, carbon dioxide and pollutant emissions of e-cars were not proven to be advantageous compared with conventional cars. The German Federal Ministry for Education, Science, Research and Technology denigrated the electric car to “be and remain a vehicle in the niche of transport policy” (Der Spiegel, 18.11.1996). The Californian and German events led to a sudden halt in the engagement of the car manufacturers. Their counterproductive actions and insufficient foresight of governments finally caused the end of the first peak phase of the e-mobility discourse. It slowed down considerably during the 1990s and had virtually come to a stop by 2003. As mentioned above, a hegemonic discourse is always competitive. The first e-mobility discourse was in many respects fragile and broke down suddenly while competitive discourses like the hydrogen engine gained more relevance. At the turn of the millennium the hype for the fuel cell engine peaked. Different producers “share the conviction of the fuel cell as a key to the engine technology of the upcoming century” (Der Spiegel, 26.04.1999a).

The start of the second e-mobility discourse can be located in 2007. Compared to the e-mobility discourse of the 1990s some similar conditions existed (see Fig. 2). The automotive industry was again affected by an international economic crisis, which was even deeper than before. Another peak of the environmental debate, this time about climate change, arose (IPCC, 2007). In contrast to the previous phase, rising oil prices and the topic of peak oil appeared on the agenda, which meant that alternatives to fossil fuels were investigated more seriously; e-cars are now being discussed in connection with renewable energies.

Furthermore, technical developments in the field of battery technology have supported the start of the new phase. Even though the new lithium-ion batteries still allow only short ranges of about 100–150 km, this restriction is resolved in the discourse with the concept of ‘urban e-cars’. These bring together all the benefits like reduction of local air emissions, climate change risks and noise, pushing the disadvantages of the short range and lack of space in urban areas to the background. The central idea of an urban e-car fully developed its lead function within the discourse and functions as a common point of reference. In the establishment of a hegemonic discourse, central ideas, like the urban e-car within the e-mobility discourse, serve an important discursive function. Unclear, confusing discourses are compressed in the central idea to form a clear metaphor (Lakoff and Johnson, 1980). With the central idea of the urban e-car one gets an immediate picture of what the e-mobility discourse would mean in reality (see Fig. 2).

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4 The Zero-Emission-Vehicle-mandate dictates a share of 10% zero-emission-vehicles for the sales of each manufacturer in the year of 2003.
The strong motivation of the government to support the current discourse originates in the effort to support the German automotive industry which is severely affected by the economic crisis and lags behind in the research of e-cars world-wide. Thereby the aim of industrial policy of the Federal Government becomes clear: the e-car is regarded necessary for strengthening Germany’s international competitiveness in the field of electric mobility. The Minister of Economy appraises the electric car as a “key technology for Germany” (Der Spiegel, 26.04.2010). Additionally, the government argued for the electric vehicles as a contribution to climate protection and in this context also as possible energy storage for renewable energies in the future.

In the meantime, the societal context has changed again when we write. The financial and economic crisis seems to be over, especially in the automotive industry, while the discourse about climate change had subsided, partly because of ‘Climategate’ and the critique on the Climate Report of the International Panel on Climate Change (Nerlich, 2010; Schiermeier, 2010). Against this background the question arises whether or not, as in the 1990s, the e-mobility discourse will once again fall silent. In contrast to the 1990s, apart from the economic and the ecological debates, a new theme is now communicated which might be strong enough to sustain the second e-mobility discourse: oil depletion. This factor forces the government and automotive industry to increase efforts towards alternative engines since facing the end of oil reserves represents an inevitable challenge. As an author of the Spiegel commented in 2010: “Two reasons are communicated for the electric car. The first is the climate change, the need to build a car with sustainable energy consumption – while the car is not the main producer of carbon dioxide […] There is another reason why the electric car is on the way. The second reason is the decisive factor – oil” (Der Spiegel, 03.05.2010).

As a result, from an external perspective the hegemonic e-mobility discourse is strongly influenced by a strategy which is mainly focused on technological innovations to make efficiency gains. Other strategies focusing on a change in mobility behavior for instance are not part of the hegemonic discourse, but marginalized in expert circles. In the following section we will analyze the e-mobility discourse from an internal perspective by taking a closer look at the actor configurations. Who are the driving forces of the e-mobility discourse and what interests do they have to do this?

5. The actor configuration – how it happened the way it happened

In our media analysis, we identified four groups of actors: the power industry, the government, the automobile industry and the so-called “new” stakeholders. The new stakeholders include on the one hand suppliers to the automotive industry, such as producers of batteries, and on the other hand small start-up companies like car producers. In both e-mobility discourses the energy industry was motivated by the creation of new markets and by being the driving force of e-mobility. The traditional automotive industry proved to be more skeptical. With the electric car they reluctantly initiated a new system path, which they would not implement unless it

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**Table:**

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<tr>
<th>Events, which mainly influenced the e-mobility discourse of the 1990s</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>Economic crisis of the automotive industry (at the beginning of the 1990s)</td>
<td>threatening job cuts, automotive industry discusses possibilities of a strategic reorientation</td>
</tr>
<tr>
<td>Californian Zero Emission Vehicle Program (1990)</td>
<td>Strict regulations planned, fought by automotive industry</td>
</tr>
<tr>
<td>Pilot test with electric vehicles on the island of Rügen/Germany (1992-1996)</td>
<td>60 e-cars, conventional car concepts, negative interpretation of the results</td>
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<th>Events, which mainly influenced the e-mobility discourse started in 2007</th>
<th>Explanation</th>
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<tr>
<td>Financial and economic crisis (beginning in 2007)</td>
<td>Following crisis of the automotive industry, threatening job cuts</td>
</tr>
<tr>
<td>More awareness of climate change and necessary countermeasures</td>
<td>Climate debate and legal regulations/acts (Fourth Assessment Report of the Intergovernmental Panel on Climate Change published in 2007)</td>
</tr>
<tr>
<td>High oil price, expected shortage (peak oil)</td>
<td>July 2008: all-time high oil price</td>
</tr>
<tr>
<td>Technical developments in the field of battery technology</td>
<td>Application tests with new lithium-ion batteries, first significant application: Tesla Roadster (officially revealed to the public in 2008, start of small series production in 2008)</td>
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**Fig. 2 – Events that mainly influenced the development of the discourse (analysis of print media by use of additional sources).**
was inevitable. Politicians in turn appeared in both discourses as initiators of government-funded industrial projects. The government considers e-mobility not only as a technical development path for electric cars but also from the perspective of sustainable transport development. However, due to the major economic importance of the automotive industry for the German economy, their interests are taken very seriously. The “new” stakeholders have only recently acquired more relevance. In questioning the new power relationship between the suppliers and the final manufacturers they affect a structural change within the automotive industry.

During the first discourse the e-car could not prevail because of the strong position of the established automotive industry. Due to the economic crisis at the beginning of the 1990s, the automotive industry was in a state of uncertainty regarding its future and was prepared to consider alternative pathways, especially if the government was prepared to subsidize research. By the mid-1990s at the latest, the crisis had been overcome and structural reforms in the automotive industry were introduced. These did not include the electric car but instead focused on and reinforced the internal combustion engine. At the same time the automotive industry found ways to counter the ecological critique, which lead to a legitimacy crisis for the automotive industry. In the early 1990s the car was portrayed as “the number one environmental vandal” facing a “total loss of acceptance”, as a head of research of a German automobile manufacturer put it, which “requires a concerted action by all participants” (Der Spiegel, 08.07.1991). In the late 1990s even this critique could be successfully countered by new cars with lower emissions. Accordingly, the interest in the electric car appeared in a small time slot of general uncertainty. In 1996 the results of the Rügen pilot study were evaluated differently by the power industry and the automobile industry, clearly showing the individual interests of both parties. The positive attitude of the power industry underlined the advantages of the electric car compared to the conventional combustion engine. Critical arguments like the limited range and lack of positive environmental effects were met by the energy industry with arguments of a nearly unlimited suitability of the electric car in urban areas and the positive environmental results at the local level. In addition, the German association for the power supply industry criticized the negative interpretation of the results of the pilot project on technical grounds: “The criticism would have applied to older, not optimized electric cars that would not have been put on the market.” (Frankfurter Rundschau, 12.02.1997).

At that time the automobile industry had already overcome its economic as well as its legitimacy crisis and it had a clear view of its core business: the traditional internal combustion engine. In contrast to the power industry, they pointed out the negative aspects of the electric engine compared to the combustion engine. They argued that battery technology needed to mature and performance would be entirely inadequate. Furthermore, they pointed out that with respect to the environmental results the electric car did not bring real benefits as long as the electricity was generated using fossil fuel. Thus, from the automotive industry’s perspective, there was no good reason for turning away from the tried and tested conventional car.

The government was maneuvering between these extreme positions of the two industry sectors. While following the spirit of the time by initially supporting the electric car with public funding, at the end of the test phase governmental policy was modified. Policy makers could not make a stand against the two industrial positions with their own programmatic standpoint. In retrospect, neither the one-sided critique of the electric car by the automotive industry nor the solely positive account by the power industry was as such convincing. Even at that time the conclusion could have been reached that the electric car would be a contribution for sustainable transport development provided the necessary policy framework would be put in place. Such an energy and transport policy would have to be defined by the government, but instead of taking a decisive position to contribute to a nuanced public understanding, the government followed the most influential stakeholder being the automotive industry.

The analysis of the media and the additional documents has shown that the actor configuration has changed in the recent e-mobility discourse. Although the same stakeholders are dominating the discourse, their standing in the development of the discourse has changed, as is shown in Fig. 3. As in the case of the first e-mobility discourse the automotive industry dominates the discourse, while in the current phase energy providers have taken a more active part. The energy providers take an active role in the process by investing in charging infrastructure for e-cars, expecting new sales potentials for its electricity and profits from new value-added services. More generally, there is more pressure on the traditional automotive industry to push the development of e-cars suitable for the general population. They also recognize that they are behind in the global development of the e-car and are dependent on cooperation with the so-called “new actors”. This is the starting point of a “real struggle for the best partners in the battery technology” (Der Spiegel, 28.07.2008). Furthermore the automotive industry is interested in e-cars to improve their image. The electric car is communicated as being “in line with the trend of the current time” (Der Spiegel, 18.11.1996). As it has been the case in the 1990s, the automotive industry had to act from a defensive position. By announcing the imminent production of e-cars they were providing a symbolic policy.

As shown in Fig. 3, the actor configuration in the recent discourse shows a more complex and closer network of relationships than in the 1990s. This is also expressed by a change of the political framework. As a result of the Act on the Priority of Renewable Energy Sources a rapid development of renewable energy generation has taken place. After the retreat from nuclear energy this development received an additional impetus. In this context the electric car has attained a different meaning. In the recent discourse it is no longer just the poor alternative to the combustion engine but an integral part of a new post-fossil energy concept. Within this energy policy strategy the energy industry becomes increasingly important.

The so-called “new” stakeholders profit too from this change of importance of the electric car. As is well known, these small and middle-sized enterprises have been suffering for a long time due to their lopsided dependence on the big automotive companies. They react more than they act and therefore until recently they were not been able to appear as
actors. By increasing the importance of the electric car, this lopsided dependence is shifting in favor of the new actors. “New companies get the chance to establish themselves in the automotive industry. Battery producers, electricity suppliers, power producers and technology companies that produce innovative automobile parts gain in importance” (Frankfurter Allgemeine Zeitung, 22.06.2009). Because of the high competence requirements of electrical engineering in the value chain of the electric car, the importance of suppliers has been enhanced. In some cases small enterprises have even started to build electric cars on their own.

In the recent e-mobility discourse the government is acting by starting new rounds of extensive funding. The German federal government’s National Development Plan for Electric Mobility was developed in close cooperation with the industry (NEE, 2008). “Currently, the Federal Government promotes the ecological changeover of the power and automotive industry with a carrot-and-stick policy. Both branches are connected by subsidies, research programs and showcase projects” (Die Zeit, 20.05.2009). However, an analysis of policies shows a one-sided strategic orientation towards economic interests. As the experiences with the e-mobility discourse of the 1990s have shown, none of the main actors then considered the topic from the viewpoint of sustainable transport development, and this is yet again the case at present. After failing to use the potential of electric traffic for sustainable transport development in the 1990s, it would indeed be a political challenge to set such a course today. In effect, the second report of the National Platform on Electric Mobility follows the principle that the main responsibility for the development of electric transport lies with the economy and the enterprises, hence it still lacks the necessary political statement for sustainable transport development (GGEMO, 2011).

From an internal perspective the hegemonic e-mobility discourse can therefore be characterized as an industry-driven process, where actors with different particular interests join together aiming for the same objective, although they are also competing with each other. Therefore the hegemonic e-mobility discourse is not just excluding other competing perspectives, but is itself a fragile formation. However, even when it seems an ongoing stable hegemonic discourse, the actors can push forward a one-sided economic strategy, focusing solely on technological innovation.

6. Conclusion

After examining the development of the e-mobility discourses, the first main question of this study, whether the recent discourse is substantially different from that of the 1990s can be clearly answered positively.

As we have seen, with the appearance of the themes of peak oil and the move towards alternative energy sources new topic have appeared on the agenda, alongside the economic and the ecological debates which have influenced the e-mobility discourses from the beginning. This addition may be strong enough to sustain the second e-mobility discourse, because it pushes the government and automotive industry to increase efforts towards alternative engines. Moreover, the actor configuration as well as the power relations between the actors have changed. The nearly unlimited power of the automotive industry in the 1990s, which could directly influence government policy, was weakened by the increased importance of the power industry and the new actors. However, the comparison of the history of the two e-mobility discourses has also shown that success and failure of technological innovations largely depends on political decisions, more than on the contents of the discourse or the actors involved in supporting it. While the government in the 1990s discarded the topic, at present
it starts a second round of funding. Therefore, a crucial inside might be that with respect to sustainable transport development the government is needed as a decisive driving force (Dijk and Yarime, 2010; Van Bree et al., 2010).

Even if the recent e-mobility discourse has this new substance, this does not yet answer the second question of this study, which is whether the electric car can contribute to sustainable transport development (Geels, 2011). The positive public image of e-mobility in general and the central idea of the urban e-car in particular have taken a lead function in the actual discourse. Sceptics confronted with this image can hardly argue against a technical artefact which is related to positive effects like reduction of pollutant and noise emissions and is therefore associated with that a hopeful future. What can be said against an urban e-car which would clearly improve the quality of life in cities in contrast to vehicles with the combustion engine? However, there is a long lasting consensus in transport science that the automobile is the last option for sustainable urban transport (Banister, 2008).

Contrary to rural areas, where people highly depend on the car because there are no alternatives, in urban areas options such as public transport and the bicycle exist. Cars, including e-cars, disproportionately consume space as well as resources and cause accidents. A transport strategy focused exclusively on electric vehicles would not solve “the crucial problems of road traffic” (Frankfurter Rundschau, 04.05.2010). Furthermore the hype about e-mobility could displace the search for and funding of alternative urban sustainable transportation possibilities such as public transport, car sharing and pedestrian and cycle traffic.

The simplicity of the central idea of the urban e-car is a reason for its success in the current debate. A critique of this idea has to propose a differentiated transport development with e-cars being, at best, a single element of it. Whereas the central idea of the urban e-car is quite powerful because of its simplicity, the complexity of reality of transport is an unappealing fact in public discourse. The congeniality of the central idea is exactly its persuasiveness through simplicity. The crucial question is who will influence the e-mobility discourse and for what objectives. It obviously makes a difference whether e-mobility is promoted as a business case or supported as part of sustainable transport development.

The actual hegemonic e-mobility discourse is thus very much influenced by particular industrial interests; commercial enterprises use ecological arguments for their needs. Therefore, currently the e-mobility discourse functions as a white hope for sustainable transport development: in reality it actually appears more a Fig leaf for particular interests. It is still far from clear whether e-cars could be part of a sustainable transport strategy. If, for instance, policy makers can be convinced of the urban e-car as a sustainable alternative to the combustion engine, which merely has to be substituted, we would still be far from a sustainable urban transport development, a point which Driscoll et al. (2012) make for Iceland.

There is without question a huge gap between the public e-mobility hype and the associated hopes with respect to a sustainable transport development on the one hand, and the realistic evaluation of the short and medium term contribution of e-mobility to sustainable transport development on the other. With respect to the challenge of reducing carbon dioxide emissions and climate change, for instance, we do not have to wait for e-cars but could very easily act immediately in many ways. To give just one example: a speed limit on German highways would reduce carbon dioxide emissions by roughly the same amount as the one million e-cars that are expected to be on the road in 2020 will.

We do not want to be misunderstood: the development of the technical innovation e-car is important. The problem starts when the e-mobility discourse is used, as we have shown, by powerful actors with particular interests to detract from a discussion on a sustainable transport policy. From a policy perspective, the e-car is a single brick in a whole building which besides technological innovations should include a strategy to change peoples’ transport behaviour. The e-mobility discourse currently inspires the hope for a technofix: a technological innovation which will solve all transport problems without needed any change of behaviour. As a contribution to the public policy debate, this old-fashioned belief must be criticised in order to reveal alternative perspectives for political actions that will lead to a real sustainable transport development.

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5 That has been demonstrated once again after the nuclear catastrophe of Fukushima, when the German government decided against nuclear power and for renewable energy, even against strong resistance of the power industry.


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