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Decarbonizing Transport in the European Union: Emission Performance Standards and the Perspectives for a European Green Deal

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Abstract: The transport sector is a major driver of climate change both globally and in the European Union (EU). While the EU as a whole is showing declining carbon emissions, transport-related emissions are higher than in 1990. Car traffic is responsible for around 12 percent of the EU's total greenhouse gas emissions. EU Commission President Ursula von der Leyen underlined the efforts to strengthen the decarbonization of the EU at the end of 2019 by publishing the European Green Deal (EGD) communication. In this paper, we analyze the controversy surrounding the emission performance standards for cars adopted in spring 2019. Car manufacturers must reduce the average carbon emissions of their fleets by 37.5% between 2021 and 2030. In this respect, the new emission performance standards are more ambitious than the previous ones. However, our argument is that without a major shift in the balance of power, extensive decarbonization and a departure from car-centered transport development will not be possible. Therefore, it is crucial for mobility research to critically engage with lobbying power in the EU and with concepts such as environmental leadership, which often underexpose the structural power of incumbent actors and existing path dependencies.

Keywords: EU; fleet limits; Green Deal; lobbying; transport policy

1. Introduction

The crisis of society–nature relations is coming to a head. This is the broad consensus in science, as formulated, for example, in the concept of the Anthropocene. The Anthropocene discourse claims that since the beginning of industrialization, humanity has exerted a massive influence on the Earth system, and in the meantime, numerous planetary boundaries have been crossed [1]. At the same time, many authors formulate criticisms of the concept by reframing the Anthropocene as the Capitalocene. This term emphasizes that it is not humanity, per se, but a specific form of social development, namely under the conditions of capitalist production relations, that has triggered the crisis of society–nature relations. Related to the dynamics of uneven development within capitalism, the responsibilities and vulnerabilities to phenomena such as climate change are very unequally distributed [2].

Nevertheless, climate change in particular has been heavily politicized in recent decades. One actor often described as a leader in environmental and climate policy is the EU. The process of European integration is also based on the EU's self-image as a leader in this field, which has nevertheless been disputed as “the myth of a Green Europe” [3]. Most recently, the President of the EU Commission, Ursula von der Leyen, underlined these ambitions at the end of 2019 with the announcement of the Green Deal that aims to decarbonize the EU by 2050 [4].

However, the EU's balance sheet is highly ambivalent in terms of climate policy: a heterogeneous picture emerges both with regard to member states and from a sectoral perspective. EU-wide emissions

fell by 21.6% between 1990 and 2018, while in the energy sector, they dropped by 30%. In the transport sector, on the other hand, emissions increased by 21% over the same period [5], largely due to car traffic [6] (p. 11). This increase is all the more remarkable because the problem has been known for a long time, and car manufacturers made their first voluntary commitment to lowering emissions as early as 1998. In 2009, the first legally binding emission performance standards up to 2020 were adopted [7]. In 2019, a new agreement was reached with a time horizon until the year 2030. By then, emissions are to be reduced by 37.5% compared to 2021 [8].

We argue that the emission performance standards adopted in 2019 reflect a certain emphasis on the ecological modernization of the EU transport sector. The comparatively ambitious EU Directive was made possible because—among other reasons—in contrast to the 2009 negotiations, the German Government did not make a firm commitment on the position of the German automotive industry when negotiating fleet limits. At the same time, however, the EU's existing power balance and institutional configurations inhibit a more far-reaching and problem-adequate approach to the ecological crisis in the transport sector. This aspect is often not sufficiently considered in research on European environmental policy. This is particularly true, as we will show, in the debates on environmental leadership.

The article is structured as follows: In the next section, we analyze the EU's performance in the field of climate and transport policy. Following on from this, in Section 3, we discuss the political economy of transportation and the institutional terrain of policy processes in the EU. Section 4 analyzes the controversies surrounding the emission performance standards for 2009 and 2019, and argues that the standards adopted in 2019 reflect a remarkable push for the ecological modernization of transportation in the EU. Our analysis emphasizes the role of the German automotive industry and the German Government as key actors in the negotiations. In Section 5, we summarize the results and formulate further research needs.

The empirical part of this paper, which is based on qualitative methods, is supported by 21 guideline-based expert interviews conducted during 2018 and 2019 with different stakeholders (from the automotive industry, non-governmental organizations (NGOs), think tanks, political parties, and ministerial bureaucracy), focusing on the struggles over the German Verkehrswende (transition in transportation). Some interviewees also provided important insights concerning the negotiation of the EU car fleet limits and the roles of German actors therein, especially the German Government. The interviews were recorded, completely transcribed, and evaluated by means of a qualitative content analysis. To validate the findings, the interviews were triangulated with primary and secondary data like newspaper articles, position papers, and reports from key stakeholders in the field and the scientific literature.

2. The EU: An Alleged Environmental Leader

Against the background of intensifying ecological crises and social movements pressing for a safer environment, several European countries started to establish environmental ministries, bureaucracies, and policies back in the 1970s. The electricity sector in particular began a shift away from fossil and nuclear technologies [9], evidenced by the share of renewable energy within the EU, which increased from 9.6% in 2004 to 18.9% in 2018 [10]. Driven by ambitious approaches to environmental policy in some member states, the EU developed significant self-confidence in becoming an environmental leader. The “myth of a green Europe” [3] became an important source of legitimation and a driver of the European integration process.

Claire Dupont and Sebastian Oberthür [11] argue that the EU has already made great progress in reaching its own decarbonization target for 2050 by adopting ambitious policies. Climate policies gained particular momentum in the first decade of the 21st century. Although the global financial and economic crisis from 2007 onwards, which has taken its own course in the EU with its economic and monetary union, has again pushed climate policy efforts into the background, the basic trajectories of climate policies continued within the EU and its member states. Rainer Hillebrand [12] argues that Germany focuses on green solutions such as renewable energies and energy efficiency precisely because

it previously had a carbon-intensive and import-dependent energy infrastructure. For that reason, Germany promotes this approach vis-à-vis other states and thereby sets, according to Hillebrand, a benchmark as a climate leader in the international field.

Other scholars try to explain the European leadership phenomenon by analyzing the institutional shape and dynamic of the EU. According to Martin Jänicke and Rüdiger K. Wurzel [13], the EU has established a complex, multilevel system of climate governance since the 1980s, based on means of leadership and lesson-drawing at different scales. Thus, the EU also took on a role as a global climate leader, even though the Union itself can be characterized as a “leaderless Europe”.

As a matter of fact, more and more competences in the realm of climate policies were shifted to the EU, thereby building on national efforts and environmental policy approaches. For this reason, it is important to understand the different dynamics of environmental leadership within the EU and its institutions. Wurzel et al. [14,15] argue that, generally, member states have not formed firm alliances. However, the Visegrád Group of four Central and Eastern European countries acted as a relatively institutionalized alliance and climate laggard in recent years. In contrast, the Green Growth Group, formed by 14 Northern, Western, and Southern European member states, functions instead as a flexible and tentative alliance of claimed climate forerunners.

However, the EU’s classification as an environmental leader is not uncontroversial. Some researchers emphasize the discrepancy between ambitious rhetoric and real policy measures, as well as the huge diversity of EU member states, or the shortcomings of the European flagship in climate policy, the emissions trading scheme (EU ETS). Anthony Zito et al. [16], for instance, examine the political changes in EU environmental policy in recent decades and trace different phases of policy development for this purpose. They conclude that progress in this policy field is closely intertwined with the process of EU integration. Therefore, environmental policy is reshaped by the neoliberal paradigm and subordinated to the objective of competitiveness. Moreover, environmental policy has been challenged by various economic and political crises since 2008. Nevertheless, changes remain incremental despite relatively high continuity of environmental policy throughout the EU during recent decades. This finding implies that abrupt changes are unlikely, and that ambitious policy initiatives—appropriate to the environmental challenges—are difficult to promote.

This finding resonates with Amanda Machin’s [17] analysis of the discourse of ecological modernization, which is closely associated with the leadership debate, in the European context. This frame connotes a harmony between economic and ecological aims, whereas in practice, it privileges economic objectives. With its focus on technological innovations, the ecological modernization discourse leads to a twofold depoliticization of environmental politics: Firstly, it emphasizes market rationality rather than political disputes concerning the direction of environmental policy measures. Secondly, it presents itself as lacking any alternative, thereby blurring the scope for other approaches.

Against this background, the EU has an ambivalent environmental record. While there have been attempts to push for ecological modernization, at least in some countries and policy areas, EU environmental policy as a whole falls far short of what is needed, for example in terms of mitigating climate change. One policy area closely related to climate change is the transport sector, which—contrary to prevailing trends in other sectors—has continued to increase its greenhouse gas emissions in recent decades. The European Commission’s 2001 and 2011 White Papers on transport already addressed related environmental problems (primarily, high emission intensity and the need for an Integrated Transport Policy (ITP)), thereby addressing economic, social, and ecological aspects; nevertheless, it has not yet been possible to reduce greenhouse gas emissions in the transport sector. In the following sections, we argue that the possibilities for an environmentally ambitious transport policy conflict with economic developments and interests, which are often articulated as national interests.

3. EU Transport Policy: National Interests, Lobby Influence, and European Post-Democracy

Even though the EU already introduced legally binding CO₂ limits for fleet cars back in 2009, greenhouse gas emissions from transport continue to rise, thereby challenging the overall EU climate

targets. In order to make sense of the problems of EU transport policy, and the outcome of the CO₂ emission performance standards in particular, it is necessary to analyze the constitution of national interests among powerful member states, as the automotive industry is of great economic importance in the EU overall and of paramount importance to certain member states such as Germany. Moreover, increasing traffic volumes are strongly linked to (and drive) national economic growth. The link between economic growth, traffic growth, and the automotive industry constitutes persistent power relations and economic and political path dependencies within the EU, thereby making a transition towards a decarbonized transport system and economy difficult to accomplish [18].

Nevertheless, some scholars support the thesis that transport-related environmental problems result from inappropriate modes of governance and inadequate political steering. For example, a case study by Detlef Sack [19] examines the ITP as an example of political steering problems, looking at the programs on “Mobility in Agglomerations” and integrated freight villages. The ITP’s objective was to contribute to the integration of—and a shift towards—low-carbon modes of transport. However, contrary to its ambitious aspirations, the policy scheme showed weak results. Sack attributes this policy failure to the difficulties of combining distinct modes of governance in a productive manner. In particular, the approach of “Co-Opetition”, i.e., the complementary nexus of cooperation and competition, could not be accomplished (for a similar reading, see [20,21]).

Even though such steering problems constitute a political challenge, they are not sufficient to explain the path dependencies and environmentally inadequate outcomes observed in transport policies. Against this background, other scholars advance the thesis that the particular national economic interests of powerful member states dominate EU transport policy, and thereby its inability to contribute toward climate change mitigation. Kirstin Lindloff [22] elaborates that the EU is a specific type of federalist system and asks how that affects the quality of environmental and transport policies. On the one hand, it can be seen that the centralization of environmental policies has tended to strengthen this policy field. On the other hand, an intergovernmental mode of governance is still important within the EU, which is characterized by national interests. On the basis of this tension, Lindloff pursues the question of whether there is a climate forerunner state within the EU’s federalist system. She concludes that Germany is not playing a pioneering role within the EU: Instead, the interests of the German automotive industry play a major role in policy formulation. This is why Germany has traditionally played a rather slowing role when it comes to environmental requirements in the field of transport policy.

From a similar angle, Helene Dyrhaug [23] argues that environmental policy integration (EPI) is required in order to strengthen policies towards a sustainable transition in the EU. Yet, this is at risk of failing due to problem sectors such as transport, as Dyrhaug shows through analyzing the adoption of the 2011 Eurovignette Directive (a detailed legal framework for charging heavy goods vehicles for using certain roads). She argues that severe conflicts are a defining characteristic of politics within the committees and in the plenary of the European Parliament as well as in the Council. Notably, rapporteurs and presidents must accommodate critics in order to avoid vetoes with respect to a blocking minority; consequently, this tends to conserve the status quo. Those veto positions in transport policies are, first and foremost, grounded in the key national interests of member states that are shaped by their economic constitution and preferences.

Thus, the industrial interests of major EU member states have a major influence on decision making in the EU, making ambitious EPI difficult to implement. Yet, this is not to be seen as a fixed or deterministic nexus but as a relatively stable structure that can be set in motion, especially if progressive member states can make use of political windows of opportunity to change policies. In order to trace back the formation of such national economic interests in transport policy, it is crucial to take into account the importance of lobbyism in the EU.

A number of authors hold a rather positive view of lobbyism. For instance, David Coen and Jeremy Richardson [24] emphasize that economic and societal stakeholders not only try to make their voices heard, but also that the EU institutions actively demand the actors’ involvement. Due to their limited

personnel resources, and in order to obtain information and achieve legitimation, EU institutions create forums of communication. Justin Greenwood [25] points out that the EU allows NGOs to act as representatives of the public in the absence of an unfolded civil society, and provides them with the necessary resources for this purpose, as EU institutions should facilitate a broad and pluralistic participation process as well as a deliberative debate. Looking at climate policy, Eleftheria Vasileiadou and Willemijn Tuinstra [26] conclude that stakeholder consultations by the Directorate-General (DG) for Energy promote the integration of climate targets into energy policy, especially if such consultations are designed as open discussion platforms and give experts and lobbyists the chance to comment on policy drafts at an early stage of the political process.

However, the adduced trends that could compensate for the prevalence of lobby power turn out to be a blunt sword. According to Hans-Jürgen Bieling [27], supposedly consensus-oriented expert groups and decision-making forums do not indicate a diffusion of deliberative procedures as a Habermasian democratic theory would assume. Fora of that kind might exist within the EU's institutions, but do not inevitably counteract an erosion of democracy since they are themselves characterized by a principal democratic deficiency. Those platforms do not ensure input legitimation, but instead rely on throughput- and output-legitimation. They cannot substitute representative organizations and a democratic formation of will. In practice, delegates of particular interests and self-appointed representatives speak on behalf of a population that has very limited opportunities to participate. Moreover, those processes disregard societal and institutional power relations that undermine the deliberative quality of the platforms in question (see also [28]).

Those power relations are key to understanding the politics of lobbyism, the unsatisfactory outcomes of transport policies, and the structural selectivities of the EU polity. Lobbyism is not beneficial for the common good and the political effectiveness of governance, but is instead a key political device for pushing through particular interests to the detriment of the public. This praxis is not only about isolated interventions. In fact, long-term and stable relations have developed between EU institutions and social actors. The latter intervene in all policy phases, from agenda setting via law-making through to implementation of policies. Moreover, we observe a trend—from a corporatist association-centered representation to a rather pluralist lobbying of single companies and think tanks. Furthermore, governance in the EU is characterized by a mode of lobbyism in which powerful players flexibly jump between local, regional, national, and supranational scales in order to assert their interests [28,29].

The realm of EU lobbying is dominated by corporate power. Only one-eighth of all lobbyists in Brussels represent the causes of employees, human rights, the environment, etc., while the rest work for corporate interests. Approximately 500 transnational companies and 1500 corporate associations have offices in Brussels. They are accompanied by numerous law practices, public relations agencies, consultancy firms, and think tanks that also—for the most part—work for commercial concerns [28,30,31]. NGOs also have their offices, political contacts, and lobby and advocacy strategies to make their voices heard, although corporate actors usually have greater resources and more allies within the institutions.

Anne Therese Gullberg [32] shows that business organizations consider their accesses to climate policy-making in the EU as much better than environmental NGOs do. This bias is further exacerbated, since gaining policy access to the EU is extremely resource-intensive. Dyrhaug [23] confirms this finding, arguing that the car lobby has more resources and contacts than environmental or public transport advocates and therefore, prevails (see also Lund [33] for an analysis of the Kyoto Protocol's Clean Development Mechanism).

These findings and arguments on lobbying power raise the issue of the democratic quality of the EU with respect to its post-democratic condition. According to Colin Crouch [34,35], the term post-democracy characterizes contemporary political systems in which formal democratic principles of representation and decision making as well as the rule of law continue working; however, in practice, they run at idle in terms of a vibrant democratic polity. The citizenhood is increasingly excluded and

alienated from the real political process, while barely legitimized circles of elites make key decisions. In contrast to citizens, corporate actors have privileged access to those circles and are closely interwoven with the elites.

Nevertheless, corporate influence neither implies that companies infiltrate and corrupt an essentially neutral and independent EU serving the common good, nor that they control EU officials like puppets, or that EU institutions and corporations are conflated into a homogeneous bloc. Instead, state institutions should be conceived as solidified condensations of social balances of power. Seen from this angle, they are characterized by relative autonomy from particular interests. However, the EU is shaped by a pronounced strategic selectivity vis-à-vis dominant corporations, reflecting the predominance of corporate power at the societal level. Civil society actors such as environmental NGOs are also present within this parallelogram of forces, but only in a minor role [36].

Furthermore, specific societal interests are typically represented by particular EU institutions. Individual actors have political strongholds and outposts in distinct state apparatuses. NGOs and actors oriented toward the public good have their contacts within the relatively weak European Parliament or the Directorate-General for Climate Action (DG CLIMA). In contrast, corporate groups can gain access to a set of inner wards within the technocratic and executive bodies of the Commission that are subject to only limited democratic control [30]. In addition, there are considerable power disparities between the EU member states. Major states (such as Germany) are particularly successful in establishing “their” corporations from key industries as national champions that are able to both capture the EU market and simultaneously use it as a basis to enter new foreign markets. Minor member states have to form alliances to strengthen their position vis-à-vis major states. Yet, this phenomenon does not imply an intergovernmental perspective, but is a manifestation of power relations within EU statehood [37].

4. Struggles over Emission Performance Standards for Cars

Following on from previous considerations that the transport sector has strong path dependencies and a poor emissions balance, and that European policy is strongly characterized by unequal power relations between capital and “common good” interests and power disparities between member states, we reconstruct the negotiation of emission performance standards for cars. The following sections analyze the struggles that led to three EU Directives on vehicle emission standards (in 2009, 2014, and 2019). Directives 443/2009 and 333/2014 were only slightly ambitious and had little effect due to numerous loopholes, whereas the most recent Directive 2019/631 is much more ambitious. Although the new Directive also includes many loopholes, it nevertheless reflects a shift in power relations to the extent that the German automotive industry has not succeeded in universalizing its interests as the national interest. In this respect, the Directive opens up the possibility for accelerated ecological modernization of EU transport by means of electric cars.

4.1. Directive 443/2009: Germany and France at the Heart of the Conflict

The negotiation of Directive 443/2009 was marked by three lines of conflict. Firstly, environmental NGOs such as Transport&Environment (T&E) campaigned for the rapid decarbonization of transport and strict emission performance standards, while the European car companies and their umbrella organization European Automobile Manufacturers’ Association (ACEA, in French: Association des Constructeurs Européens d’Automobiles) and the German Association of the Automotive Industry (VDA, in German: Verband der Deutschen Automobilindustrie) tried to weaken the climate legislation in order to secure their CO₂-intensive business model. However, secondly, there is also a line of conflict within the industry: while German car manufacturers are particularly active in the premium segment characterized by heavy, emission-intensive vehicles, the French car industry, for example, is more focused on small and medium-sized cars. Accordingly, the French car industry has been much more open to reasonably ambitious standards. This orientation was also reflected to a large extent in the positioning of the respective governments. Thirdly, there were also differing views within the European institutions. The European Parliament called for relatively ambitious standards and this was

also supported by the DG for the Environment, whereas DG Enterprise adopted a position similar to the demands of ACEA, and the European Council was also divided [29,38,39].

While the Commission was developing its draft in 2007, a fierce conflict became public, between the DGs for Environment and Enterprise, concerning the formal leadership and content of the Directive. The network Competitive Automotive Regulatory System for the 21st Century (CARS21) also played an important role in the agenda-setting phase of the Directive. This expert group was founded in 2005 with the objective of bringing together different stakeholders to discuss the effectiveness of transport policies. However, its members were selectively composed and dominated by corporate interests, reflecting the asymmetric power relations in the field. The core orientation of the group was to adjust EU policies to enhance the competitiveness of the European automotive industry. Thus, corporate lobbyists had first-hand contact with Commissioners, while NGOs were excluded from the agenda-setting phase [40] (pp. 33–35).

Against this background, it becomes clear why the Commission's proposal drafted in December 2007 followed the companies' wishes to a large extent: Their new car fleets should not emit, on average, more than 130 g of CO₂ per kilometer in 2012, and not more than 95 g in 2020. Furthermore, every original equipment manufacturer (OEM) should be assigned an individually adjusted target for its car fleet depending on the average weight of each company's cars. The adapted target should be defined by a so-called "slope" factor. This scheme granted OEMs with vehicles of above-average weight a higher target value. Therefore, even if the factor was not proportional to the average emissions of the OEM's car fleets, it rewarded those companies with carbon-intensive cars [40] (pp. 39–41).

Subsequently, the alliance of the European car companies broke apart, with ACEA losing its unifying power. Member states' governments reacted to the EU's proposal basically by forming two opposing blocks. The targets drafted by the Commissions would have hit German OEMs considerably harder than their French and Italian counterparts. Even if German OEMs benefited from the slope factor, the targets remained a much greater challenge for them. Therefore, the VDA lobbied for an adjustment of the factor in favor of German OEMs. The interests of the automotive industry, which were essentially articulated as national interests, dominated the bargaining processes and resulted in intense disputes not only within the European Council but also the Commission and the European Parliament. The OEMs and respective associations each lobbied "their" governments, Commissioners, and parliamentarians [29].

The German automotive industry formed a coherent bloc under the umbrella of its lobby organization, the VDA, which became one of the core actors in the policy conflict. Aside from this mutual position, the companies also relied on direct lobbying. The chief executives of VW, Daimler, BMW, and VDA made use of their close contacts to German Chancellor Angela Merkel and several of her ministers [39]. Matthias Wissmann, former member of the German Bundestag and Federal Minister of Transportation (1993–1998), became president of the VDA in June 2007, since he had close personal ties to top-ranking officials, especially to his former cabinet colleague and fellow party member, Chancellor Merkel. The lobbying strategy of the German automotive industry was quite successful thanks to a well-functioning informal policy network at both the national and European levels [29].

Ultimately, Chancellor Merkel took the lead in pushing through the interests of the German automotive industry—bypassing the formal institutions and instead falling back on an informal European power network. The German Chancellor bargained directly with the major heads of government and executives of EU institutions. As the proceedings at the EU level became gridlocked, German and French government executives met for a bilateral summit on 9th June 2008. During this crucial encounter of the major adversaries, Germany was able to push through some substantial concessions for its OEMs: the slope was not changed, but a gradual phase-in of the 130-g target was agreed; the target should only apply to a part of the car fleets in 2012, not coming into full effect until 2015. Furthermore, the financial penalties for companies that fell short of the target were reduced.

In essence, Merkel won out over her French counterpart Nicolas Sarkozy, with the resulting agreement marking a breakthrough in the gridlocked negotiations [38].

A couple of NGOs attempted to intervene with the help of the Environment Committee of the European Parliament, to prevent the abovementioned phase-in and respective delay until 2015 from being integrated into the Directive. However, the European Parliament was unable to prevail over the Council in the subsequent trialogue. Both the Commission and Parliament remained relatively weak during the whole policy process. Instead, the laggards, primarily Germany together with some East European member states, gained a victory against “green” forerunner states within the Council, resulting in an agreement based on the lowest common denominator [38]. Directive 443/2009, passed on 23rd April 2009, embodies an asymmetric compromise in Germany’s favor.

4.2. Directive 333/2014: Concretization of the 2020 Target

Through Directive 443/2009, the European Commission bound itself to table a proposal by the end of 2012, on how the 95-g fleet target for 2020 should be implemented in concrete terms. Yet, the final Directive was not passed until the beginning of 2014. Once more, the conflict over this political question revealed the predominance of corporate interests. This time, however, environmental NGOs had a slightly stronger position in the policy process. The CARS21 group again presented a strategic paper, thereby setting the basic direction and framing of the subsequent political process. However, in the meantime, T&E had joined the expert group and attempted to influence the process from a minor position within the platform [40] (p. 51).

Similarly to the previous policy process, various advocates for the automotive industry intervened in the debate and made ample use of their informal policy networks at both the national and EU levels in order to undermine the political potency of the scheduled Directive. After confidential meetings with VDA lobbyists, the then German Minister of Economics, Philipp Rösler, a member the German liberal party (FDP, in German: Freie Demokratische Partei), contacted the then EU Energy Commissioner, Günther Oettinger, a member of the German conservative party (CDU, in German: Christlich Demokratische Union Deutschlands). Simultaneously, Martin Winterkorn, the then chairman of the executive board of Volkswagen, wrote to Oettinger on 5th July 2012. Oettinger, without formally being in charge, moved the then Climate Commissioner, Connie Hedegaard, to make concessions in favor of the automotive industry [41] (p. 24). As a consequence, on 11th July 2012, the Commission adopted a mitigated draft for the amended Directive that had been weakened to appease the auto industry.

In mid-2013, negotiations gained momentum again, when the EU sub-negotiators proclaimed an agreement in the trialogue on 24th June. They confirmed the 95-g target but introduced so-called “super-credits” that would allow companies to double-count cars that emitted less than 50 g per kilometer [42]. The companies coordinated their advocacy activities transnationally, on the basis of their shared interests, in order to limit the impact of the legislation. However, they formed national blocs when it came to its concrete drafting, following the paths of their respective product portfolios. The German OEMs demanded an extension of the super-credits and, in this manner, a softening of the targets. Once more, they began their lobbying by activating Horst Seehofer, the then conservative Head of State of Bavaria where the OEM BMW has its headquarters, as a relevant ally, who then contacted Chancellor Merkel. VDA president Wissmann also wrote to Merkel requesting her help, upon which Merkel’s Office of the Federal Chancellor then telephoned other EU governments over the subsequent days.

Initially, it was thought certain that the European Council would pass the compromise on 27th June. Nevertheless, Angela Merkel led the then Irish Taoiseach, Enda Kenny (then also President of the EU Council) to remove this point of order from the agenda [41,43]. Germany briefly pressed for another phase-in scheme, to run until 2024, as a condition for agreeing to the CO₂ target. Member states finally came to a new compromise on 29th November 2013 that was formally passed in February 2014. The new Directive 333/2014 included a one-year phase-in of the 2020 target until 2021 [44]. In summary,

German enterprises prevailed over their French and Italian counterparts by relying on the assertiveness of Chancellor Merkel and her government agency. Nevertheless, they could only manage to delay the policy rather than force a substantial revision of the Directive's final design.

4.3. Directive 2019/631: A Moderate Shift towards Ecological Modernization

In the following years, the political conditions described above remained relatively stable. However, some changes emerged that weakened the dominant position of the automobile companies, including to some extent German OEMs. Firstly, the urgency of the climate crisis gained importance amongst the European public, not least provoked by the rising climate justice movement, with the result that EU institutions perceived increasing pressure to meet their climate targets. Secondly, German OEMs lost influence over "their" government to a certain degree. This was due to the industry's loss of confidence experienced in the wake of the Dieselgate crises, and a certain shift of priorities within the German Government towards more ambitious climate policies (Interviews: Representative of Federal Government; IG Metall). Thirdly, the disputes over the previous Directives mainly concerned the optimization of combustion engines, whereas in the meantime, the technological and market maturity of electric vehicles had since increased significantly. Against this background, T&E claimed that new internal combustion cars would have to reduce their emissions by 60 percent by 2030 compared to 2021 levels, to meet the requirements of the Paris Agreement. T&E argued that by 2035, cars must not emit any greenhouse gases, implying that the producers may only sell electric vehicles from then on [45]. These gradual transitions are important for understanding the policy process and final content of Directive 2019/631.

In 2017, the Commission laid a new draft entailing proposals for the 2025 and 2030 fleet targets. Jos Delbeke, then Director-General for Climate Policy, sought talks with T&E and presented the prospect of integrating a fixed quota of zero-emission vehicles (ZEV) into the new Directive. However, the substance of the drafts was once again shaped by VDA, which opposed the impending rate for ZEVs. In particular, VDA was able to inscribe its approach into the bill, to set a CO₂ objective on a percentage rather than an absolute basis. VDA considered a target of 20 percent as the maximum feasible reduction.

As Chancellor Merkel was occupied with negotiating the structure of a new coalition government following the German federal elections of autumn 2017, VDA president Wissmann turned to Martin Selmayr for help, chief of staff of the then European Commission President Jean-Claude Juncker, and also to Climate Commissioner Miguel Arias Cañete. Wissmann's primary purpose was to undermine the potency of the ZEV target, and to weaken its effects if it could not be averted completely. For this purpose, he aimed to prevent EU sanctions on car manufacturers that fell short of complying with the ZEV quota. At the same time, the German ministers in charge called upon Günther Oettinger, who in the meantime had been appointed Budget Commissioner. Oettinger again interfered in the domains of his Commission colleagues. In addition, the then German Foreign Minister, Sigmar Gabriel, also exerted leverage on Juncker. As a result, the Commission dismissed the fixed quota for electric cars, but adhered to the intermediate objective for 2025 [46].

On 6th November 2017, the EU Commission published its draft: the car fleet of each OEM should reduce its CO₂ emissions by 15 percent by 2025 and 30 percent by 2030. Moreover, companies should sell 15 percent ZEVs in 2025 and 30 percent in 2030. The EU Commission abstained from enforcement mechanisms such as sanctions and instead relied on incentives. While the corporations were delighted by the proposal, NGOs such as T&E expressed their disappointment, warning that the weak targets and the non-binding ZEV quota would not compel the companies to change their product policies [47]. While Climate Commissioners generally patronize the cause of the environmental NGOs, Miguel Arias Cañete instead acted as an advocate for the automotive industry, declaring that tougher CO₂ targets could lead to further job losses and factory closures. In doing so, he referred to undisclosed data from ACEA, thereby contradicting the impact assessment conducted by his own DG CLIMA [48].

However, some relevant forces within the European Parliament backed the environmental concerns. Miriam Dalli, the Maltese representative and rapporteur of the Committee on the Environment, Public Health, and Food Safety (ENVI), took up the demands of the environmental NGOs. She was able to organize a majority within ENVI at its 10th September 2018 session. On 3rd October, the European Parliament decided upon a common position in line with ENVI: OEMs should be obliged to cut the CO₂ emissions of their fleets by 20 percent by 2025 and 40 percent by 2030; ZEVs should account for 20 percent of sales in 2025 and 35 percent in 2030. In contrast to the Commission's blueprint, the Parliament recommended considerable sanctions for companies that failed to meet the quota [49]. While T&E overall appreciated the Parliament's proposal, the NGO emphasized that the draft still fell short of meeting the Paris Agreement [50].

After the Parliament's statement, it was up to the European Council to find a common position. The confrontational diplomatic negotiations in the weeks before the Council's session on 9th October 2018 can be explained in terms of the divergent long-term strategies of member states with regard to preferred propulsion technologies. The French Government led a group of 19 member states that gave the EP leverage in arguing the case for an ambitious 2030 target. They were close to achieving a 65 percent majority, which would allow them to compel a decision. On the counter side, Germany headed a group including Bulgaria, the Czech Republic, Hungary, Romania, and Slovakia. Those member states chose the Commission's 30 percent target over the Parliament's tougher proposals [50,51]. Ultimately, Elisabeth Köstinger, the then Austrian environmental minister, brokered a compromise: fleet emissions should be reduced by 15 percent in 2025 and 35 in 2030. The Council's agreement included a range of exceptions, thereby further diluting the targets. Moreover, the Council agreed upon a ZEV quota of 30 percent in 2030—without imposing sanctions on manufacturers that fail to meet the objective. Thus, the Council's position was not far from the Commission's [52].

Finally, the European Commission, Parliament, and Council agreed upon a draft for the new Directive 2019/631 as part of the trialogue procedure on 17th December 2018. On 17th April 2019, the European Parliament and Council finally adopted the new regulation [53], under which OEMs are obliged to mitigate their CO₂ emissions by 15 percent by 2025 and 37.5 percent by 2030; low-carbon vehicles must account for 15 percent of sales in 2025 and 35 percent in 2030.

This outcome is remarkable, since the agreed targets are more ambitious than the positions of the Commission and Council, and tougher than the established corporate power relations had reason to expect. It indicates that the changing context and waning influence of the German automotive industry on the German Government paved the way for a form of ecological modernization of EU transportation that is at least somewhat more purposeful (Interviews: Representative of Federal Government; IG Metall). However, OEMs, especially the German ones, still retain a strong position and were able to weaken the potency of the Directive by introducing some concessions into the agreement; not only relying solely on incentives and excluding a sanction mechanism for missing the ZEV quota, but also introducing some loopholes into the bill [54].

Firstly, car manufacturers are allowed to register zero- and low-emission vehicles (ZLEV) in EU member states where the market for this technology is still developing (i.e., where the share of ZLEV among newly registered cars is less than 5 percent), thereby benefitting from higher credits—only to resell those cars a few months later in developed EU markets. This double-counting could lead to reduced market diffusion of electric cars and higher CO₂ emissions as the bottom line. Secondly, Norway, which has already unilaterally passed more ambitious ZEV targets, might be included within the EU CO₂ regulation (despite not being an EU member state). In that case, OEMs could count their sales in Norway (i.e., sales that would have occurred in any case in Norway's better-developed ZEV market) and offset these against selling fewer ZEVs elsewhere in Europe. Thirdly, the most potentially damaging loophole concerns so-called "compliance cars". Under pressure from car-manufacturing member states, a passage was integrated into the Directive allowing poorly performing plug-in hybrid cars with de facto high emissions to count towards the ZEV target. Those vehicles are quite often large SUVs that rarely utilize their electric propulsion option due to their short electric range, and that

often emit more CO₂ than conventional cars when using their conventional internal combustion drivetrains [55,56]. (In 2019 the EU published new figures indicating that CO₂ emissions of new cars increased by 1.6 percent in 2018. The main cause is SUVs that emit considerably more CO₂ than average petrol cars. The SUV share of new cars sold in the EU increased from 7 percent to more than 30 percent in the last ten years. Before carmakers were obliged to offer cleaner cars (from 2020 onwards), they held back low-emission vehicles and attempted to maximize sales of SUVs, which provide the highest profit margins [56,57]. These legal loopholes have far-reaching consequences, since OEMs that over-achieve the ZEV targets can reduce their CO₂ objectives by up to five percent [57,58]. Not least, the Dieselgate scandal showed that OEMs manipulated the emission tests in recent years, with the result that the effective emissions were well in excess of 40 percent higher than indicated. Consequently, the Commission introduced the stricter World Light Duty Test Procedure (WLTP) in 2017. Only one year later, it came to light that OEMs are also able to cheat this new procedure. Hence, the effect of the new reduction targets could be further watered down [59,60].

5. Conclusion: Accelerated Ecological Modernization instead of Social–Ecological Transformation

The crisis in society–nature relations makes a transformation of the transport sector imperative from an environmental perspective, especially as the sector contributes significantly to climate change. Of the sector's overall CO₂ emissions, a large proportion results from motorized private transport. The analysis of the controversies surrounding EU emission performance standards for car fleets shows that the regulatory approaches adopted to date are inadequate to address the scale of the problem. Fleet limits are not designed to reduce traffic, nor to shift the modal split towards environmentally friendly modes of transport or initiate a profound transformation of mobility, but rather to improve the technological efficiency of cars. In this respect, fleet limits correspond to the logic of ecological modernization, which in most cases has only a narrow focus on technological solutions and barely affects existing power relations [22]. Nevertheless, shifts in the struggles over emission performance standards become obvious by analyzing the policy processes in recent decades.

Voluntary agreements were still employed during the 1990s, whereas binding fleet limits were set in 2009 (Directive 2009/442). However, due to the influence of the automotive sector as a whole and the German automotive actors in particular, those fleet limits were entirely unambitious. In addition, numerous loopholes were introduced, so that the limits barely led to any reduction in emissions, especially since the real-world performance of cars showed increasing discrepancies with the official data provided by the OEMs. The German automotive industry and its umbrella organization, the VDA, were able to successfully prevent effective regulation due to their strong lobbying power at both German and European levels [22].

Against the background of the failure of current fleet limits, which remain valid until 2021, new more restrictive limits were adopted in 2019 (Directive 443/2019). This is partly due to the fact that the context has shifted: climate change has recently become heavily politicized, the car industry is on the defensive following the diesel emissions scandal, e-cars now offer a viable alternative to internal combustion engines, and the EU Commission has taken up the cause of a European Green Deal [4]. The Directive aims to reduce car fleet emissions by 37.5% by 2030 compared with 2021. This more ambitious approach is due, not least, to the inability of the German automotive industry to continue conflating its particular interests as synonymous with the national interest. While the German Government consistently pursued the interests of the German automotive industry in negotiating the 2009 fleet limits (and their concretization in 2014), it was much more hesitant when negotiating the 2019 Directive (Interviews: Representative of the Federal Government; IG Metall). Nevertheless, the new regulation also contains numerous loopholes. In this respect, it is clear that the existing power relations, which are also reflected in lobbying capacities, stand in the way of solving the problems associated with motorized private transport beyond electrification of the drive train.

This finding also leads to skepticism concerning the prospects of implementing a European Green Deal. Without overcoming the power relations associated with the existing system of non-sustainability,

as the debates on the Capitalocene [2] remind us, the destructiveness of existing society–nature relations will not undergo fundamental change. Against this background, both the EU as a whole and its individual member states still have a very long way to go to become environmental leaders. The emission performance standards adopted in 2019 are, at best, a minimal step in that direction.

This article has a focus on automobiles and thus, also refers to research gaps that need to be filled in the future. First, greenhouse gas emissions are rising not only in automobile traffic but also in freight and air traffic. In addition, the entire transport sector is facing major upheavals [61], also against the background of advancing digitalization and automated driving [62,63]. In this respect, future research should focus more on analyzing the political dynamics within the transport sector and different modes of transport.

Second, it is of great importance, as this article suggests, to think of mobility as a social relationship and to articulate the issues of decarbonization strategies with debates on mobility justice [64]. For it is by no means certain that the ambitions of the European Green Deal will be fulfilled and whether more than an ecological modernization of transport will take place at the European level.

This points to a third aspect, namely the need to relate the interaction processes between developments on the European scale to debates in national and regional contexts. It is therefore a matter of better decoding the dynamics of the European multilevel system.

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Representative of Federal Government (November 2018)

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