

EU Policies on Car Emissions and Fuel Quality

Reducing the Climate Impact from Road Transport

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Title

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Abstract

Transport is the second biggest source of greenhouse gas (GHG) emissions in the EU, and contributes about one-quarter of the EU's total emissions of CO₂. Significant reductions in GHG emissions from transport are required if the EU is to achieve its long-term climate goals. This report examines the making and implementation of two of the regulations the EU has put in place to lower emissions from the transport sector: the EU's revised Fuel Quality Directive (Directive 2009/30/EC) and the cars/CO₂ regulation (Regulation (EC) 443/2009). It was found that the relevance of various theories of policymaking in the EU varies with different policy phases. A policy-network understanding of EU policymaking is strengthened when assessing the policy-initiation phase. The Commission played a key role in this phase and drafted legislation in close collaboration with the car and oil refining industries. An intergovernmentalist understanding of EU policy-making is strengthened when assessing the decision-making phase. In this phase, member states defending the interests of their domestic industries had strong influence, but the European Parliament played an important role in this phase too, employing its power in the co-decision procedure. Finally, the implementation process is best understood as a multi-level governance process in which several actors and institutions - notably the Commission, member states, industries, and NGOs - influenced the process.

Key Words

car emissions, climate change policies, EU, fuel quality directive, transport

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Contents

1	Introduction	1
2	Analytical framework	2
3	The climate side of EU transport policy	5
	3.1 From Rome to Maastricht	6
	3.2 Entering: sustainability and climate change concern	7
	3.3 The 2011 White Paper	8
4	Background and baseline	10
	4.1 Fuel quality and the Auto-Oil processes	10
	4.2 CO ₂ emissions from cars	16
	4.3 Summing up the baseline before 2006/2007: Auto-Oil (fuel quality) and voluntary agreements (car emissions)	20
5	Initiation of coordinated policies	22
	5.1 A proposal for a revised fuel quality directive	23
	5.2 A new strategy on cars and CO ₂ emissions	28
6	Deciding on policies	35
	6.1 The fuel quality directive	35
	6.2 Regulation 443/2009 on cars and CO ₂ emissions	38
7	Implementing policies	42
	7.1 Implementing the revised FQD	42
	7.2 Implementing car CO ₂ standards	47
8	Comparative analysis and conclusions	50
	Interviews	57
	References	58

1 Introduction

Transport is the second biggest source of EU greenhouse gas emissions (GHG) after energy, representing around one-quarter of EU carbon dioxide (CO₂) emissions (Commission 2012a). While GHG emissions in other sectors decreased by 15% between 1990 and 2008, those from transport increased by 36% during the same period (ibid.). Road transport alone account for roughly 70% of EU transport GHG emissions (ibid.).

Significant reductions in GHG emissions from transport are required if the EU is to achieve its long-term climate goals. The EU has put in place a range of policies aiming to lower emissions from the transport sector. For instance, aviation has been included in the EU's emissions trading scheme (EU ETS); legislation is in place to reduce emissions from cars and vans; and a target and a policy have been adopted to reduce the greenhouse gas intensity of fuels. The two latter measures will be the subject of analysis and discussion in this report. Regulations targeting *car emissions* and *fuel quality* affect two of the most important and powerful industries in the EU: the car industry and the oil industry.

The EU member states are the world's largest manufacturers of motor vehicles, with the car industry directly employing more than 2.3 million people and supporting more than 12 million jobs across Europe in total (EurActiv, 6/10/08). This equals about 5.5% of all employment in the EU27. The cars produced in the EU are almost exclusively fuelled by oil-derived products, and the oil refining industry is therefore inextricably linked to the transport sector – and thus the car industry. In 2008, oil products supplied 90–94% of the energy needed for transport within the EU, and the transport sector accounts for more than half of the oil used worldwide (Europa 2011: 12). Although oil extraction is expected to peak and then decline in coming decades, the shortfall is likely to be compensated with non-conventional oil (such as tar sands) and other fossil resources such as gas-to-liquids and coal-to-liquids (Creutzig et al. 2011:2396). Such fuels tend to be more energy- and carbon-intensive than oil because of significant upstream emissions in the supply chain (ibid.).

To reduce CO₂ emissions caused by fuels, the EU has decided to adopt a lifecycle approach, taking into account emissions from the extraction, processing and distribution of fuels. In 2008, EU policymakers agreed on legislation requiring a reduction of GHG intensity of the fuels used in vehicles by up to 10% by 2020, placing the responsibility with oil suppliers. Car emissions were also addressed through agreement on binding legislation in 2008, forcing manufacturers to make cars more CO₂-efficient. The two pieces of legislation were negotiated and developed in the same period, alongside – but independent of – the 2008 energy and climate package.

The 2008 regulation on car emissions and the revised EU directive on fuel quality (FQD) were the first legally binding measures of their kind in the European transport sector. This was the first time that car manufacturers had to reduce CO₂ emissions through improvements in motor technology. Similarly, the revised FQD was the first time the oil refining

industry had to contribute to reducing CO₂ emissions through improvements in fuel quality, and the first time a fuel was directly subject to lifecycle analysis.

Agreement on these two pieces of legislation represented a milestone in EU efforts to reduce the climate impacts of road transport. This makes it pertinent to examine the following set of interrelated questions. First, why did the EU decide to adopt these legally binding measures, who were the key players in the policy-initiation and decision-making phases, and what was the relative influence of various stakeholders in these phases? Second, how can we assess and explain the 2008 outcomes of the policy-making process? Specifically, has the EU been able to balance the need for *ambitious* policy in these areas with *acceptance among target groups*? This question is crucial for goal attainment in the areas of car emissions and fuel quality. Finally, how can we assess and explain the changes introduced in the areas of fuel quality and car emissions introduced *after* 2008? The focus in this report is thus on the outcomes of policymaking, along two dimensions: level of ambition, and acceptance of policy. To explain the policymaking outcomes, we draw on general theories of EU integration and policymaking.

This report is organized as follows. Section 2 introduces the framework for analysing the making and implementation of the revised FQD, and the regulation on cars and CO₂. Section 3 briefly reviews EU strategies for dealing with the climate-change challenge in the transport section. In section 4, we take a closer look at EU policy in the areas of fuel quality and car emissions prior to the efforts to develop binding legislation. In section 5, we turn to the policy-initiation phase for the revised FQD and the cars/CO₂ regulation, and examine the first stakeholder consultations and the Commission's proposals for legislation. Section 6 examines the decision-making processes for both pieces of legislation, focusing on how key actors responded to the Commission's proposals and influenced the policy outcomes: the revised FQD, and the regulation on cars and CO₂. Section 7 looks at the implementation process, examining how changes introduced after 2009 have influenced the ambitiousness and acceptance of the two pieces of legislation. In section 8, we discuss the policymaking processes in light of the theory perspectives and offer some brief conclusions.

2 Analytical framework

The policy outcomes to be explained in this report are the revised EU fuel quality directive (FQD) and the EU car emissions regulation agreed in 2008. These outcomes are seen in the context of agreed goals: is it *ambitious* enough to reach the EU goals of a 20% reduction in CO₂ emissions by 2020, and the longer-term goal of 80–95% cut by 2050? The 'Effort Sharing Decision' (ESD) establishes annual binding GHG emission targets for member states for the period 2013 to 2020 – for those sectors not included in the EU ETS. One of the most important sectors under the ESD is transportation, where the overall goal for reduction of emissions from non-ETS sectors is 10% (at EU level). Together with the ETS reduction, this adds up to the abovementioned 20%. While each member state is responsible for achieving its part of the effort, the EU has

also introduced several measures to help member states reduce their ESD emissions, such as the policies on car emissions and fuel quality. In this report we therefore attempt to assess how ambitious this legislation has been, as the new EU-wide measures should contribute significantly to reaching the Effort Sharing Goals.

The policy outcomes need to be considered legitimate responses to the challenge of transport emissions, and will therefore also be assessed in terms of different types of actors' actual participation and related transparency in the decision-making process and system. While a relatively ambitious policy is necessary to reach EU's climate policy goals, some degree of *acceptance* in target groups is needed, to avoid implementation failure. Hence, we expect that the EU will have to combine a relatively ambitious policy with acceptance in target groups to achieve its overarching policy objectives. We examine at the outcome at the stage of adoption, while also making stops along the way, assessing policy at the 'baseline' stage, in the initiation phase, and in the phase following adaptation (proposed or adopted changes until 2012). We expect that the policy outcomes at the various stages can be classified in one of four categories:

- ambitious outcomes based on high acceptance
- ambitious outcomes based on low acceptance
- high acceptance, low level of ambition
- low level of ambition, low acceptance

To analyse the making and implementation of the EU's policy on car emissions and fuel quality, we draw on general theories of EU integration and policymaking. One analytical approach is liberal intergovernmentalism, which regards EU policy outcomes as a result of interstate bargaining among states pursuing national interests. According to liberal intergovernmentalism, it is important to focus on the interests, objectives and negotiation behaviour of the EU member states to understand policy processes and outcomes. The core claim of this approach is that EU policy outcomes are determined primarily by national preferences in the member states and by interstate bargaining among them (Moravcsik 1998). National preferences are complex but reflect the politics, institutions and economics of each member state. From this perspective, we would expect the member states to be the key actors in the establishment of policies on car emissions and fuel quality. Hence, the making and implementation of EU policies on car emissions and fuel quality is compatible with the liberal intergovernmentalism perspective to the extent that policy outcomes are consistent with national preferences in the most powerful member states.

Another approach takes EU institutions and institutional rules as the unit of analysis. Responding to the increasing importance of EU institutions and institutional rules, such as the co-decision procedure, some scholars have argued that intergovernmentalists have underestimated the independent causal importance of institutions and formal rules in influencing policy outcomes (Pollack 2005: 20). The 'historical institutionalists' have focused on how a given set of institutions shape and constrain the

behaviour of actors over time through institutional lock-ins and processes of path dependence (see e.g. Hall 1986; Thelen and Steinmo 1992; Pierson 1996). Sociological institutionalists and constructivist approaches in international relations have defined institutions more broadly to include informal rules, norms and conventions (Pollack 2005: 20). They have argued that such informal institutions could 'constitute' actors, reshaping the preferences and identities of individuals and member states in profound ways (see Sandholtz 1993; Jørgensen 1997).

Also writing in opposition to intergovernmentalists like Moravcsik, but from a somewhat different point of departure than institutionalists, multi-level governance scholars focus on policy networks and policy communities of public and private actors in given issue areas. They have argued that policymaking authority has shifted from central governments to EU institutions (particularly the European Commission and the Parliament) as well as to local and regional governments in each member state (Marks 1992; Hooghe 1996). In other words, central governments are losing control to supranational and subnational actors alike (Hooghe and Marks 2001; Bache and Flinders 2004). Another strand of the multi-level governance tradition focuses on describing and explaining the dynamics of transnational and transgovernmental networks of public and private actors in areas such as research, technological development and environmental regulation (Peterson and Bomberg 1999; Peterson 2004).

This strand of the multi-level governance approach should be particularly relevant for analysing our cases, because it focuses on how the openness and interdependence of such networks of public and private actors substantially determine the content of the policies that are eventually brought before the Council and the European Parliament (EP) for formal adoption. The key issues we must focus on are the *access* to and *influence* of various stakeholders in consultations with the Commission as well as the *dynamics of interaction* within the emerging policy networks. Given the issue areas of car emissions and fuel quality, it will be especially pertinent to focus on the relative influence of the car manufacturers, the oil industry, and environmental NGOs in the making and implementation of EU policies. The positions of member states matter as well, but member states will here be regarded as one type of stakeholder among several others that comprise transnational and transgovernmental policy networks. Because the European Commission has exclusive authority to initiate and draft new EU legislation, it can be expected to play a key role in the phase of policy initiation. From the multi-level governance perspective, we expect that the broad contours of the cars regulation and the revised FQD were determined in the early stages of policymaking, when the Commission drafted policies in consultation with industry associations, environmental NGOs, member states and other stakeholders. Hence, the making and implementation of policies on car emissions and fuel quality is compatible with the multi-level governance perspective to the extent that the Commission and non-state actors – notably the car and oil industries – took the initiative and shaped policy outcomes.

A third analytical approach focuses on *issue linkages* in the making and implementation of EU policies. The linkage of issues and side payments is a recurrent theme in the history of EU negotiations and has been

identified as the core of the EU's integration success. The study of issue linkages can be traced back to early neo-functionalists theories of European integration. The 'functional spillover' posited by early neo-functional theory (e.g. Haas 1961), in which integration in one sector would produce the unintended effect of promoting further integration in other sectors, is perhaps less relevant for understanding the making of EU policies on car emissions and fuel quality. However, 'political spillover', in which both supranational actors (e.g. the Commission) and subnational actors (e.g. interest groups) create intended and strategic pressures for further integration, could be a relevant example of how actors use issue linkages to achieve certain objectives. A key difference between the neo-functional literature and the more recent literature on issue linkages is arguably that the former sought to explain the process of European integration, whereas the latter seek to explain EU policymaking and policy outcomes.

Recent studies have called for more research on issue linkages in order to understand policymaking and policy processes in the EU (e.g. McKibben 2010). We expect that when different issues are linked, *the level of ambition can be increased without sacrificing consent among relevant actors*. In this report we are thus interested in examining whether the Commission and other actors created intended and strategic linkages between policy issues in order to increase the ambitiousness of policies on car emissions and fuel quality. The issue linkage approach is compatible with both liberal intergovernmentalism and the multi-level governance approach, depending on the questions of how issue linkages were formed, which actors created intended and strategic linkages, and with what consequences. We consider these theories as complementary rather than competing approaches to understanding the making and implementation of the cars regulation and the revised FQD. The validity of these approaches is likely to vary in different phases of policymaking and across the two policy processes to be examined here.

This report is based on data obtained from primary and secondary sources as well as two rounds of interviews with policymakers and key stakeholders in Brussels in December 2011 and April 2012. In total, 15 semi-structured interviews were conducted with representatives from the European Commission, the European Parliament, the car industry, the oil industry and environmental NGOs (see list of interviews). Policy proposals, assessments and other official policy documents as well as industry and NGO responses have informed the analysis. In addition, news services such as *ENDS Daily* and *EurActiv* have been particularly valuable sources of information. Secondary sources on EU transport policy and climate policy have provided useful background material for the analysis of regulations targeting car emissions and fuel quality.

3 The climate side of EU transport policy

Transport has always been a big source of pollution and CO₂ emissions in the EU; GHG emissions from transport have been gradually increasing and are projected to continue to do so. The EU has policies on air, sea and road transport. The focus of this report is on *road transport*, as this is the largest transport subsector in terms of GHG emissions, and as policies in

this area came to be an important part of the energy and climate package of 2009. Road transport is a major source of greenhouse gas emissions, as well as the principal consumer of oil-based fuels. There are four main ways to cut transport CO₂ emissions (Fergusson 2008: 3):

1. Improve vehicle fuel efficiency
2. Reduce fuel carbon intensity
3. Travel by less carbon-intensive modes of travel
4. Travel less

This report offers a discussion and an analysis of the EU's policy in the two first of these approaches. Almost all cars and trucks today are powered by fuel-inefficient internal combustion engines, but there are many technical options to improve the fuel economy within conventional vehicles – like improved engine technology, better aerodynamics, and advanced tyres (Fergusson 2008: 4). It is also possible to introduce even more advanced and fuel-efficient technologies – hybrids, fuel cells, battery vehicles etc. To improve vehicle fuel efficiency is thus the responsibility of the car manufacturer, but the EU can set standards that the manufacturers must live up to. Regarding the second approach, reducing fuel carbon intensity, the best option available at this point is to introduce liquid biofuels, often blended with conventional fuels (Fergusson 2008: 4). Together they make up the 'supply side' of transport policy, while the third and fourth approaches focus on the consumer; the 'demand side'. The EU has also put in place policies to stimulate/influence consumers to travel less and use different modes of transport. This is an important part of an 'integrated approach' to transport sustainability, but it falls outside the scope of this report.

Before going into more detail in these two areas, let us begin with a general overview of EU transport policy.

3.1 From Rome to Maastricht

Already the 1957 Treaty of Rome identified transport as one of the areas where a common policy should be developed so as to enable economic integration. However, for many years very little happened, as the Council was unwilling, or unable, to translate the Commission's proposals into action (Humphreys 2011; Commission 2001: 6). In the 1992 Treaty of Maastricht, the political, budgetary and institutional foundations for EU transport policy were reinforced (Commission 2001: 6). The development of the Single Market, aimed at free movement of goods, people, services and capital, made it necessary to secure a modern and efficient infrastructure. A key point thus became the concept of trans-European networks (TENs). TENs concern three sectors: transport, energy and telecommunications, and give the Community the right to develop guidelines covering objectives, measures and projects of common interest. The European Commission was given the mandate to elaborate plans for transport infrastructure at the EU level, funded partly by Community money. Thus, a Common Transport Policy (CTP) became a reality in 1992. Since then, EU transport policy has developed rapidly, liberalizing the internal transport market and pushing for EU-wide mobility. The

overall objectives of EU transport policy have been the same since 1992: ‘a competitive, secure, safe and environmentally friendly mobility’ (Commission 2006a: 21).

3.2 Entering: sustainability and climate change concern

In 1990, the EU committed itself to stabilizing CO₂ emissions by the year 2000 at 1990 levels (Skjærseth 1994: 26–27). In 1995, in the context of worldwide efforts to combat global warming, the EU reaffirmed this commitment (Commission 1995: 2). Against this background, the increasing CO₂ emissions from transport were considered a special cause for concern. Later in 1995, a *Community Strategy to reduce CO₂ emissions from passenger cars and improve fuel economy* was adopted, introducing a package of measures to reduce emissions from road transport (Commission 1995). The strategy included a target of putting new passenger cars on a trajectory towards reducing CO₂ emissions to 120 g CO₂/km by 2012. With this strategy and target, a shift could be observed in transport policy, as policymakers started to focus more on questions of sustainability in general, as well as the issue of climate change in particular.

At the Gothenburg European Council in 2001, the concept of ‘modal shift’ – the change of transportation from motor vehicle or air to railway or ship – was placed at the heart of the EU’s sustainable transport development strategy. It was recognized as necessary to move the EU away from its heavy dependence on road transport, as this led to both congestion¹ and pollution² – problems which in turn threatened economic competitiveness (Bache et al. 2011: 366). In the aftermath of this Council meeting, a *White Paper for European Transport Policy for 2010* was adopted (Commission 2001). Here the Commission proposed some 60 measures with the common objective of developing a European transport system capable of shifting the balance between modes of transport. A key aim was to decouple transport demand from transport growth. With this White Paper, the EU focused on revitalizing the railways, improving quality in the road transport sector, promoting transport by sea and inland waterways, controlling the growth in air transport, and building the trans-European transport network (Commission 2001: 13–14). Other prime concerns in this document were road safety and congestion, which is basically the effect of imbalance between modes (Commission 2001: 15). ‘Accordingly, the White Paper proposed policies to adjust the balance between the modes, stressed the need to do away with bottlenecks in the trans-European networks (TENs) and to reduce the number of road acci-

¹ ‘If most of the congestion affects urban areas, the trans-European transport network itself suffers increasingly from chronic congestion: some 7 500 km, i.e. 10% of the road network, is affected daily by traffic jams. And 16 000 km of railways, 20% of the network, are classed as bottlenecks’ (Commission 2001: 7).

² ‘According to the latest estimates, if nothing is done to reverse the traffic growth trend, CO₂ emissions from transport can be expected to increase by around 50% to reach 1 113 billion tonnes in 2010, compared with the 739 million tonnes recorded in 1990. Once again, road transport is the main culprit since it alone accounts for 84% of the CO₂ emissions attributable to transport’ (Commission 2001: 10).

dents' (Commission 2006: 6). The objectives were linked to the Lisbon Agenda for creation economic growth and jobs, as well as the growing concern about global warming and the need to reduce carbon emissions. However, it is important to note that no objectives/targets were quantified in this White Paper, and so the commitments to environmental improvement were rather loose (interview with N2, 2011).

In 2006, the Commission presented a review of the 2001 White Paper, reaffirming the main guiding principles. This review drew attention to the changes in the context since the 2001 EU enlargement, the acceleration of globalization, international commitments to fighting global warming and rising energy prices – and the need to take these into account (Commission 2006: 4–6). In 2006, climate change was recognized as a prominent issue, and rising GHG emissions from transport threatened the achievement of the Kyoto targets, which had been binding since 2002 for the EU.

The mid-term review stated that the measures envisaged in 2001 were not sufficient '...to contain the negative environmental and other effects of transport growth whilst facilitating mobility as the quintessential purpose of transport policy' (Commission 2006a: 6). Now, a more comprehensive, *holistic* approach to transport policy was envisaged: '[...] in many areas European intervention will not suffice. Mutually complementary action will be needed at national, regional and local levels of government as well as by citizens and industry themselves [...] The future actions, [...] will be based on a broad dialogue with all stakeholders concerned' (Commission 2006a: 21). In other words, the responsibility for action was to be spread among several actors; moreover, the 2006 review omitted the key objective from 2001 of decoupling transport demand from economic growth. The concept of 'modal shift' was also removed, and replaced with 'co-modality': 'the efficient use of different modes on their own and in combination will result in an optimal and sustainable utilization of resources' (Commission 2006: 21). According to one interviewee, the changed focus in this Communication was due to massive lobbying from the car industry, which was keen to share the responsibility for emissions reductions but was upset with concept of 'modal shift' (interview with ENGO1, 2011).

3.3 The 2011 White Paper

By 2011, climate change had progressed from being one important issue among many others, to become a core issue in the European Union. In March 2011, the European Commission published a new White Paper – or Roadmap – on transport, in order to promote a single transport market while also seeking to reduce GHG emissions from the sector. Although reducing emissions is central (and 'business as usual' impossible), 'curbing mobility is not an option' (Commission 2011: 5), and this roadmap seeks to conciliate the two goals of growing transport and reduction in emissions. 'The challenge is to break the transport system's dependence on oil without sacrificing its efficiency and compromising mobility' (Commission 2011: 5). Building on the 2001 White Paper's concept of 'modal shift' and the 2006's 'co-modality', the 2011 Roadmap introduces the concept of full modal integration and 'multimodality':

‘Better modal choices will result from greater integration of the modal networks: airports, ports, railway, metro and bus stations, should increasingly be linked and transformed into multimodal connection platforms for passengers’ (Commission 2011: 6).

The 2011 Roadmap acknowledges that much has been achieved since the 2001 White Paper – however, the transport system is still not sustainable, with oil dependence continuing and CO₂ emissions increasing. A business-as-usual path would increase congestion costs by about 50% by 2050 (Commission 2011: 4). The 2011 White Paper thus presents a strategy for reducing GHG emissions from transport by 60% by 2050. Other key goals to be achieved by 2050 include (Commission 2011):

- no more conventionally-fuelled cars in cities
- 40% use of sustainable low-carbon fuels in aviation; at least 40% reduction in emissions from shipping
- a 50% shift of medium-distance intercity passenger and freight journeys from road to rail and waterborne transport
- most passenger journeys between 200 km and 1,000 km to be made by rail
- road-accident fatalities to be reduced to almost zero.

Then the Roadmap proposes 40 specific initiatives in air, rail, road, maritime and inland waterway transport for the next decade. Key measures include a major overhaul of the regulatory framework for rail, proposals for a core European ‘multi-modal’ network, an airport package, a communication on inland waterway transport, a new approach to transport charges, and an EU Strategic Transport Technology Plan (Commission 2011). The Roadmap is accompanied by a working document which describes in detail all the initiatives and legislative proposals the Commission intends to present in the near future.

The publication of the Roadmap brought critical reactions from various transport interests.³ ACEA, the European Automobile Manufacturers Association, reacted to the Commission’s Roadmap by criticizing the shift away from ‘co-modality’ acknowledged in the 2006 review: ‘ACEA calls for an urgent clarification to the wrong signal sent by the White Paper with regard to the acknowledged principle of ‘co-modality’ which should have been at the centre of the future European transport policy, not modal shift ones’, underlining that ‘[t]ransport modes do not compete with each other[...]’, and ‘[n]o mode is ‘per se’ more friendly for the environment’ (ACEA 2011). The Roadmap was also criticized by the environmental movement. While they generally supported the move away from the concept of ‘co-modality’ (interview with ENGO1, 2011), they accused the Commission of putting off action and relying on ‘miraculous technological breakthroughs’ (T&E 2011b). T&E held that the Roadmap

³ For an overview of reactions to the 2011 Roadmap see: www.euractiv.com/transport/transport-remain-big-polluter-new-eu-plan-news-503579

totally lacks short-term action, as ‘the only concrete action the Commission proposes with its current mandate (2010–2014) is to expand airport capacity, which will make the headline targets even harder to reach’ (T&E 2011b). Greenpeace also criticized the Commission for leaving most of the green efforts until after 2030, asserting that the paper ‘[...] blatantly passes the buck to the next generation. The transport sector will become Europe’s biggest source of carbon emissions, but the EU is choosing to look the other way’ (Greenpeace 2011). Some NGOs have also stressed that the long-term 60% target is insufficient for reaching the overall EU goals of GHG reductions by 2050 (interviews with ENGO1 and ENGO3, 2011).

The Commission communicated the White Paper to the European Parliament and the Council, expecting them to endorse the document and the list of proposed actions. However, many member states deemed the 60% target too ambitious, and wanted this to be seen as only an indicative target. The EU’s 27 transport ministers met in Luxembourg 16 June 2011, dismissing the 60% target, on the grounds that there existed no alternative to fossil fuels that would be competitive in terms of technology and price (EurActiv 17/06/11). The report on the White Paper by the EP’s Committee on Transport and Tourism was adopted on 29 November 2011 (European Parliament 2011).

4 Background and baseline

4.1 Fuel quality and the Auto-Oil processes

Much has been written about the EU’s Auto-Oil processes in the 1990s (see e.g. Friedrich et al. 2000; Young and Wallace 2000; Wurzel 2002; Wettestad 2006), so here we will only sum up the most important stages in the processes. The aim of this section is to provide a picture of (1) the ambitiousness and legitimacy of the Auto-Oil processes and regulation(s) predating the revised FQD from 2009, and (2) key actors and their positions in the discussions on fuel-quality regulations.

Before Auto-Oil

The EU’s concern with car emissions and fuel quality was originally linked to the role of vehicle emissions in deteriorating air quality and acidification problems, as well as the development of the single market. The first relevant directive related to vehicle emissions was adopted in 1970 – Directive 70/220 established vehicle *emission limits* for carbon monoxide (CO) and unburnt hydrocarbons (HC) (Skjærseth and Wettestad 2003: 6). A few years later, the first fuel directive was adopted, thereby introducing the approach of combining emission limits and fuel requirements (Skjærseth and Wettestad 2003: 6). This fuel directive from 1975 was modelled on ECE (Economic Commission for Europe) standards, as fuel-quality regulations were dealt with on the pan-European level led by the UN between 1970 and 1985 (Friedrich et al. 2000). In this period, EU emission standards were tightened incrementally in line with the Best Available Technology (BAT) and limits already been agreed as ECE regulations.

In the early 1980s, several EFTA members withdrew from the international ECE regime in order to adopt more stringent car emission limits based on/inspired by US standards ('US 83'). In 1983, the West German government also threatened to breach with the other EU members, and move forward unilaterally and adopt more stringent standards. This led to political controversy in the EU, and the Commission replied by setting up the advisory committee Motor Vehicle Emissions Group (MVEG) in 1985 to find a compromise. Several proposals were put forward for further reductions in vehicle emissions. Car emission regulations were created in the EU in both 1989 and 1991,⁴ and the consolidated 1991 Directive (91/441/ECC) set mandatory car emission limits (EURO I standards) roughly as strict as the US standards (Skjærseth and Wettestad 2003: 8). The next directive (94/12/EEC) put forward EURO II standards.

Although the 88/89/91/92 directives were a significant step forward, they were not particularly stringent, and far from an adequate political response to the growing problems of air pollution (Skjærseth and Wettestad 2003: 9). It became clear that the regulatory approach followed so far, of incremental BAT development, 'offered too little flexibility and was met with growing hostility in the car industry' (Skjærseth and Wettestad 2003: 9). EU lawmakers and industry alike wanted to find more cost-effective solutions, as became clear at the 1992 Auto-Oil Symposium. In the wake of this Symposium, it was decided to launch the Auto-Oil I Programme.

The Auto-Oil I Programme

The Auto-Oil I Programme has been considered one of the most important environmental policy initiatives launched by the Commission during the 1990s (Friedrich et al. 2000: 593). It was a two-year collaborative research effort aimed at finding the most cost-effective way of reducing road transport pollution. The idea for a European Auto-Oil programme originated from the American Auto-Oil Air Quality Improvement Research Programme (AQIRO), and can be traced back to a letter from the Commission to the automobile and oil industries in November 1991 (Friedrich et al. 2000: 596). The Auto-Oil I Programme started in 1992, and consisted of three independent, but interrelated, projects: urban ambient air quality studies, an emissions and fuels technology programme, and cost-effectiveness studies. The Auto-Oil Programme was designed for heavy industry involvement; and the European Petroleum Industry Association (Europia) and ACEA signed a contract with the Commission for a two-year European Programme on Emissions, Fuels and Engine technologies (EPEFE) on 12 July 1993. Two years of tripartite discussions between the several of the Commission Directorates-Generales (DGs) and Europe's automobile and oil industries followed. This meant that member states, NGOs and the European Parliament were excluded from this phase of the policymaking process (Friedrich et al. 2000: 593)

⁴ Directive 89/456 and Directive 91/441.

The Commission's Auto-Oil I Programme was completed in 1995, and the Commission put forward two legislative proposals on stricter fuel standards and tighter emission limits in June 1996. These directives, to take effect in the year 2000, focused on a proposal on the reformulation of petrol and diesel fuels (with targets for sulphur content); and a proposal to strengthen existing emission limits for passenger cars. It set targets for car emissions and fuel quality in 2000, and 'indicative' lower limits for 2005. The proposals were then discussed among member states and in the European Parliament.

The Environment Council discussed the Auto-Oil Programme for the first time on 15 October 1996 (Friedrich et al. 2000: 599). Perhaps surprisingly, a main reaction among member states was that the proposals were too lax, especially concerning the proposed sulphur content in diesel, as well as the absence of obligatory limits for 2005 (Skjærseth and Wettestad 2003: 12; Wettestad 2006: 3). Moreover, the Commission was criticized for the approach followed within the first phase of the Auto-Oil Programme, as some member states perceived it as closed and too exclusive (Skjærseth and Wettestad 2003: 12). At this point, a North-South divide could be observed among the member states: while Germany, Austria and the Scandinavian countries favoured more stringent limits on vehicle emissions and fuel quality for the year 2000 than those proposed, southern states like Spain, Portugal and Greece described the Commission's proposal as 'too strict' (ENDS, 4/3/97).

The European Parliament discussed the Commission's proposals in the spring of 1997. In March 1997, three draft reports from the EP's Environment Committee were released, condemning the Commission proposals for being too weak (ENDS, 5/2/97). The failure to consult experts outside the industries concerned and the lack of transparency were also criticized in the reports (Skjærseth and Wettestad 2003: 13; Friedrich et al. 2000: 600). With regard to fuel quality, lower allowable sulphur content for diesel was suggested, and regarding emission limit values, binding limit values for the year 2005 were proposed. The Committee's suggestions were accepted by a large majority of the EU's plenary session in April 1997 (Friedrich et al. 2000: 599), when more than 300 of the 400 MEPs present voted in favour of tightening the two draft directives on emission limits and fuel quality (ENDS, 10/4/97). The Auto-Oil process was one of the Parliament's first chances to exert its new powers stemming from the introduction of the co-decision procedure under the 1993 Maastricht Treaty (Friedrich et al. 2000:594).

The car industry reacted to the Parliament's stance. The industry was particularly critical of amendments proposed by Socialist MEP Bern Lange, as the stricter new limit on nitrogen oxide emissions would, according to ACEA, be very hard to achieve (ENDS, 5/2/97). Europa reacted to the proposals of Green MEP Noel Mamre to reduce the sulphur content of petrol from 200ppm to 50 ppm in 2000 and 30 ppm by 2005 (ENDS, 5/2/97). Thus, there was aggressive lobbying by the automobile and the oil industries in the months following the Parliament's first reading.

In its common position in October 1997, the Environmental Council accepted some of the EP's amendments to the FQD. Indeed, it went well beyond the Commission's proposal, 'reflecting how unambitious the Auto-Oil I Programme was overall' (Friedrich et al. 2000: 602). However, the Council decided on a 150 pm sulphur limit by the year 2000, upheld the 350 ppm limit proposed by the Commission, and rejected mandatory standards for 2005 (Skjærseth and Wettestad 2003: 14; Friedrich et al. 2000: 602). The Directives were then sent back to the Parliament for a second reading. In the meantime, in January 1997, the Commission formally launched the Auto-Oil II Programme.

At the plenary session in February 1998, the Parliament voted overwhelmingly for stricter (and mandatory) 2005 fuel standards than those agreed by the EU environmental ministers (ENDS, 18/2/98). That vote set in motion the *Conciliation Committee*, which can be convened to resolve any disagreement between the Council and Parliament following the second reading of a legislative proposal.⁵ Since the Parliament had a huge majority for most of the amendments (400–450 votes out of approx. 550 members present), this put the Council under strong political pressure to make concessions (ENDS, 18/2/97).

To get MEPs from the southern member countries on board, the Parliament had included derogations on fuel-quality standards, under which countries that can show 'severe socio-economic difficulties' in meeting the deadline could get extra time to comply (ENDS, 18/2/97). This angered environmental groups, who argued that the Parliament 'has approved derogations for precisely those countries which should be subject to the toughest controls' (ENDS, 18/2/97).

Directives established under the Auto-Oil programme

The negotiations of the Conciliation Committee had to settle two key questions: whether to set indicative or mandatory fuel and emission standards for 2005; and how strict several specific standards should be, including the issue of sulphur levels. A final result was ready in June 1998, and the Auto-Oil conciliation deal was formally adopted by the Parliament and the Council in mid-September that same year. The Parliament's call for mandatory 2005 standards was largely successful, but the fuel standards remained in line with the Council's 1997 decision (Wettestad 2006: 4). In other words, the EP accepted the standards desired by the Council rather than the more stringent limits it had pushed for. Two main directives were decided on:

- Directive 98/70/EC, the Fuel Quality Directive (FQD), related to the quality of petrol and diesel fuels, established minimum specifications

⁵ A Conciliation Committee may be set up under the co-decision procedure between the Council and Parliament, as provided for in Article 294 of the Treaty of the Functioning of the European Union (TFEU). Made up of members of the Council (or their representatives) and an equal number of representatives of Parliament, its task is to reach agreement on a text acceptable to both parties. The Commission is to assist the Council and Parliament in the process, helping them to resolve their differences.

for petrol and diesel fuels for use in road and non-road mobile applications. Under this directive, sulphur limits for the year 2000 will be 350 ppm in diesel and 150ppm in petrol; this limit will be tightened to 50ppm for both fuels in 2005. This Directive targeted the oil industry (Europia).

- Directive 98/69, relating to passenger cars and light commercial vehicles, targeted substances like CO, HC, NO_x, and, for diesel cars, particulates. This Directive tightened existing emission limits in two stages (2000 and 2005), and targeted the car industry (ACEA).

Together, the new directives required a two-step improvement in exhaust standards and fuel quality by 2000 and 2005. The EU also agreed to phase out leaded petrol by 1 January 2000, with possible derogations from the obligation lasting up to five years for countries able to prove that the measure would cause 'severe socio-economic problems'. According to Friedrich et al. (2000: 504), the Parliament emerged as the clear winner from the Conciliation Committee negotiations; 'the Commission and particularly the oil industry became the biggest losers. The automobile industry found itself in the camp of the winners [...]'

Reactions

Regarding fuel quality, the oil industry and its euro-federation representatives Europia (European Petroleum Industry Association) and Concawe (European Oil Industries' European Organisation for Environmental and Health Protection) are the main target actors. Europia was initially not satisfied with the 1996 Commission proposal, as it was stricter than the organization 'felt justified on the basis of the Auto-Oil Programme's findings' (Skjærseth and Wettestad 2003: 17). Europia had been content that the original proposal had only 'indicative' 2005 fuel-quality targets, and was consequently deeply dissatisfied with the Parliament's stance on the issue throughout the process. This issue also highlighted a split within the industry, as ACEA supported stricter fuel-quality standards. While ACEA and other car makers (through the 'worldwide fuel charter') wanted a new international harmonization of fuel standards for diesel and petrol (with tight sulphur levels), this led to furious reactions in the oil industries: here the argument was that the overall emissions from vehicles could be reduced more cost-effectively through other means than very stringent sulphur levels (ENDS, 5/6/98). Europia also argued that low-sulphur fuels would increase CO₂ emissions at refineries, as such fuels would require more complex and energy-consuming processes (Wettestad 2006: 6).

On the other issue, that of vehicle emission limits, the car industry – with its euro-representative ACEA – was the main target group. ACEA was highly critical at the outset, claiming that the Commission put all the burden on the car makers, while requiring 'very little improvement' in fuel quality. It saw the Auto-Oil programme as an unfair sharing of cost burden between the two industries (Friedrich et al. 2000: 599). However, ACEA became more positive over time.

According to Skjærseth and Wettestad (2003: 19), Europa's influence on the fuel quality context was rather low, and ACEA's impact on the emission limits context was also rather low. This they explain with reference to internal conflicts and rivalries between the two industries, as well as the formidable counterforces facing the industry in this case: 'These forces included a clear majority of the Council and the Parliament, in addition to the usual ENGO opponents' (Skjærseth and Wettestad 2003: 24).

The Auto-Oil process aimed at cutting vehicle exhaust pollution, and upon its finalization, ACEA could resume negotiations with the European Commission on a voluntary commitment to reduce CO₂ emissions from new cars. One main reason for this is that sulphur-free levels have often been cited by car makers as a prerequisite for the introduction of advanced engine technologies with lower CO₂ emissions.

In the aftermath of Auto-Oil I

The 'tripartite dialogue' used in the Auto-Oil I Programme was criticized by several member-state governments, NGOs and the European Parliament (Friedrich et al. 2000). This was therefore abandoned in later processes on fuel quality and car emissions, in order to promote a broader legitimacy base and in favour of a wider and more transparent consultation process.

The discussion on sulphur levels continued into the new millennium, with several actors demanding that the EU should envisage even lower levels of sulphur in motor fuels than the limits decided on under the 1998 FQD. Germany sought to get the EU to require all petrol and diesel cars to be sulphur-free from 2007, and car makers came with similar demands (ENDS, 25/5/00). The Commission launched a public consultation on the issue in 2000, and in 2001 it became clear that the Commission was ready to propose a further cut to 10ppm (which means sulphur-free fuel). On 11 May 2001, the Commission proposed making sulphur-free petrol and diesel mandatory throughout the EU from 2011. While this was accepted by the car manufacturers, it also put extra pressure on them to cut vehicle CO₂ emissions. The industry had by then already signed a controversial voluntary agreement with the EU, and in May 2001 the Commission said that it would now 'explore the possibilities for additional commitments' (ENDS, 11/05/01). Europa had at this point started to adjust to and accept tighter sulphur standards, and thus welcomed the 2001 Directive (Wettestad 2006: 6).

The EP Environment Committee responded to the draft proposal from the Commission by proposing a more ambitious timetable: all fuels for both road and non-road vehicles should contain less than 10ppm by 2008 (ENDS, 6/11/01). These demands were backed by the full assembly in November 2001. The environmental ministers then decided on a compromise: fuels were to be sulphur-free by 2009 – moving the timing forward from the Commission's original proposal of 2011. This was formally adopted late in 2002, when the EU decided on petrol and diesel with a sulphur content of 10ppm throughout the EU from 2009 – quite significantly improving the environmental ambition-level in the 1998 FQD. The

1998 FQD was thus modified by Directive 2003/17/EC, only affecting the sulphur limits for petrol and diesel set in the Directive.

4.2 CO₂ emissions from cars

Voluntary agreements with the car industry

Since the mid-1990s, reducing CO₂ emissions from cars has been targeted by the EU authorities as a main solution to the problem of climate change. In 1995, CO₂ from passenger cars accounted for about half of CO₂ emissions from transport, and about 12% of total CO₂ emissions in the EU (Commission 1995: 2). Average CO₂ emissions per kilometre from cars were 186g in 1995 (Brink 2010: 181–182). These high figures led the Commission to conclude: ‘Against this background [the climate change challenge], developments in CO₂ from transport are a special cause for concern’ (Commission 1995: 2). After signing of the Kyoto Protocol in 1997, it became clear that the emissions path of the transport sector threatened the EU’s ability to meet its commitments under the Protocol.

The Council called for a target of 120g CO₂/km as early as 1992,⁶ but in the early 1990s, the EU authorities could not agree on various proposals for regulating CO₂ emissions from passenger cars (Keay-Bright 2000: 6). In December 1994, the Environment Council more specifically requested the Commission to look into the possibility of substantially lowering the fuel consumption of newly registered cars by 2005 (Commission 1995: 4). In 1995, the European Parliament formally supported the objective that new passenger cars registered in the EU should emit a mean of 120g CO₂/km⁷ by 2005 (Brink 2010: 181).

Following these early signals from the member states and the Parliament, the Commission adopted the *Community Strategy to reduce CO₂ emissions from cars* in 1995. This CO₂ emission reduction plan was based on a ‘three-pillar strategy’: a voluntary agreement, a fiscal framework and a consumer information scheme (COM (95) 689 final).⁸ The goal of 120g/km by 2005 was noted in this strategy, representing a 35% reduction from 1995 levels.

The Environment Council endorsed this target in 1996 – but extended the time frame by specifying that the objective of the strategy should be to

⁶ Council Directive 91/441 EEC calls for proposals to reduce CO₂ from passenger cars.

⁷ This target equals an average consumption of 5 litres per 100 km for cars with petrol engines and 4.5 litres per 100 km for diesel engines.

⁸ In its Community strategy to reduce CO₂ emissions from passenger cars and improve fuel economy from 2005, the Commission proposed that an improved fuel economy should be based on the following elements: 1) an agreement between the Community and the auto industry involving clear objectives and provisions for monitoring, 2) the promotion of fuel efficiency of passenger cars to be incorporated as one of the objectives in a future Community initiative on vehicle taxation arising from the ongoing review of that area, 3) a complementary measure with regard to fuel-economy labelling, 4) an ambitious RTD effort to improve the performance of motor vehicles (Commission 1995).

achieve an average CO₂ emission figure of 120g/km by 2005, *or by 2010 at the latest*.⁹ A voluntary agreement with industry was highlighted as the central feature of the Commission's strategy. This was contested by the European Parliament, which started out by objecting to the principle of a voluntary agreement, and called on the Commission to propose binding CO₂ emission limit values for passenger cars in a resolution of 10 April 1997 (Commission 1998: 2). In response, the Commission made the following declaration during the conciliation talks of 29.6.1998 between the Parliament and the Council on the Auto-Oil I FQD: 'In the event of negotiations with ACEA not coming to a successful conclusion, the Commission undertakes to consider the introduction of binding legislation' (Commission 1998: 2).

The use of voluntary agreements (VAs) in the environment field was quite widespread in the EU in the 1990s. Since the development of the EU's Fifth Environmental Action Programme, VAs were increasingly used as a means for effective environmental action, calculated to exceed more than 300 by 1997 (Volpi and Singer 2002: 144). Such agreements set targets, but they are not legally binding; it is left up to the industry how to achieve them. The automobile industry was familiar with voluntary agreements through the experiences of the German sector association, Verband der Automobileindustrie (VDA), which concluded a national, voluntary self-commitment in March 1995. The German manufacturers made a commitment for a 25% reduction in the average fuel consumption of their cars produced and sold in Germany between 1990 and 2005 (Commission 1995: 13).

The Commission entered into technical deliberations with ACEA (European Automobile Manufacturers' Association) in early 1996. After months of negotiations on how to design the voluntary agreement, these negotiations stalled in early 1998, when ACEA staunchly held the position of achieving average emissions of 167g/km by 2005 (ENDS, 11/03/98). ACEA had offered this already in June 1997, a proposal which was immediately rejected by the European institutions, as it was considered too low a target. For a while it looked as if the Council would instruct the Commission to draft a directive setting mandatory limits on the CO₂ emissions of new cars (ENDS 19/03/98).

⁹ See Council Conclusions of 25 and 26 June 1996:

www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/envir/011a0006.htm

'The Council affirms the medium term objective to reach an average CO₂ emission value for newly registered cars in the European Union corresponding to 120g CO₂/km which is roughly equivalent to an average consumption of 5 l/100 km for petrol cars and 4,5 l/100 km for diesel cars. This means a significant reduction of the present level of CO₂ emissions. The aim is to reach this objective by 2005. The Council is of the opinion that achievement of this will require the immediate establishment of intermediate emission objectives in a phased approach demonstrating substantial progress which should be the subject of close monitoring. Should it appear that it is not possible fully to achieve the objective by 2005, the phasing could be extended, but in no case beyond 2010.'

When the EU institutions ‘threatened’ legislation in 1997 and kept up the pressure in 1998, ACEA finally submitted to the Commission an offer for a voluntary plan to reduce emissions from new cars to 140g/km by 2008. ACEA said that this target was conditional on a range of commitments from governments. 140 g/km had been signalled as an acceptable level by a Council meeting in March 1998, and the new ACEA offer was considered as ‘real advance’ by many member states (ENDS, 19/03/98).

In July 1998, a voluntary agreement was signed between the ACEA and the European Commission (Commission 1998). This agreement committed automobile manufacturers to achieving a target of 140 g/km by 2008 (compared with the 1995 new car average of 186 g/km). This would equal a 25% reduction for all new registered passenger cars from 1995 to 2008.¹⁰ ACEA also committed to bringing to the market individual car models with CO₂ emissions of 120 g/km or less by the year 2000. In October 1998, the EU Council of Ministers formally approved the commitment. Speaking on behalf of the Austrian EU presidency, Environment Minister Martin Bartenstein called the deal the ‘most wide-ranging and most important environmental voluntary agreement with industry the EU had ever concluded’ (ENDS 6/10/98). A debate followed in the Council on whether to prepare contingency legislation which could be brought forward if car makers failed to live up to their commitment. Denmark wanted this, but other countries and the Commission objected, as it would undermine the good faith of the agreement (ENDS 6/10/98). In other words, the European Union decided to trust the car manufacturers.

This voluntary target of 140g/km fell short of the EU’s target of 120g/km by 2005. To help bridge the gap, the Commission proposed legislation under the two other pillars of the Community Strategy as well: CO₂ labelling and (member-state) fiscal measures.¹¹ Both these instruments were aimed at the demand side and were intended to provide additional reductions below the 140g CO₂/km target of the voluntary agreements (Brink 2010: 183).¹²

¹⁰ At the same time, ACEA said that it would review the potential for further CO₂ emission reductions with a view to moving to 120g CO₂/km by 2012. ‘The original target of 120g CO₂/km proposed for 2005, which had already moved to 2010, was thus in the process of being moved to 2012’ (Brink 2010: 182–183).

¹¹ In fact, the ‘three-pillar-strategy’ was in many ways a concession to the car industry; when the voluntary agreements were accompanied by the two other pillars the strategy became more acceptable to the industry (interviews, anonymous 2011).

¹² Directive 1999/94/EC aims at ensuring that information related to the fuel economy/ CO₂ emissions of new passenger cars is made available to consumers. Since 1999, fuel-economy labels for all new cars must be displayed at the point of sale. The Directive was intended to help raise awareness among consumers. Regarding taxation, the aim of the Commission was to encourage sales of vehicles with low fuel consumption via tax measures. However, not much happened before 2005, when the Commission presented a proposal for a Directive that would require member states to restructure their taxation systems for passenger cars.

As all main US car manufacturers are represented in ACEA, the only major producers left outside the ACEA voluntary agreement were Japanese and Korean. In 1999, the EU pressured Japanese (JAMA – Japan Automobile Manufacturers Association) and Korean (KAMA – Korean Automobile Manufacturers Association) car makers to make voluntary commitments similar to ACEA's (Commission 1999). JAMA and KAMA brought forward a voluntary offer in the summer of 1999, but this was rejected by the Commission, which had expected the Japanese and Korean producers to match the voluntary deal made with ACEA to reduce average 1995 emissions by 25% by 2008 (ENDS, 21/6/99). They finally agreed to this: the aim adopted was to limit average specific emissions from newly registered passenger cars to 140g CO₂/km by 2009 – one year later than for ACEA.

In 1999 and 2000, the European Commission 'recognized' these commitments. Scholars have noted that the negotiation of the voluntary agreements suffered a serious democratic deficit, as the European Parliament was bypassed in the process. According to Volpi and Singer (2002: 150), public participation was almost non-existent, and the exclusion of the EP had dramatic consequences: 'Because negotiations have been carried out 'behind closed doors', the danger of regulatory capture materialized and led to the agreement of very weak targets'.

Already in its conclusions in June 1996, the Council had stated the need for a scheme to monitor CO₂ emissions from passenger cars in order to assess the effectiveness of the CO₂ reduction strategy. The Monitoring Mechanism,¹³ adopted in 2000, was therefore an important part of the implementation of the voluntary agreements. This set up a system of annual data collection (on e.g. specific CO₂ emissions, the number of vehicles registered and so on). The mechanism was initially based on information provided by the automobile association, but gradually member states provided more impartial information to the data (Brink 2010: 184). According to Article 9 of Decision 1753/2000/EC5, the Commission is to report annually on the effectiveness of the strategy.

Voluntary agreements deemed insufficient

The adoption of the voluntary commitments and the Monitoring Mechanism was followed by a phase of reporting and considerable focus on results. The voluntary agreements proved to have various fundamental shortcomings, in level of ambition as well as acceptance. Weak targets and inadequate enforcement made it hard to reach the EU's goal of 120g/km by 2010, and the agreements were surrounded by a lack of public participation and transparency (Volpi and Singer 2002; Keay-Bright 2000).

According to the Commission's first annual report on the deal (covering the period 1995–1999), some initial progress towards meeting the targets under the voluntary agreements was achieved – as all the vehicle

¹³ Decision No 1753/2000/EC of the European Parliament and of the Council of 22 June 2000 establishing a scheme to monitor the average specific emissions of carbon dioxide from new passenger cars

manufacturer associations had reduced the average specific emissions of their vehicles. To reach their target, all three associations (ACEA, JAMA and KAMA) had to cut emissions by 2% per year on average, but ACEA had managed improvement of 1.5%, JAMA 1.15% and KAMA only 0.4% (Volpi and Singer 2002: 151). The emissions cuts achieved were deemed not sufficient: 'in order to meet the final target of 140 g CO₂/km additional efforts are necessary and the annual reduction rate needs to be increased' (Commission 2000: 5).

In the 2002 annual report (for reporting year 2001), the Commission reminded car makers that it could draft EU legislation to force down emissions from new cars if the manufacturers failed to reduce levels voluntary (Commission 2002). However, according to the same report, ACEA members were on track towards meeting the goal of a 25% cut in average new-car CO₂ emissions by 2008, while the Japanese and Korean producers were lagging behind. 'Further efforts, particularly from KAMA, are needed to reach the final objective of 140 g/km, because the average annual rate of reduction is insufficient in all three associations' (Commission 2002). This picture was confirmed in the annual report published in 2004 (reporting year 2002), where the Commission stated that the intermediate target had been reached early by both ACEA and JAMA, and 'we therefore consider that these associations are on track to meet their long-term targets' (Commission 2004: 4). This was the first time the Commission used data provided by member states, and not data from the associations of automobile manufacturers themselves.

In the reports covering both 2003 and 2004, the Commission underlined that the reduction projections for all three associations remain a 'cause for concern', and the manufacturers 'will therefore need to increase their efforts if they are to achieve the final objective' (Commission 2005; 2006c). All in all, although some progress was made during the first years of the voluntary agreements, the average emissions from new cars sold in the EU-15 fell only from 186g CO₂/km (1995) to 163 g CO₂/km (2004), and the Commission realized that the voluntary approach had brought limited progress at best (Commission 2007b). Progress also varied considerably across manufacturers (Brink 2010: 187). It became apparent that voluntary agreements were not enough to achieve the reduction target, so binding legislation was now deemed necessary.

4.3 Summing up the baseline before 2006/2007: Auto-Oil (fuel quality) and voluntary agreements (car emissions)

Beginning with fuel quality, the EU's concern originally had to do with the contribution of vehicle emissions to deteriorating air quality and acidification problems, not climate change. The Auto-Oil processes were concerned with exhaust emissions and air quality, and this process had a low level of climate-related ambition in the years before 2006/2007. The two directives established in 1998 under the first Auto-Oil programme were related to the quality of petrol and diesel fuels for use in road and non-road applications and to substances like CO, HC, NO_x from passenger cars and light commercial vehicles. Combined, these directives required improvements in exhaust standards and fuel quality in two steps (2000 and 2005).

The ‘tripartite dialogue’ used in the Auto-Oil programme was criticized by several member states and NGOs as well as the European Parliament. Stakeholders other than the car and oil industries perceived the Auto-Oil programme as being rather closed. Particularly the first phase of the Auto-Oil programme had strong industry involvement, with Europia (representing the oil refining industry) and ACEA (representing the car industry) as main players. The tripartite negotiations among Europe’s car and oil industries and the Commission meant that member states, NGOs, and the European Parliament were excluded from the this phase of the policymaking process (1993–1995).

The Environment Council first discussed the Auto-Oil programme in 1996, and the European Parliament discussed the proposals from the Commission in the spring of 1997. The Auto-Oil process was one of the first chances for the Parliament’s to exert its new powers stemming from the introduction of the co-decision procedure in the 1993 Maastricht Treaty (Friedrich et al. 2000: 594). The European Parliament succeeded in its call for mandatory 2005 standards in the two directives, but fuel standards remained in line with the Council’s 1997 decision (Wettstad 2006: 4). Summing up the negotiations, Friedrich et al. (2000: 504) conclude that the Parliament emerged as the clear winner, whereas ‘the Commission and particularly the oil industry became the biggest losers. The automobile industry found itself in the camp of winners.’

Several actors demanded that the EU should enact lower levels of sulphur in motor fuels than the limits determined by the 1998 FQD, and discussions on the limit values of both sulphur levels emission continued into the new century. The environmental ambitiousness of the 1998 FQD was strengthened in 2002/2003 when the EU decided that all fuels for road as well as non-road vehicles should contain less than 10 ppm by 2009 (Directive 2003/17/EC). In this process, the ‘tripartite dialogue’ used in the Auto-Oil 1 Programme was abandoned in favour of a broader and more inclusive and transparent consultation process. Comparing the process with establishing voluntary agreements between the Commission and the automobile manufacturers with the process for establishing the FQD, we see that both processes were initially rather closed to stakeholders other than the industry. However, we can also note that whereas the European Parliament was excluded from the negotiations on voluntary agreements, it made use of its new powers stemming from the co-decision procedure introduced in the Maastricht Treaty to influence the FQD.

Turning to car emissions, the 1998 voluntary agreement between ACEA and the European Commission committed automobile manufacturers to achieve a target of 140g CO₂/km by 2008, equal to a reduction of 25% for all new registered passenger cars from 1995 to 2008. Identical agreements were made with the Japanese and Korean Automobile Manufacturers Associations (JAMA and KAMA) in 1999. However, the voluntary agreements proved low in both ambition and acceptance by stakeholders other than the automobile industry. First, the target was weak compared to the 120g CO₂/km target by 2005 adopted by the Commission in the 1995 *Community Strategy to reduce CO₂ emissions from cars*. This target was probably not sufficient to stabilize CO₂ emissions from passenger

cars at 1999 levels by 2010 (Volpi and Singer 2002: 143; Bondgardt and Kebeck 2006: 47). Second, there was limited progress in meeting the target: the voluntary agreements were deemed insufficient for achieving the 140 g CO₂/km target. According to Volpi and Singer (2006: 153), '[t]he ACEA agreement cannot be considered a good example of an effective climate-protection measure.' Third, negotiation of the voluntary targets suffered a serious democratic deficit – the European Parliament was excluded from the process, and public participation was almost non-existent. The voluntary agreements between the Commission and the car industry thus came to enjoy little acceptance from stakeholders other than the partners.

On the other hand, this was the first time the car industry agreed to voluntary emission reductions, and the voluntary agreements prepared the industry for the binding legislation to come. Specifically, the Monitoring Mechanism was established in 2000 to help implement the voluntary agreements. This mechanism for monitoring and reporting CO₂ emissions from cars was initially based on information submitted by the automobile associations, but member states gradually provided more impartial emissions data (Brink 2010: 184).

Summing up, the voluntary agreements with the car industry and the Auto-Oil processes suffered from a relatively low level of ambition in terms of environmental goals, and low acceptance among outside stakeholders (NGOs, the European Parliament, several member states). However, the agreements with the car industry prepared the industry for binding and more stringent regulations. Similarly, the Auto-Oil processes readied the oil industry for the process of reducing the CO₂ emissions from fuel. In this sense, the voluntary agreements and the Auto-Oil processes represented stepping stones on the way towards binding CO₂ legislation.

5 Initiation of coordinated policies

In March 2007, the European Council endorsed an integrated approach to climate and energy policy aimed at transforming Europe into a highly energy-efficient, low carbon economy. To meet this challenge, the EU Heads of State and Government established the 20–20–20 targets: a reduction in EU GHG emissions of at least 20% below 1990 levels; 20% of EU energy consumption to come from renewable resources; a 20% reduction in primary energy use compared with projected levels, through improvements in energy efficiency. In December 2008, the EU adopted the 'climate and energy package' to implement these 20–20–20 targets. The package consists of four pieces of complementary legislation: a revision and strengthening of the EU Emissions Trading System (ETS); an 'Effort Sharing Decision' among the member states governing emissions from sectors not covered by the EU ETS; binding national targets for renewable energy; and a legal framework to promote and develop carbon capture and storage (CCS). Although EU policies on fuel quality and car emissions were not part of the climate and energy package, the revised FQD and the car emissions regulation were negotiated at the same time as the package and must be seen in light of the 20–20–20 targets.

This section examines the initiation of a revised FQD and legislation on car emissions, beginning with the former directive.

5.1 A proposal for a revised fuel quality directive

Commission proposal

The 1998 FQD did not regulate CO₂ emissions, but by 2007 EU lawmakers wanted to adopt new standards for transport fuels that would reduce the contribution of these fuels to climate change. To prepare for a new FQD was a highly technical exercise, and the Commission organized a stakeholder process with the relevant stakeholders. Two meetings were held and further opportunity was provided for written comments before the Commission presented its presentation in January 2007 (Commission 2007a: 4).¹⁴ To get input on technical details, the Commission used its Joint Research Centre (JCR) to ensure a structured stakeholder process and meetings with stakeholders (Commission 2007a: 4). The work carried out by the JCR also involved the research organization of the European automotive industry (EUCAR) and the research organization of the European oil industry (CONCAWE). The JCR's final advice was received on 28 February 2006 (Commission 2007a: 5).

On 31 January 2007 the Commission presented a proposal for directive on fuel quality, revising Directive 98/70/EC. According to the Commission, the proposed directive '[...] reflects developments in fuel and engine technology, the growing importance of biofuels and the need both to meet the air quality goals set out in the 2005 Thematic Strategy on Air Pollution and to further reduce the greenhouse gas emissions that are causing climate change' (Commission 2007c: 2). The revision of Directive 98/70/EC had two purposes: to improve air quality by reducing emissions of, *inter alia*, sulphur and PAC; and to help combat climate change. The new Directive was intended to contribute to CO₂ emissions being reduced by 500 million tonnes by 2020, to allow for a higher content of biofuel ethanol and to reduce emissions of dangerous dust emissions (Commission 2007c). The Directive was proposed as part of the 'integrated approach' on CO₂ and cars, as fuels with lower carbon content are necessary to reduce emissions from the transport sector. The main changes to the directive proposed by the Commission were the following:

- Standards for sulphur dioxide: The mandatory date for a maximum of 10 ppm sulphur in diesel is confirmed as 2009 (Commission 2007a: 7).
- Vapour pressure and ethanol: A separate petrol blend will be established, to enable higher volumes of biofuels to be used in petrol and diesel. For the same reason, the vapour pressure limit is increased for petrol blended with ethanol (Commission 2007a: 8).
- Mandatory monitoring and reporting of 'lifecycle greenhouse emissions' from fuels as of 2009, as well as an obligation on fuel suppliers

¹⁴ The Impact Assessment reports the main views of stakeholders – in particular where stakeholders have diverging views (see Commission 2007b).

to reduce the GHG emissions that their fuels cause in the course of their life-cycle (during refining, transport and use). According to Article 7a of the revised FQD, suppliers will have to reduce emissions per unit of energy by 1% a year from 2010 levels in the period 2011–2020. This target – known as the 7a-target – is to result in 10% reductions by 2020.

The last point was of greatest importance for our purposes, as it aimed at supporting the further development of low-carbon fuels and helping to secure that also the fuel sector contributes to achieving the EU's GHG reduction goals (Commission 2007c: 2). This proposal was the first time a specific product – fuels – got a reduction target on the basis of a lifecycle, or 'well-to-wheel', analysis. Fuel suppliers are to meet the objective by cutting emissions from processing the fuels (e.g. reducing venting and flaring and by achieving efficiency gains in refineries) or by promoting the use of lower-carbon fuels such as hydrogen and biofuels.

The proposal also tried to ensure, for the first time, that increased biofuels *actually reduce* CO₂ emissions in practice. Because producers must calculate the lifecycle emissions – or the *total carbon footprint* – of biofuels used, this will encourage them to seek more efficiently produced biofuels. While the best available biofuels on the market can reduce lifecycle emissions by 90% relative to fossil fuels, the worst ones can actually increase them (ENDS, 1/8/07).

The proposal for a revised FQD also meant that the process of cars and CO₂ emissions could continue to the next level, as the Commission sent a clear message that automobile manufacturers were not to assume all the burdens involved in reducing CO₂ emissions alone. The revised FQD (as well as the 10% target for biofuels by 2020) would also drive the development towards cuts in CO₂ emissions from cars – biofuels are to be counted as a 'complementary measures', thus contributing towards the 120g CO₂/km target for cars CO₂ emissions.

Nonetheless, the target of a 10% reduction (the 7a-target) in lifecycle GHG emissions of fuels spurred considerable debate, with many questions and considerable uncertainty surrounding the target. Fuel suppliers who would have to reduce such emissions by 1% from 2011 onwards reacted with fury, criticizing the Commission for double legislation due to the EU ETS. Many questions were debated in the months following the proposal: How should efforts made by firms before 2010 be accounted for? Was the 1% per annum target for decreasing emissions too 'rigid'? Is it wise to embark upon a plan before introducing sustainability criteria for producing biofuels and before a method for calculating lifecycle emissions from fuels has been agreed? What about the impact and the co-existence of the regulation with the EU ETS? As we will see below, the various stakeholders had strong, and often diverging, views on these questions.

The 7a-target presented oil companies with a choice: they could either reduce emissions from the fossil fuel chain, or they could switch to biofuels. The oil industry early argued that the most relevant measure would be switching to biofuels, as only 15% of lifecycle emissions are

related to fuel production and distribution. The Commission, on the other hand, maintained that the 7a-target should (and could) also drive emission reductions in the fossil fuel chain: ‘CCS and energy efficiency improvements such as flaring use of cogeneration at oil refineries, substituting gas for oil and reducing gas flaring in oilfields are all more cost-effective ways to cut emissions than switching to biofuels’ (ENDS, 1/8/07).

Parallel to the Commission’s proposal for a revised FQD, EU energy ministers also recommended a mandatory minimum target of 10% of all petrol and diesel consumption to come from biofuels in every member state by 2020. This target was *explicitly linked to the FQD*, as the target depended on changes in EU fuel-quality laws, to enable greater blending of biofuels into conventional fuels. The target was also conditional on biofuel production being sustainable, as well as on the introduction of second-generation biofuels (ENDS, 15/2/07; T&E et al. 2009: 16). The 10%-biofuels target was proposed as part of the Renewables Energy Directive, and thus also part of the proposed EU climate and energy package. The biofuels target was to spur considerable controversy, as we shall see.

Reactions to the proposal: Demand for sustainability criteria

Following the Commission’s proposal, the European Parliament’s Environment Committee requested a study. The report *Inclusion of sustainability criteria in the Fuel Quality Directive* was published in early July 2007, followed by an EP-led stakeholder consultation (European Parliament 2007: 24).

A debate ensued concerning whether the EU should stipulate biofuel sustainability criteria or not. In the EP’s Environment Committee in September 2007, the centre-right EPP party held that the revised FQD was the wrong place to decide how biofuels should be produced. Despite the opposition from EPP, the Committee added minimum sustainability criteria for biofuels to the draft revision of the FQD at a meeting on 27 November 2007, when adopting the first-reading report on the Commission’s proposal. Such criteria would oblige biofuel producers to protect water and soil resources in order to avoid significant negative indirect land-use change impacts. The Committee stated that only biofuels in accordance with the criteria should be counted towards meeting the 10% target. It also introduced a requirement for biofuels to deliver lifecycle CO₂ savings of at least 50% compared to fossil fuels, in order for them to count towards the 10% target – as against the 35% suggested in the Renewables Directive. At the same meeting, the Environment Committee voted in favour of granting a more flexible timeline to industry: CO₂ emissions should be reduced by ‘at least 2% every 2 years’ (as opposed to the more strict 1% per year proposed by the Commission).

Several EU governments were sceptical to the Commission proposal, and in the autumn of 2007 the Portuguese EU Presidency tabled a compromise plan (ENDS, 5/10/07). While some states felt the 10% target was too ambitious, other governments remained unwilling to commit to a target before biofuels sustainability criteria were defined, together with the principles for calculating GHGs (ENDS, 5/10/07). However, when

the EU environment ministers held their first public discussion of the proposal in late October that year, all reaffirmed their support for the goal in principle, but added three conditions which had to be met: 1) sustainability criteria for biofuels, 2) the relationship of the fuel proposal to other pieces of legislation must be clarified (especially as regards the proposed target for biofuels and the EU ETS), and 3) clear, harmonized methods for calculating lifecycle emissions (ENDS, 31/10/07; T&E 2007c). Some countries also questioned whether it would be possible to achieve the 10% by the 2020 target.

Europaia stated that it 'shares the EU concerns around GHG emissions' and 'acknowledge[s] the need to take action' (Europaia 2007b). The organization argued that the most appropriate measures for addressing CO₂ emissions from the transport sector was through a multi-stakeholder approach,¹⁵ and reacted to the energy package by noting that it 'contains only fuel supply-side measures', and considered that 'these should be accompanied by ambitious consumption demand-side measures' (Europaia 2007a: 8). Europaia also declared that the oil industry was prepared and willing to work for the introduction of biofuels in the market, but that the proposed FQD would 'generate multiple, inconsistent and conflicting regulation when coupled with the proposed 10% biofuels target and the refinery emissions caps set by the ETS' (Europaia 2007a: 8).

In addition to these concerns which had been presented in January 2007, following the Commission's proposal, Europaia underlined that the EU should differentiate within the fuels pool between fossil fuels biofuels, because there is a 'fundamental difference between the two classes of fuel in terms of GHG savings potential' (Europaia 2007b). According to Europaia, Wheel-To-Tank emissions in the case of fossil fuels represent only 15% of overall emissions, and the margin for reductions is very limited. In other words, at an early stage Europaia signalled that the oil industry wanted to meet the FQD targets through more use of biofuels, and to a lesser extent through efficiency improvements of the fuel production processes. According to a statement issued by Europaia in January 2007, the 10% target would translate into a 20–30% volume of biofuels (assuming typical biofuel GHG saving from 40–50%), and this level of biofuels use was 'certainly unrealistic based on purely EU indigenous production and it is questionable whether sufficient imported supplies can be made available within the existing timeframe' (Europaia 2007b). Hence, Europaia supported biofuels introduction as the best option to reduce GHG emissions of road fuels, but saw the proposed target as unrealistic.

Later in 2007, Europaia made it even clearer that the oil industry was against the proposed 7a-target: 'Europaia believes that inclusion of Article 7a in the Fuels Quality Directive is premature and should be deferred

¹⁵ A multi-stakeholder approach which: 'requires action from the car and truck manufacturers, the vehicle owner (driver), the transport infrastructure operators and the fuel providers. Improvement of vehicle efficiency and freight infrastructure are probably the most effective measures to achieve material and lasting CO₂ emission cuts while decreasing energy consumption' (Europaia 2007b: 2).

until the issues of concern have been resolved' (Europa 2007c). It also argued that EU requirements for the oil industry to remove sulphur from fuels were exerting upward pressure on carbon emissions.

ACEA, on the other hand, welcomed this proposal as a step on the way towards a more 'integrated approach'. The car industry stressed the importance of the fuel industry's contribution in reducing transport emissions, noting that the focus of the Commission is still 'far too much on vehicle technology' (EurActiv, 29/10/07, review)

The environmental NGO (ENGO) Transport and Environment (T&E) warmly welcomed the Commission's proposal in general, and Article 7a in particular. T&E saw the approach chosen as being very good, as lifecycle GHG emissions reduction targets differentiate between biofuels according to their environmental performance. The approach concentrates on the ends and not the means to the end, and, as noted by T&E, it makes more sense to 'set a climate obligation for fuel suppliers and let them figure out how to meet them in the most cost-effective way, than to prescribe a certain amount of biofuels with highly uncertain environmental effects' (T&E 2007b). In February 2007 T&E director Jos Dings compared the revised FQD with previous EU biofuels policies:

Until now, Europe's approach to alternatives like biofuels has been to promote them regardless of whether they are good or bad for the environment, or whether other renewable energy might work better. If it's designed right, this commitment to reducing carbon emissions will ensure that only the cleanest biofuels are promoted and the production process of fossil fuels is cleaned up. That is a very good approach and we welcome it (T&E 2007a).

This view is based on the previously discussed assumption that not all biofuels perform equally well, making a lifecycle approach necessary to identify the best-performing biofuels. In other words, while T&E supported the approach chosen under the FQD, the organisation was highly critical to the mandatory target proposed for biofuels as part of the energy and climate package. T&E defended the lifecycle approach under the FQD as an alternative to the EU's '10% biofuels target by 2020'. According to T&E, a volume target would not give any indication of the real-world reductions in emissions that would result, while the FQD would actually require fuel suppliers to improve their climate performance.

T&E was therefore very pleased when a large majority of the EU member states supported the idea in principle at the Council meeting in October: 'This is a significant development that the ministers support Article 7a. This is an important measure in efforts to clean up fuel production and avoid dirty fuels produced from tar sands and coal' (T&E 2007c). T&E was also pleased when the Environment Committee supported the idea of sustainability criteria, and the demand that only biofuels that deliver lifecycle emission savings of at least 50% compared with fossil-based fuels should be counted towards the 10% target.

Before examining how the final agreement on the revised FQD was reached, let us first look at the initiation of new policies on CO₂ emissions from cars.

5.2 A new strategy on cars and CO₂ emissions

Initiation: Time for legislation on cars and CO₂ emissions

The early 2000s saw growing support for legislation instead of voluntary agreements with the car industry. The possibility of replacing the voluntary agreement with binding regulations was discussed repeatedly, at the national and EU levels. Governments had increasingly come to believe that the EU would have to legislate in order to limit CO₂ from cars. In December 2003, the German Minister of the Environment, Jürgen Trittin, called for EU legislation to force car manufacturers to reduce to 120g CO₂/km by 2012 (ENDS, 22/12/03). In 2003, Trittin was alone among European ministers in calling for legislative action – but this changed in 2004 when, after a meeting of environment ministers, several governments said that the Commission should be prepared to legislate (ENDS, 15/10/04).

In January 2005, the European Parliament backed these proposals through a resolution calling on the European Commission ‘urgently to put forward proposals for binding CO₂ limits for new vehicles’.¹⁶ T&E supported this, arguing that an emissions trading scheme was the best option for achieving faster emission cuts, as well as CO₂-based taxes (ENDS, 21/01/05). The June 2005 European Council unanimously reconfirmed that ‘in line with the EU strategy on CO₂ emissions from light-duty vehicles, the average new car fleet should achieve CO₂ emissions of 140g CO₂/km (2008/9) and 120g CO₂/km (2012)’ (Commission 2007a: 2).

Parallel to these discussions, in January 2005, the Commission announced that a new ‘high-level’ group, called CARS21,¹⁷ had been set up to ‘boost the competitiveness’ of the European car industry.¹⁸ The Group was established under DG Enterprise, to review the role of environmental policy and CO₂ emissions as part of developing an overarching integrated policy framework for the automotive sector (Commission 2007c: 5). The CARS21 group was immediately criticized for its ‘unbalanced’ membership: ‘The group has seven industry representatives but no representatives from either the Parliament’s environment committee [...] or NGOs with environmental expertise’ (T&E 2005). According to Brink (2010: 194) ‘CARS21 was (and remains) a process to support the competitiveness of the automotive industry, whilst at the same time working to clarify strategic and practical ways forward [...]’. In reality, the views of the CARS21 Group were to become central in the Commission’s work on drafting legislation on cars and CO₂.¹⁹ The central role of the CARS21

¹⁶ European Parliament Resolution 13/01/2004

¹⁷ Competitive Automotive Regulatory System for the 21st Century High Level Group

¹⁸ CARS21 was not a Commission exercise as such: it was externally initiated and driven, but it had a strong ally in DG Enterprise and Günter Verheugen (interviews with Com1, Com4 and Com5, 2011).

¹⁹ Interviewee information – expressing deep concerns over the group and the influence it had: ‘This was not really a “broad group”, and it was outrageous that an industry group basically was invited to write legislation. The industry gained an entry and an insight in a process which should have been more internal to the Commission’ (2011).

Group has by many been criticized as inappropriate: it led to a closed and industry-led process, and finding constructive solutions for emissions reductions was difficult, with the industry presence so prominent (interviews with Com1, 2011 and Com4, 2012). Conversely, the car industry itself has argued that this was a good discussion platform, with the most important stakeholders and policymakers represented – making it easier to find consensus and feasible solutions. ‘CARS21 was a real mirror of what you could expect from the actual regulatory process’ (interview with ACEA1, 2011).

In early 2006, the Commission – this time DG Environment – launched a public consultation on how best to achieve the EU’s more ambitious CO₂ reduction target of 120g/km by 2012. A first round of public consultations was carried out by the Commission in 2005–2006 via an internet consultation (Commission 2007c: 5), complemented by a working group established under the European Climate Change Programme (ECCP).²⁰ It became important for DG Environment to gain control over the process after the establishment of the CARS21 Group, and DG Environment decided to use the ECCP to conduct a proper Impact Assessment on the issue. It was decided that CARS21 could provide *input* to this Impact Assessment, as DG Environment wanted to limit the influence of the powerful group on the actual policy process (interview with Com1, 2011). DG Environment viewed the ECCP as a more balanced stakeholder forum, and ‘more in line with the discussion DG Environment wanted’ (interview with Com1, 2011).

The ECCP review concluded that although the voluntary approach had delivered solid reductions in CO₂ emissions, it had not been as successful as hoped. Given this slower-than-expected progress to date, the 120g/km target could not be met by 2012 without additional measures (Commission 2007b: 2).

In November 2006, ACEA responded to the ECCP process and the alleged ‘failure’ of the car industry: ‘the European car manufacturers are fully committed to reducing CO₂ emissions of passenger cars [...]’ (ACEA 2006). The car industry asserted that the EU should introduce harmonized carbon dioxide-based taxation and other demand-side measures to cut CO₂ from cars, instead of demanding more technology changes from car manufacturers. In other words, the industry fought hard to keep the voluntary agreements, and explained the slow progress by, *inter alia*, pointing to consumers and their unwillingness to buy CO₂-efficient models. The car sector is one of the most competitive markets in the world, and ‘if people don’t buy CO₂ efficient cars, what can you do?’ (interview with ACEA1, 2011). ACEA also pointed to EU regulatory developments, concerning for instance safety and air pollution, as factors giving ‘counterproductive effects’ on emissions reductions (ACEA 2006). The organization urged the EU to take an ‘integrated

²⁰ European Climate Change Programme. All documents from this ECCP process can be found here:

http://circa.europa.eu/Public/irc/env/eccp_2/library?l=/light-duty_vehicles&vm=detailed&sb=Title

approach' to further CO₂ reductions – as the CARS21 Group also recommended. We return to a discussion of the concept 'integrated approach' below.

A new strategy on cars and CO₂ emissions

The early stakeholder consultations and preparations culminated in February 2007, when the Commission presented a *revised CO₂ and cars strategy*, with a proposal for binding legislation as its cornerstone (Commission 2007a). This strategy consisted of a set of measures aimed at influencing both the supply and the demand side of the EU market for cars and vans. The strategy presented in February had been postponed twice, as a result of heavy lobbying and internal divisions in the Commission. Let us take a closer look at the internal discussions and conflict in the Commission, prior to publication of the revised strategy.

When it was decided that some sort of binding legislation was necessary to reduce CO₂ emissions from cars, a most central question to be settled was this: How should the emissions-reduction burden be shared? Environment and Industry Commissioners were discussing whether the main responsibility for reducing CO₂ emissions should lie with automobile manufacturers (as under the voluntary agreements), or be shared among several stakeholders. While Environment Commissioner Stavros Dimas wanted a 120g CO₂/km binding limit on average emissions from new cars from 2012, Enterprise and Industry Commissioner Günter Verhaugen from Germany declared that would unfairly punish manufacturers of large and high-performance vehicles. It would be disadvantageous to the German car industry in particular, and Verhaugen worried that new, binding legislation targeting only the manufacturers would lead the car giants to move out of Europe, costing the continent thousands of jobs (*The Guardian* 8/2/2007). Verhaugen therefore favoured what became known as the 'integrated approach', which would involve tyre-makers, fuel suppliers, repairers, drivers and public authorities as well as vehicle manufacturers (interview with Com2, 2011). The integrated approach had gained traction through the CARS 21 Group which, as mentioned above, was set up in 2005 by Verhaugen. It is obvious that the Commission took the work of the CARS21 Group into account when creating the CO₂ and cars strategy, and the Commission presented a Communication on CARS21 along with the revised CO₂ and cars strategy (Commission 2007c); the two were in fact published on the same day.

The internal dispute in the Commission over the actual content of the strategy led to several delays, but the international community put extra pressure to bear on the Commission, as this (January 2007) was the time when the dramatic 2007 report from the Intergovernmental Panel on Climate Change (IPCC) report was published (IPCC 2007).²¹

²¹ The headline findings of the IPCC Fourth Assessment Report, the largest and most detailed summary of the climate change situation to date, were: "warming of the climate system is unequivocal" and "most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations" (IPCC 2007).

Commission President Barroso finally intervened to settle the internal dispute between the Commissioners. According to one of our interviewees, Barroso said that Dimas and Verheugen should work together on this piece of legislation; he did not wish to take sides, and so he did not give the file to any one of the Commissioners (interview with Com1, 2011). On 7 February 2007, the Commission was ready to present the strategy.

The strategy: main content

The strategy envisaged binding EU legislation (not voluntary agreements) to ensure that average emissions from new cars sold in the EU27 would reach the 120g CO₂/km target by 2012. It was stated that the Commission would propose a legislative framework by the end of 2007 or by the latest by mid-2008. Improvements in motor technology would have to reduce average emissions to no more than 130g CO₂/km, while the remaining 10 gr (in order to reach the 120g CO₂/km target) would be left to softer 'complementary measures' (Commission 2007a). This meant that car producers would have to realize new vehicle-technology improvements, but that these measures would be complemented by further use of biofuels,²² fuel-efficient tyres and air-conditioning, traffic and road-safety management and changes in driver behaviour. The strategy did not contain any longer-term target. The Commission (2007a; 2007b) also proposed the following:

- For vans, the fleet average objectives would be 175g CO₂/km by 2012 and 160g CO₂/km by 2015, as against 201g CO₂/km in 2002;
- Investments in research aimed at reducing emissions to an average of 95g CO₂/km by 2020;
- Encouraging member states to promote and stimulate the purchase of fuel-efficient vehicles (via labelling and car taxation);
- Requiring car manufacturers to sign an EU code of good practice on car marketing and advertising to promote more sustainable consumption patterns.

In other words, the final decision of the Commission marked a partial defeat for Stavros Dimas – as the integrated approach weakened the earlier target of 120g CO₂/km. It is important to understand that the EU at this point was caught in a zero-sum game: the 120g CO₂/km target was taken as a given (nothing else could be introduced at this point) – so if someone else is going to do more, that means that the car industry will do less. The decision to go for an integrated approach can be interpreted as a necessary compromise with the car industry (and Germany) in order to achieve a legislative outcome, but it can also be seen as a major lobbying victory for the car industry (Brink 2010: 194).

²² The contribution of biofuels to the integrated approach is ensured through the fuel quality directive.

Reactions to the strategy on cars and CO₂ emissions

Reactions to the Commission's revised CO₂ and cars strategy were intense and deeply divided. Various stakeholders and actors disagreed among themselves on how the market-wide average of 130g/km should be split among the manufacturers and models. The Commission had not been clear on this in its strategy, saying only that 'the weight option' was one of many options being considered:

How exactly this will be translated at the level of the manufacturers and vehicles, and how the emissions saving of up to 10g CO₂/km to be contributed by complementary measures will be divided amongst the various measures identified, have yet to be decided. The precise definition of the regulatory approach will be established after wide consultation and on the basis of a thorough impact assessment (Commission 2007b: 3).

The strategy also underlined that legislation should be 'non-discriminatory', meaning that 'legislation should not hurt anyone too much'.²³

ACEA described the 130g/km target as 'arbitrary and too stringent' and said that '[p]utting the burden mainly on the car industry is the most expensive and least cost-effective method possible' (ACEA 2007a). It underlined that CARS21 had endorsed the integrated approach, and said that the Commission had put too much emphasis on vehicle technology, and too little on the 'complementary measures' (like biofuels, eco-driving and infrastructure measures). The automobile industry claimed to support the overall 120g CO₂/km target, but felt that the target could be reached in a wiser and more cost-efficient way – by sharing the burden between different stakeholders to a larger extent than proposed in the strategy. In its response to the Commission's CO₂/cars consultation, ACEA wrote:

[...] as stated by ACEA during the 2003 potential reduction review under the CO₂ Commitment, as recommended in 2005 by the multi-stakeholder group CARS 21, and as adopted in the 2006 Commission's Energy Efficiency Action Plan, an Integrated Approach involving all relevant stakeholders is required to reach the Community target of 120g CO₂/km [...] The Commission's ECCP consultant had clearly concluded that engine technology was a high-cost measure to reduce CO₂ emissions (ACEA 2007b: 2).

The integrated approach chosen in the strategy was, according to the industry, not 'integrated enough' – it was a *limited* integrated approach, with too much burden placed on the car manufacturers (interview with ACEA1, 2011).

In the discussions during 2007 related to burden-sharing *among automobile manufacturers*, the industry called for a system with differentiated caps according to vehicle weight, enabling heavier cars – which, according to ACEA, respond to consumer demands – to exceed

²³ A point stressed by one of the interviewees: in practice it meant that it should not hurt the Germans too much.

the 130g/km target. However, there was a split in the car lobby at this time. While Germany producers like BMW and Mercedes-Benz make heavier vehicles and had rising emissions, France's Peugeot and Renault, and Fiat of Italy, make lighter cars whose emissions were falling. 'Porsche, the German luxury car maker, recently called it a "war" in the European car industry waged by French and Italian makers of smaller cars against Germany' (*The Guardian*, 8/2/2007).

From the opposite side of the table, environmental NGOs condemned the Commission's strategy, saying that it weakened an eleven-year-old climate target (EurActiv, 8/2/07). Although the NGOs acknowledged that the strategy did, for the first time, 'say that carmakers will now face binding legislation to improve fuel efficiency', the 'integrated approach' and the 130g CO₂/km led to great disappointment (T&E 2007d). The ENGOs did not want the legislation linked to weight, as 'linking emission standards to weight would greatly reduce the main incentive to manufacture and sell lighter cars, because these would be subject to proportionately tougher standards' (ENDS, 29/8/07). The ENGOs linked the new proposal to the recently published IPCC report: 'Following last week's devastating report on the threat of global climate change it is clear that tougher action is required, not weaker' (Friends of the Earth transport campaigner Tony Bosworth to *The Guardian*, 7/2/2007).

The Council gave overwhelmingly support to the Commission's strategy, underlining the need for an integrated approach (ENDS, 1/7/07). In June 2007, the Environment Council 'urged the European Commission to come forward, as soon as possible and before the end of 2007, with a legislative framework to reduce CO₂ emissions from cars [...]' (Commission 2007d). The strategy and its targets did, however, arouse fierce opposition in some of the member states, and especially in Germany – with warnings that the new legislation could wipe out premium automobile manufacturers such as Mercedes, Audi, Porsche and BMW.

In the European Parliament, UK Liberal MEP Chris Davies rejected the Commission's strategy as too costly, maintaining that it did not give manufacturers *enough time* to make the necessary design changes. He proposed that the industry should have three extra years to meet the EU target, but that the full and sole responsibility for meeting the 120g/km mark should rest with the industry (as opposed to the integrated approach). Hence, the industry should be asked to do more, but later. In a resolution adopted in September 2007 the EP's Environment Committee said that automobile manufacturers would have to reach the EU target of an average of 120 grams per kilometre by 2012 through improvements in vehicle technology alone, thus rejecting the 'integrated approach' – as well as Davies' phase-in period (ENDS, 13/09/2007). Rapporteur Chris Davies welcomed the decision of the Committee, even though it had rejected by a significant majority his plan to allow manufacturers until 2015 to meet the tougher target (ENDS, 13/09/07).

The Environment Committee failed nonetheless to persuade the full assembly, and when the resolution was up for vote in the Parliament on 10 October 2007, the Commission's proposal was weakened. The EP recommended that the target should be 125g/km, but that manufacturers

should have until 2015 to meet it. This recommendation was significantly weaker than the 120g/km by 2012 target proposed by the EP's Environment Committee a month previously. The Parliament also recommended that reduction targets be defined through a footprint-based (track width multiplied by wheelbase) limit value – and not by weight (as discussed above). T&E was very disappointed with the decision, saying that this target was 20% weaker than the Commission proposal, and 40% weaker than that of the Environment Committee (ENDS, 24/10/07). Also Green MEPs were highly displeased with the assembly's decision.

The task of preparing a proposal was handed over to the Commission's General Secretariat (headed by former Environment Directorate head Catherine Day) in order to prevent bickering between the Commission's industry and environment departments (ENDS, 18/12/07). Several issues were hard to decide on – like the level of penalties, what an emissions trading scheme for car emissions could look like, and how to differentiate among classes of cars (ENDS, 18/12/07).

Proposal for legislation on cars and CO₂ emissions

The Commission finally proposed the draft regulation on 19 December 2007 (Commission 2007c). Like the strategy launched in February, it was based on an 'integrated approach' where the target of 120 g/km was to be reached through improvements in motor technology accounting for average emissions reductions up to 130g CO₂/km (by 2012); and complementary measures contributing to the final cut of up to 10g CO₂/km (thus, the Commission was not asking the automobile manufacturers to bear the full responsibility of the reduction). The setting of a binding target of 130g/km marked the end of the voluntary approach, although it weakened the previous 120g/km target.

The average 130g/km target was finally proposed to be implemented according to a utility function based on vehicle *weight* (mass). A limit curve of permitted emissions of CO₂ for new vehicles was defined according to the mass of the vehicle ('sloped line target'). The curve was set in such a way that heavier cars would have to improve more than lighter cars, but in practice the limits for heavier vehicles were quite lax – for instance, cars weighing more than two tonnes, such as the Porsche Cayenne or the Land Rover, would still be allowed to emit more (above the limit value curve) – as long as they were balanced by cars which were below the curve. This was criticized by ENGOs, but according to the Commission, that calculation method ensured that manufacturers of larger cars would still have to make proportionally greater cuts than producers of smaller cars.²⁴

²⁴ A good explanation of the sloped-line target proposed can be found in Brink (2010): 'It adopted the sloped-line target idea noted above and proposed a somewhat flattened target: a slope at 60 per cent of the best-fit line of CO₂ to mass. Manufacturers of heavy vehicles reportedly preferred a slope of nearer 80 per cent, and those of smaller cars a slope of 20-30 per cent. Had there been a 'zero per cent slope', this would have been a horizontal line and hence the same as a common target [...] The 60 per cent slope is slightly more favourable towards smaller vehicle manufacturers, and it partly addresses the perverse incentive for

Furthermore, the Commission proposed that penalties should be payable for each g/km of CO₂ emitted by the manufacturer's average vehicle above its fleet target, multiplied by the number of vehicles sold.²⁵ Various flexibility mechanisms were introduced: for instance, manufacturers would have the opportunity to form a 'pool' with other automobile manufacturers to allow them to jointly meet their combined target. The proposal covered all manufacturers selling new cars in Europe – whether European, American, Japanese, Korean, etc.

Both automobile manufacturers and environmentalists immediately reacted by criticizing the plans, and a period of intense lobbying from all sides ensued. An ACEA representative branded the system proposed as 'punitive, repressive and unrealistic' (ENDS, 19/12/07). T&E, on the other hand, raised concerns over the level of the penalties, as well as weight as a parameter for setting CO₂ standards. The ENGO said the proposal favoured heavy vehicles, and reduced the incentive to make smaller cars – the best CO₂ reduction measure of all (ENDS, 19/12/07).

6 Deciding on policies

6.1 The fuel quality directive

Formal negotiations on the draft proposal started on 6 February 2008. One of the main issues at stake in the decision-making process was whether binding 'sustainability criteria' for biofuels should be included in the Directive. The decision-making process was also influenced by the intensified stream of critical reports and studies on biofuels throughout 2008. In this section we seek to get an overview of the FQD decision-making process, from early 2008 until the final agreement was adopted in December that same year. How did key actors work to change the Commission proposal? Which links were introduced in the negotiation process? And how can we assess the final outcome in terms of level of ambition and acceptance (in relation to the Commission's proposal)?

Council and MEPs teaming up

As we have seen, both the Council and MEPs welcomed the Commission's plans, but said that the new directive should include sustainability criteria, to prevent environmentally-harmful biofuel production. The Commission responded that it was developing sustainability criteria, but that these would be best agreed in the proposed directive on renewable energy promotion (the RES directive), which would include the previously discussed 10%-biofuels target. MEPs argued that the criteria planned by the Commission under the RES directive would not be in place sufficiently early to prevent fuel makers from investing in cheap but 'bad' biofuels (EurActiv 30/1/08). This deadlock was partly settled in February 2008, when EU governments created a working group to establish 'core criteria' for biofuel sustainability intended to appear in the

manufacturers to increase the weight of their cars in order to avoid significant emission reductions, which can result from using a mass-based utility curve' (Brink 2010: 195–196).

²⁵ €20 per g/km in 2012, €35 in 2013, €60 in 2014, and €95 in 2015

renewables directive as well as in the FQD (ENDS, 25/2/08). According to ENDS (25/2/08), EP rapporteurs on both renewables and fuel quality supported this move, and an alliance of member states and MEPs was thus created to pressure the Commission to include binding sustainability criteria in the FQD.

A draft paper circulated by the Slovenian presidency in late March 2008 showed that governments felt that the Commission proposal requiring all biofuels used in Europe to deliver lifecycle savings of 35% compared to conventional fuels was too weak (EurActiv 01/04/08). When the special working group delivered its final draft sustainability criteria in early May, it became clear that the group recommended 'that the minimum level of carbon dioxide savings that biofuels must yield should be set in two stages' – from an initial savings threshold of 35%, rising to 50% from 2015. The various member-state governments disagreed among themselves on these figures, with some saying they were too high, others too low (ENDS, 8/5/08); thus there emerged a split on where and when to set the second-stage target. The working group also held that the EU should accept imports only from countries that have ratified and implemented international treaties such as the Kyoto Protocol.

Since January 2008 a range of studies had questioned the eco-friendliness of biofuels; during the spring, the stream of critical reports and studies intensified (T&E et al. 2009: 17). In February 2008, the UK review (the 'Gallagher Report') on the indirect impacts of biofuels was published. It concluded: (2008:8) 'the displacement of existing agricultural production, due to biofuel demand, is accelerating land use change and, if left unchecked, will reduce biodiversity and may even cause greenhouse gas emissions rather than savings' (cited in T&E 2009: 17). Even the Commission's in-house scientific department, the Joint Research Centre, concluded that the cost of promoting biofuels would 'almost certainly' outweigh the benefits, with no guarantee of reducing GHG emissions (ENDS, 1/6/08). The increase in biofuels production was also linked to the global food crisis, as well as deforestation taking place around the globe. 'Pressure is mounting on the commission to scrap the new biofuel target as several top EP scientists recently joined in the criticism' (ENDS, 1/6/08). This led the 2008 Spring Council of EU leaders to no longer explicitly include support for biofuels in their target, but merely reiterate the importance of ensuring the sustainability of biofuels (T&E et al. 2009: 16).

In 2008, several NGOs also accused oil firms of erroneously claiming that the 7a-target was unachievable. A report published by Friends of the Earth Europe in April 2008 showed calculations that fuel producers could achieve reductions of between 10.5% and 15.5% by reducing gas flaring and venting, improving energy efficiency and switching to alternative fuels at refineries: thus, the oil industry could reach the target 'without using harmful biofuels at all' (Friends of the Earth 2008).

Final agreement on a revised Fuel Quality Directive

In December 2008, the EP adopted a legislative resolution on the proposal for a revised FQD, with 670 votes to 20 (European Parliament 2008). The report was tabled for plenary consideration by Dorette

Corbey, on behalf of the Committee on Environment, Public Health and Food Safety. The legislative resolution adopted in this first reading was the result of a compromise between Parliament and Council, making it easy to proceed to a first reading deal with the member states.

A final text on the revised EU FQD was then agreed on in November 2008, yielding a ‘first-reading agreement’ after three months of talks between the EP and the Council. The final directive was presented as part of the climate and energy package containing measures aimed at fighting climate change and promoting renewable energy. It requires fuel suppliers to reduce lifecycle GHG emissions from road fuels by 6% from 2010 to 2020 (Article 7a), and thus introduces for the first time a reduction target for GHG emissions from fuels. The legislation is to apply to all petrol and diesel used in road transport, as well as gasoil used in non-road-mobile machinery. The 6% was presented as part of a bigger 10% reduction target, made up of:

- a 6% reduction in GHG intensity of fuels by 2020, with intermediate indicative targets of 2% by 2014 and 4% by 2017 (Article 7a)
- an additional 2% reduction subject to developments in new technologies such as CCS
- a further 2% reduction to come from the purchase of Clean Development Mechanism (CDM) credits.

Article 7a requires fuel suppliers to cut the carbon footprint of their products, per unit of energy sold, by 6% in 2020, compared to 2010 baseline of fossil-fuel GHG intensity. The greenhouse gas intensity of fuels will be calculated on a lifecycle basis. Thus, from January 2011, distributors of fuel would be obliged to report the emissions per unit of energy from the various fuels they distribute. Combustion CO₂ emissions (about 85%) cannot be influenced by the supplier, implying that the remaining 15% would need to be cut to 9%. Every reduction undertaken before the baseline year of 2010 does not count: only improvements between 2010 and 2020 are relevant.

To enable these GHG emission cuts, petrol may have higher biofuel content, and so the revised FQD also facilitates the more widespread blending of biofuels into petrol and diesel. From 2011, petrol may contain up to 10% bioethanol. In order to avoid damage to older cars, however, fuel with 5% ethanol (E5) will continue to be available until 2013, with the possibility of extending this period.

The compromise aims to ensure that only biofuels that fulfil sustainability criteria will be used. For biofuels to count against the GHG emission reduction targets they must meet certain sustainability criteria set out in the FQD (which correspond to those in the Renewables Directive). With effect from 2017, the GHG emissions saving from the use of biofuels is to be 50%; after 2017, it shall be 60% for biofuels produced in installations where production has started from 2017 onwards. This means that the biofuels to be taken into account are not to be made from raw material obtained from land with high biodiversity value, raw material obtained from land with high carbon stock, or raw material obtained from land that

was peat land as of January 2008 (European Parliament 2008). The agreement also introduces for the first time a limit on the petrol additive MMT (an organometallic compound) of 6mg from 2011 and 2mg from 2014. Further, the revised FQD requires labelling of other metallic additives. The proposal for relaxing the maximum vapour pressure limit for bioethanol blends was rejected by EU lawmakers (ENDS, 27/11/08).

Europa found the 6% target 'more aligned' with the target expected in the Renewables Directive, and was thus quite content (ENDS, 27/11/08). However, it repeated that 'the reduction target should not apply to fossil fuels and it would not improve refinery efficiency beyond the level already being encouraged by the EU's emission trading system' (ENDS, 27/11/08). The environmental group T&E also welcomed the agreement as a very good step in a highly positive direction. According to one informant, however, the environmental groups were uncertain how to respond to the final agreement – going from a 10% to a 6% target. There had been considerable controversy around biofuels, many critical studies had been published, and debates over *indirect land-use change* (ILUC) complicated the matter. A 10% target would mean an even greater incentive for more biofuels – so 6% could actually be the best for the environment and the climate. The key question that put the ENGOs in a difficult situation was how to make sure that biofuels would provide significant carbon emission savings compared to fossil fuels. We return to the discussions of this question in section 7.

Parallel to the adoption of the revised FQD, a directive on renewable energy (RES Directive) was also agreed in the EU, on 9 December 2008. It sets an overall target of 20% renewable energy for the EU, to be divided among the member states. Furthermore – and of relevance to this report – the RES Directive sets a 10% mandatory target for the *share of renewable energy* in road transport fuels for 2020. While the original Commission proposal read 'biofuels', this was changed in the decision-making process to the broader term 'renewable energy'. It is still widely assumed that the RES Directive will act as a major driver for increased biofuel production. The directive employs the same sustainability criteria as the FQD, aiming to ensure that only sustainable biofuels count towards the target. The 10% target has to be met individually by each EU member state: states may choose to do this through use of biofuels or renewable electricity in cars and trains.

6.2 Regulation 443/2009 on cars and CO₂ emissions

Decision-making: The proposal goes to co-decision

After the Commission had finally proposed the draft regulation on 19 December 2007, the legislation was debated by the European Parliament and the member states, as the proposal was subject to the co-decision procedure by the Council and the EP. This opened up to a full-scale political battle between opponents and supporters of the new measure.

The proposal was widely discussed during both the Slovenian and French EU presidencies in the spring and autumn of 2008, respectively. Within the Council, Germany and France dominated the discussions. Germany led the political opposition to the proposals; at an early point the German

Chancellor Angela Merkel stated: ‘We believe this path is not economically favourable [...] therefore we think that industry policy is being made here which burdens Germany and German carmakers’ (*The Guardian*, 20/12/2007). The UK and the Netherlands, by contrast, argued against watering down the proposal (Brink 2010: 198).

Several member states argued for a substantial ‘phasing-in’ of compliance, and attacked the 2012 target date. Prior to a meeting of environment ministers in June 2008, a Slovenian presidency Progress Report revealed that some governments wanted to move the proposed deadline for car makers to reduce CO₂ emissions to 130g/km, from 2012 to 2015. Germany signalled that its car manufacturers would not be able to fully meet their share of the proposed target by 2012, and proposed that the binding limit should be phased in gradually (ENDS, 6/6/08).

In a meeting in April 2011 (during the Slovenian Presidency), several things became clear; ‘The German official said France now wanted to take the matter out of the hands of the environment ministers and resolve it between heads of government. France takes over the EU presidency for six months in July and wants a deal on its watch’ (Reuters, 11/4/2008). A major sticking point between Germany and France was whether a car’s weight or the size of its carbon footprint should determine how the curbs were to apply. Since their interests were so divergent, it was widely assumed that any deal that could be agreed by these two countries would form the basis for an EU-wide agreement.

In a joint statement in June 2008, Merkel and Sarkozy gave their backing to the 120g/km by 2012 target, saying that the targets should be based on vehicle weight (in line with the Commission’s proposal). This meant that heavier, more-polluting German cars could emit more – as long as the manufacturers balanced this production with smaller, less-polluting models. Both France and Germany called for a ‘substantial’ phasing-in of the target, the inclusion of eco-innovations, as well as greater flexibility on penalties. No specific proposals for a timetable for a phase-in were included in this June declaration (ENDS, 10/6/08).

Achieving an agreement on cars and CO₂ was a priority for the French Presidency, as it wanted to bolster the EU’s leadership role in addressing climate change (Brink 2010: 197; interviews with Com1 and N1, 2011). This can to some extent explain why France was ready to yield to German demands (like the weight parameter) – the Presidency wanted to ‘close the deal’ before the end of 2008. After this, a new, less climate-progressive member state would take over the Presidency (the Czech Republic), and it was important to agree on ambitious climate change policies before the 2009 elections to the European Parliament (interviews with EP1 and ENGO1, 2011).

Reactions to the German–Franco car deal were varied. The German car industry seemed pleased, but ENGOS raged: ‘Germany’s BDI industry group said Chancellor Angela Merkel had strongly defended German industrial interests in her talks with French President Nicolas Sarkozy [...] But Germany’s opposition Greens party and pressure group Greenpeace sharply criticized the proposal, accusing Merkel of putting car-

makers' interests before environmental concerns' (Reuters, 10/6/08a). Car makers welcomed the transition period until 2015, as well as the inclusion of ecological innovations. 'The proposal is not ideal but better than the one from the European Commission' (Matthias Wissmann, president of the VDA car lobby, quoted in Reuters, 10/6/2008b). Looking back on the decision-making phase, one NGO representative said that the German–Franco deal was the real turning point; this agreement 'ruined the changes of an ambitious agreement' (interview with ENGO1, 2011).

The European Parliament also watered down the Commission's proposal, although there was a major divergence of opinion within the Parliament at this time (interview with EP2, 2012). In early September 2008, the Industry and Energy Committee adopted a resolution saying that car makers should have three years' breathing space to implement CO₂ reduction: they would only be required to ensure that 60% of their fleet met the target by 2012, 70% in 2013, 80% by 2014 and 100% by 2015 (EurActiv 02/09/08). It also proposed a penalty of €40 per excess gram of CO₂ – less than half of the amount proposed by the Commission. Green groups responded by accusing Industry Committee MEPs of bending to pressure from the car industry (EurActiv, 02/09/08).

Later that same month (September 2008), the EP's Environment Committee said that the Commission's proposal was too soft on car manufacturers, who should be forced to limit average CO₂ emissions from new cars in the EU to 130g/km by 2012, as part of an overall 120g/km target.²⁶ One major change to the Commission's proposal was the inclusion of a longer-term emission limit of at least 95g/km in 2020.

For some time it looked as if the Environment Committee would vote along the same lines as the Industry Committee. Prior to the actual vote, the Italian socialist rapporteur Guido Sacconi had – in collaboration with Martin Callanan from the Conservatives – tabled a set of compromise amendments, including a phase-in period until 2015 and weakened penalties for non-compliance. Many observers had expected that to pass: the two largest party groups had agreed; moreover, the Industry Committee had endorsed a similar phase-in and later date just a few weeks earlier. However, in the final Environment Committee vote on cars and CO₂ emissions, all party groups were torn apart along the lines of national interests, with MEPs from both the Socialist and Centre–Right groups breaking ranks to side with Liberal and Greens to defeat the compromise deal. According to one interviewee, the turning point came when the Green group called for a roll-call vote, which is basically a vote where it is recorded who voted what. Normally, only the overall result is recorded in EP Committees, but the Greens insisted that each individual's vote

²⁶ 'MEPs in the committee took many by surprise by voting down an "industry-friendly" compromise proposal between the EPP-ED and Socialist groups that would have diluted the Commission's original plans by awarding carmakers a three-year phase-in period, rather than enforcing a strict 2012 deadline' (EurActiv, 01/10/08), and 'The Committee voted 46 in favour and 19 against the more stringent proposal, despite committee members' certainty that it would face considerable resistance' (Brink 2010: 198).

should be publicly visible. Suddenly it would be clear which members supported 'ambitious' climate-friendly policies, and which did not (interview with EP1, 2011). And so, the final result became that the Environment Committee voted against the EP's Industry and Energy Committee, and (basically) in favour of the Commission's original proposal, adding a 2020 target of 95g/km.

Throughout 2008, car makers continued to lobby fiercely against the Commission's December 2007 proposal. In the autumn of 2008, the financial crisis was used as an extra argument. 'You can't pile on regulation on an industry during its worst time in the last ten years' (Fiat CEO Sergio Marchionne, at a Paris Auto Show in October 2008, to Reuters, 3/10/08). The financial crisis was expected to worsen the situation for European and US car manufacturers.

In October, the French Presidency of the EU tabled amendments in the Council that closely mirrored the June deal between France and Germany. The proposal would delay full introduction of the legislation until 2015, reduce the fines to car manufacturers that only narrowly miss their targets, and postpone until 2012 the adoption of a binding emission limit for 2020 (ENDS, 1/10/08). However, France seemed to be open to the long-term goal of 95g/km by 2020 that the EP Environment Committee and many member-state governments had been pushing for (EurActiv, 01/10/08). ENGOs responded by saying that France was clearly putting forward what was essentially a German industry position on this legislation (EurActiv, 01/10/08).

Coming to an agreement on cars and CO₂ emissions

On 4 November 2008, negotiations began between the Parliament and the Council, with the Commission acting as a mediator. France, Germany, Italy and the UK – Europe's largest car-manufacturing countries – had worked to water down the targets and give the industry more time and flexibility. The French Presidency was given a mandate to negotiate on behalf of the member states. These approached the negotiations on basis of the French proposal to limit CO₂ emissions to 130g/km for 65% of new cars in 2012, gradually rising to 100% by 2015, to a large extent championing the viewpoint of European car makers. In late November, negotiations between the Council and the EP ended without an agreement, apparently due to internal disagreements within the EP, and to EP/Council disagreement on wording of the long-term 95g/km target (ENDS, 25/11/08).

A few days later, however, EU lawmakers reached an agreement whereby they backed the French proposal of gradually limiting CO₂ emissions to 130g/km for 65% of new cars in 2012, 75% in 2013, 80% in 2014 and 100% by 2015 – as opposed to the Commission's original proposal of introducing the caps on all new cars sold in the region in 2012. Each car maker was to get an individual annual target based on the average mass of all its new cars registered in the EU in a given year. Manufacturers whose fleet average exceeded the limit from 2012 would have to pay a penalty for each car registered. The 'integrated approach' was decided on: 130g/km was to be achieved by improvements in vehicle motor

technology, with the remaining 10g/km reduction to be obtained by other measures. The deal also reduced the proposed fines, but the long-term target of average emissions at 95g CO₂/km by 2020 was agreed – this final point being obvious strengthening of the Commission’s original proposal.²⁷ The European Parliament approved the final text on 17 December 2008 – adopted with 559 votes in favour, 98 against and 60 abstentions (Brink 2010: 198). The legislation was finally published as Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009.

ACEA responded by calling this a ‘very tough deal for the industry’, although acknowledging that there had been changes from the Commission’s original proposal that would make it ‘more reasonable and achievable’ (ENDS, 2/12/08). Socialist and EPP-ED MEPs welcomed the deal, while Green MEPs, ALDE and GUE/NGL criticized its level of ambition. T&E went even further, deploring the compromise:

The car producing countries of Germany, France, Italy, the UK and Sweden have all played a role, by defending the specific interests of their national industries [...] The attempts of other countries to stand up in the broader public interest have sadly failed. The story of this law is the story of special interests in industry and national governments preserving the status quo (EurActiv, 02/12/08).

The final agreement proved to be backed by most EU governments and the Parliament’s two largest political groups (ENDS, 2/12/08). It was the first piece of legislation ever to introduce limits on CO₂ releases from new cars in the EU. The final text of an EU regulation to limit CO₂ emissions from new passenger cars was published by the Council of Ministers in March 2009.

7 Implementing policies

7.1 Implementing the revised FQD

In 2009, the job of implementing the revised FQD began. The method for calculating lifecycle GHG emissions from fuels and energy other than biofuels had not been set out in the Directive, and was subsequently taken up for consultations in the Commission. Implementing measures setting the default values for different fuels still had to be agreed. One of the most problematic issues proved to be whether (and when) to add a default value for oil sands distinct from that for conventionally produced oil. Moreover, the sustainability criteria for biofuels had to be specified, spurring debate on how to calculate the impact of indirect land-use change (ILUC). We examine both of these debates below.

²⁷ One Commission interviewee described this target as a ‘game-changer’: it is very tough, and will have a huge effect on the development of the industry in the years to come.

ILUC criteria

Under the revised FQD it was decided that member states must ensure that biofuels offer at least 35% carbon-emission savings compared to fossil fuels. This figure is to rise to 50% as of 2017 and 60% by 2018. Under both the Renewable Energy Directive (RES) and the revised FQD, it was decided that, following the adoption of the revised FQD, the Commission should publish an assessment of the impact of *indirect land-use change* (ILUC) on GHG emissions and examine ways to minimize its impact. ILUC relates to the possible unintended consequences of releasing more carbon emissions when replacing large forested areas and food production with energy crops for ethanol or biodiesel production. Emissions from *directly* converting land to agricultural use for producing biofuels (direct land use change) must be reported under the revised FQD adopted in 2009. However, increased demand for agricultural products for use in biofuel production may lead to more land being converted to agriculture *elsewhere*, and this indirect land-use change can lead to increased emissions, as when rainforests are converted to cropland. But how should the GHG impact due to ILUC be estimated? Indirect land-use change cannot be observed directly or measured, so *modelling* is necessary to estimate the degree of ILUC – with the various deficiencies and uncertainties associated with the modelling.

The Commission conducted its consultation on ILUC in 2010, with member states, oil producers, ENGOs and other key stakeholders taking part. The EU member states were divided on the issue. The Danish energy agency recommended applying an ILUC factor to all high-risk biofuels as a precautionary measure, and France made a similar proposal; but countries such as the UK and Spain opposed immediate action (ENDS, 6/1/2011). Oil producers warned against using ILUC factors. In its response to the consultation, Shell maintained that ILUC was a complex concept, caused by the wider agricultural and forestry sector, not just biofuels alone; it felt that EU initiatives to tackle ILUC should aim to mitigate CO₂ impacts from across the various sectors (Shell 2010: 1). Furthermore, although Shell recognized ILUC as an issue, it was ‘concerned that the incorporation of highly uncertain ILUC factors would do very little to address the underlying problems associated with ILUC’ (Shell 2010: 2). BP’s submission went along the same lines: ‘energy policy is not the appropriate tool to address primarily an agricultural/land use management issue’; further, that the range of outputs from the range of modelling work done so far had provided ‘little clarity of consistency regarding the indirect effects from the production of biofuels’ (BP 2010: 1; BP 2010: 3). Environmental NGOs, on the other hand, used the consultation to argue that all studies had shown that ILUC was substantial and would lead to an increase in GHG emissions: this must be dealt with and properly accounted for in the GHG emissions calculations associated with biofuels feedstocks. Otherwise, ‘the Renewable Energy Directive and the Fuel Quality Directive will fail their primary policy target, increasing greenhouse gas emissions from transport rather than reducing them’ (Friends of the Earth 2010: 1).

Based on this consultation, the Commission decided to postpone action on ILUC impacts. In a report published on 22 December 2010, it concluded that the EU must conduct further analysis on the risks of ILUC

related to biofuels production before considering appropriate measures to mitigate such risks (Commission 2010a). While acknowledging that ILUC can reduce GHG emissions savings associated with biofuels, the Commission announced that it needed more time to decide what action should be taken. This additional time would be used to prepare an impact assessment with credible proposals based on sound models and data, and ‘if appropriate’, accompanied by a legislative proposal on ILUC (Commission 2010a: 14).

Both MEPs and green NGOs deplored this delay, charging that the ‘balance of evidence of the studies leaves no doubt that ILUC impacts are substantial’ (T&E 2010a). Environmental NGOs called for the full environmental impact, including those from ILUC, to be taken into account in the sustainability criteria in the FQD and RES Directives (T&E 2010a). Early in 2011, the EP issued a report stating there was enough scientific evidence to calculate ILUC impacts – thus hinting that the delay was due to political rather than technical reasons (ENDS, 25/5/2011).

In its December 2010 report on ILUC the Commission announced that it would focus on assessing the following policy options (Commission 2010a: 14):

1. do nothing (while continuing to monitor),
2. increase minimum GHG-saving thresholds for biofuels,
3. introduce additional sustainability requirements on certain categories of biofuels,
4. introduce feedstock-specific ILUC factors.

Subsequent discussions between DG Climate and DG Energy have made it clear that the only politically feasible options are (2) and (4): increasing biofuel emission saving thresholds and/or introducing ILUC factors (interviews with Com4 and Com5, 2012). Whereas DG Climate would like to see feedstock-specific ILUC criteria introduced, so as to exclude certain biofuel feedstocks that are environmentally harmful, DG Energy has resisted such a measure. The biofuel industry has lobbied intensively to prevent the introduction of ILUC factors that would penalize biofuels that are more environmentally harmful (interview with Com6, 2012). Being more sympathetic to arguments put forward by biofuel producers, DG Energy prefers biofuel emissions-saving thresholds that exclude ILUC factors. These differences of opinion between the EU executive’s energy and climate departments seem to be delaying the impact assessment and the legislative proposal. In an attempt to arbitrate, José Manuel Barroso’s cabinet was brought in to ensure the coherence of the forthcoming legislative proposal that will accompany the impact assessment (ENDS, 26/01/12). Sources in Climate Commissioner Connie Hedegaard’s cabinet say they are working on a proposal that combines the policy options of biofuel emission-saving thresholds and feedstock-specific ILUC criteria (interview with Com3, 2012). The analysis for the impact assessment has been basically completed, but the Commission has a hard time determining the specifics of the legislative proposal, due to differences of opinion between DG Climate and DG Energy (interviews with Com3 and Com 6, 2012).

Calculating life-cycle GHG intensity

The second major debate following the adoption of the FQD related to how to calculate the lifecycle GHG intensity of fossil fuels, in particular whether there should be a specific default value for calculating lifecycle greenhouse gas emissions from tar sands. Or in other words, whether, and when, to add a default value for tar sands oil that is distinct from that for conventionally produced oil (ENDS, 17/3/11). In practice, this would mean that 'filthier-than-average' sorts of fuels, such as petrol derived from Canadian tar sands, would need mixing with cleaner sorts, like biofuels. The FQD requires fuel suppliers to cut lifecycle GHG emissions by 6% – based on values for different kinds of fuels. The default values were due to be adopted in 2010, but the proposal was delayed until 2011, due mostly to internal wrangling in the Commission.

In July 2009, the Commission published a consultation document inviting stakeholder comments on a methodology for accounting for the GHG intensity of various fossil fuels. Here the Commission proposed that there should be one default value for crude oils, and one for tar sands oil. The GHG value was set at 107 grams of CO₂ per megajoule of fuel, reflecting the Commission's estimate that tar sands oil emits 23% more than conventional crude. However, in March 2010, a new consultation paper on the Directive was leaked, with Commission drafts showing that a separate value for tar sands oil had been dropped (Friends of the Earth 2011a: 11). This would imply that oil refiners could buy low-quality crude oil or crude from producers with high extraction emissions and still get the same default value (ENDS, 23/3/10). How did this come about – did the Commission actually change its position?

Environmental groups reacted strongly, demanding that the GHG value for tar sands oil be reinstated. In March 2010, 17 MEPs joined in sending a letter to Climate Commissioner Connie Hedegaard, calling for a specific default value for calculating the lifecycle GHG intensity of the dirtiest fuels (European Parliament 2010). This echoed ENGO concerns that the Commission draft contained only one default GHG value of petrol and one for diesel, 'despite the fact that extraction and processing of different crude oil show substantial variation in carbon intensity' (European Parliament 2010). The letter goes on to say: 'While the imports of [fuel from tar sands] to the EU market may be small at the moment, we are concerned that this might change in the near future due to immense reserves of this dirty source of crude oil in Canada and in several other countries' (ibid). Environmental groups also criticized the Commission on grounds of secrecy, after the Commission had withdrawn from its website a study showing that tar sand oil emits 23% more than conventional fuels. The ENGOs claimed this was because the Commission was under 'enormous pressure' from Canada (ENDS, 3/2/11).

True enough, Canadian government representatives and Canadian oil producers were worried that a default value for tar sands would affect the market value of their oil. Canada does not think that oil sands deserve special treatment, and fears that the EU may set precedent against tar sands with potentially huge international ramifications (Friends of the Earth 2011a: 6). David Plunkett, Canada's EU ambassador-designate,

told EurActiv: '[...] we are opposed to Canadian oil being unfairly discriminated against without scientific justification. Oil sands crude has similar greenhouse gas emissions to many other crude oils imported by Europe' (EurActiv 5/10/11). Between 1990 and 2009, oil sands GHG emissions per barrel were reduced by 29%. According to a report prepared by Friends of the Earth Europe, Canadian interests organized over 110 lobbying event on tar sands and the FQD between September 2009 and July 2011 (Friends of the Earth Europe 2011a: 3). According to the same report, Canadian lobbying seemed to have paid off in March, when the Commission changed its position and proposed *one* default value per fuel or energy and feedstock type (Friends of the Earth 2011a: 11). However, the Commission denied that it was working on such a proposal, and the confusion and the delays continued.

In October 2011, the Commission finally decided to set a specific GHG emissions value for tar sands oil, ending months of speculation and internal Commission negotiations: the value of 107 grams of CO₂ per megajoule of fuel was reinstated. Environmental NGOs were pleased with the Commission's final decision. As Friends of the Earth Europe stated in a press release: 'The EU Commission has sent a clear message to Canadian and US policy makers that Europe does not want dirty fossil fuels. This is a bold step towards climate protection and is in defiance of unprecedented lobbying by the Canadian government and by the oil industry' (Friends of the Earth 2011b). Similar praise was forthcoming from Transport & Environment, whose Director Jos Dings declared:

With this decision the EU is sending a signal to the oil industry that dirty fuels should clean up or stay away. If member states give this proposal the green light, producers will have a real incentive to invest in cleaner technologies and to stop dirty habits such as flaring. The Commission, and in particular, the climate commissioner Connie Hedegaard should be applauded for not backing down in the face of huge pressure from Canada and the oil industry (T&E 2011b).

On 23 February 2012, EU member-state officials voted over the proposal from the Commission. A qualified majority was needed for it to be adopted, but the vote ended in a deadlock. Austria, Denmark, Finland, Greece, Ireland, Latvia, Luxembourg, Malta, Romania, Slovakia and Sweden voted for the proposal, while Bulgaria, the Czech Republic, Estonia, Hungary, Lithuania, Italy, Poland and Spain voted against, with Belgium, Cyprus, France, Germany, France, the Netherlands, Portugal and the UK abstaining (*The Guardian* 23/02/12). 'With all the lobbying against the proposal, I feared member states would reject the proposal', said Connie Hedegaard. 'I am glad this was not the case. I hope ministers will realize that unconventional fuels need to account for their considerably higher emissions through separate values' (quoted in *The Guardian*, 23/02/12). But environmental groups were disappointed. Darek Urbaniak, a campaigner from Friends of the Earth Europe said: 'Intense pressure from the Canadians and oil lobbies means we have missed a chance to keep high-polluting sources of fuels out of Europe' (ENDS, 23/02/12).

Indeed, Canada has continued to lobby hard against the proposal. In letters that have been leaked, Canada's ambassador to the EU and its oil minister warned the Commission that Canada was considering legal action through the World Trade Organization, should the EU adopt the proposal. 'Canada will not hesitate to defend its interests, including at the World Trade Organization', it was stated letters sent to European commissioners prior to the vote in February (*The Guardian* 20/02/12). The unveiling of Canada's threats followed a series of revelations of secret meetings and strategies by the Canadian government and oil lobby to prevent the EU from labelling oil sands as highly polluting. In December 2011, *The Guardian* revealed that the UK government had been giving secret support at the very highest levels to Canada's campaign: at least 15 high-level meetings and frequent communications had taken place since September 2011, which included UK Prime Minister David Cameron discussing the issue with his Canadian counterpart Stephen Harper during a visit to Canada (*The Guardian* 27/11/11). At a secret meeting in London, high-level officials met representatives of the Canadian Associations of Petroleum Producers and Shell, Total and Statoil – oil companies with huge investments in the vast tar sands of the Canadian province of Alberta (*The Guardian* 20/02/12).

The European Council – the EU body that represents the member states – was set to vote on the proposal in June 2012, but delayed the decision, in order to allow the Commission to conduct an impact assessment for the proposal. A decision on the revised FQD is expected in early 2013.

7.2 Implementing car CO₂ standards

Implementing the cars and CO₂ regulation

Regulation (EC) 443/2009 setting emission performance standards for new passenger cars requires a fleet average emission of 130g/km for new passenger cars to be fully achieved by 2015 – through a phase-in period. After the regulation was adopted, the Commission set about preparing the implementation measures:

detailed rules on the monitoring and reporting of data; detailed rules on the application for a derogation from the specific CO₂ emission target for small volume and niche manufacturers; detailed rules on the procedure for approving innovative technologies (eco-innovations), and detailed rules on the methods for the allocation of excess emissions premiums (Commission 2010b: 5) [emphasis added]

All these matters were taken to comitology (committees of representatives of member states, 'national experts') for further discussion/detailed planning.

Regarding monitoring and reporting of data, the Commission adopted new rules and guidance for monitoring CO₂ emissions from cars in 2010 – as part of implementing the 2009 regulation. These rules were updated in 2011, but will still be subject to further improvement (interview with Com1, 2011). The regulation requires the relevant national authorities in each member state to record information for each new passenger car

registered in its territory, and submit this information to the Commission every year (manufacturers will be invited to check the accuracy of this information). Data to be collected include manufacturer name, type, variant, version, specific emissions of CO₂, mass, wheel and track width, as well as fuel type, fuel mode and engine capacity. The Commission uses this information both for calculating the average specific emissions of CO₂ from new passenger cars (a list showing the performance of each manufacturer); and for setting the specific emissions target to be met by each car manufacturer for a given year. The information is also used to calculate fines, so it is essential that the information be collected and interpreted correctly. By the end of October each year (from 2011) the Commission will give each car manufacturer a specific emissions target for its fleet in the coming calendar year. From 2012 car manufactures that fail to meet their target will be fined.

The monitoring and reporting mechanism is thus central to making Regulation (EC) 443/2009 work. This has remained a weak point: According to DG Climate Action, the quality of the data collected is not good enough (interview with Com1, 2011). In order to secure confidence in the Regulation, this issue must be resolved, as it challenges the functioning and credibility of the entire system (interview with Com1, 2011). The monitoring mechanism is being evaluated, and is likely to be changed and improved in parallel with the implementation of the 95g CO₂/km-target (see below).

Regarding eco-innovations, the regulation provides car makers with the possibility of applying for the approval of certain innovative technologies that contribute to reducing CO₂ emissions from passenger cars. These eco-innovation credits will help the industry meet the 130g CO₂/km target, and eco-innovations can count for up to 7g CO₂/km towards the target. But then, once the regulation had been adopted, the discussion started: Which technologies, assessed under which criteria, should be eligible as eco-innovations? In July 2011, the EU finally agreed on accounting rules for eco-innovations. It was decided that a regulation can qualify as an 'eco-innovation' if it is new to the market, it contributes to significant CO₂ savings, and is not otherwise taken into account in determining the level of CO₂ emissions from vehicles (Commission 2011). This provision aims at giving the automotive sector greater incentives to invest in new CO₂-reducing technologies, but ENGOs have argued that the entire mechanism is an unnecessary concession to industry lobbying (interviews with Com1 and ENGO1, 2011). However, ACEA is not satisfied, maintaining that the final provision makes it very hard to prove that something is an eco-innovation, in turn making it more challenging to comply with the Regulation (interview with ACEA1, 2011). DG Climate Action was content with how the final provision on eco-innovations turned out (interview with Com1, 2011).

Long-term targets on cars and CO₂ emissions

Reports in 2010 showed that car makers are on track to meet the binding target of 130g/km by 2015 as per the 2009 legislation. ACEA claims this is due mainly to the financial crisis (interview with ACEA 2, 2012), whereas T&E insists that the 2009 legislation finally forced the manu-

facturers to improve their technology performance (ENDS, 10/11/10). Some studies have also showed that they probably exaggerated the time needed for complying with the CO₂ limits, as much evidence points towards car makers in Europe heading for significant ‘over-compliance’ with the regulation. Some key findings from the latest report from T&E on CO₂ progress in the car industry (T&E 2011c):

- The industry as a whole reduced average CO₂ emissions by 3.7% in 2010, continuing the trend of much faster reductions since adoption of the EU’s mandatory CO₂ targets for cars. The industry reached an average CO₂ emission of 140 g/km.
- Progress was more evenly spread across automobile manufacturers than before: Europe’s eight largest automobile manufacturers (measured in terms of sales) all reduced CO₂ within 2% of the average, between 2% and 6%. Volvo was a positive outlier with a 9% reduction; Mazda and Honda were both negative outliers, with slight increases in emissions.
- The top four in terms of fleet-average CO₂ emissions remain unchanged: Fiat leads with 126 g/km, followed by Toyota, PSA and Renault; and Daimler remains last on the list, having reduced CO₂ in 2010 by a below-average 3%.
- The industry as a whole is only 7% away from achieving its 130 g/km target for 2015, as of 2010 it still had a 11% gap to close.
- Toyota is again closest to achieving regulatory CO₂ targets: the company is virtually there, five years ahead of time. Also PSA and Fiat are very close, with, respectively, 3% and 5% cuts left to make. Daimler is still furthest away, with a 15% gap yet to close.
- The distance-to-target figures do not allow for loopholes such as ‘eco-innovations’, ‘supercredits’ and provisions for car makers below 300,000 sales. In fact, the manufacturers are even closer to meeting targets than these figures suggest.

Regarding the long-term target for 95g CO₂/km in 2020 already decided on, a stakeholder process has been conducted by the Commission. In July 2020, the Commission proposed legislation setting out the modalities of how this target is to be reached (Commission 2012b). This proposal requires approval by the European Parliament and Council to become legally binding. It seems that the long-term target is welcomed by all key stakeholders – ACEA welcomes targets which can deliver certainty in product planning and allow for long development cycles in the industry. However, as before, ACEA wants this target to be met through an integrated approach, sharing the burden between different stakeholders – in the most cost-effective way (interview with ACEA1, 2011). There seems to be some sort of mind-change in the car industry: they did not fight the 95g-target to the same extent as they did with the 120g-target; and, with similar performance standards being set all over the world, some companies are beginning to see ‘this push for technological improvement as something which could strengthen their competitiveness, rather than the opposite’ (interview with Com1, 2011).

Similar proposals

After finishing the work with Regulation 443/2009, the Commission went on to work on emissions from light commercial vehicles (vans). The Commission draft proposal was similar to the one agreed on CO₂ emissions from passenger cars, and proposed a fleet average emission for all new vans of 175g/km as of 2013, with no phase-in. Reactions were similar to the case of cars/ CO₂: the French, German and Italian governments wrote to the Commission to get the target phased in over several years. The final proposal was thus delayed because of internal disagreement in the Commission, and the final draft regulation tabled by the Commission in October 2009 proved less ambitious than the earlier version: European manufacturers of light commercial vehicles (LCV) such as vans would have to reduce average emissions from new vehicles to 175g/km from 2014, phased in to 2016 under the proposed regulation. The Commission also proposed a long-term emission reduction target of 135g/km by 2020. Average van emissions were 203g/km in 2007 (ENDS, 28/10/09).

The Council generally supported the proposed limit of 175g/km, but disagreed on when it should be introduced. Sweden want the 175-target to apply from 2014, while Germany and France held that the phase-in should be extended to end 2017 (ENDS, 16/03/10). Member states were also split on whether the proposed limit of 135g/km by 2020 should be weakened or made tougher (ENDS, 22/12/09). (For European Parliament opinions, see ENDS, 17/03/10) – The EP Environment Committee finally called for a softening of the 135-target to 140g/km. In November 2010 the member states watered down the proposal even further: by 2020, CO₂ emissions from vans should be limited to 155g/km. Member states also agreed to extend the interim target of 175g/km from 2016 to 2017 (ENDS, 12/11/10). EU lawmakers finally agreed to 147g/km by 2020, with the interim target of 175g/km to be phased in between 2014 and 2017 (ENDS, 21/12/10).

8 Comparative analysis and conclusions

This report has examined the making and implementation of the EU's revised FQD (Directive 2009/30/EC) and the cars/CO₂ regulation (Regulation (EC) 443/2009). These two pieces of legislation represent a milestone in EU efforts to reduce the climate impact from road transport. The EU's concern originally had to do with the contribution of vehicle emissions to deteriorating air quality and acidification problems, not climate change. The Auto-Oil processes were concerned with exhaust emissions and air quality, and this process had low climate-related ambitiousness in the years before 2006/2007. The two directives established in 1998 under the first Auto-Oil programme were related to the quality of petrol and diesel fuels for use in road and non-road applications and to substances like CO, HC, and NO_x from passenger cars and light commercial vehicles. Combined, these directives required improvements in exhaust standards and fuel quality in two steps (2000 and 2005).

The Commission's proposal for a revised FQD on 31 January 2007 was the first time ever that the oil industry had to contribute to reducing CO₂

emissions, and the first time a fuel was directly subject to lifecycle analysis. The '7a-target' was welcomed by ENGOs and proactive member states. The Commission's proposal for a revised FQD can be seen as quite *ambitious*, taking into account that criteria for sustainable biofuels must be developed. This report has shown how the Commission played a key role in the policy processes – which is not surprising, given the exclusive authority of the Commission to initiate and draft new EU legislation. It did not act on the request of the member states, but the proposals for binding legislation must be seen in relation to the integrated approach to climate and energy policy and the 20–20–20 targets established by the EU Heads of State and Government. The Commission abandoned the 'tripartite' dialogue procedure used in the Auto-Oil processes, instead organizing a structured stakeholder process and several meetings with stakeholders. That made the process more inclusive than the earlier 'tripartite' dialogue between the Commission and the car and oil industries in Auto-Oil process.

Our analysis shows that the process and legislative proposal resulted in a split between the car and oil industries. While ACEA stated that the car industry welcomed the proposal and highlighted the importance of the oil industry's contribution in reducing transport emissions, Europaia made it clear that the oil industry opposed the 7a-target. In this way, the Commission succeeded in splitting the powerful alliance between the car and the oil industries. Despite the protest from Europaia, we must conclude that the initiation process was relatively inclusive and that the oil industry as well as environmental NGOs and other stakeholders being heard and in part heeded.

Regarding car emissions, we have seen that the voluntary agreements with the car industry suffered from low climate ambitiousness, slow progress towards the reduction targets, and low acceptance among outside stakeholders (ENGOs, the European Parliament, several progressive member states). First, the 140 g CO₂/km target was weak, compared to the 120g CO₂/km target by 2005 adopted by the Commission in the 1995 *Community Strategy to reduce CO₂ emissions from cars*. Second, there was limited progress in meeting the target; the voluntary agreements were deemed insufficient in order to achieve the 140 g CO₂/km target. Third, negotiation of the voluntary targets suffered from a serious democratic deficit, with the European Parliament excluded from the process and public participation almost non-existent. The voluntary agreements between the Commission and the car industry gained little acceptance from other stakeholders than the partners themselves. However, these voluntary agreements prepared the car industry for binding and more stringent regulations. In this sense, the voluntary agreements represented a stepping stone on the way towards binding CO₂ legislation.

In the early 2000s, support for legislation in place of voluntary agreements grew. The CARS21 group, established under DG Enterprise in 2005 to boost the competitiveness of the European car industry, was tasked with reviewing the role of environmental policy and CO₂ emissions as part of developing an overarching integrated policy framework for the automotive sector. In early 2006, the Commission – this time DG Environment – launched a public consultation on how best to achieve the

EU's more ambitious CO₂ reduction target of 120g/km by 2012. A first round of public consultations was carried out by the Commission in 2005–2006, complemented by a working group established under the ECCP. It became important for DG Environment to gain control over the process after the establishment of the CARS21 group, and DG Environment decided to use the ECCP to conduct a proper Impact Assessment on the issue. The CARS21 group could only provide input to this Impact Assessment, as DG Environment wanted to limit the influence of that powerful group on the policy process. DG Environment viewed the ECCP as a more balanced stakeholder forum, and more consistent with the discussion DG Environment wanted. The ECCP review concluded that, although the voluntary approach had delivered significant CO₂ reductions, it had not been as successful as hoped. With the slower progress to date, the 120g/km target would not be met by 2012 without additional measures.

In February 2007, the Commission presented a *revised CO₂ and cars strategy*, with a proposal for binding legislation as the cornerstone (Commission 2007a). There were not many important changes from the revised CO₂ and cars strategy of February 2007, to the final proposal for legislation presented on 19 December 2007. As both the revised strategy and the final proposal came from the Commission, they can be said to mark the beginning and end of the 'initiation' phase. The car emissions regulation can be said to have been *ambitious* in the sense that, for the first time, binding legislation was proposed in order to reduce CO₂ emissions from cars. However, the strategy and the proposal were centred on an *integrated approach*, representing a watering down of the 120g CO₂/km target. The average CO₂ emissions of any new car fleet were to be 130g CO₂/km, with the remaining 10g CO₂/km to be achieved by other means. This represented a defeat for DG Environment and a victory for CARS21 and DG Enterprise. Several stakeholders criticized the linking of weight to emission standards in the proposal, as this would reduce the incentives to make smaller cars. This linkage was dropped in the revised CO₂ and cars strategy, but it was included in the final proposal for legislation following intense lobbying from some member states and manufacturers, especially premium car makers in Germany. Several flexibility mechanisms were also introduced in the proposal as a result of the lobbying from manufacturers and concerned member states. In October 2007 came a further weakening of the Regulation's ambitiousness, when the European Parliament voted that 2015, and not 2012, should be the end-date of the commitment.

As with the revised FQD, the Commission played a key role in the initiation of legislation to reduce CO₂ emissions from cars. However, many have questioned the role of the CARS21 Group, and the influence this industry group had in the process of drafting the proposal. The CARS21 group comprised seven industry representatives, with no representatives from either the EP Environment Committee or NGOs with environmental expertise. This was an industry-dominated group where the industry, according to some observers, was 'invited to write legislation'. The industry gained an entry to and insights into a process that, according to some observers, ought to have been much more balanced in terms of stakeholder participation. DG Environment was critical to the

heavy representation of the car industry in the preparations for a legislative proposal, which can explain why it decided to use the ECCP to conduct assessments of various policy tools. The ECCP process, by contrast, was ‘standard EU procedure’ where all stakeholders had the possibility of being heard.

However, DG Environment never managed to get the upper hand in the process. Although DG Environment sought to influence the process at an early stage through the ECCP review, it did not succeed in reducing the strong influence of the CARS21 Group, or the watering-down of the 120g CO₂/km target by the car makers and member states where the manufacturers concerned are based. DG Environment opposed the linking of weight to emission standards in the proposal, but CARS21 and DG Enterprise insisted on making this linkage. Although heavier cars would still have to improve more than lighter cars, the emission limits for heavier cars were quite lax in the end. The CARS 21 group and DG Enterprise also got their way with the integrated approach, which reduced the pressure on car manufacturers to make lighter cars and/or improve engine technology to reduce emissions. We can conclude that DG Enterprise, the car industry, and member states concerned with the competitiveness of their own car industries were pleased with the final legislative proposal as well as the policy process leading up to it, viewing the process as legitimate and the outcome as acceptable.

As to decision-making, the inclusion of sustainability criteria in the final agreement on the revised FQD must be said to increase the environmental ambitiousness of the final agreement, compared to the Commission’s proposal. The definition of sustainability criteria was also strengthened, as the European Parliament and member states called for biofuels to deliver life-cycle CO₂ savings of at least 50% compared to conventional fuels. However, the target for a 10% reduction in the GHG intensity of fuels by 2020 was reduced to 6%. Not many NGOs reacted strongly to this, as the debate shifted considerably in 2008, as the stream of critical reports towards biofuels intensified. It should also be noted that the final ambitiousness of the Directive hinges on a series of specifications deferred to the implementation process. The final agreement seemed acceptable to both Europa and the environmental NGOs, given the uncertainty surrounding biofuels. Had there been fewer critical reports about biofuels when the final agreement on the FQD was reached, the environmental NGOs would surely have been more critical to the weakening of the ambition level of the GHG intensity target.

Regarding the cars/CO₂ regulation, both the Council and the European Parliament watered down the Commission’s original proposal: a phase-in period was introduced, fines were reduced, and several ‘flexibility mechanisms’ – or loopholes – were introduced. From a problem-solving perspective, the Regulation is far from ambitious enough for dealing with the enormous challenge of CO₂ emissions from passenger cars. On the upside, the EU legislation now offers a legally binding framework for CO₂ reductions from new passenger cars. In this sense, the final agreement on the cars/CO₂ Regulation represented a milestone. The long-term target of 95g CO₂/km can also be seen as significantly increasing the level of ambition in this policy area.

As to the legitimacy of this piece of legislation, the role of the CARS21 Group led many to question the legitimacy of the initial work of the Commission, as this group gave powerful industry interests very direct influence on Commission-internal processes. Moreover, the car industries also spent considerable resources and time on lobbying this piece of legislation, and had strong influence on the process all along. Finally, this regulation is a story of powerful national interests in which the major EU car-manufacturing countries all played a role and defended their national interests. Concerning legitimacy, we may also ask whether the process was too fast and whether the French Presidency's rush to achieve an agreement affected the outcome. The ENGOs and other supporters of strong climate action claimed that in its hurry to get a deal, France handed out too many concessions to the car industry, in order to fend off objections from Germany, Italy, Poland and many other East European states.

Finally, how did the specification of policies affect the ambitiousness and acceptance of the revised FQD and the cars/CO₂ regulation? Taking into account the latest developments of the FQD, we must say that the picture is somewhat mixed. As long as the Commission is not able to provide a methodology for accounting for ILUC, it is hard to say how the ambition levels of the FQD will be affected in the end. Regarding legitimacy, this seemed for a long time to be a dark chapter of intense lobbying by the Canadian government and the oil industry, but several voices were heard in the consultation processes on both ILUC and tar sands. The final outcome of the process will certainly affect the legitimacy of the Directive. The highly controversial issue of tar sands will make it hard to find a solution acceptable to both the oil industry and the ENGOs. Moreover, the discussions took place – and continue to take place – largely behind closed doors, an approach that threatens the legitimacy of the sustainability criteria as well as the tar sand issue.

Turning to the cars/CO₂ regulation, the ambitiousness of the regulation was strengthened (or at least not weakened) with the final provision on eco-innovations. However, the level of ambition and credibility of the Regulation will remain threatened as long as a good system for monitoring and reporting is lacking. Currently, the quality of the data is not good enough. The long-term target of 95g CO₂/km is ambitious, but it remains to be seen whether a new regulation encompassing this target will be implemented, or what it will look like. The stakeholder process has just begun, and there seems to be sort of a mind-change underway in the car companies, in a more progressive direction – but this must be examined in future work. The Commission has also started discussing the possibilities for a 2025 target. Regarding the acceptance of the cars/CO₂ regulation, the implementing measures are decided on by comitology, which makes the process less open and transparent, with possible lower legitimacy among stakeholders. In particular, we note that ACEA was not happy with the provision on eco-innovation decided on in the committee.

To conclude, then, this study lends support to several established theories of policymaking in the EU. We have observed that the Commission collaborated closely with the oil and car industries in the initiation and drafting of new EU legislation on both car emissions and fuel quality.

However, in the fuel quality process it became clear that the two industries had differing interests: the car industry was pleased with the Commission's proposal, whereas the oil industry strongly opposed it. There was also divergence of opinion within the Commission, with DG Environment fighting to defend the stringency of the original car regulation proposal. Environmental NGOs and other stakeholders were being heard too, but member states concerned about the competitiveness of their industries proved more influential, particularly in weakening the proposed cars/CO₂ regulation. On the other hand, the final proposals for new EU legislation on car emissions and fuel quality cannot be seen as a result of interstate bargaining. This phase of the policymaking process has been more compatible with the multi-level governance perspective, given that the Commission, in close consultations with the car and oil industries and other stakeholders, drafted the legislative proposals. The idea of a policy network comprising DG Enterprise of the Commission, the car and fuel industries represented by industry associations based in Brussels (ACEA and Europia), and national industry associations, accurately captures how the legislation on car emissions and fuel quality was drafted.

Turning to the decision-making phases, we see that powerful member states have exerted strong influence on the policy outcomes. In particular, the car-manufacturing countries of France, Germany, Italy, Sweden and the UK have all played a role in influencing the cars/CO₂ regulation, by defending the specific interests of their national industries. This observation strengthens an intergovernmentalist understanding of policy-making as the outcome of interstate bargaining among member states defending their national interests. However, we have also seen that the European Parliament has used its powers stemming from the introduction of the co-decision procedure in the 1993 Maastricht Treaty to influence both the cars/CO₂ regulation and the revised FQD. This observation lends support to theoretical approaches that take EU institutions and institutional rules, such as the co-decision procedure, as the unit of analysis. The evidence thus shows the independent causal importance of institutions and decision-making procedures in influencing policy outcomes.

Finally, in the implementation phase, we have seen that various issues were taken to comitology –committees of representatives of member states comprising national experts – for further discussion and detailed planning. The fact that several implementing measures are to be decided in comitology makes the process less open and transparent, with possible lower legitimacy among stakeholders. It also shows that the member states continue to play an important role in the implementation phase. While this observation lends support to an intergovernmentalist understanding of EU policy-making, we have also highlighted how both the Commission and industry interests have influenced the specification of the revised FQD and the cars/CO₂ regulation.

We can thus conclude that the relevance of the various theories of policy-making in the EU varies with the different policy phases. A *policy-network* understanding of EU policymaking is strengthened when we look at the policy-initiation phase. We have seen that the Commission played a key role in this phase and drafted legislation in close collabora-

tion with the car and oil refining industries. The policy proposals could be seen as the result of informal politics within policy networks in which the Commission and the industry had particularly strong influence. An *intergovernmentalist* understanding of EU policy-making is strengthened when we look at the decision-making phase and the strong influence of member states defending the interests of their domestic industries. However, we also see that the European Parliament has played an important role in this process, employing its power in the co-decision procedure. Finally, the implementation process is best understood as a *multi-level governance* process in which several actors and institutions – notably the Commission, member states, industries, and NGOs – influence the specification of policies.

We do not find strong support for the proposition that issues have been linked in order to obtain agreement or to increase the ambitiousness of policies on car emissions and fuel quality. Our main observation is that negotiations on car emissions and fuel quality took place in separate processes, with little contact among policymakers and stakeholder across the two processes. However, this report has examined only whether policies on car emissions and fuel quality were linked, not whether such policies were linked with the EU energy and climate package. Policies on car emissions and fuel quality were negotiated at the same time as the package, but separately. Future research should examine whether linkages between these transport-related policies and the EU energy and climate package were created in order to achieve a compromise or increase the level of ambition.

Tackling transport emissions has remained a headache and a priority for the Commission. Despite several attempts to address problems in the transportation sector, emissions are still going up. Since 1990 transport emissions have risen by 36%. The 2011 White Paper set an agenda for the EU transport sector up to 2020, but longer-term objectives are also needed. If current transport trends continue, the goal of 80–95% emissions reductions by 2050 is not within reach. The revised FQD and the cars/CO₂ regulation represent only a first step in addressing the enormity of the challenge of reducing CO₂ emissions from passenger cars and fuels.

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