

# The Origin, Evolution and Consequences of the EU Emissions Trading System

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## Introduction

The EU was a leading skeptic towards international emissions trading in greenhouse gases (GHGs) in the run-up to the 1997 Kyoto Protocol. Yet only four years later the European Commission (hereafter: the Commission) proposed the world's first international emissions trading system for large industrial emitters of CO<sub>2</sub>. The directive on emissions trading was formally adopted in July 2003, followed by a separate decision-making process on a directive linking the EU Emissions Trading System (EU ETS) to the Kyoto Protocol's flexibility mechanisms.<sup>1</sup> On 1 January 2005 the EU ETS was launched, with a pilot phase from 2005–2007 as the first step, followed by the Kyoto Protocol's commitment period 2008–2012 as the second and more important step. Based on experiences gained, in January 2008 the Commission proposed a revised ET directive for the post-2012 period (2013–2020).<sup>2</sup>

Why did the EU change its position in 1998? How did it manage to establish the world's first international emissions trading system so rapidly? What are the consequences so far, and to what extent does the 2008 proposal for a revised ETS combine the need for an ambitious and legitimate system? These are the main questions addressed in this article, which provides a broad overview of the development and implementation of the EU ETS.

The EU ETS is an instrument for allocating carbon emissions allowances (in tonnes of CO<sub>2</sub>) to industry. Industry can buy or sell these allowances as deemed necessary, so this instrument should provide greater flexibility and cost-effectiveness than, for example, simple emission standards. If the system is to make any sense as a climate-policy instrument for reducing emissions, fewer allowances should be allocated than are projected to be needed. The EU ETS has for a long time been described by EU officials as the cornerstone of the climate policy of the European Union, and it will be important for any EU success in reducing GHG emissions in Europe and compliance with its Kyoto (and subse-

\* This article is based on Skjærseth and Wettestad 2008a.

1. The Clean Development Mechanism (CDM) and Joint Implementation (JI). See Hægstad Flåm 2007 for an analysis of the EU linking directive process.
2. European Commission 23 January 2008. COM (2008) 16 provisional.

quent global) commitments. As the first international emissions trading system in the world, it also represents a “grand policy experiment.”<sup>3</sup>

The EU ETS is also theoretically interesting and challenging from a social science perspective, as different schools of thought offer divergent views as to why the EU changed from being a laggard and instead emerged as a leader in emissions trading. According to liberal intergovernmentalism, we would expect changes in the interests and positions of the EU member states to be key to understanding the evolution of the system. Conversely, multi-level governance and institutional approaches to EU policy-making would rather point to changes in the positions and strategies of nonstate actors and EU institutions such as the Commission and European Parliament. Finally, an international regime consequence and interaction approach would seek the explanation outside the EU itself—due to the consequences of changes in the international climate regime, particularly in the commitments and flexibility mechanisms of the Kyoto Protocol.

There is a large and growing body of social science literature on the EU ETS that cannot be reviewed in full here. However, previous contributions tend to concentrate on certain phases, such as initiation and decision-making<sup>4</sup> or implementation.<sup>5</sup> Other contributions highlight either one major level of explanation, such as EU external factors and regimes,<sup>6</sup> or one specific explanatory factor, such as the attractiveness of the instrument itself,<sup>7</sup> policy transfer from the US<sup>8</sup> or consequences for the scalar politics of climate governance.<sup>9</sup> Finally, some of the most valuable contributions thus far have been written by the Commission architects themselves,<sup>10</sup> providing a detailed description of the EU ETS.

By drawing on this valuable literature, this article provides a broad analysis of all the major phases in the development of the EU ETS based on multiple levels. This approach restricts the theoretical and empirical depth of the analysis, but enables us to better understand the links and consequences of initial phases and the complementarity of different explanatory levels and factors in the various phases. The origin, evolution and consequences of the EU ETS cannot be fully understood without reference to nonstate actors, member states, EU institutions and the international climate regime.

The article is structured as follows. Section two presents the analytical framework. In sections three to five, we analyze the initiation, decision-making

3. Cf. Kruger and Pizer 2004, 1. How the linking between the EU ETS and other ET schemes develops will also affect the emergence of a global carbon market and the architecture of a future climate regime that may include important emitters, like the USA, that are not party to the Kyoto Protocol.

4. Wettestad 2004, 2005; and Damro and Mendes 2003.

5. Grubb et al 2005; Carbon Trust 2007; and Ellerman et al. 2007.

6. Oberthür and Tänzler 2007.

7. Voss 2007.

8. Damro and Mendes 2003.

9. Bailey 2007.

10. Lefevre 2005; and Delbeke 2006.

and implementation of the EU ETS. Section six discusses lessons from the past and the prospects ahead in light of the January 2008 proposed revision of the ET Directive. Finally, section seven wraps up with main conclusions.

## Analytical Point of Departure

The EU found itself facing three challenges—acceptance of the idea of emissions trading, adoption and design of the system, and practical application.<sup>11</sup> These challenges can roughly be related to three phases in the development of the EU Emissions Trading System: policy initiation, decision-making and implementation.

Different theories regarding EU policy-making and integration provide us with different explanations related to these policy phases. Our starting point is that the EU was a leading skeptic towards emissions trading in the run-up to the 1997 Kyoto Protocol.<sup>12</sup> Most EU member states, EU institutions, green groups and industries either opposed or were highly skeptical of the idea of emissions trading.<sup>13</sup> In the following, we outline three explanatory approaches as heuristic tools for understanding the radical changes that took place, paving the way for the EU ETS.

One approach sees EU policy-making and integration as mainly a result of interstate bargaining. According to this liberal intergovernmentalist approach, the interests and preferences of the EU member states are the key to understanding the making of the EU ETS. Liberal intergovernmentalism is based on various assumptions, one of which is of specific relevance here: bargaining outcomes are shaped by the relative interests and preferences of the EU member states, leaving scant room for autonomous supra-national institutions to influence policy-making significantly.<sup>14</sup> According to Hooghe and Marks: “The core claim of the state-centric model is that policy-making in the EU is determined primarily by national governments constrained by political interests nested within autonomous national areas.”<sup>15</sup>

The development of the EU ETS is compatible with a liberal intergovernmentalist approach to the extent that the member states changed their positions, took the initiative and shaped the design of the scheme. Where the member states had differing interests in the ETS design due to differing national energy-economic circumstances, we would expect to find a decentralized system, ensuring high autonomy to each member state in the implementation phase. On the one hand, it is reasonable to assume that a decentralized system

11. The idea of emissions trading has been—and to some extent still is—controversial and is by no means widely accepted. In the context of climate change, the concept has been challenged as being morally wrong and questionable with regard to equity. See Ott and Sachs 2000.

12. Grubb et al. 1999, 92.

13. Skjærseth and Wettestad, 2008a.

14. Moravcsik 1998, 1999; and Marks et al. 1996.

15. Hooghe and Marks 2001, 3.

would provide high acceptance among member states. In particular, decentralized allocation of allowances would enable member states to adapt the allocation process to their own national circumstances. Participants who feel a sense of ownership of the process are more likely to abide by the rules than those who do not feel such ownership, because they perceive the process to be fair and equitable.<sup>16</sup> On the other hand, lack of harmonization will lead each state to allocate allowances in the light of total allowances in “rival” countries. Countries will thus be inclined to lower their ambitiousness to avoid a loss of competitiveness. The member states will have incentives to protect their own industries by providing generous allocations. The dilemma of collective action would easily lead to a “race-to-the-bottom” and over-allocation of emission allowances, as it would be in the interest of all member states that others contributed more to the reductions in order to protect their own industries.<sup>17</sup>

Another approach explains the EU ETS by pointing to the complexity of the actors and institutions involved at different levels of decision-making. Multi-level governance has been depicted as an alternative to state-centered liberal intergovernmentalist approaches regarding European integration and policy-making.<sup>18</sup> Different variants of multi-level governance have been developed since Gary Marks’ original model, but they all share some common assumptions, implying that European integration has weakened the state.<sup>19</sup> One aspect of this general assumption is of particular relevance here:<sup>20</sup> supranational institutions, such as the Commission, are believed to have an independent influence on policy-making that exceeds their role as agents for national governments.<sup>21</sup> This means that individual governments do not have full control over collective decision-making. Different strands of new institutionalist approaches and public administration theory share the same assumption.<sup>22</sup> We use the term institution in a broad sense, both as arenas and as actors.<sup>23</sup>

The development of the emissions trading scheme is in line with a multi-level governance approach, as it was the EU institutions that changed their positions and strategies, took the initiative and shaped the design of the scheme. The tension between what Hoffman<sup>24</sup> refers to as the “logic of integration” (Europeanism) and the “logic of diversity” (nationalism) is inscribed in the

16. Franck 1990.

17. Olson 1965; and Porter 1999.

18. Hooghe and Marks 2001; and Fairbrass and Jordan 2004.

19. Marks 1992; Marks et al. 1996; and Hooghe and Marks 2001.

20. Another relevant assumption is that nonstate actors influence policy-making through both the formation of national preferences *and* directly at EU level. The separation of domestic and international politics made by liberal intergovernmentalists is thus blurred by the multi-level governance approach. For an analysis that includes industry and ENGOs, see Skjærseth and Wettestad 2008a.

21. Hooghe and Marks 2001, 3.

22. See e.g. Bulmer 1998, 370; and Trondal 2007.

23. Underdal 2002, 24. Notice that different explanatory approaches emphasize different institutional aspects of the EU.

24. Hoffman 1966.

sharing of competence between the “nationalism” of the member states in the Council and the “Europeanism” of the Commission and the European Parliament (hereafter: Parliament). To maximize their control over the system, the Commission and Parliament would probably push for a system with a high degree of harmonization based on common criteria in the implementation phase. Common criteria for the allocation of emission allowances would contribute to counteracting free-riding among member states and push in the direction of high(er) environmental ambitiousness.

Common to both liberal intergovernmentalism and multi-level governance approaches is the emphasis on EU internal factors and processes for explaining EU policy-making and integration. The third explanatory approach looks at factors external to the EU itself.<sup>25</sup> Our point of departure is the consequences and interaction between international regimes and EU policies.<sup>26</sup> The classic definition of international regimes considers them to be “sets of implicit or explicit principles, norms, rules and decision-making procedures around which actors’ expectations converge in a given area of international relations.”<sup>27</sup> The most relevant principles, norms and rules in this specific context are those laid down in the 1992 UN Framework Convention on Climate Change (UNFCCC), its 1997 Kyoto Protocol and the decision made by the parties.

The development of the EU ETS seems to be in line with an international regime approach to the extent that EU institutions and actors initiated the EU ETS in response to changes in the international climate regime. While recognizing that the relationship between the EU and the climate regime has been a two-way process, a more specific expectation to be assessed here is that the design of EU ETS came to reflect developments within the climate regime, so that in the implementation phase, environmental ambitiousness was determined by the link between the EU ETS and the Kyoto Protocol’s flexibility mechanisms—the Clean Development Mechanism (CDM) and Joint Implementation (JI).

These approaches are clearly complementary, but point to different decision-making levels and driving forces to explain what happened. A central expectation is that their relative explanatory power will vary in the different policy phases. For instance, it is reasonable to assume that the liberal intergovernmentalist approach will be particularly relevant for understanding decision-making and implementation, due to the central role of the member states in these policy phases.

## **Initiating the EU ETS: The Kyoto Protocol and the Commission’s Response**

The first positive signals about emissions trading started to come from the Commission in late spring 1998. Initially, discussions focused on the role of the EU in relation to the global flexibility mechanisms under the Kyoto Protocol. How-

25. Weale et al. 2000; and Skjærseth and Wettestad 2002.

26. Oberthür and Gehring 2006.

27. Krasner 1983, 2.

**Table 1**  
Overview of Propositions

	<i>Policy Initiation: the Idea</i>	<i>Decision-making: Adoption and Design</i>	<i>Implementation: Environmental Ambitiousness</i>
Member-state level	Change in the positions of the member-states leads to the initiation of the EU ETS	The EU ETS reflects the positions of the member-states. <sup>a)</sup> It is decentralized	Decentralized system based on high member-state autonomy leads to high legitimacy, but low environmental ambitiousness
EU level	Commission changes its position on emissions trading and initiates the EU ETS independently	The EU ETS reflects the positions of the Commission and the Parliament. It is centralized	Centralized system based on common allocation criteria leads to high(er) environmental ambitiousness
International level	EU institutions and actors initiate the EU ETS in response to changes in the international climate regime	The EU ETS reflects developments within the climate regime	Environmental ambitiousness is determined by the link between the EU ETS and the Kyoto Protocol's flexible mechanisms

a) Given the decision rule applied

ever, the idea of an EU-internal pilot scheme for emissions trading was launched already in a June 1998 Communication on an EU post-2012 strategy.<sup>28</sup> This Communication stressed that the EU should be able to show demonstrable climate policy progress by 2005, as called for in the Kyoto Protocol. Discussions on a possible internal EU emissions trading system were taken one step further in a May 1999 Communication on preparing for the implementation of the Kyoto Protocol.<sup>29</sup> This Communication launched the idea that such a system should initially be fairly narrow in scope (with regard to industry sectors and greenhouse gases), targeting large emitters or a single economic sector, and only CO<sub>2</sub> (which is the most easily measurable gas). Issues of harmonization and degree of centralized control were floated only in general terms.

These issues were then taken a significant step further in the March 2000 ETS Green Paper.<sup>30</sup> Here, the Commission made an implicit plea for a more centralized—and hence harmonized—system for determining the crucially important emission cap within the system, emphasizing the substantial institutional challenges that a more decentralized approach would entail.<sup>31</sup> The suggested coverage of the system was in line with the 1999 Communication: six sectors were now singled out, with electricity and heat production by far the largest.

Why then did the Commission change its mind on emissions trading and initiate the EU ETS? The Kyoto Protocol itself was clearly important. The Communications prepared by the European Commission in 1998 and 1999 depict emissions trading as part of the EU's implementation of the Kyoto Protocol. During the Kyoto negotiations, the EU was highly ambivalent towards international emissions trading and argued in favor of domestic action. As the US was not willing to accept a binding numerical target without flexibility, the EU had to yield in order to ensure that a binding target was achieved in the Protocol. The possibility of international emissions trading was thus included in the Kyoto Protocol in very general terms and only as an option (Article 17). Despite the optional nature of Article 17, however, the Commission expected international emissions trading to become operational under the climate regime from 2008, and argued that an EU internal emissions trading system from 2005 would "provide invaluable practical experience of trading."<sup>32</sup> The timetable for the development of EU ETS was also a product of the climate regime. The commitment period included in the Kyoto Protocol (2008–2012) and the requirement of showing demonstrable progress by 2005 determined the time-schedule for the EU ETS.

The EU Kyoto Protocol commitment to reduce emissions by 8 percent (from their 1990 level) between 2008 and 2012 was perceived as mandatory by

28. European Commission June 1998.

29. European Commission 19 May 1999.

30. European Commission 8 March 2000.

31. The logic behind an environmentally effective emissions trading system is to encourage companies to decrease their emissions by creating a dynamic monetary incentive so they can sell their surplus allowances or credits to other larger polluters, and profit from this. Such an incentive requires a cap on the total number of emission allowances below projected emissions.

32. European Commission June 1998, 20.

the Commission and most member states, thus pointing to the need for new policy instruments to achieve the Kyoto target.<sup>33</sup> The EU's leadership in international climate policy and its insistence on binding numerical reduction targets in the Kyoto negotiations implied a special obligation for the EU to comply with its own Kyoto commitments. The Protocol gave the EU particular incentives to engage in emissions trading since that could reduce the costs of complying with the Kyoto target. Emissions trading thus represented a new economic opportunity for the EU. When the Commission presented its Green Paper on emissions trading in March 2000, it attached an economic analysis showing significant savings from the program.<sup>34</sup> The causal mechanisms at work, linking the international climate regime to the initiation of the EU ETS, were thus mainly a combination of (perceived) pressure to comply with the new international climate commitments, and economic opportunities provided by the instrument itself.<sup>35</sup>

In no way did the Kyoto Protocol require the development of the EU ETS, and the Protocol had little to say about the specific design of such a system. In fact, the EU developed its own ET system before the international system had been worked out under the Kyoto Protocol. The EU ETS was also to become significantly more complex and detailed than the international system, as it came to be based on company actions and not governmental actions as in the Kyoto Protocol. The Commission itself played a key role in transforming the vague idea of an international emissions trading system into a specific proposal for the EU ETS.

In essence, the Commission took the initiative, built up knowledge based on external expertise, and crafted support among stakeholders. One important explanation behind the Commission initiative was a change in personnel within the Commission's environment directorate which took place shortly after the adoption of the Kyoto Protocol. Most of the "command-and-control" staff who had worked in the climate change unit left, including the staff leader. Economist Jos Delbeke moved into a leading position within the unit, and other economists were recruited to Delbeke's new team. A core group of EU officials was being formed, dominated by economists who were receptive to the idea of emissions trading, and who sought the swift development of an EU ETS. The membership of this group grew to include the main formal skills needed: in law, engineering and political science.<sup>36</sup> Another important development was the increasing recognition that new policy instruments at the Community level were needed to achieve the Kyoto target. The reason was that the proposed directive on the carbon/energy tax would not be adopted due to the requirement of unanimity.<sup>37</sup> Emissions trading thus appeared as a highly convenient solu-

33. Wettstad 2005.

34. See Vainio and Zapfel 2006 for a comprehensive discussion of economic analyses and EU emissions trading. European Commission 8 March 2000.

35. Voss 2007.

36. See Delbeke 2006 for biographies of the core team.

37. This directive was originally proposed in 1991. See Skjærseth 1994; and Wettstad 2001.



tion. It was new, and it resonated well with economists' emphasis on cost-effectiveness. Moreover, it could be proposed under the qualified majority rule, thereby avoiding the fate of the carbon/energy tax.

The development from vague idea to specific design proposal can be traced back to knowledge-building in the Commission. This was necessary as Europe, unlike the USA, had scant knowledge of emissions trading, and no practical experience. The Commission built up its independent knowledge base on emissions trading by contracting the external consultants Foundation for International Law and Development (FIELD), together with the Center for Clean Air Policy (CCAP) in Washington DC, which produced seven scoping papers and two summary reports on design issues. Most of their recommendations found their way into the 2000 Green Paper.

Finally, the Commission managed to gain the support of affected actors. Between March 2000 and January 2001, important learning and legitimization took place in the European Climate Change Programme (ECCP) Working Group 1 on flexibility mechanisms. This group, composed mainly of representatives from industry, ENGOs (environmental nongovernmental organizations) and the Commission, was partly handpicked by Delbeke's group to promote consensus on the main EU ETS design issues. The final report of WG 1 was presented in July 2001: the group was now unanimous on the need to introduce emissions trading as soon as possible.

Emissions trading was easier for the Commission to sell to industry than taxes—and they also sold it well. The Commission emphasized different aspects of emissions trading to different stakeholders. To industry, the instrument was framed as a cost-effective tool that could even provide economic opportunities for shrinking emitters to sell allowances. To ENGOs (and the European Parliament), the instrument was framed as environmentally effective, as it would automatically lead to the target/cap set (given various conditions). To governments, both these arguments were combined and linked to implementation of the Burden Sharing Agreement and the Kyoto Protocol targets. The qualities of the instrument itself and how it was framed by the Commission proved effective in reducing resistance and building support within the member states, the Commission, the Parliament, industry and ENGOs.

What about the role of the member states? Initially, only the UK, Denmark, the Netherlands, Sweden and Ireland supported emissions trading within the EU. Most of the other 10 members either opposed it or were indifferent to the idea of an EU ETS. The early support of the UK was politically important for the Commission, as the UK had previously contributed to blocking the adoption of the common energy/carbon tax. National responses to the Green Paper indicated that the distribution of votes for and against emissions trading in the year 2000 were roughly equal. Among those that were positive, positions varied widely on the degree of harmonization and specific design principles. Moreover, Germany, as the largest EU emitter, opposed a mandatory EU ETS in the first phase due to its own voluntary climate agreements with industry. The Council of Ministers did not seriously discuss the EU ETS until 2000. However, the

Council of Ministers did request proposals from the Commission on effective policy instruments that could counter rising emission trends and bring the EU on a path towards compliance with the Kyoto Protocol. In this sense, we could say that the member states in the Council indirectly “requested” the EU ETS.

We may conclude that the proposition based on the intergovernmentalist approach gained least empirical support in this phase. Two factors in particular, from the multi-level governance and regime approaches pull in the same direction, contributing to understanding the initial introduction and development of the ET idea from the spring of 1998. First, the Kyoto Protocol fixed the target and the time frame and suggested a new cost-effective policy instrument that the EU would have incentives for implementing. Second, the new economists working on climate change in DG Environment favored economic policy instruments at the EU level and recognized the potential of emissions trading, particularly in light of the failure to get the EU carbon/energy tax adopted. The Commission acted as an entrepreneur by taking the initiative, building up knowledge and crafting support among stakeholders.

### **Deciding on the EU ETS: Member State Preference for a Decentralized System**

In October 2001, the European Commission formally proposed the ET directive.<sup>38</sup> The proposal built on responses to the 2000 Green Paper and on consultations with stakeholders within the European Climate Change Programme. The proposal required adoption by a qualified majority among the member states in the Council and a co-decision with the Parliament. The final ET Directive was adopted by the Council in July 2003. The main shape and content of the proposed directive remained intact through the complicated EU decision-making process.<sup>39</sup> The ET Directive laid the foundation for the first international and the largest emissions trading system ever, starting 1 January 2005 and covering around 11,500 installations in the EU’s 25 member states.<sup>40</sup>

We expected that the member states would have significant influence in the decision-making phase, as the Council of Ministers is the main legislative EU body. In line with our proposition that the EU ETS came to reflect the positions of the member states, this suggests that they mainly agreed with the Commission proposal. The reason could be either that they had changed their preferences after the consultation process on the Green Paper, when a qualified majority was out of reach and key countries like Germany were reluctant—or that the Commission had managed to take various member state interests into account in its ET directive proposal.

First, the positions of the member states did actually change in the time between the Green Paper and the ET directive proposal. A new round of consul-

38. European Commission 23 October 2001.

39. However, it also shows that various interests were able to affect the final outcome of the ET Directive, including “opt-in” and “opt-out” clauses for installations.

40. Currently 27, with the accession of Bulgaria and Romania.

tations with industry, ENGOs and member states (plus the European Economic Agreement and accession countries) was convened on 4 and 10 September 2001 respectively. The minutes from these meetings indicate a significant change in member state positions towards convergence around a common EU ETS, compared to the responses to the earlier Green Paper.<sup>41</sup> The principal remaining challenge was that the two largest EU emitters, the UK and Germany, preferred a voluntary EU ETS in the pilot phase before 2008. In the end, however, these countries had to give in and accept a mandatory system from 2005, partly due to the “hidden stick” provision of qualified majority voting.<sup>42</sup>

Second, the Commission did also take the various member state interests into account in its ET directive proposal. The final proposal was more decentralized than the Commission had preferred in the 2000 Green Paper. Most importantly, the allocation of allowances was to take place at the member state level and not at Community level. This was preferred by a majority of the member states.<sup>43</sup> The final outcome in 2003 was generally in line with the Commission’s proposal, with a fundamentally decentralized approach to setting emission caps (Article 9 in the ET Directive).<sup>44</sup>

Why did the member states shift their positions? Something had clearly changed from the March 2000 Green Paper to the consultation process with member states in September 2001. In 2000, member states disagreed on most aspects related to the design and harmonization of emission trading. Yet by 2001 a majority of the member states could agree on the basic ETS design.<sup>45</sup> In addition to growing knowledge about emissions trading within the member states, the most important change in this period was the decision by President George W. Bush to withdraw the US from the Kyoto Protocol. This rendered the practical implementation of the Kyoto Protocol uncertain, and led to a crisis in the international climate regime cooperation that penetrated the internal EU decision-making process.<sup>46</sup> For the EU, the US withdrawal from the Kyoto Protocol was unexpected, although there had always been concern about US ratification. Washington’s decision to dump the Kyoto Protocol was taken very

41. To our knowledge, there is no official record from this meeting with the member states. However, there is a draft summary record that gives the thrust of the main conclusions. European Commission 8 October 2001.

42. The ET directive was, however, adopted by unanimity, but the possibility of using qualified majority voting placed significant pressure on these states that did not have sufficient votes to block the adoption of the directive.

43. A smaller group of member states led by France and Belgium preferred a greater degree of harmonization. See Vis 2006b, 188.

44. However, unlike the Commission proposal, the criteria for national allocation plans were specified in Annex III of the Directive. In particular it was stipulated in the first criterion that, prior to 2008, the total quantity of allowances to be allocated should be consistent with a path towards achieving or over-achieving each member state’s EU Burden Sharing Agreement or Kyoto Protocol target. The 10 new member states that joined the EU as of 1 May 2004 were not parties to the 1998 Burden Sharing Agreement, but had obligations under the Kyoto Protocol.

45. Likewise, the consultation processes with industry and ENGOs showed an “overwhelming majority” in favor of proceeding with emissions trading, sooner rather than later.

46. The Protocol requires ratification by 55 Parties accounting for at least 55 percent of 1990 CO<sub>2</sub> emissions from that group. The US alone accounted for 34 percent of Annex 1 1990 emissions.

seriously by the top EU leaders, who responded immediately. In a resolution from the March 2001 European Council summit in Stockholm, for example, the EU leaders expressed their deep concern regarding the fate of the Protocol.<sup>47</sup>

The US exit first served to unify the positions within and among the EU actors and institutions in climate policy. This meant that it helped to unify the positions of the EU member states (and other actors) in support for the EU ETS. As noted by Brussels insiders, “the huge impetus the Commission used was Bush’s withdrawal. It united the EU in an extraordinary way.”<sup>48</sup> The US withdrawal from the Kyoto Protocol also caused the Commission to significantly advance its agenda on the ET directive proposal. The Commission had the tools to make the “save Kyoto campaign” credible to other major industrial emitters by preparing for emissions trading. According to the Commission’s Peter Vis: “Emissions trading came to be seen as the practical measure that would test the credibility of the EU’s promises to act.”<sup>49</sup> The Proposal for an ET directive was depicted as the key measure for implementing the Kyoto Protocol; a direct linkage was made to efforts to save the Kyoto Protocol by accompanying the ET directive proposal with a proposal for a Council Decision to ratify the Kyoto Protocol.<sup>50</sup> In this way, EU implementation of the Kyoto commitments became deliberately linked to ratification of the Kyoto Protocol. The US rejection thus placed the draft ET proposal in the spotlight and raised emissions trading to the top of the EU agenda. The Climate Change Unit in the Commission was quick to recognize this as a “window of opportunity” for realizing plans for a European emissions trading system, and for the EU to show leadership in global climate diplomacy.<sup>51</sup> The EU’s leadership ambition expressed itself in diplomatic efforts to win the support of other states to ratify the Kyoto Protocol.

Since most other states—nearly 100 countries, including Japan and Canada—took steps to ratify the Protocol in 2002, the US exit from the Kyoto Protocol left Russia in a key role for determining the fate of the Kyoto Protocol. Despite the uncertainty of Russian ratification until 2004, the EU was convinced that Moscow would ratify.<sup>52</sup> This was important for keeping the final stage of the EU ETS decision-making process on track, as the central element for complying with the Kyoto Protocol.

The Kyoto Protocol continued to affect the speed of the EU ETS decision-making process through its “demonstrable progress by 2005” time limit and the 2008–2012 commitment period. These time limits placed pressure on EU actors and institutions. On the other hand, the rules for international emissions trading agreed upon in Bonn and Marrakech did not significantly affect the design of the EU ETS, as the proposed ET directive was aimed at companies, not governments. The main structure of the proposal was ready before these confer-

47. *ENDS Daily*, 4 April 2001, “Washington Climate Talks Leave EU Disappointed,” Issue 966.

48. Interviews in Brussels, 26–27 May 2004.

49. Vis 2006a, 40.

50. A communication on implementing the European Climate Change Programme was also presented. Council 29 October 2001.

51. Interviews in Brussels, 12 January and 15 May 2006.

52. Moe 2007.

ences. Nevertheless, the EU ETS represented the main instrument for implementing—and increasingly for saving—the Kyoto Protocol. If the US exit from the Kyoto Protocol had led to a collapse in the climate regime (as had been foreseen by the Bush administration), perhaps the EU ETS would not have been adopted—at least not at the same time or in the same form.

The Commission, and particularly the European Parliament, had less influence in the decision-making phase. Both the Commission and the Parliament preferred a more centralized system, particularly regarding the allocation of allowances. Nevertheless, although the Commission formally has a less prominent role in the decision-making phase, it continued to play quite an important role in practice by being very active behind the scenes in Council negotiations for instance. This active role was facilitated by the asymmetrical distribution of knowledge between the Commission and most member states: the Commission had more than a two-year lead in building up expertise on emissions trading.

Though the Parliament had formal power to veto the proposed ET directive according to the co-decision procedure, its actual influence was quite moderate when compared to its own ambitions. The Parliament aimed to make significant changes to the decentralized nature of the scheme, its coverage and method of allocation. Most of the proposed changes aimed at strengthening the environmental integrity of the system. The final result included some modifications in that direction. For example, the Parliament proposed a mandatory cap on the allocation within each member state to ensure that allocations were sufficiently ambitious to lead to significant reductions in emissions. The Parliament did not manage to get a mandatory cap, but ended up with a more flexible requirement: the total amount of allowances was to be “consistent with” a path towards the Kyoto targets.

To summarize, the proposition that the EU ETS reflects the positions of the Commission—and particularly the Parliament—gained least support in the decision-making phase. The adoption and design of the EU ETS came about mainly as a result of change in the positions of the member states, the member states’ influence on the Commission to propose a decentralized system and the option to use qualified majority voting. The US exit from the Kyoto Protocol served to unify the positions of the member states, and anticipation of Kyoto ratification proved important for keeping the EU ETS decision-making process on track as the key instrument for complying with the Kyoto Protocol.

### **Implementing the EU ETS: The Flaws of Decentralization**

Implementing the ET Directive involved several issues, such as providing guidance to industry, establishing relevant institutions on monitoring and verification, and setting up national allowance registers.<sup>53</sup> Such tasks are important for the functioning of the EU ETS, but cap setting, and so far the production of

53. See Mullins 2005, 183.

National Allocation Plans (NAPs), are the key elements from a policy perspective, as they determine the environmental ambitiousness of the system. What are the consequences so far regarding environmental ambitiousness? We proposed that a decentralized system would lead to “over-allocation” of emission allowances and low ambitiousness.

As noted earlier, one main outcome and feature of the EU ETS *was* a decentralized approach to the setting of national emission caps. Hence, a key instrument for implementing the EU ETS became the production of National Allocation Plans, starting in the summer of 2003 when political agreement was obtained on the ET Directive. This Directive contained many important NAP principles and signals—particularly Annex III, with 11 guidance points and criteria for the development of NAPs. The Commission was given the authority to assess National Allocation Plans and reject any found not to be in compliance with the relevant provisions—particularly the need to be on a path towards the Kyoto target in the period 2005–2007 and consistent with Kyoto targets in the period 2008–2012.

In early January 2004, the Commission published a Communication aimed at clarifying the criteria.<sup>54</sup> It was further emphasized that the allocation was to be consistent with a path to the Kyoto target, and the total quantity of allowances to be allocated should not be more than necessary in view of actual and projected emissions. Of these two, the relationship between the total cap and projected emissions would indicate the actual emission reductions to result from implementation of the EU ETS.

With regard to the first allocation process (NAP I for the pilot phase 2005–2007), several early and tentative independent assessments indicated that NAP I ambitiousness was rather modest.<sup>55</sup> The first verified EU ETS emission figures (for 2005) were announced in mid-May 2006, and they confirmed that the ambitiousness in this round was low: CO<sub>2</sub> emissions were about 80 million tonnes, or 4 percent lower than the number of allowances distributed to installations in order to cover 2005 emissions.<sup>56</sup> Even though some of this gap may have been due to actual reductions and lack of reliable data on historical emissions, the publication of these verified data sent shock waves into the until then surprisingly flourishing allowance trading market, leading to a steep price drop for allowances in the pilot phase—from a top level of around €30 per tonne CO<sub>2</sub> in late April 2006 down to around €12 in early May and further down in the spring of 2007, hitting a low of only €0.5 in the end of April 2007.

Concerning the second allocation process in 2006–2007 (producing NAPs for the phase 2008–2012), the early picture was not encouraging. For instance, EU environment commissioner Stavros Dimas noted that “much to my regret, taking the first 17 notified national allocation plans, they propose a cap about

54. European Commission 7 January 2004.

55. E.g. Zetterberg et al. 2004; Ecofys 2004; and Grubb et al. 2005.

56. Ellerman and Buchner 2007.

15 percent above actual emissions in 2005.<sup>57</sup> This statement also clarified that the Commission would use the verified 2005 emissions data as a key measuring stick in assessing the NAPs. By November 2007 the Commission had assessed all 27 NAP II plans, and national emissions from the ETS sectors had been set at an average of around 6.5 percent below 2005 levels.<sup>58</sup> This would help the individual member states, as well as the EU, to comply with their Kyoto commitments.

Variation in ambitiousness among the member states can be explained by domestic factors such as institutional fit between domestic climate policy and the EU ETS, the need for the EU ETS to achieve Kyoto targets, and the general climate policy “drive.”<sup>59</sup> As a common system, however, the decentralized nature of the scheme facilitated a “race to the bottom” where each member state had incentives to allocate generously to protect its own industries. The underlying competitive challenge can be seen in the hesitation to be the first state to publish a National Allocation Plan.<sup>60</sup> It can also be seen in connection with new entrants to the EU ETS, where existing member states were concerned that other states might accord more favorable treatment to the new entrants.<sup>61</sup>

Although EU ETS implementation was decentralized, the allocation of allowances was not totally unconstrained. The Commission was given a limited watchdog authority. This means that the consequences of a centralized system are still worth exploring, since the EU ETS included elements aimed at harmonizing NAPs. More specifically, we assumed that such elements would push in the direction of higher environmental ambitiousness. So what did the Commission achieve? Overall, it managed to shave off some 290 million tonnes of the proposed pilot phase/NAP I total. As this represents less than 4.5 percent of the total allocation of about 6.6 billion tonnes, it is not very much. However, the effect of common criteria is as expected. In the case of NAP II (for the 2008–2012 period), as noted, the Commission adopted a tougher line. All NAP II plans (except Denmark, France, Slovenia, and the UK) were trimmed by an average of 10.5 percent. In sum, the harmonizing elements of the national allocation process and the “watchdog” role played by the Commission pushed in the direction of higher ambitiousness, as expected.

In 2004, the EU adopted a linking directive that made it possible to use credits stemming from CDM projects from the moment that the EU ETS began in 2005. However, the EU countries have no formal international targets to comply with before the 2008–2012 Kyoto commitment period. This is why the discussions about NAP I ambitiousness centered on a “path” to Kyoto compliance. Hence, in the ETS 2005–2007 pilot phase, there was, in reality, little sense

57. *ENDS Daily*, 23 October 2006, “Dimas Gives Damning Verdict on Emissions Plans,” Issue 2190.

58. European Commission 23 January 2008. MEMO/08/35-23/01/2008.

59. Skjærseth and Wettestad 2008b.

60. Ellerman et al. 2007.

61. Vis 2006b, 187.

in “using up” CDM credits, even if they had been available—which they were to a very limited extent only.<sup>62</sup>

However, with the second phase of the ETS, the CDM issue becomes far more pertinent. All member states except Estonia plan to allow their installations to use JI and CDM credits instead of EU ETS allowances to cover up to 20 percent of their emissions in the period 2008–2012. Such credits are likely to be cheaper than EU ETS allowances due to the lower abatement costs and higher risks involved in investing in emission-saving projects carried out in third countries under the Kyoto Protocol’s project-based mechanisms. Hence, the use of such credits may lead to downward pressure on prices in phase two of the ETS and low incentives for abatement within the EU itself.<sup>63</sup> Somewhat paradoxically, the link to the Kyoto Protocol may have increased the willingness of governments to take on ambitious ETS caps, but may subsequently mean that less abatement takes place in the EU area.

As a result, increased cost effectiveness may go hand-in-hand with less reduction within the EU. All in all, environmental ambitiousness (with regard to abatement in the EU area) is likely to be significantly influenced, but not solely determined, by the flexibility mechanisms of the Kyoto Protocol.

The main conclusion from the implementation phase is that all three propositions, based on the various explanatory approaches, are important for understanding the implementation of the EU ETS so far. The decentralized nature of the system led the member states to allocate too many allowances, to protect their own interests. The common criteria for allocation developed as a result of influence from the Parliament and the role of the Commission in counteracting the level of “over-allocation” to some extent. Finally, the link between the EU ETS and the Kyoto Protocol’s flexibility mechanisms is becoming increasingly important for the ambitiousness of the system.

### **The 2008 Proposal for the ETS Post-2012: Tension between Ambitiousness and Legitimacy?**

The initial phases will have important consequences for the EU ETS in the future. One core question is whether the EU will be able to combine ambition *and* legitimacy in developing the system.

With regard to ambition, the EU has tried to tackle the problems experienced so far in the new 2008 EU energy and climate package and particularly in the proposal for the ETS post-2012. First, the Commission has proposed a revised ET Directive where the total allocation of allowances is centralized at the EU level. The Commission proposes to set a single EU-wide cap and to allocate allowances on the basis of fully harmonized rules. From 2013, the total number

62. Among other things, the capacity of the CDM’s Executive Board (EB) to assess and approve projects has been inadequate. Furthermore, the formal link between the EU and Kyoto allowance registries was not established until October 2008.

63. Ecofys 2006.



of allowances is set to decrease annually in a linear manner. National Allocation Plans will, therefore, no longer be needed. Furthermore, conflicts regarding internal distribution of allowances and industrial lobbying are likely to be reduced by a combination of payment for allowances (it is estimated that around 60 percent of the total number of allowances will be auctioned in 2013) and fully harmonized allocation rules for all companies across the EU with similar activities. Third, the uncertainty regarding the effect of the link between the ETS and the Kyoto mechanisms is reduced by a proposal that almost no new CDM/JI credits will be allowed to enter the ETS after 2012. Only unused credits developed and approved before 2013 will be useable.<sup>64</sup> Only if a “satisfactory” global agreement is adopted at the UNFCCC meeting in Copenhagen in late 2009 will the inflow of such credits be more liberal. These proposed changes all point towards a more ambitious system.

The proposal for the revised ETS is scheduled to be adopted together with the rest of the climate and energy package in December 2008 (with March 2009 as the main fall-back option). The likelihood of adopting the proposed changes and creating an environmentally effective system post-2012 will depend on the relationship between the ambitiousness and the legitimacy of the system. The tension between legitimacy and ambitiousness is not static, but may change over time. This may indicate a deliberate Commission strategy aimed at establishing high autonomy and legitimacy first, and then gradually increasing the level of ambition accompanied by a reduction in autonomy. The initial phases of the EU ETS support the view that high acceptance and legitimacy have been important concerns. In the initiation phase, broad consultation with stakeholders led to an agreement that a European emissions trading system was a good idea. In the decision-making phase, the main actors got what they wanted: the member states got a decentralized system based on high autonomy, while industry got allowances for free. These concessions had to be made in order to get a system in place before the Kyoto Protocol’s commitment period began. In the implementation phase, the system generated too many allowances to be effective. In addition, the Commission’s efforts to push for a more ambitious system based on common criteria had a significant effect.

The discussions in the European Parliament and the Council have thus far not challenged the key centralization element of the proposal, in particular the setting of a single EU-wide cap.<sup>65</sup> This is somewhat surprising in light of the initial struggle for legal competence between the member states and the EU institutions. There are at least two possible reasons for this. First, the decentralized system did actually lead to a sense of collective ownership of the system, including a trial-and-error period, making it clear for the member states and industry that a centralized system was needed in order to reach the EU’s climate targets. At the same time, the saliency of climate targets has increased as climate change

64. Except for projects in the 50 Least Developed Countries.

65. The final version of this article was prepared in November 2008.

has undoubtedly climbed higher up government agendas and the need for an effective, streamlined ETS has become clearer.

Second, it can be argued that other elements of the proposal bring the member states and their concerns “back in.” This is related to how energy-producing and energy-intensive industries are treated in the new proposal. For example, full auctioning is proposed for the power sector, a development which will result in considerable revenues for the member states. The possibility of revenues amounting to over €60 billion by 2020 has been indicated.<sup>66</sup> With regard to energy-intensive industry, free allocation is proposed for sectors facing international competition that are at risk of so called “carbon leakage,” i.e. that they could be forced to relocate to countries outside the EU with more lenient regulation. Some governments, industry and the European Parliament’s industry committee have been pushing for energy-intensive industries to receive all their carbon allowances for free in 2013 and/or border-tax adjustments.<sup>67</sup> The need for governments to protect their own domestic energy-intensive industries through national allocation will thus be reduced when safeguards against industry relocation to countries with a less stringent policy are introduced at EU level. The snag is, of course, that more widespread exceptions for energy-intensive industry result in a less ambitious system. With this caveat in mind, the Commission has apparently been able to establish and combine high legitimacy in the process so far with a proposal for a revised and more ambitious system which points toward a more environmentally effective ETS post-2012.

## Conclusions

The EU changed its position on emissions trading for three main reasons: the Kyoto Protocol’s commitments and provisions for international emissions trading, the attractiveness of the instrument itself and the entrepreneurial behavior of the European Commission. The Commission took the initiative, built up independent knowledge and crafted support among stakeholders. The main reasons why the system could be established so rapidly were twofold: first, the Commission proposed a decentralized ET directive in line with the diversity of the member states’ interests; second, the US exit from the Kyoto Protocol led to a crisis that served to unify the positions of the EU actors and institutions. The consequences so far can be understood in light of the decentralized nature of the scheme and increasing links to the Kyoto Protocol; over-allocation of CO<sub>2</sub> emissions allowances and uncertainty about the environmental ambitiousness of the system within the EU area. However, the EU has tried to deal with this problem by gradually increasing harmonization and through cuts in proposed national allocation plans, as well as a 2008 Commission proposal for a revised directive for the 2012–2020 period. A key element in this proposal is setting the

66. Carbon Trust 2008, 24, 25.

67. See e.g. *ENDS Report*, 11 September 2008, “Carbon leakage concerns dominate EU ETS debate,” Issue 2612.

total cap at EU level to ensure scarcity of allowances in the market and higher environmental ambitiousness.

These observations indicate that the various explanatory approaches have had differing degrees of explanatory power in the three policy phases analyzed in this article. They also show that what happened in the initiation and decision-making phases had important consequences for how the system has been implemented and how well it will work in practice. The decision to make the system decentralized was probably necessary in order to get any system adopted at all. The price has been a rather malfunctioning system which, with the 2008 revision proposal, now seems set on a far more promising course. The advantage has been a legitimate system. The possibility of getting a more ambitious and legitimate system in place would lead us to expect a more environmentally effective EU ETS post-2012.

As indicated, the revised ETS is set to be finally adopted in December 2008. The new decision-making process shows both similarities and differences compared to the previous one. One striking similarity is that the process takes place parallel to uncertain and complex international negotiations. One major difference is that it takes place at a higher political level, accompanied by greater political attention to climate change. As a result, the revised ETS is set to be adopted at the top-level European Council. Another important difference is that the ETS reform is part of a broader EU climate and energy package. Issue linkages may open up for an integrative package, but the resulting complexity may also lead to deadlocks and delays.

Lessons from the previous decision-making process show, however, that unexpected events may indeed occur. Once again, events in the US may help the Commission's ETS agenda. The newly elected, more "climate-friendly" chief executive in the White House may help to allay continuing fears of EU industry about global "carbon leakage" and loss of economic competitiveness. However, the financial crisis may work in the opposite direction. In late November 2008, the price for ETS allowances dipped below €15 (down from €27 in July). If the crisis develops into a longer term economic slump exerting continued downward pressure on carbon prices, the incentive effect of the EU's climate policy cornerstone may be seriously weakened.

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