

Understanding the Differing Governance of EU Emissions Trading and Renewables: Feedback Mechanisms and Policy Entrepreneurs

Elin Lerum Boasson and Jørgen Wettestad

The Fridtjof Nansen Institute, Fridtjof Nansens vei 17, 1326, Lysaker, Norway.

E-mail: elinlerumboasson@me.com, jorgen.wettestad@fni.no

Paper prepared for presentation at the International Studies Association 51th Annual Convention, New Orleans, LA., February 17–20, 2010

Draft for forthcoming book on ‘**EU Climate Policy: The New Drive**’

Comments very welcome!

Abstract

This paper presents a comparative study of two central EU climate policies: the revised Emissions Trading System (ETS), and the revised Renewable Energy Directive (RES). Both were originally developed in the early 2000s and revised policies were adopted in December 2008. While the ETS from 2013 on will have a quite centralized and market-streamlined design, the revised RES stands forward as a more decentralized and technology-focused policy. Differing institutional feed-back mechanisms and related roles of policy entrepreneurs can shed considerable light on these policy differences. Due to member states' cautiousness and contrary to the preferences of the Commission, the initial ETS was designed as a rather decentralized and 'politicized' market system, creating a malfunctioning institutional dynamic. In the revision process, the Commission skillfully highlighted this ineffective dynamic to win support for a much more centralized and market-streamlined approach. In the case of RES, national technology-specific support schemes and the strong links between the renewables industry and member states promoted the converse outcome: decentralization and technology development. Members of the European Parliament utilized these mechanisms through policy networking, while the Commission successfully used developments within the global climate regime to induce some degree of centralization.

Key words: EU climate policy, New institutionalism, Multilevel Governance, Policy networks, Policy Entrepreneurs

1. Introduction

This paper presents a comparative study of two key policies in EU climate policy: the revision of the EU Emission Trading System (ETS), and the revised Renewable Energy Directive (RES).¹ Both were developed in the early 2000s and revised in 2006–09, the latter process conducted within the context of the EU climate and energy package.² The revised ETS aims to reduce emissions from the covered sectors and installations by 21% by 2020, whereas the revised RES aims to increase the share of renewables by 20% by that same year. These are central European climate policies, but they are also ambitious projects for industry change. It is hence important to understand the causal forces that shape these policies. A comparative assessment can also provide new insights into the mechanisms that drive EU policy development more generally.³

There are striking differences between the directives. With both, the member states have delegated significant competencies to the EU organizations, but the centralization is far stronger in relation to the ETS than RES. Moreover, while the ETS represents rather pure market governance, the RES policy is a large-scale industry-fostering project, much like industrial policy of the post-WWII era. Since the two EU policies were developed during the same period, involved many of the same actors, aim at solving the same environmental problem, and were negotiated as linked parts of an inclusive climate and energy policy package, these differences are intriguing. *Why is then the ETS a centralized market instrument while the RES gives the member states more leeway and follows a technology-specific governance approach?*

There are at least four main schools and perspectives in EU studies that offer answers to this question. According to Liberal Intergovernmentalists, the policy differences stem from differences in the issue-specific distribution of power among member states: member states with the largest relative bargaining power will affect EU policy outcomes the most. A Multi-Level Governance perspective would be more open to differences stemming from a deliberate, entrepreneurial effort from the European Commission (hereafter: Commission) or

¹ Our thanks to Susan Høivik for language polishing and editing assistance.

² Central elements in the ‘new EU climate policy drive’ are: 1) the ‘20 by 2020’ targets adopted in March 2007 (targeting emissions, renewables and energy efficiency); and 2) the climate and energy policy package which was adopted in December 2008 and included also new carbon capture and storage (CCS) policy, in addition to new renewables and emissions trading policies. See e.g. Depledge (2008).

³ The interaction between these policies is in itself a complex issue which will be given specific and due attention in other parts of our forthcoming book. In this paper, the issue is only briefly introduced and discussed.

the European Parliament (hereafter: Parliament). This perspective would also sensitize us to differences in the policy networks operating within the two issue areas. New Institutionalists would expect policy differences to stem from differences in the traditional governance approaches in which the two issues are embedded. Moreover, industries within the two issue areas are expected to have different structural relationships to EU organizations and national governments. Finally, an International Regime perspective instead draws attention to the possibility that the two policies are affected differently by global organizations and institutions. *Thus we now ask: to what extent and how were the outcomes shaped by issue-specific power distribution among EU member states, by deliberate steering on behalf of the Commission and the Parliament, by EU-internal structures and institutions, or by external international features?*

In-depth assessment of interest formation and power struggles warrants assessment of national, European and global developments. Our focus will be on the policy development period between mid-2000s and 2009, but with attention to their historical embedding as well. In order to grasp the mechanisms at work, we specifically examine some member states that played key roles: Germany, Poland, Spain, Sweden and the UK. These countries are also generally important within the EU; they represent both traditional EU climate-policy leaders and laggards, and they come from different regions within the EU: North, South and East. Further, we explore the industries that have been most deeply involved in the policy processes. Utilities were engaged in both processes, whereas the energy-intensive industries engaged primarily in the ETS and the renewables industry in RES

Section 2 presents the theoretical backdrop. The third section briefly introduces the policies in focus and the differences to be explained as to vertical integration and governance approach. Section 4 discusses how the four theoretical lenses help us understand the differing policies. The fifth and final section presents key conclusions and discusses theoretical implications.

2. Theoretical foundation

Disagreement abounds as to the causal forces that shape EU policy outcomes – not least which actors are most powerful. Some argue that EU organizations, such as the Commission and the Parliament and Pan-European corporations, play important roles, while others maintain that the member states defending their national industries still predominate. A growing amount of empirical research indicates the need for *complementary* perspectives, as EU policy is increasingly complex and unpredictable. In our view, some key questions are

these: Under what conditions do the various actors affect the policy outcome the most? In what situations are EU-internal developments decisive, and when will global developments kick in forcefully? What is the relative importance of entrepreneurial skills and social structures and institutions?

Our two cases show that these outcomes may result from various different pressures. Comparative, qualitative case studies of low-level policy (not treaty-related) processes are rare in European integration studies (see Jørgensen et al., 2006). Further, few researchers apply more than one or two theoretical perspectives. Our comparison of the up-coming highly centralized market-based policy, the revised emissions trading system (ETS), with the more decentralized technology development Renewables Directive (RES), seeks to identify the causal mechanisms at work. Methodologically, we triangulate theoretical perspectives as well as data sources. This research draws on in-depth interviews with some 30 Brussels insiders, business statistics (particularly Financial Times 2009), company reports, EU documents and media sources, ENDS in particular.

Most grand theory contributions discuss European market integration and centralization of power to Brussels as if these were two sides of the same coin (e.g. Haas, 1958; Moravcsik, 1998). We, however, treat these as separate dimensions: the level of vertical integration, and the fundamental governance approach. *Vertical integration* refers to the transfer of domestic competencies to the European level (Schimmelfenning and Rittberger, 2006:74–75). The degree of vertical integration denotes the extent to which the policy area is characterized by ‘joint decision-making, implementation and enforcement’ at the European level (Moravcsik, 1993:479). The key point is whether it is the member states or the EU organizations that are given the basic competence to govern the policy issue in question (Olsen, 2007:96). We will regard the level of vertical integration as strong when EU organizations are given competence to:

- *Steer the daily governance of the policy scheme/market*
- *Develop detailed regulations/templates*
- *Monitor and facilitate implementation*

The *governance approach* dimension has to do with the ‘methodology’ applied to reach the emission reductions or renewable share increase. Various actors have debated how to ensure a shift toward a low-carbon economy (see Gupta et al., 2007), without agreeing on one recipe. Their approaches may be categorized along a dimension spanning from technology development to market governance. The core assumption in the market approach is that the regulated industries will develop low-carbon practices once this becomes

economically viable (Sims et al., 2007:306). The prime task of governments and/or the EU is then to design markets that make it expensive to pollute and beneficial to produce low-carbon products. The governments should not favor any specific industries or technologies, but rather produce technologically neutral instruments that allow the market forces to choose winner industries and technologies. The core assumption of the *technology approach* is that the regulated industries will develop low-carbon practices once the technologies are mature and technology competencies have become widely disseminated (Boasson, 2009:7). Governments should adjust their regulations to the specific needs of different industries and the various low-carbon products under development (Sims et al., 2007:306).

One single piece of policy may include both approaches. However, we will focus on identifying the dominant approach in both policies. Our defining criteria are as follows:

- *The market approach is strong when a dominant share of the policy is directed toward creating or sustaining a market, in which the forces of supply and demand create governance incentives.*
- *The technology development approach is strong when a specific technology or site-specific governmental regulation is dominant.*

Let us now turn to the explanatory approaches. Our four perspectives differ in many respects, in particular by highlighting different causal mechanisms.

Liberal Intergovernmentalism sees member-state positions as central. These positions will result from competition among domestic industries, in which the economically strongest will have greatest influence on shaping the national positions (Moravcsik, 1993; 1998). Thus, national industry is seen as the primary ‘interest contributor’, with the member-state governments as ‘interest receivers’. Once interests are shaped, they will remain stable. EU policy outcomes are not a mere reflection of industry power: the key factor is the distribution of power among the member states negotiating the EU policy. If the strongest producers groups in all member states have similar preferences, then the member states will follow suit. It is, however, more likely that member-state interest diverge, and then the relative distribution of bargaining strength becomes important.

The relative power of any given member state depends primarily on two factors: the magnitude of domestic economic interests favoring a specific outcome, and its access to superior information (Moravcsik, 1998; Moravcsik and Schimmelfenning 2009).⁴ First,

⁴ In addition, Moravcsik argues that member states that are able to exchange concession in an issue area where the preferences of domestic groups are not intense, for a preferred outcome in an issue of higher domestic

because EU member states often make decisions by consensus, preferences tend to be drawn toward the *lowest common denominator*. Following Moravcik's logic, those that oppose market creation and strong vertical integration will have the lowest common denominator position. Countries likely to gain the most economically from the development of an EU market in an issue area will be more willing to compromise on the margins to realize gains, while those that will gain the least tend to enjoy more clout to impose conditions (Moravcsik 1998:3). Second, member states that have access to more and better information about factual conditions in the issue area will be able to influence the negotiations to their advantage. We will assume that member states with considerable industry that will be affected by the policy will collect and hence command most information.

This perspective highlights one structural and one entrepreneurial mechanism: first, member states' economic interests in European market creation; second, the ability to exploit bargaining dynamics. The former is a reflection of national industrial structure, while the latter relates to entrepreneurial skills. Our main assumption is that the *ETS is more vertically integrated and more dominated by market governance than RES because (almost) all member states were positive to centralization and market governance in the former case but not in the latter*.

Second, inspired by literature on multi-level governance, we will focus on supranational actors such as the Commission and the Parliament. A core argument here is that, in the EU, 'authority and policy-making influence are shared across multiple levels of government – sub-national, national, and supranational' (Marks et al., 1996:342). A *network* perspective on organizations and social relations is central. The Commission, and to some extent the Parliament, create and govern pan-European expert and policy networks (Hooghe, 2001; Hooghe and Marks, 2001; Kohler-Koch, 1999; Mazey and Richardson, 2006). Moreover, the Commission and the Parliament themselves are regarded as networks in their own right.

The power of specific Commission officials and MPs depends on their network connections, both internally and externally. Because the Commission serves as the hub of numerous highly specialized policy networks and is the agenda-setter in most policy processes, it tends to be the most powerful actor (Hooghe, 2001; Eising, 2004:218; Mazey and Richardson, 2006; Marks et al., 1996:355). Moreover, it can strategically exploit its role as negotiation facilitator to impose its views. In this perspective, the Commission and partly

importance, will be more powerful. That argument will not be explored in this paper, but will be discussed in our forthcoming book.

the Parliament are interest contributors, with member states and industry as interest receivers. Thus it is primarily Commission officials that shape how national industries and governments perceive their interests.

This perspective highlights two entrepreneurial causal mechanisms – the ability to steer through a) network governance, and b) strategic leadership. Here our main assumption is that *the ETS has become more vertically integrated and more dominated by market governance than RES because the Commission favored different approaches in the two issue areas and steered by network governance and strategic leadership.*

Third, New Institutionalism highlights the importance of EU-internal institutional and structural feedback mechanisms (Fligstein, 2008; Pierson, 1996; Stone Sweet et al., 2001). All actors will be embedded in different institutional logics. The type of logic that prevails within a sphere will profoundly affect how the actors communicate their interests and which strategies they develop to defend or promote these interest. They determine which problems are salient and which solutions are appropriate (March and Olsen, 1989; Thornton, 2004:50). Further, structural relationships will shape the distribution of power between public and private organizations operating in the same societal sphere (Scott et al., 2000:358–60). European or national legal regulations, formal organizational prescriptions, strategic alliances, contracts, patterns of membership in national or European associations, patterns of economic transition – all contribute to the structure.

Different organizational fields will have varying structures and be dominated by dissimilar institutional logic(s). An organizational field is a specific societal sphere involving political actors, industry and governmental organizations (Bourdieu and Wacquant, 1992; DiMaggio and Powell, [1983] 1991; Fligstein, 2008:8). Some issues may be embedded in national organizational fields, whereas others will be embedded in European organizational fields. Some fields may be characterized by market logic, whereas technology development may be the salient logic in others. This lens leads us to seek out the organizational fields in which the policy actors are embedded, and to map the structural and institutional architecture of this field(s). Rather than regarding some groups as interest contributors and others as interest receivers, this perspective posits that *all* field-level actors will mutually affect each others' interests.

Two causal mechanisms operate within every field: structural feedback mechanisms (fields dominated by high centralization at the European level will develop policies with high vertical integration) and institutional feedback mechanisms (once the market logic has entered

a field, it will grow stronger and more dominant over time). The field in which the central players in a policy development processes are embedded will affect policy outcomes the most.

Thus, we expect two institutional-structural mechanisms to operate: first, institutional feedback and, second, structural feedback. Our main assumption here is that *the ETS is more vertically integrated and more dominated by market governance than RES because the organizational field that dominated in the ETS was embedded in a market logic and structurally centralized at the European level, while the organizational field that dominated in RES was embedded in a technology development logic and had a decentralized structure.*

The International Regime perspective leads us to assume that developments within the global climate regime will both enable and constrain EU policy developments. Although no world government exists, the global state of affairs is not one of totally unpredictable anarchy. There are global regimes which provide the norms and structures that shape the outcomes of EU policy development (Krasner, 1982; Meyer et al., 1997). In line with this perspective, we will explore the extent to which and how the two policy processes are linked to main actors and institutions within the global climate regime.

Because of the ambiguous nature of ideas, rules and norms developed globally, the carriers of the global impulses may contribute significantly to alter the original policy signals (Haas, 1992:27, Sahlin-Anderson and Engwall, 2002). The relevant actor in question will enhance its power through this process. Specifically, we will expect to find that the Commission has gained power from its position as the representative of the EU in the international climate negotiations. Furthermore, the ETS may also be more directly linked to the Kyoto Protocol than RES, through the possibility for companies within the ETS to use credits from the Kyoto flexibility mechanisms – the Clean Development Mechanism (CDM) and Joint Implementation (JI) – for compliance.

This perspective then highlights one institutional-structural and one entrepreneurial mechanism: first, global norms and regulations will diffuse into EU policy and shape governance approaches; second, actors will creatively interpret the global policy signals and use this to legitimize their interests and viewpoints. Thus our main assumption here is that *the ETS is more vertically integrated and more dominated by market governance than RES because the global climate regime induced more market governance into the ETS and not in RES, and policy entrepreneurs more skillfully deployed the global regime to legitimize stronger vertical integration in the ETS than in RES.*

3. A striking difference: centralized market approach in the ETS – decentralized technology focus in RES

3.1 The ETS and RES: brief snapshots

Before focusing on the striking differences in the recently revised policies, we will briefly sum up some important background information. The EU emissions trading system (ETS) is the first large-scale international emissions trading system in the field of the environment. No wonder it has been called ‘the new grand policy experiment’ (Kruger & Pizer, 2004: 1) and ‘a fundamental systems change in environmental governance’ (CEPS, 2002: 6). As indicated by these quotes, the system raises questions of multi-level power and governance with implications far beyond the sphere of climate politics.

The ETS is a system whereby companies are allocated allowances for their emissions of greenhouse gases, allowances which they can then trade with each other.⁵ The main ETS directive, adopted in mid-2003, established a three-year pilot phase (2005–2007) to precede the main commitment period of the Kyoto Protocol (2008–2012) (Council, 2003; Directive 2003/87). The ETS was established as a fundamentally ‘decentralized’ system in which key decisions about the amount (the cap) and allocation of allowances were to be decided primarily by the member states in the form of National Allocation Plans (NAPs). Furthermore, emission allowances were mainly handed out free of charge. The Commission was given more of a background role in the first phases of implementing the system, primarily as a watchdog of the extent to which member states carried out allocations in line with the agreed criteria of the 2003 Directive. (Skjærseth & Wettestad, 2008).

In January 2008, the Commission put forward a proposal for a revised ETS for the period 2013–2020 (Commission, 2008). This would involve a far more centralized ETS, doing away with NAPs completely, and was characterized as a ‘revolution’ in the division of power between the EU and Member States’ (Carbon Trust, 2008: 17). The main allocation rule was now to be auctioning. This revised ETS was finally adopted in December 2008, i.e. Directive 2009/29/EC (Skjærseth & Wettestad, 2010). It is then this revised Directive and ETS design which is focused in this paper.

Turning to RES, the EU developed R&D support during the 1990s. The 2001 RES policy, with its indicative target of 21% renewable energy consumption by 2010, was the first substantial policy in the area. In their deliberations on this directive, the Commission and

⁵ Allowances are denominated in metric tonnes of carbon dioxide equivalent. One tonne of carbon dioxide-equivalent is a unit of measurement reflecting the potency of greenhouse gases.

Europe's largest power producers promoted the introduction of a pan-European green certificate scheme. This would imply the creation of a market for renewable energy determined by a range of governmental regulations, with certain parallels to the ETS (Commission, 2005; 2008a). The key factor would be the size of the quota that renewable energy producers were obliged to produce or purchase.⁶ It was maintained that green certificate schemes would yield sizeable profits for actors that could produce renewable energy most efficiently, and favor actors large enough to manage considerable financial risks. However, this idea was met with the counter-argument that technology-specific support was needed. The renewables industry promoted feed-in tariffs that guarantee renewable energy producers access to the grid, a fixed level of operation support and varying support levels for different technologies (Commission, 2005; 2008a). The final 2001 directive merely presented regulations concerning the creation of a voluntary scheme. By the mid-2000s it had become evident that the 2001 target would not be met.

In the revision of the directive, the market-specific vs. technology-specific support measure conflict arose again. As part of the climate package, the Commission proposed a new binding 20% target in 2007, and a draft directive one year later. RES was the most contentious part of the climate package. As we shall see, the market supporters also lost out in this second round, but now the directive resulted in significant further vertical integration.

3.2 Vertical integration and governance approach: the differing outcomes

Turning first to the vertical integration dimension, the ETS post-2012 will be a rather centralized and harmonized system (Directive 2009/29/EC). In the initial ETS, the member states decided national caps through National Allocation Plans. The 2009 Directive, however, sets a collective target for the ETS as a whole. National allocations are then to be derived from this single, EU-wide ETS emission cap. The sectors and installations included in the system are to achieve a 21% reduction by 2020, in relation to 2005 emission levels. This is based on a fixed model producing annual linear emissions reductions and ending up in the agreed 21% reduction. In contrast to what we find in the RES directive, where national plans are now *introduced*, in the revised ETS the member states will no longer produce national plans. Thus, the post 2012-ETS will stop being a conglomerate of 27 national emission systems: it will be a harmonized pan-European scheme, with common rules for most aspects –

⁶ The purchaser of a green certificate does not buy the actual energy, but a security that confirms its economic contribution to cover the cost of investment and/or operation.

such as how much of the allowances shall be auctioned, which industry activities can still be given free allowances, how transactions shall be registered, and so forth.

The Commission is the main coordinator of the ETS. In the revised Directive, it is stated that the Commission shall adopt a regulation governing the monitoring and reporting of emissions and report annually on the functioning of the market (Art. 10.5). This assessment will be based on information from member states as well as independent verifiers of national operators (Commission, 2009:20). Furthermore, from 2013 on, allowances will be held only in the central Community registry and not also in national registries. Although auctioning revenues will be collected by member states, the Commission is to monitor whether these funds are applied in accordance with the principles of the Directive. The creation of EU rules for handing out free allowances limits member states' earlier flexibility and leeway considerably. If a 'satisfactory' new global climate agreement is adopted and the EU increases its overall target from 20 to 30%, the Commission will have a key role in the subsequent ETS adjustment process.

The Commission has also a central role in the process of developing detailed regulations to determine which ETS sectors are particularly exposed to global competition and thus may be granted free allocations (Directive 2009/29/EC: Article 10a). As to the compliance system, installations with lower allowances than actual emissions must pay €100 for each ton of 'illegal' CO₂ equivalents to the relevant member-state authority. Concerning member-state compliance, the Commission is not granted coercive mechanisms other than those available under ordinary infringement procedures. Additionally, the Commission may execute certain extraordinary measures in case the allowance prices should skyrocket (Directive 2009/29/EC: Article 29a). Despite constraining elements, it still appears that the Commission will have a strong hand in the governance of the revised system.

As to governance approach, the ETS post-2012 will be a more streamlined market system, more in line with economic textbook ideals. In the first phase of the ETS, as noted, allowances were mainly handed out free of charge, based on historical emissions and 'grandfathering'. This served to reward large, ineffective emitters and opened up for considerable lobbying and individual discretion (Sæverud and Wettestad, 2005). In the ETS post-2012, auctioning is to be the general allocation method. Around 40% of the allowances will be auctioned in 2013, increasing to approx.70% by 2020. This implies that the distribution of allowances will increasingly be based on market criteria, with the influence of technical and political considerations correspondingly reduced. Furthermore, free allocations will be further harmonized: with inputs from relevant stakeholders, the Commission will

establish Community-wide sectoral benchmarks for such allocations. These changes strengthen the overall character of the ETS as a trans-national market measure.⁷

We now turn to the revised RES directive (Directive 2009/28/EC) which covers consumption of electricity, heating, cooling and transportation. The overarching target is for energy from renewable sources is to have a 20% share of the gross final consumption of energy by 2020. All member states are given individual targets, calculated on the basis of their GDP and current level of renewables. In addition, the directive establishes a specific target of 10% energy from renewable sources in the field of transportation.⁸ The directive transfers some new powers to EU organizations. The Commission and two Committees are granted competence to develop detailed rules to facilitate implementation. Additionally, the Commission is to develop a highly detailed template for national action plans. This gives the EU organizations some leeway to govern policy implementation without direct member-state involvement. The Commission is instructed to monitor the sustainability of biofuels directly, but it has no such competencies in relation to the national implementation of the other elements of the directive. However, it is given substantial powers to probe into national implementation efforts.

The Commission can develop soft measures to facilitate implementation, such as a website displaying member-state progress and facilitating a continuous process of ‘naming and shaming.’ Finally, because member-state targets have been made binding, the infringement procedure has a certain coercive edge. However, this is a cumbersome process, and the directive does not enable the Commission to punish directly any member states that violate their RES obligations. Thus, the revised directive provides the EU organizations with significant, but far from complete, competence in this policy area.

Concerning the governance approach, the RES directive states that member states are to pay special attention to ‘sectors that suffer disproportionately from the absence of technological progress and economies of scale’ (Directive 2009/28/EC: preamble 20). It introduces a range of new and detailed technical requirements relating to the promotion of renewable energy in specific sectors, as in the buildings and transport sectors. Three flexibility mechanisms are created: 1) statistical transfer between member states; 2) collaboration on joint projects between member states; and 3) joint projects between member

⁷ However, the development is not unambiguous. A sectoral differentiation of allocation method has been introduced, with (at least initially) much more auctioning of allowances for energy producers than for energy-intensive industries.

⁸ Development of the biofuel target was highly controversial, but that discussion will not be explored in detail here.

states and third countries (Directive 2009/28/EC: Articles 6,7 and 8). All mechanisms enable member states to collaborate in order to reach their targets for renewable energy, but none relies on a specific market approach. Moreover, the focus on individual projects implies that member-state governments are to engage directly in specifying the technological criteria for projects on renewable energy. The statistical transfer mechanism enables member states to develop common feed-in or certificate schemes, but they are not instructed to design market-reliant schemes (Directive 2009/28/EC: Art 11). Thus, the RES directive does not aim to create or sustain a market in which the forces of supply and demand create governance incentives: it promotes governance primarily through technology- or site-specific governmental regulation.

Table 1. Level of vertical integration and governance approach in RES and in ETS

	Criteria	RES 2009	ETS 2009, post-2012 rules
Vertical integration	<i>The upper hand in daily governance of the scheme/market</i>	Member states	The Commission
	<i>Create detailed regulations/templates</i>	Shared between member states and the Commission	The Commission
	<i>Monitor and facilitate implementation</i>	Primarily member states	Primarily the Commission
Governance approach	<i>Market creation focus</i>	Not present	Dominant
	<i>Technological development</i>	Strong	Some elements

From Table 1 we see that vertical integration is significant in both policy areas, but significantly stronger in ETS than in RES. Moreover, whereas RES mainly reflects a technology-development governance approach, market governance dominates the ETS.

4. Explaining differing policy outcomes: four main possibilities

4.1 Liberal Intergovernmentalism: Different member state positions and bargaining dynamics in the two issue areas?

In line with the approach of Liberal-Intergovernmentalism, we will explore the member-state positions, probing into how these reflect the internal distribution of economic power between industries. Second, we discuss whether those member states that adopted the lowest common denominator and had the most information influenced the policy outcome the most.

Table 2 summarizes the national positions of five major member states in the two issue areas, as they were around 2007/2008. UK and Sweden must be counted among the

countries most positive to the establishment of the ETS.⁹ Back in the early days of the ETS, the UK opposed a centralized system. Over time, it became a strong supporter of a much more vertically integrated system. Also Germany and Spain shifted to more pro-vertical integration positions from 2004/2005 on. However, after 2007, Germany has emerged as an increasingly staunch supporter of continued free allowances to the energy-intensive industries. Spain seemed to have had fewer doubts about the move towards auctioning. Poland, along with the other accession countries, called for limited vertical integration, and was also the main proponent of continued free allowances to the power sector. Thus, Poland must be seen as a clear stumbling block in the process of further ‘market streamlining’ the ETS.

Table 2. National positions in relation to ETS and to RES

		Germany	Poland	Spain	Sweden	UK
ETS	Vertical integration	Strong	Weak	Strong	Strong	Strong
	Market versus technology development	Market limitations (energy-intensive industries)	Market limitations (power producers)	Market	Market	Market
RES	Vertical integration	Strong	Weak	Medium	Strong	Weak
	Market versus technology development	Technology specific	Technology specific	Technology specific	Market	Market

Concerning RES, Germany called for rather strong vertical integration, whereas the UK was the strongest opponent.¹⁰ In late 2006, only Germany and Sweden supported significant vertical integration in the form of a binding target. A few months later, there were ten countries that supported a binding target. The accession countries were the most skeptical, Poland in particular. Germany, Poland and Spain were strong supporters of a technology-development approach, whereas the UK and Sweden advocated market governance. They argued that ‘company-level trading would destroy the country’s national renewable support scheme’.

Thus we may conclude that there exists a significant correlation between dominant member-state positions and the final outcome. But did the national positions reflect the interests of the most dominant national industries? This is a complicated question, and only

⁹ The summary of these country positions is based on work conducted in connection with the writing of several pieces on the ETS revision process (see Skjærseth and Wettstad, 2010; forthcoming 2010). The developing positions will be further substantiated in the ETS chapter in Boasson and Wettstad (forthcoming 2011).

¹⁰ The summary of these country positions is based on work conducted in connection with the writing of the RES chapter in Boasson and Wettstad (forthcoming 2011).

some preliminary observations can be presented at this stage. Most utilities promoted centralized market solutions in both policy areas (Eurelectric, 2008). There are, however, some notable exceptions. Spain's Iberdrola supported technology-development governance in RES. The Polish utilities seemed skeptical to market measures in both cases. The energy-intensive industries were critical towards both more market-streamlining and high vertical integration in the ETS (Skjærseth and Wettestad, 2010). The renewables industry called for a technology-specific RES policy, but with strong vertical integration (EREC 2008).

How did the relative strength of the interests of the different industries affect the positions of the member states? If a country hosts some of the major European corporations within the industry, and the national market is dominated by nationally owned actors, it is reasonable to assume that those industrial actors have a strong position in this country. Concerning power producers, seven incumbents control two thirds of European power production (EDF, 2009; E.ON, 2009; ENEL, 2009; GDF Suez, 2009; Iberdrola, 2009; RWE, 2009; Vattenfall, 2009). All (except Sweden's state-owned Vattenfall) are among the top 50 European corporations (Financial Times, 2008). The second and third largest utilities are German, and dominate the domestic market. Poland has no major utility, but its market is dominated by smaller Polish utilities (PAI, 2006). The Spanish and the Swedish markets are dominated by nationally owned major corporations. None of the dominant European players are British, and the UK market is a blend of national and foreign companies (HM Government 2007).

The energy-intensive industries cover a range of highly different industrial activities, as for instance chemicals production and industrial mining. They are reasonably financially robust, with many companies in the list of the 500 largest European companies (Financial Times 2009). Four of the ten largest companies are German. Also the UK and Spain host some significant energy-intensive corporations. These industries relate to a global market, so their dominance in their national markets is less relevant than for the other industries.

As for renewables, Germany is the only country with a significant industry (Jacobsson and Volkmar, 2006; Meyer 2003). Spain has a handful of smaller solar-power companies (Río and Unruh, 2007:1509). In 2008, few renewable energy companies made it to the list of Europe's top 500 companies, measured in relation to market value. However, we find two German companies towards the end of the list (Financial Times 2008). In the other countries, utilities have taken the lead in the development of renewable energy (Jacobsson and Bergek 2004; Mitchell and Connor, 2004; Río and Unruh, 2007:1503; Iberdrola, 2009).

Table 3. Some industrial characteristics of utilities, renewable and energy-intensive industries – a first, rough cut

		Germany	Poland	Spain	Sweden	UK
Utilities	<i>Nationally owned majors</i>	E.ON RWE	None	Iberdrola	Vattenfall	None
	<i>Dominant companies in national market</i>	E.ON RWE Vattenfall	Polish utility-coal mining companies	Iberdrola ENEL	Vattenfall, and medium-sized Nordic utilities	Mix national and foreign actors
Energy - intensive industries	<i>Nationally owned majors</i>	BASF, Bayer, Linde, Thyssenkr.		Acerinox		Rio Tinto Anglo American
	<i>Dominant companies in national market</i>	Not relevant	Not relevant	Not relevant	Not relevant	Not relevant
Renewables	<i>Nationally owned significant actors</i>	Q-cells Solarworld	None	Iberdrola	None	None
	<i>Dominant companies in national market</i>	Large number of actors	No established market (yet)	Iberdrola	Vattenfall, pulp and paper industry	Mix national and foreign utilities

Source: Financial Times 2009, company reports

Table 3 shows that utilities are stronger than energy-intensive industries in most countries, although the two industries seem to have a more equal footing in Germany. The UK has some large energy-intensive industry corporations, but these are not the most dominant on the European scene. Thus they may be rather equal in standing with the rather modest UK utilities, which are much smaller than the dominant European corporations. Further, the renewables industry is significant only in Germany, but even there it has scant economic clout compared with the utilities. In Spain, Iberdrola dominates both the electricity market and renewables development.

It is very challenging to analyze the relative strength of different industries, and that makes it hard to assess whether the member states speak for their most dominant industry interests in the ETS. On the other hand, member-state positions seem far more homogeneous than their respective national industry bases would imply. In RES the analytical problem is twofold: Why do otherwise rather similar actors, such as Spanish Iberdrola and Swedish Vattenfall, prefer different policy designs? Why does Germany clearly align to the weakest industry, the renewables industry, and not the strongest, the utilities? In both cases, actors have changed their positions substantially, and this contrasts the Liberal Intergovernmentalism assumption of stable interests.

Although the member-state positions do not appear to follow automatically from the domestic industry patterns, it seems as if the EU policy outcomes reflect the member-state positions to some extent. Moreover, there is reason to believe that Germany had the best access to information in the ETS as well as RES – simply because all three industries are strong in Germany. Germany was a key provider of information, particularly in relation to RES, and this may well be part of the explanation why the final RES outcome is close to the German position.

What then can we conclude as to the explanatory value of this perspective? On the one hand, we find significant correlations between the policy outcomes and national positions, and that strongly indicates that the member states were key players. On the other hand, this perspective does not enable us to explain national positions. Differences in access to information seem to have played a role. But the assessment based on this perspective still leaves us puzzled. Which causal mechanisms are operating? Why do similar industries in different countries perceive their economic interests in different ways?

4.2 Multi-level Governance: More effective Commission networking in the ETS than in the RES?

In line with this perspective, we would expect differences between the policy outcomes to be attributable to variances in the role and positions of the Commission. The Parliament may also be influential. We will first look into the role of the Commission and the Parliament in relation to the ETS and subsequently in RES.

As explored in greater detail in Skjærseth and Wettestad (2008), Commission officials engaged in considerable networking during the run-up to the adoption of the first ETS directive. Dedicated policy entrepreneurs, primarily in DG ENV, created a Commission-internal network, that in Skjærseth and Wettestad (2008), was named the ‘BEST’ group (‘Bureaucrats for Emissions Trading’). In 1999 the Commission initiated the creation of a European Climate Change Programme (ECCP) intended to help to identify climate measures (ECCP, 2003). Industry, government representatives and environmental organizations and national experts participated in the many working groups. This tactically skilled ‘BEST’ group used the meetings within the ECCP I’s working group on ‘Flexible Mechanisms’ to create an external network. The BEST group led the meetings, handpicked ‘trading-positive’ participant, and wrote up the proceedings. Initial skepticism towards emissions trading was considerable among all groups of stakeholders and knowledge about such trading quite

limited, so building this ‘epistemic community’ was important in getting a majority of EU actors to support the very *establishment* of an ETS. However, the networking was not sufficient to get stakeholders to support the *design* preferred by the Commission – which was one of high vertical integration, with allowances mainly distributed by auctioning.

In this context, the key question becomes: as the ETS *was* adopted in 2003 and the system started in 2005, was such networking equally important in the Commission’s later efforts to gain acceptance for changes towards a much more centralized and auctioning-based ETS? Probably not. The main answer is simple: the very need for such a tightly steered process was no longer there, as emissions trading now had taken hold. A main element in the revision process was the four meetings within the ECCP II ‘working group on ETS reform’ held in 2007. This process was forcefully led by BEST entrepreneurs, but participation was broader and less ‘steered’ this time. For instance, over 100 participated in the meeting on ‘further harmonization and increased flexibility’ in May 2007. Still, interviews indicate that some participants at these meetings felt that the process was deliberately steered in certain directions, and that the conclusions from the meetings were formulated most in line with BEST preferences (interviews in Brussels, May 2009). All in all, it seems probable that the conclusions from these meetings served to underpin and legitimate the quite radical propositions for ETS revision that the Commission put forward in January 2008.

Were there then any networks that opposed centralization and a clearer market approach in the revised ETS? The Commission seemed quite united in the overall push for greater centralization, but some officials in DG Enterprise were skeptical to full auctioning. DG Enterprise was instrumental in establishing the High-Level Group on Competitiveness, Energy and the Environment in 2005, with representatives from industry as well as Commission officials. This group helped draw attention to the issue of windfall profits, but it is questionable if it really can be seen as an alternative network to those developed by the market proponents (Wettstad, 2009). There were at least two routes to protect energy-intensive industries: first, a ‘more auctioning and market’ route targeting power producers, and a more ‘anti-market’ route of continued free allowances for the energy-intensive industries. Moreover, the impression is that the energy-intensive industries did not manage to mobilize much support within the European Parliament; the few market skeptics there did not seek to establish ‘opposition networks’.

With RES, we discover that while the whole Commission seemingly supported stronger market governance in the ETS there was severe internal disagreement concerning RES governance. Moreover, the Commission did not undertake much network governance in

this area. On the other hand, we find that the Commission promoted increased vertical integration through strategic facilitation of the negotiation processes. Initially, the Commission proposed a binding RES target in 2007, even though only two of the 27 member states had supported this (ENDS, 2006b). Surprisingly, the 2007 spring European Council accepted this. Our interviewees agree that the strategic leadership of the Commission was central in this respect (interviews in Brussels, June 2009). According to interviewee: ‘I do not think that the member states really understood that this decision implied that the 20% obligation would be transferred into binding obligations for each and every member state.’ Although several member states initially stated that they wanted to re-negotiate their targets put forward in the 2008 draft, this did not happen (ENDS, 2008a).

After it was decided that the target was binding, the Commission started to develop detailed regulations that would actually ensure that the member states fulfilled their obligations. Initially, the Commission planned to launch a specific directive on heating and cooling in addition to the RES electricity directive, but in 2007 came a change of strategy. As expressed by one interviewee: ‘To give them (member states) greater freedom in this respect allowed us to steer more rigidly on an aggregated level.’ There is reason to believe that the Commission’s introduction of a binding target and a broad scope contributed to change the member-state positions towards giving the Commission a mandate to develop a detailed template and regulations (interviews in Brussels, June 2009).

Turning to the governance approach, we do not see strong strategic leadership on the part of the Commission. The ETS BEST network hub supported market measure in RES, but they did not create an external network. Rather, during the 2007 drafting process the Commission had very little contact with external market proponents, although the renewables actors report that they were well informed. The European Forum for Renewable Energy Sources (EUFORES) facilitated this information exchange between the Commission and the renewable industry. EUFORES was governed by a small group of MEPs. National parliamentarians from all member states, a broad range of renewable energy industries and Commission representatives participated (EUFORES, 2009). EUFORES advocated high vertical integration and technology specificity (EUFORES, 2005; 2007). Moreover, EUFORES facilitated the creation of parliamentary support for the positions of anti-market measure MEPs such as Claude Turmes, who served as the rapporteur for RES (see Turmes, 2005). Interviews show that the renewable energy industry, as well as governmental representatives from Spain and Germany, contributed to his drafting of the Parliament’s input to RES. Turmes achieved cross-party support for strengthening the technological development

approach and stronger vertical integration (ENDS, 2008b). This fitted well with the approach of the compromise proposal from the UK, Poland and Germany that introduced mechanisms for voluntary cross-country cooperation and removed all elements of market governance pressure from the directive. Feed-in schemes were controversial in core member states, but EUFORES succeeded in uniting the actors that were quite happy with these. This indicates that EUFORES contributed to strengthen the anti-market proponents among the EU member states.

What may we conclude with regard to the entrepreneurial activity of the Commission and the Parliament? First, it is evident that with both the ETS and RES, the Commission induced stronger vertical integration – by way of network governance in the ETS, and strategic leadership in RES. Second, in both instances, policy networks influenced the final governance approach. The ETS network had its hub in the Commission, whereas the RES network was primarily governed by a group of MEPs. Both networks appear to have contributed to shape member-state positions. Hence, there seems to be some evidence to support the assumption that differences in governance approach reflect different preferences among Commission officials.

Although the multi-level governance analysis provides some answers, it also creates new questions. Why were Commission officials able to create a powerful network in the ETS, but not in RES? Why did anti-market parliamentarians initiate a RES network but not an ETS network? Why was the Commission united in its view on the revised ETS governance approach, but divided in its view of RES governance? Why was the Commission more successful in inducing stronger vertical integration in the ETS than in RES?

4.3 New Institutionalism: Different feedback mechanisms?

In order to take advantage of insights from New Institutional theory, we must identify the institutional and structural feedback mechanisms that operated in the organizational fields related to the two policies. We first present the organizational field of utilities, and then discuss how this field and the field of energy-intensive industries affected the ETS. Next, we explore how the fields of utilities and renewables shaped the RES outcome.

The organizational field of utilities emerged as truly European in the late 1990s, when liberalization reforms enhanced cross-border contact between energy markets. By the mid-2000s, the structure of this organizational field was marked by a mismatch between a small group of excellent major utilities and a lack of European market harmonization (Rademaekers

et al., 2008). The utilities had de-coupled from the national governments and transformed into publicly traded companies (Codognet et al., 2003). A conglomerate of electricity markets had emerged, but they were neither unified nor uniform (Glachant, 2003; Rademaekers et al., 2008:18–19). EU competition law allowed the Commission to interfere and instruct the major corporations to reduce the level of company-internal vertical integration, but member states still controlled transmission regulation and energy policy. The national business associations of the power industries were represented by Eurelectric in Brussels. Our interviews indicate that while Eurelectric and the largest utilities had developed good contact with several Commission DGs, they had weak ties to national governments.

Liberalization entailed a shift in institutional logic. While the utilities had previously aimed at securing power supply to customers within a restricted geographic domain, their focus was now on increasing their market value. As a main strategy, they sought ensure this through mergers and acquisitions. Because EU competition law constrained them in expanding their domestic markets, the predominant strategy became to acquire shares in new markets, often through swap deals with each other (Glachant, 2003). Not all national energy ministries aligned to this logic, however. The malfunctioning of national power markets led many national governments to reverse the liberalization process through retaining national control of electricity prices (Commission, 2009).

In order to see to what extent this perspective can help us to understand the outcome in ETS, we need to explore the nature of the field of energy-intensive industries. With regard to structure, the impression is that this field is less coherent than the case with renewables and utilities. For instance, chemicals and industry metals relate to different markets; these industries are represented by different business federations in Brussels, and they are not in the same way dominated by a handful of large corporations as in the case of utilities. Thus, neither the dominance of a few really large corporations nor strong business associations contributes to create internal agreement. As to contacts within EU institutions, actors in the energy-intensive industries have strong links to DG Enterprise. These industries were the first ones to be targeted by the EU (as with the original coal and steel union). As to the Parliament, the links to the industry committee seem much stronger than to the environment committee (see EU Observer, 2009). Although the EU internal market provides the key regulatory framework for these industries, they can also draw on historical ties to national governments, as in the case of voluntary agreements in Germany (see Wurzel, 2008).

Concerning the issue of institutional logic, this field is marked by tension between market logics and a more technology-oriented logic, in the ETS witnessed for instance in the

emphasis given to technology benchmarks. In contrast to the utilities, these industries are generally more oriented towards a global market, as they produce goods which more easily than power can be transported long distances. Thus, their growth strategy has much to do with securing national and EU policies which do not endanger their global competitive situation.

What of the relative success of utilities and energy-intensive industries in the case of the ETS? In the process leading up to the 2003 Directive, as indicated earlier, the utilities were both more positive towards emissions trading and actively engaged in trying out the instrument through simulation exercises. In the energy-intensive industries, there was an overall feeling that emissions trading did not really concern them. As noted by one industry representative, ‘we slept in class’ (interviews in Brussels, 2005). This also indicates that, because the industry aligned to a market logic, it was not very skeptical at outset (except for the chemicals industry; then skepticism grew when it became clear that the scheme would offer power producers windfall profits stemming from free allowances (Skjærseth and Wettestad, 2008).

After 2004, the energy-intensive industry became increasingly opposed to windfall profits for utilities at the expense of the energy-intensive industries. In the further process of revising the ETS, these industries succeeded in attracting considerable attention to both windfall profits and ‘carbon leakage.’ This was achieved largely by drawing on established links to other central actors in this field, such as DG Enterprise within the Commission and key member states like Germany (Wettestad, 2009; Skjærseth and Wettestad, 2010). All these bits and pieces of evidence help us understand the somewhat ambiguous turn towards more auctioning and market governance in the revised ETS – the considerable continued free allowances to ‘vulnerable’ energy-intensive industries, based on technology benchmarks.

Initially, the ETS functioned poorly, with too many allowances and volatile and low carbon prices and low incentives for emission reductions (see Skjærseth and Wettestad, 2010). How did this malfunctioning, actually serve to strengthen the Commission’s case for a more pure market design and much stronger vertical integration, rather than challenging the very existence of the ETS? First and foremost the member states had by 2006/7 invested considerable energy, resources and prestige into developing this system, pointing rather to an improvement of the system rather than switching to alternative regulatory routes. Second, the Commission had been given a sufficiently prominent position in the first ETS directive to ensure a strong hand in the revision process. Lastly, the Commission could build upon the rather strong initial structural relations to the utilities in order to promote the auctioning cause.

The ‘opposing power’ of the utilities had also been weakened by the debate about windfall profits.

Turning then to the case of RES, the German renewable energy story can be taken to epitomize the emergence of the European renewables field. Here we find that a resilient alliance of engineering research communities, cooperative ventures that started small-scale renewable energy production, and the Green Party (eventually joined by the Social Democrats) advocated a feed-in support scheme (Meyer, 2003; Jacobsson and Volkmar, 2006). This alliance guaranteed fixed technology-specific support levels, with no incentives towards development of the most profitable projects (Meyer, 2003:671; Reiche and Bechberger, 2004:248). Initially, the utilities had not been entitled to receive any benefits. Ultimately, the Greens in 2001 succeeded in transferring the responsibility for renewable energy from the Ministry of Economic Affairs, which favored market governance, to the feed-in supportive Ministry of Environment (ENDS 2005c).

Structurally, the EU renewables field is dominated by small actors. Only a few wind-power and photovoltaic manufacturers have internationalized (EWEA, 2009; EPIA, 2009). Nonetheless, the industry has a well-coordinated presence in Brussels. Despite representing a variety of different technologies, all the 13 renewable associations (for wind power, photovoltaic and so forth) are gathered in EREC, the European Renewable Energy Council (EREC, 2009). Due to its reliance on state aid, the industry has strong ties to national governments, especially in Germany and Spain. Moreover, it has strong ties to politicians, among the Greens and Social Democrats in particular.

The field is bound together by a shared adherence to technology-development logic. The industry is primarily fostered by state aid, underpinned by technological and not economic success criteria. By 2008, 18 EU member states had developed some kind of feed-in scheme (Commission, 2008).

Evidently the RES outcome in focus in this paper is more in line with the logic and structure of the field of renewable energy than the utility field. How did this come about, given the generally greater economic strength of the latter? The utilities and market promoters in the Commission started to promote the development of a European green certificate scheme already in the late 1990s (Foquet and Johansson, 2008; Rowlands, 2005). However, they only succeeded in introducing a regulation in the 2001 RES directive that spurred the development of voluntary certificate schemes (Directive 2001/77/EC). The voluntary scheme was no great success and did not contribute to increase the legitimacy of market measures in renewable energy policy. The utilities continued to advocate the development of a pan-European

obligatory scheme, but by 2008 only seven of the 27 EU member states had developed green certificate schemes (Commission, 2008). The UK and Sweden were the pioneers. In Sweden, such a scheme had been launched in 2003, and immediately boosted investments (Jacobsson and Bergek, 2004). In the UK, the pace of investment was slower (Mitchell and Connor, 2004).

When the number of candidates for mergers and acquisitions had diminished, renewable energy investment became one of the few options that could allow the dominant utilities to grow (see e.g. Vattenfall, 2009:30). They also believed that a European green certificate market could pave the way for a European electricity market proper (interviews in Brussels, June 2009). By December 2007, market supporters in the Commission had drafted the skeleton text of a fully fledged EU certificate market (see Commission 2007). This draft was leaked. Immediately afterwards, EREC, the German and Spanish governments, and Iberdrola engaged in intense lobbying. One month later, the Commission launched a new draft with a weak market focus, merely opening up for certificate trade (Commission, 2008). The renewables industry argued that because certificates were defined as tradable goods, they were subject to EU competition legislation (Commission, 2008: Art 9). They envisaged that this would enable the European Court of Justice to decide that member states would have to include all projects that applied in their support schemes, even if the plants were constructed outside the country. That would threaten the most generous feed-in schemes, like those of Germany. This argument eventually hit even the trading promoters in the Commission (interviews in Brussels, 2009).

Discussions were characterized by a profound lack of trust between actors from the different fields. Interviewees describe the conflict as having an ‘almost religious’ character. Media coverage of the 2005–2009 debate provides many examples of actors readily accusing each other of fraud, lack of credibility, being reactionary, and so forth (see e.g. ENDS 2005a,b,c; 2006a). The conflict played out in national governments, in national media, in the Commission and even within Eurelectric.

Table 4. Key characteristics of the three institutional fields involved in the development of the two directives: rough overview

		Organizational field of utilities	Organizational field of renewable energy	Organizational field of energy intensive industries
Cast of actors	<i>Commission</i>	DG Env DG Enterpr, DG Tren	DG Tren	DG Enterprise, DG Env
	<i>Parliament</i>	Conservatives	The Greens, Social Democrats	Cross-party links
	<i>Member states</i>	UK, Sweden	Germany, Spain	Germany
Structural relationships	<i>Multi-level industry coordination</i>	Rather strong	Strong	Weak
	<i>Industry–member state ties</i>	Weak ties	Strong	Rather strong
	<i>Industry–EU organizations</i>	Strong to the DG Env and DG Enterprise,	Strong to DG Tren and strong to the Parliament	Strong to DG Enterprise, some links to the Parliament
Institutional logic	<i>Salient logic</i>	Competitive market value maximizing	Technology development	Global market value maximizing/technology benchmark
	<i>Level of institutional conflict</i>	Medium	Low	Medium

To what extent can the New Institutionalism perspective shed light on the outcome of the policy development process? From Table 4 we see that, due to structure, power was concentrated at the member-state level in the case of RES because the renewable energy industry was primarily national and not European in scope and the renewable industry had strong links to national governments. The European level was the stronger in relation to ETS, because both industry groups had an international scope, they were rather strongly tied to the Commission and the Commission had a more prominent position in the governance of these industries. Moreover, we have seen that structural feedback effects favored low vertical integration in RES (the member states had control of the issue at outset) and the diffusion of feed-in schemes strengthened the technology-development logic. In the ETS, the initial decentralized ETS based on handing out allowances for free created a sort of ‘negative’ institutional feedback, strengthening the case for both higher vertical integration and a stronger market approach.

Yet, several questions still remain. Was the EU-internal development really strong enough to ensure the radical strengthening of the market approach in ETS – or was it also underpinned by external forces? With the member states quite heavily opposed to stronger vertical integration in relation to RES, why did it still become more centralized?

4.4 The International Regime perspective: ETS more affected by the climate regime than RES?

Turning to our final perspective, we begin by describing how the climate regime addresses emissions regulation and renewable energy. Second, we discuss to what extent elements from the climate regime have shaped specific EU policy outcomes, and whether EU actors could creatively apply elements from the climate regime to strengthen their impact on the two policy outcomes.

The United Nations Convention on Climate Change (UNFCCC) was agreed in 1992. Five years later the Kyoto Protocol was developed, and the EU took on a commitment to reduce its emissions by 8% in the period 2008–12. The Protocol established three flexible mechanisms: emissions trading; the Clean Development Mechanism (CDM); and Joint Implementation (JI). Detailed regulations and a significant UNFCCC administration that facilitated global emissions trading were also developed. As to renewable energy, the Kyoto Protocol deemed it advantageous, but provided no specific regulations. Renewable energy has been discussed in other global UN forums, including the Johannesburg summit in 2002, but no global agreements have emerged.

The EU took on the Kyoto obligation on behalf of all its member states: it is the Commission that represents the EU in the global regime, not each and every of the member states directly or individually. Thus, the Commission was given the role of coordinating member-state efforts and monitoring whether the Community was on track to reach its Kyoto commitments. Moreover, the Commission's DG Environment was to coordinate the EU's common climate negotiation strategies. After the withdrawal of the US from the Kyoto Protocol in 2001, the EU emerged as the leading global climate actor (Schreurs and Tiberghien, 2007).

Soon after the Kyoto Protocol was formally ratified in February 2005, discussions began on the creation of a new agreement to apply after 2012. During 2006 and 2007, the Intergovernmental Panel on Climate Change (IPCC) presented scientific reports whose main message was that global emissions would need to be reduced by 25–40% by 2020 and by 50–80% by 2050 (IPCC 2009). These IPCC reports attracted immense media attention. In stark contrast to this increasing and unprecedented global urge for action, the international negotiations ran into a serious stalemate, due in particular to conflicts between the industrialized and the developing countries. Hardly any process was achieved at the Conferences of the Parties arranged between 2005 and 2008 (i.e Cléménçon 2008). Pressure

on the EU to take action to stimulate and energize the negotiations increased, as the Copenhagen meeting in 2009, seen as the natural occasion for adopting a new post-2012 treaty, drew closer.

The new EU climate and energy targets and policy package put forward in 2007 and 2008 were cast as means and instruments for achieving an ambitious and comprehensive agreement in Copenhagen 2009. When the new policy drive was presented in January 2007, Commission president José Manuel Barroso hailed it as ‘by far the most ambitious policy against climate change in the world’ (ENDS, 10.01.2007). The targets and policy package were meant to show that the EU was a serious and credible global player; and the possibility of increasing the ambition to 30% if the world followed suit was intended to ‘sweeten’ the global deal.

The Commission urged the member states to handle all the policies in the 2008 climate package (including RES and the ETS) at top speed (interviews in Brussels 2009). It was imperative to get the package adopted before the climate talks in Poznan in December 2008, and at the latest by spring 2009. The energy ministers readily endorsed this time schedule (Council, 2008:12; ENDS, 2008a). Also the Parliament followed suit and agreed to have only one reading. The keen time-pressure and the trilogue process probably led to greater Commission influence on the decision-making process than would normally have been the case. Final agreement on the ETS and RES was reached on December 12, only two days before the end of the Poznan talks (Council, 2009).

In examining how the global development affected the ETS outcome, we must bear in mind that this measure has been embedded in the global climate regime from the very start (Skjærseth and Wettestad, 2008; Wettestad, 2009). The weight given to flexibility mechanisms in Kyoto spurred learning in the EU, and their very existence contributed to the EU’s 1998 turn-about, from flexibility skeptic to trading frontrunner. Developments within the climate regime also provided impetus for the development of the ETS (Oberthur and Gehring, eds, 2006). The US withdrawal from Kyoto was a catalytic event that convinced trading skeptics that quick development of an EU ETS could be an important contribution to ‘saving the Protocol’ (Wettestad, 2005).

After the ET Directive was adopted in 2003, a new decision-making process began, on developing the more specific link between the ETS and the CDM and JI.¹¹ A main outcome in the 2004 Linking Directive was that CDM and JI credits could be used for compliance

¹¹ The possibility to buy and use CDM and JI credits is the main element that links the company-focused ETS and the state-focused global emissions trading.

purposes in the ETS. The global flexibility mechanisms received a firmer footing when the Kyoto Protocol was formally ratified in February 2005. This made it harder to question the legitimacy of the ETS. EU officials increasingly referred to the ETS as the ‘flagship’ and ‘cornerstone’ of EU climate policy (see Commission, 2008).

Can the global links then shed light on the development of ETS governance toward considerable centralization and further market streamlining? Here, the ‘cornerstone’ element would seem the main thing to note. It was precisely the global regime that legitimized the ETS, and this helps to explain why many actors came to see a centralized, streamlined and well-functioning ETS as a sheer necessity. Such an ETS could both contribute to bolstering EU ambitions to exert global leadership and strengthen the EU’s ability to comply with anticipated, more ambitious post-Kyoto global rules. However, we should note that global concerns also created stumbling blocks for efforts to increase auctioning and further market-streamline the ETS, in the form of the growing debate about possible carbon leakage related to a more ambitious ETS, and hence a related need for continued free allowances to energy-intensive industries.

Turning to RES, we find that despite the lack of specific renewable energy focus in the global regime, the EU repeatedly used the global climate talks to highlight their renewable industry development (e.g. ENDS, 2004). Moreover, the process leading up to the spring 2007 Council meeting was characterized by a shared feeling of urgency towards developing new global solutions and clear and ambitious statements from the EU (interviews in Brussels, June 2009). The Commission added to the pressure by explicitly arguing that the global situation warranted that the RES target be made binding (ENDS, 2007). The global climate media hype and the situation in the global negotiations enabled the Commission to induce enhanced the vertical integration in both cases. However, green certificate promoters in the Commission received no backing from the global regime as to the creation of a market measure, and that made market supporters less powerful in relation to RES than in the ETS.

To what extent did global organizations and institutions then facilitate the development of the two policies? Concerning the governance approach, the climate regime’s weight given to flexibility mechanisms continued to legitimize the further development of an ETS and a market approach to cutting emissions, but the regime could not do the same for RES. In both issue areas, the global backdrop provided the Commission with potent arguments for further vertical integration, and the Commission skillfully exploited the entrepreneurial possibilities provided by the global regime.

4. Concluding discussion

This paper started out with the question: why is the revised EU emissions trading system a centralized and further market-streamlined instrument while the new renewables policy gives the member states more leeway and follows a technology-specific governance approach – even though both target the same problem and were developed within the framework of an integrated climate policy package? Although there are complex forces at work and our evidence is incomplete thus far, we would hold that our comparison of these two cases can contribute to enhancing knowledge on the causal mechanisms at play in EU policy development processes more generally.

The Liberal Intergovernmentalism perspective draws attention to member-state positions, and how these reflect the internal distribution of economic power between industries. At a first glance, the EU policy outcomes correlate rather strongly with member-state positions. However, the mechanisms highlighted by this perspective (economic interests of dominant industries and superior information) do not appear to have been responsible for this. Hence, in the two cases examined here, it does not seem as if the member-state positions have followed from the patterns of domestic industry. Thus this perspective does not really enable us to understand national positions. While some of the differences between the outcomes may relate to the different positions of the least ambitious actor in the two cases, and to the actor with superior information (Germany in both issue areas), these two mechanisms would seem to fail in capturing the main forces at work. We can only conclude that it is difficult to identify whether the causal mechanisms highlighted by this perspective have been operative or not.

Turning to the Multi-level Governance perspective, we see that the basic assumptions in the Liberal Intergovernmentalism perspective may have led us astray: it is not primarily the industry that shapes the positions of governments and subsequently the governments that shape EU policy outcomes. Instead, entrepreneurial activity on the part of Commission officials and MEPs contributed significantly to shape member-state positions. This insight does not refute the importance of member states; rather it shows that their positions are influenced by European policy entrepreneurs. With both the ETS and RES, skillful entrepreneurship by the Commission succeeded in strengthening member-state support to vertical integration. Through network governance, the Commission influenced both European industries and member states to support a stronger market approach in the ETS. A Parliament-

initiated network managed to influence RES development, but in the opposite direction, helping to diffuse and strengthen the technology-development logic among member states. We can conclude that strategic leadership and network governance mechanisms contributed to shape the two policy outcomes. On the other hand, this perspective may easily lead us to overestimate the powers of actors situated in Brussels.

The New Institutional perspective shows that the networks explored in the multi-level governance perspective did not evolve *de novo*. Instead, structural and institutional configurations facilitated the development of a strong Commission-led ETS network and a significant parliamentarian-led RES network. Both networks were empowered by the strong relations of the Brussels-situated actors to industries – utilities in the first instance, the renewables industry in the latter. Even though skillful entrepreneurship can be crucial, no actor can accomplish much without structural and institutional backing. That the Commission had figured centrally in the establishment of the ETS back in the early 2000s, and that the most central organizational field in this issue area – utilities – was dominated by Europeanized large corporations, enabled Commission entrepreneurs to promote vertical integration successfully. In institutionalist language, the structural feedback mechanisms empowered certain entrepreneurs – the Commission and the major utilities.

Similarly, the decentralized nature of European renewables industry and policy created structural feedback mechanisms that empowered Germany and Spain and the renewable energy industry, while constraining the large utilities and the Commission. In parallel, the institutional feedback mechanisms at work within the field of renewables legitimized a continued focus on technology development rather than market governance in this policy area. In contrast, institutional feedback mechanisms legitimized the efforts of market proponents to strengthen the market character of the ETS, and hindered the energy-intensive industries in questioning the market design in the emission regulation.

We do not argue that structural-institutional feedback mechanisms determine policy outcomes. Contrary, the New Institutional hypothesis was not fully met. This study shows that institutional and structural feed-back mechanisms can be strengthened or countered by skilled policy entrepreneurs. Consider the ETS. This issue had not become heavily institutionalized by the turn of the century, and the feedback mechanisms were weak. When the ETS was developed in early 2000, few countries had long-standing traditions of carbon emissions regulations, and particularly not emissions trading. Thus, the Commission's vigorous entrepreneurship could really make a difference. However, due to opposition from central target groups, the Commission had to make a tactical retreat, allowing the establishment of

initially decentralized ETS structures and institutions – which proved not to work very well. In the revision process, the Commission was able to benefit from its generally strong position in the system, and succeeded in getting acceptance for higher vertical integration, more market-streamlining and generally improved structures and institutions. In this venture, the Commission was further helped by the generally increased salience of the climate change issue globally and within the EU.

Turning then finally to the International Regimes perspective, we see that the climate regime strengthened the Commission, but also to some extent the industries that favored a market approach in ETS and those that aimed for a technology-development approach in RES. This played out most strongly in the case of the ETS, where a more centralized and well-functioning system could be framed as important for stimulating further international progress. The climate regime provided market rules for emissions, but not for renewables. Although the Kyoto trading mechanisms have different design than ETS, they are founded on the same institutional logic and this legitimated a further strengthening of the market design in ETS. The lack of external backing made it harder for market proponents to garner support for the market approach in RES. However, it must be noted that the Commission, through skillful entrepreneurship, was able to exploit the stalemate in the internal climate talks to strengthen the vertical integration in both policies. They argued that if the EU presented ambitious and coherent EU-climate policies this would energize the international talks. The member states eventually supported this view and accepted a stronger degree of centralization than aimed for at outset. Because the degree of vertical integration was stronger in ETS at the outset, the final result was also stronger centralization in ETS than in RES.

Can this comparative study of the ETS and RES provide some general insights for EU policy research? We hold that it helps in identifying and defining the different causal mechanisms that drive EU policy developments, and contributes to the discussion on which actors are most powerful in EU policy development. Traditional theoretical approaches to EU studies attribute certain mechanisms to certain actors, and tend to highlight only a few mechanisms and a few actors as crucial in the Brussels game. Our study has indicated a more complicated picture, with many mechanisms and many actors contributing to affect the outcome. Importantly, we propose a re-organization of how to regard the actors and the mechanisms, thereby simplifying the analytical challenges. Table 5 classifies the mechanisms that operate in the EU policy processes in relation to two dimensions: the types of mechanisms on the one hand, and the societal sources of the mechanisms on the other.

Table 5. Classification of the four kinds of causal mechanisms that shape EU policy

		Kind of mechanism	
		<i>Institutional-structural</i>	<i>Entrepreneurial</i>
Mechanism origin	<i>EU-external</i>	Rules and norms of international policy regimes. Negotiation dynamics in international regimes. International media hypes.	Interpretation and change of rules and norms of regimes/ negotiation dynamics/media hypes.
	<i>EU-internal</i>	Institutional feedback. Structural feedback. Economic power distribution.	Network creation. Strategic leadership. Strategic use of information.

All four kinds of mechanisms operate in our four cases. However, we have seen that in some periods the cases were dominated by certain mechanisms, whereas at other times other mechanisms were at work. Moreover, a skillful entrepreneur may exploit EU-external signals to produce EU-internal networks, which subsequently turn into structures and institutional logics that again produce structural feedback mechanisms, as seen in the case of ETS. On the other hand, skillful entrepreneurs may exploit structural feedback mechanisms to create EU-internal networks to further strengthen structural and institutional feedback mechanisms with member state internal origin, as we saw with RES.

Although we have not been able to pinpoint the causal effect of the distribution of economic power and strategic use of information in the cases examined here, these may prove to be important, and are therefore included in our classification. What we do assume is that our cases reveal some of the general problems involved in analyzing their importance; they will tend to be so closely intertwined with the other mechanisms that it is difficult to identify whether or not they have had an independent effect. For instance, entrepreneurs will often be able to exploit superior access to information only if they create a network, and economic power will be effective only if the actor with the money also has a favorable structural position in relation to the policy area in question. This the utilities did not have in relation to RES, so here economic power did not make for any change.

Our fourfold classification does not attribute certain mechanisms to some actors, such as our four initial perspectives did. It is not only the Commission that can initiate networks: the member states and the Parliament can do this as well. Moreover, whether structural mechanisms favor member states or EU organizations will differ from case to case. The study presented here gives reason to expect differences as to which actors profit from the different

mechanisms, depending on the issue area. Policy entrepreneurial power is issue specific; those with the upper hand in one issue can be without clout in another. For instance, large pan-European corporations would seem to be more easily empowered in issue areas that are heavily regulated by EU policy at the outset, whereas national industry actors are more empowered in issues that are nationally regulated to begin with. Somewhat paradoxically, the European Parliament is stronger in issue areas where the member states still have the upper hand. Whereas the Commission is most powerful in areas where it was delegated some responsibilities at the outset. Moreover, it seems that global institutions and regulations work to strengthen the Commission on the expense of national governments. We have seen how the Commission has been able to exploit the global backdrop to strengthen its internal political clout – even though the global negotiations have come to a halt, and the global regime has not yet actually produced new formal rules.

This paper is only the first stage on our way toward drawing theoretical conclusions from our comparative studies of EU policy. The theoretical discussion has still to be developed further, but we believe that we have captured important causal mechanisms operating in the ETS and RES policy development. As our main preliminary finding, our study has shown that the differences in ETS and RES governance can to a considerable degree be explained by a combination of differing institutional feedback mechanisms and differing links between these EU policies and international institutions.

Sources

- Boasson, E. L. (2009) *Industry Change: Enhanced and Constrained by Multi-levelled Institutional Change*. Paper presented at EGOS, Barcelona July 2nd 2009, track 1. Multiple and contradictory logics in business systems.
- Bourdieu, P. and L. Wacquant (1992) *An Invitation to Reflexive Sociology*. Chicago: Chicago University Press.
- Carbon Trust (2008), *Cutting Carbon in Europe—The 2020 Plans and the Future of the EU ETS*. London: Carbon Trust Publication CTC734. June 2008.
- CEPS (2002). *Greenhouse gas emissions trading in Europe: Conditions for environmental credibility and economic efficiency*. Brussels: CEPS Task Force Report no.43.
- DiMaggio, P. J. and W. W. Powell ([1983] 1991) 'The Iron Cage Revisited', pp 63–82 in W.W. Powell and P. J. DiMaggio (eds.) *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press.
- Cléménçon, R. (2008) 'The Bali Road Map: A First Step on the Difficult Journey to a Post-Kyoto Protocol Agreement,' *Journal of Environment and Development* 17: 70–94.
- Codognot, M.K.; J.M Glachant, C. Hiroux, M. Mollard, F. Lévêque and M.A Plagnet (2003) *Mergers and Acquisitions in the European Electricity Sector*. Report. Paris: Centre d'économie industrielle.
- Commission (2007a) *Limiting Global Climate Change to 2 Degrees Celsius. The Way Ahead for 2020 and Beyond*. Communication. Brussels: European Commission.
- Commission (2007b) *Prospects for the Internal Gas and Electricity Market*. Communication from the Commission. Brussels: European Commission.
- Commission (2007c) *Proposal for a Directive on the Promotion of the Use of Energy from Renewable Sources*. Leaked draft, December 2009. Brussels: European Commission.
- Commission (2008) *Proposal for a Directive on the Promotion of the Use of Energy from Renewable Sources*. January 2008. Brussels: European Commission.
- Commission 2008. *The Support of Electricity from Renewable Energy Sources*. Commission staff working document. Brussels: European Commission.
- Commission 2008. *Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading System of the Community*. January. 23 Brussels: European Commission.
- Commission (2009) Report on Progress in Creating the Internal Gas and Electricity Market. Communication. November 3, Brussels: European Commission.
- Council (2008) *Brussels European Council 13–14 March 2009*. May 20, 2009. Brussels: Council of the European Union.
- Council (2009) *Brussels European Council 11–12 December 2009*. February 13, 2009. Brussels: Council of the European Union.
- Depledge, J. (2008) 'Climate Package Agreed', *Environmental Policy and Law*, 39/1, 2009:66-67.
- Directive 2001/77/EC on the Promotion of Electricity Produced from Renewable Energy Sources in the Internal Electricity Market. September 27, 2001. *Official Journal of the European Union*
- Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community and Amending Council Directive 96/61/EU. *Official Journal of the European Union*, 25 October 2003, L 275.

- Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community, in Respect of the Kyoto Protocol's Project Mechanisms. *Official Journal of the European Union*, 13 November 2004, L 338/18
- Directive 2009/28/EC on the Promotion of the Use of Energy from Renewable Sources, amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. April 23, 2009. *Official Journal of the European Union*, L140/63
- Directive 2009/29/EC of the European Parliament and the Council of April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community. *Official Journal of the European Union*, L140/63
- ECCP (2003) *Second ECCP Progress Report: Can We Meet our Kyoto Targets?* Brussels: European Climate Change Programme.
- EDF Group (2009) Annual Report 2008. Paris: Cedex.
- Endesa (2008) Annual Report. Operations review.
- ENDS (2004) Future Climate Change Policy Talks Gear Up. 17.11.2004.
- ENDS (2005a) 'Small Firms Good, Big Firms Bad' says Trittin. 10.03.2005.
- ENDS (2005b) German Renewable Feed-in Tariffs under Attack. 03.05.2005.
- ENDS (2005c) German Left to Lead on in Environmental Policy. 11.10.2005.
- ENDS (2006a) EU 'Must Get Real on Energy-Climate Policies'. 24.11.2006.
- ENDS (2006b) EU Set to Shift its Sights on Clean Energy. 11.12.2006.
- ENDS (2007) Green Energy Division Looms over EU Summit. 06.03.2007.
- ENDS (2008a) Energy Ministers Welcome Climate Package. 28.02.2008.
- ENDS (2008b) MEPs Back Beefed-up Renewable Energy Law. 11.09.2008.
- ENEL (2009) Annual Report 2008. Rome: ENEL
- E.ON (2009a) Company report 2008. Düsseldorf: E.ON.
- EPIA (2009) *Annual Report 2008*. Brussels: European Photovoltaic Association.
- EREC (2004) *Campaign for Take-Off: Renewable Energy for Europe 1999–2003*. Brussels: European Renewable Energy Council.
- EREC (2008) EREC Welcomes the Renewable Energy Directive Proposed by the European Commission. Brussels: EREC.
- EREC (2009) Organisations. Accessed January 19, 2010.
<http://www.erec.org/organisation.html>
- EUFORES (2009) European Parliamentarians for a Sustainable Energy Future. <http://www.eufores.org/>. Accessed January 19, 2010.
- EUFORES (2005) *Declaration of Edinburgh 2005*.
- EUFORES (2007) *Declaration of Berlin on the Upcoming Framework Directive for Renewable Energy Sources*.
- Eurelectric (2005) Integration Electricity Markets through Wholesale Markets: EURELECTRIC Road Map to Pan-European Market. Ref. 005-308-0010. Brussels: Eurelectric.
- Eurelectric (2008) Position Paper on Review of the EU Emissions Trading Directive (2003/87/EC). Brussels: Eurelectric.
- EWEA (2009) Winning with European Winds. Annual Report 2008. Brussels: European Wind Energy Association.
- Financial Times (2008) Europe 500 2008. http://www.ft.com/cms/s/0/05b22652-413c-11dd-9661-0000779fd2ac.dwp_uuid=4ca4e366-413b-11dd-9661-0000779fd2ac.html?nclick_check=1. Published June 24, 2008.
- Fligstein, N. (2008) *Euroclash*. Oxford: Oxford University Press.

- Fouquet, D. and T.B. Johansson (2008) 'European Renewable Energy Policy at "Cross Roads,"' *Energy Policy* 36: 4079– 4092
- GDF Suez (2009) 2008 Reference document. Paris: DGF Suez
- Glachant, J.M. (2003) 'The Making of Competitive Electricity Markets in Europe: No Single Way and No Single Market,' pp. 7–38 in D. Finon and J.M Glachant (eds.) *Competition in European Electricity*. Cheltenham: Edward Elgar.
- Gupta, S., D. A. Tirpak, N. Burger, J. Gupta, N. Höhne, A. I. Boncheva, G. M. Kanoan, C. Kolstad, J. A. Kruger, A. Michaelowa, S. Murase, J. Pershing, T. Saijo and A. Sari (2007) 'Policies, Instruments and Co-operative Arrangements,' in B. Metz, O.R. Davidson, P.R. Bosch, R. Dave and L.A. Meyer (eds.) *Climate Change 2007: Mitigation*. Cambridge: Cambridge University Press.
- Haas, E. B. (1958) *The Uniting of Europe*. Stanford: Stanford University Press
- Hooge, L. (2001) *The European Commission and the Integration of Europe. Images of Governance*. Cambridge: Cambridge University Press.
- Hooghe, L. and G. Marks (2001) *Multi-Level Governance and European Integration*. Oxford: Rowman & Littlefield.
- HM Government (2007) *Meeting the Energy Challenge: A White Paper on Energy*. London: HM Government.
- Iberdrola (2009) Shareholders and Investors. Accessed January 5th, 2010. <http://www.iberdrola.es/webibd/corporativa/iberdrola?IDPAG=ENWEBACCINVERSOR&codCache=12657486188647034>
- IPCC (2007) IPCC Fourth Assessment Report: Climate Change 2007. http://www.ipcc.ch/publications_and_data/publications_and_data_reports.htm
- Jacobsson, S and A. Bergek (2004) 'Transforming the Energy Sector: The Evolution of Technological Systems in Renewable Energy Technology,' *Industrial and Corporate Change* 13 (5): 815–847.
- Jacobsson, S. and L. Volkmar (2006) 'The Politics and Policy of Energy System Transformation – Explaining the German Diffusion of Renewable Energy Technology,' *Energy Policy* 34: 246–276.
- Jørgensen, K.E.; M.A. Pollack and B. Rosamond (eds.) (2006) *Handbook of European Union Politics*. Thousand Oaks: Sage.
- Kohler-Koch, B. (1999) 'The Evolution and Transformation of European Governance', pp. 14–35 in B. Kohler-Koch and R. Eising (eds.) *The Transformation of Governance in the European Union*. New York: Routledge.
- Krasner, S.D. (1983) 'Structural Causes and Regime Consequences: Regimes as Intervening Variables' in S.D. Krasner (ed.) *International Regimes*. Ithaca: Cornell University Press.
- Kruger, J. and Pizer, W.A. (2004). *The EU Emissions Trading Directive: opportunities and potential pitfalls*. Washington,: Resources for the Future.
- March, J.G. and J.P. Olsen (1989) *Rediscovering Institutions: The Organizational Basis of Politics*. New York: The Free Press.
- Marks, G., L. Hooghe and K. Blank (1996) 'European Integration from the 1980s: State-Centric v. Multi-level Governance,' *Journal of Common Market Studies* 34 (3): 341–378.
- Mazey, S. and J. Richardson (2006) 'Interest Groups and EU Policy Making' pp. 247–268 in J. Richardson (ed.), *European Union: Power and Policy-making*. London: Routledge
- Meyer, J.W; D.J. Frank, A. Hironka, E. Schofer and N.B. Tuma (1997) 'The Structure of a World Environmental Regime, 1879–1990,' *International Organization* 51 (4):623–651.

- Meyer, N.I. (2003) 'European Schemes for Promoting Renewables in Liberalized Markets,' *Energy Policy* 31:665–676.
- Mitchell, C. and P. Connor (2004) 'Renewable Energy Policy in the UK 1990–2003,' *Energy Policy* 32:1935–1947.
- Moravcsik, A. (1993) 'Preferences and Power in the European Community: A Liberal Intergovernmentalism Approach,' *Journal of Common Market Studies* 31 (4): 473–524.
- Moravcsik, A. (1998) *The Choice for Europe*. Ithaca: Cornell University Press.
- Moravcsik, A. and F. Schimmelfenning (2009) 'Liberal Intergovernmentalism' pp. 67–87 in T. Diez and A. Wiener (eds.) *European Integration Theory*. Oxford: Oxford University Press.
- Oberthür, S. and T. Gehring (eds.). (2006). *Institutional Interaction in Global Environmental Governance*. Cambridge, MA: MIT Press.
- Olsen, J.P. (2007) *Europe in Search of a Political Order*. Oxford: Oxford University Press.
- PAI (2006) *Poland's Fuel and Energy Sectors*. Warsaw: Polish Information and Foreign Investment Agency.
- Pierson, P. (1996) 'The Path to European Integration: A Historical Institutional Analysis,' *Comparative Political Studies* 29 (2): 123–163.
- Rademaekers, K., A. Slingenbergh and S. Morsy (2008) *Review and Analysis of EU Wholesale Energy Markets. Historical and Current Data Analysis of EU Wholesale Electricity, Gas and CO2 Markets*. Report for the European Commission DG TREN. ECORYS: Rotterdam.
- Reiche, D. and M. Bechberger (2004) 'Policy Differences in the Promotion of Renewable Energies in the EU Member States,' *Energy Policy* 32: 842–849.
- Río, P. and G. Unruh (2007) 'Overcoming the Lock-out of Renewable Energy Technologies: The Case of Wind and Solar Electricity,' *Renewable & Sustainable Energy Reviews* 11: 1489–1513.
- Rowlands, I.H. (2005) 'The European Directive on Renewable Electricity: Conflicts and Compromises,' *Energy Policy* 33: 965–974.
- RWE (2009) *Annual Report 2008*. Essen: RWE.
- Sahlin-Anderson, K. and L. Engwall (2002) 'Carriers, Flows and Sources of Management Knowledge', pp 3–32 in K. Sahlin-Andersson and L. Engwall (eds) *The Expansion of Management Knowledge*. Stanford: Stanford Business Books.
- Schimmelfenning, F. and B. Rittberger (2006) 'Theories of European Integration' pp. 73–95 in J. Richardson (ed.) *European Union: Power and Policy Making*. London: Routledge
- Schreurs, M. A. and Y. Tiberghien (2007) 'Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation,' *Global Environmental Politics* 7 (4):19–46
- Scott, W. R.; M. Reuf, P. J. Mendel and C. A. Caronna (2000) *Institutional Change and Healthcare Organizations*. Chicago: University of Chicago Press.
- Sims, R.E.H; R.N. Schock, A. Adegbulugbe, J. Fenhann, I. Konstantinaviciute, W. Moomaw, H.B. Nimir, B. Schlamadinger, J. Torres-Martínez, C. Turner, Y. Uchiyama, S.J.V. Vuori, N. Wamukonya and X. Zhang (2007) 'Energy Supply,' in B. Metz, O.R. Davidson, P.R. Bosch, R. Dave and L.A. Meyer (eds) *Climate Change 2007: Mitigation*. Cambridge: Cambridge University Press,
- Skjærseth, J. B. & Wettestad, J. (2008). *EU emissions trading: initiation, decision-making and implementation*. Aldershot: Ashgate.

- (2010), The EU Emissions Trading System Directive Revised (Directive 2009/29/EC), chapter in S. Oberthur and M. Pallemerts (eds.), *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy*. Brussels: ASP Editions
- Stone Sweet, A.; N. Fligstein and W. Sandholtz (2001) 'The Institutionalization of European Space,' pp. 1–28 in A. Stone Sweet, N. Fligstein and W. Sandholtz (eds.) *The Institutionalization of Europe*. New York: Oxford University Press.
- Sæverud, I. and Wettstad, J. (2005) 'Norway and Emissions Trading: From Global Front-Runner to EU Follower', *International Environmental Agreements*. 6 (1): 91-108
- Thornton, P. (2004) *Markets from Culture*. Stanford: Stanford Business Books.
- Turmes, C. (2005) 21 Renewable Energy for the XXI Century. Power point presentation. Accessed January 19, 2010. <http://www.eufors.org/index.php?id=92>
- Vattenfall (2009) Annual Report 2008. Stockholm: Vattenfall
- Wettstad, J. (2005) 'The Making of the 2003 EU Emissions Trading Directive: Ultra-Quick Process Due To Entrepreneurial Proficiency?' *Global Environmental Politics*, February 2005, vol.5, no.1, pp.1–24.
- Wettstad, J. (2009a) 'EU Energy-Intensive Industries and Emission Trading: Losers Becoming Winners?', *Environmental Policy and Governance*, vol.19, No.5, pp.309–320.
- Wettstad, J. (2009b), European Climate Policy: Towards Centralised Governance? *Review of Policy Research* 26 (3), pp.311-329.
- Wurzel, R.K.W. (2008), The Politics of Emissions Trading in Britain and Germany, report for the Anglo-German Foundation for the Study of Industrial Society, October 2008.