The political effects of climate policy: Policy feedback from the European Union Emissions Trading System

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For Lily

Abstract

Greenhouse gas emissions trading has been widely promoted as a policy instrument that overcomes well-known political barriers to climate change mitigation. But others contend its political consequences make climate mitigation more difficult. However, few in-depth, theoretically-informed studies directly assess these claims. This thesis addresses these gaps by exploring the circumstances in which emissions trading generates policy feedback influencing subsequent political processes by reinforcing or undermining political support for the original policy.

The study focuses on the European Union Emissions Trading System (EU ETS), the world's largest and longest-operating trading system, combining the existing policy feedback literature with related literatures on emissions trading and EU policy making. Through document analysis and elite interviews, it examines the evolution of the ETS from 1998 to 2018, tracing its effects on actors, resources, and policy preferences over time.

This analysis reveals that while EU policy makers anticipated political obstacles to adopting the ETS, they gave less consideration to post-adoption policy feedback. Indeed, the unintended feedback effects of the ETS were significant. One such self-reinforcing effect was the growth of a network of actors – such as industry associations and environmental NGOs – that became involved in subsequent policy-making processes and largely supported emissions trading. However, self-reinforcing feedback also stymied attempts to recalibrate the ETS to fit changing conditions. Other, self-undermining feedback reduced support for the status quo policy but facilitated political opportunities for policy centralization and steeper emission reductions. Self-reinforcing and self-undermining policy feedback therefore co-existed and interacted in subtle ways not fully explained in the existing literature.

These findings are useful to those studying the long-term political viability of climate mitigation policy. They also contribute to the existing literature on policy feedback by analyzing a regulatory policy area in which feedback has been less explored. Finally, for EU scholars, they bring into sharper focus the endogenous influence of existing EU public policies on subsequent politics.

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Acknowledgements

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Abbreviations

AEII – Alliance of Energy Intensive Industries

ALDE – Alliance of Liberals and Democrats for Europe

CAN Europe – Climate Action Network Europe

CDM – Clean Development Mechanism

Cefic – European Chemical Industry Council

CEMBUREAU – European Cement Association

Cerame-Unie – European Ceramic Industry Association

CMIA – Climate Markets and Investment Association

DG CLIMA – Directorate-General for Climate Action

DG ENV – Directorate-General for Environment

ECJ – Court of Justice of the European Union

ENVI – Committee on the Environment, Public Health, and Food Safety

EP – European Parliament

EPP – European People's Party

EU – European Union

EU ETS – European Union Emissions Trading System

Eurelectric – Union of the Electricity Industry

Eurofer – European Steel Association

GHG – Greenhouse gas

IETA – International Emissions Trading Association

IPCC – Intergovernmental Panel on Climate Change

ITRE – Committee on Industry, Research and Energy

LRF – Linear Reduction Factor

MSR – Market Stability Reserve

NAP – National Allocation Plan

PKEE – Polish Electricity Association

S&D – Socialists and Democrats

UNFCCC – United Nations Framework Convention on Climate Change

WWF – World Wide Fund for Nature

Chapter 1

Designing climate policy: Investigating the role of policy feedback

1.1 Introduction

Human-induced climate change is one of the most important long-term challenges facing humanity. Climate mitigation policy, which is aimed at reducing greenhouse gas emissions and limiting the rise in global average temperatures, is crucial to reducing the negative impacts of climate change during the 21st century and beyond (IPCC, 2014). The number of climate mitigation policies has grown at a rapid rate in the past two decades (Fankhauser et al., 2016; Schmidt and Fleig, 2018), and in many cases these policies have become more stringent over time (e.g., Schaffrin et al., 2015). These developments have unfolded as climate governance in general is becoming increasingly polycentric, with action occurring in multiple and overlapping jurisdictions (Jordan et al., 2018, 2015; Ostrom, 2010; Wettestad and Biedenkopf, 2018). Growing polycentricity has resulted in policy experimentation occurring in many important domains, from the local through to the global level (Hilden et al., 2017).

However, there is also evidence of policy failure, failed policy adoptions, and even policy dismantling and retrenchment. High-profile cases of failed policy adoption include the European Union's unsuccessful attempt to introduce a carbon and energy tax originally proposed by the European Commission in 1992 (Skjærseth, 1994), and the multiple rejected proposals for a cap-and-trade system in the United States (Skocpol, 2014, 2013). There have also been high-profile cases of policy dismantling, including Australia's emissions trading system (Pearse, 2018), renewable energy support in France and Spain (Cointe, 2015), and on-going dismantling attempts in the United States (Environmental Protection Agency, 2017).

Additionally, decarbonization is still not proceeding quickly enough. The 2015 Paris Agreement committed participating nations to limiting climate change to the internationally-agreed target of a temperature rise less than 2°C above pre-industrial global average temperature, and as close as possible to 1.5°C (UNFCCC 2015, p. 22). It also called for a peaking of emissions as soon as possible and reaching net-negative emissions in the second half of the 21st century. But there is a long-standing "emissions gap" between these goals and existing policy commitments (United Nations Environment Programme, 2017). Current policy commitments are not expected to limit warming to below the 2°C temperature limit (Climate Action Tracker, 2018). Although emissions of carbon dioxide from fossil fuels and industry appeared to peak in 2014-2016, they are projected to rise again in 2017 (Jackson et al., 2017). This paradox – a growing policy and governance response to climate change alongside continued failure to peak, let alone reduce, global emissions – is a vital concern moving forward.

The inadequacy of climate policy is in part due to the nature of the transition to a low-carbon society. Reducing greenhouse gas emissions requires large-scale changes to many of modern society's most important systems, such as energy and agriculture (IPCC, 2014). Existing energy and other systems can be locked into a high-emissions pathway because of the long lead-times needed for investment (Unruh, 2002, 2000; Unruh and Carrillo-Hermosilla, 2006). Existing carbon-intensive systems also have strong support from many policy makers and powerful business incumbents (e.g., Downie, 2017). This creates significant political barriers to adopting, maintaining, and updating climate mitigation policy (Grubb, 1990; Paterson, 1996).

Consequently, increasing discussion in the academic literature has turned to the need to design climate policies that create self-reinforcing dynamics to lock in greenhouse gas reductions and steadily increase political support for further mitigation (Jordan and Matt, 2014; Levin et al., 2012; Meckling et al., 2015; Skjærseth, 2018, pp. 498–499). This idea builds on the work of Unruh (2000) on carbon lock-in but focuses on creating intentional, desirable forms of lock-in to preserve and strengthen decarbonization after policy adoption. One example of such desirable lock-in is when a policy creates or strengthens constituencies that have an interest in deeper mitigation

(Levin et al., 2012; Meckling et al., 2015). However, policy lock-in risks creating "policy dead-ends", in which sub-optimal policies become difficult to modify or repeal, such as incentives for bioethanol production in the United States (Biber et al., 2017, p. 639; see also Rietig and Laing, 2017).

This thesis aims to contribute to this rapidly evolving literature through a long-term, historical study of the politics surrounding the European Union Emissions Trading System (EU ETS), a major instrument in the EU's climate mitigation policy mix. In order to examine how the ETS affected climate mitigation politics after its adoption, it uses the theoretical concept of policy feedback –- denoting the political effects generated by a public policy (Pierson, 1993; Skocpol, 1992; Skocpol and Amenta, 1986). It examines whether and how policy feedback was important in the ETS case, and if that feedback reinforced or undermined the policy and its goals, including the ultimate goal of reducing greenhouse gas emissions. In doing so, it seeks to contribute to the theoretical and empirical understanding of the EU ETS and its development, to the analysis of how climate policy has – or does not have – policy feedback effects on climate politics, and to identify lessons for the future in this vital and rapidly developing area of policy making.

The rest of this chapter is organized as follows: Section 1.2 gives an overview of the existing literature on climate mitigation politics and the recent shift in that literature towards studying post-adoption policy dynamics. Section 1.3 examines the literature on the politics of emissions trading, a prominent policy instrument in the EU's climate policy mix, some of whose political effects have been noted but are still understudied in the existing literature. Section 1.4 provides an overview of the concept of policy feedback and provides a brief overview of the existing literatures on the topic. Section 1.5 presents the case selection and an overview of the research design. Section 1.6 focuses on the aims and objectives of the thesis, including the research questions. Section 1.7 provides an overview of the rest of the thesis and concludes this chapter.

1.2 Post-adoption climate politics: Existing perspectives

Alongside the expansion in the number of climate change policies in many jurisdictions, there has been a parallel increase in attention to the politics of climate mitigation policy by academic researchers. This section provides a brief overview of this literature, in order to make clear the questions researchers are studying and thus to orientate and contextualize this study.

One prominent area of focus in the literature on climate politics is policy adoption, including research that tracks the amount of existing climate legislation (e.g., Nachmany et al., 2015), examines the explanatory factors which influence policy adoption (e.g., Fankhauser et al., 2016; Never and Betz, 2014), and studies the adoption of individual climate policy instruments, including emissions trading (Meckling, 2011a; Skjærseth and Wettestad, 2008a). In addition, very recent political science scholarship has placed an increasing focus on *post-adoption* climate policy dynamics. This rapidly expanding area of research has identified a number of factors which influence the post-adoption stability, expansion, or dismantling of climate policy. These factors include the existing economic context (Biber et al., 2017, pp. 618–639), the actions of policy entrepreneurs (Boasson and Wettestad, 2014; Rabe, 2016; Skjærseth and Wettestad, 2010a), international regimes (Fankhauser et al., 2016; Skjærseth and Wettestad, 2010a), policy instrument choice (Kelsey and Meckling, 2018), the comparative influence of legislatures and bureaucracies on policy design (Meckling and Nahm, 2018), and party politics (Pearse, 2018; Tobin, 2017). A number of these studies test factors against one another to explore which are most important in explaining policy outcomes (e.g., Skjærseth and Wettestad, 2008a; Tobin, 2017).

While factors such as party politics and the existing economic context are potentially important in explaining policy development, policy makers rarely operate on a blank canvas: existing policy also plays an important but greatly under-appreciated role (Hacker, 1998; Mettler, 2016). In line with Schattschneider's observation that "new policies create a new politics" (1935, p. 288), a growing literature in the past decade has focused on the role of existing climate policy in influencing subsequent political processes (Boasson and Wettestad, 2013; Jordan and Matt, 2014; Kelsey and Zysman, 2013; Lockwood, 2014, 2013; Meckling et al., 2015; Skjærseth, 2018; Skogstad, 2017; Vormedal, 2012).

This literature – which addresses the post-adoption effects of climate policy – covers a wide range of political jurisdictions, but much of it focuses on North America (Kelsey and Zysman, 2013; Stokes and Breetz, 2018) and the European Union (Boasson and Wettestad, 2013; Jordan and Matt, 2014; Skogstad, 2017), including particular member states such as the United Kingdom (Lockwood, 2013; Rietig and Laing, 2017) and Germany (Lauber and Jacobsson, 2016). The policy instruments that are most commonly studied include subsidies (Lauber and Jacobsson, 2016; Stokes and Breetz, 2018), market-based instruments such as emissions trading (Boasson and Wettestad, 2013; Skjærseth, 2018), voluntary agreements (Jordan and Matt, 2014), and framework legislation (Lockwood, 2013; Rietig and Laing, 2017). A few studies take a broader view, examining a large number of policies from multiple jurisdictions (Aklin and Urpelainen, 2013; Meckling et al., 2017, 2015).

The literature above can be usefully divided into two strands. The first strand focuses on policy instrument choice and sequencing, analyzing whether certain instruments are more or less effective at building political support (e.g., Meckling et al., 2015). This perspective makes comparisons across a wide range of cases and focuses on how policies are sequenced over time. For example, Meckling et al. (2017) study policy sequencing for decarbonization in a number of cases, arguing that green industrial policy, once adopted, has made more stringent regulation possible. Stated more generally, they argue that policies which distribute benefits make the subsequent adoption of stronger policies that impose costs easier; in other words, “carrots buy sticks” (see also Biber et al., 2017).

The second strand focuses on if and how policy design affects subsequent politics (e.g., Jordan and Matt, 2014). These studies are more likely to focus on one or a small number of policies, and to trace processes and causal mechanisms in detail. Generalizing from a study of the regulation of greenhouse gas emissions from transport in the European Union, Jordan and Matt (2014) argue that there are a number of design elements that make policy change more likely, including the presence of a regular review mechanism. Many of these studies focus on longer-term policy making, and especially multiple policy cycles (e.g., Müller and Slominski, 2013; Stokes and Breetz, 2018) 2018). In the context of this literature, the next section focuses on the post-adoption politics of a prominent climate policy instrument: emissions trading.

1.3 The post-adoption politics of emissions trading

This thesis focuses on a very prominent example of a market-based instrument used for climate policy: greenhouse gas emissions trading, and specifically the variant known as cap-and-trade (see Tietenberg, 2006). In a cap-and-trade system, organizations are allocated allowances that allow them to release a certain amount of greenhouse gases into the atmosphere. The sum of these allocations is the limit of greenhouse gases that can be released by those sectors (i.e., the cap). Allowances are usually either distributed for free to specific recipients (in the ETS literature, this is known as free allocation) or auctioned to the highest bidder. The target groups covered by the system – and in many cases other actors such as financial institutions– can trade these allowances (this being the "trade" in cap-and-trade). The ability to trade allowances provides organizations with the option to either reduce emissions or buy allowances. According to economic theory, this feature of emissions trading allows reductions to be made where they are most cost-effective, leading to a reduced overall cost of mitigation in the economy as a whole (Tietenberg, 2006).

Emissions trading is an important component of the international policy mix related to climate mitigation. It was first brought to international prominence during the negotiation of the 1997 Kyoto Protocol, when the United States successfully pushed it as part of a mixture of international mitigation commitments (Grubb et al., 1999). The story of the expansion of emissions trading from a small flexibility provision in the Kyoto Protocol to a major domestic policy instrument is well known. It was given an important boost when the European Union moved to adopt the EU Emissions Trading System between 1998 and 2003. This carried a certain irony because the EU had strongly opposed the inclusion of emissions trading in the Protocol (Wettestad, 2005). In the mid- to late-2000s, attempts were made to build a global carbon market that would eventually grow to connect emissions trading systems around the world (European Commission, 2006; Meckling, 2011). These attempts were largely not successful, due to the failed adoption of emissions trading (e.g., in the US, see Skocpol, 2013), the dismantling of existing policies (e.g., in Australia, see Pearse, 2018), and the incompatibility between the emissions trading systems that were already successfully put in place (Green, 2017; Green et al., 2014). However, emissions trading became an increasingly-used policy instrument for climate mitigation, growing from only the EU ETS in 2005 to 23 implemented systems in 2017 (World Bank, 2018). In the same period, these systems grew from covering 3.5% of global greenhouse gas emissions in 2005, to 10% in 2017 (World Bank, 2018). By 2020, China plans to adopt a national emissions trading system covering electricity generation, which if successful will significantly expand the instrument's global coverage (Biedenkopf et al., 2017; World Bank et al., 2017, p. 13).

However, emissions trading systems have also been beset by a number of high-profile problems. One is that their emission reduction targets are generally not sufficient when viewed in light of the large and increasing gap between actual reduction targets and those needed to meet the goal of staying below the 2°C or 1.5°C temperature target (see Section 1.1). This is arguably a problem common to many types of policy instruments used for climate mitigation and is not limited to emissions trading (Climate Action Tracker, 2018). A second problem is related to the specific instrument: allowance prices that are considered too low to drive low-carbon innovation, change behavior to lead to emission reductions, and raise revenue for climate mitigation and other uses (European Commission, 2013; Green, 2017). The phenomenon of allowance prices remaining lower than projections is common to many emissions trading policies and can therefore be seen as a broader issue than the design of any one system, which vary considerably (Tvinnereim, 2014).

Emissions trading's reach, prominence, and problematic track record of use in practice mean that its effect on politics is a question of great importance in the broader literature on the post-adoption effects of climate policy. However, the literature on the politics of emissions trading is split on whether the instrument helps or hinders the broader politics of mitigation. The more positive view is that the instrument can make subsequent policy adoption more likely and build support for further climate mitigation. Early studies along these lines focused on policy adoption, and argued that emissions trading would make adoption more likely by facilitating emission reductions that were more cost-effective when compared to other policy instruments such as direct regulation (Ellerman, 2000; Grubb, 1990; Meckling, 2011; Tietenberg, 2006). More recent research places more attention on post-adoption dynamics. The lower cost of compliance under emissions trading is used to argue that policy actors would support its gradual expansion to more economic sectors (Svendsen, 1998; Tietenberg, 2006). Others highlight how emissions trading creates new constituencies that further climate mitigation because of their financial interest in the policy instrument (Meckling, 2015; Newell and Paterson, 2010; Voss and Simons, 2014).

However, other research provides evidence that emissions trading can also generate weak or even negative political effects. Meckling et al. (2015) argue that emissions trading policies have had relatively weak effects on political support, due to low prices for emission allowances in most systems around the world (Tvinnereim, 2014). Emissions trading can create pressure to dismantle or weaken other types of climate and energy policy, such as the role of the EU ETS in the push to reduce renewable energy subsidies and reduce the stringency of renewable energy targets in the European Union (Nilsson et al., 2009). Another potential problem is that, once in place, emissions trading can reduce the scope to adopt other, potentially more stringent, policy instruments (Lohmann, 2012, 2011; Meckling et al., 2015). Others argue that emissions trading is being used as a strategy to avoid more stringent policy alternatives such as direct regulation (Paterson and P-Laberge, 2018).

To summarize, the political benefits and drawbacks of emissions trading have been theorized and studied, sometimes by the same authors. In general, many of these studies discuss potential political effects, sometimes written before the policy in question was fully operational (e.g., Newell and Paterson, 2010; Svendsen, 1998). These studies make important theoretical propositions that can be studied by further empirical research. Others focus on broad issues with emissions trading across a range of cases and at a low level of detail (Meckling et al., 2017, 2015). Of those that focus in more detail on a single case, the focus in many is on the policy positions of various groups of actors, and not necessarily how changes created by emissions trading had an impact on subsequent policy making (e.g., Voss and Simons, 2014).

1.4 A policy feedback approach

This thesis employs a theoretical framework centered on the concept of policy feedback: the political effects generated by a public policy (Pierson, 1993; Skocpol, 1992). Since the introduction of the concept by Skocpol and Amenta (1986), and its further elaboration by Skocpol (1992) and Pierson (2000, 1994, 1993), scholars have found evidence of policy feedback having a significant impact on long-term policy development across a wide range of cases (see, e.g., Campbell, 2012).

Policy feedback is also associated with the trend in political science to pay more attention to the temporal aspects of policy making:

> "Contemporary social scientists typically take a "snapshot" view of political life, but there is often a strong case to be made for shifting from snapshots to moving pictures. This means systematically situating particular moments (including the present) in a temporal sequence of events and processes stretching over extended periods. Placing politics in time can greatly enrich our understanding of complex social dynamics" (Pierson, 2004, pp. 1–2).

Therefore, policy feedback is often studied not over a short period of time (the snapshot approach), but over decades to trace the effects of policy and their political consequences (the moving picture approach). Policy feedback theory is especially prominent in studies of welfare state policy (Campbell, 2003; Mettler and Soss, 2004; Pierson, 1994; Skocpol, 1992; Weaver, 2010). In addition, it has also been used to study a wider range of policy issues, a trend which started in the 1990s (Coleman et al., 1996; Pierson, 1996; Skogstad, 1998) and has accelerated since 2005 (Jordan and Matt, 2014; Patashnik, 2008; Skjærseth, 2018; Skogstad, 2017).

Based on and modifying Pierson (1993), three causal mechanisms of policy feedback are identified in this thesis according to whether the feedback operates via the original policy's impact on resources/incentives, on actors' policy interpretations and beliefs, or on the decision-making rules governing subsequent policy changes. Building on Pierson (2000) and Jacobs and Weaver (2015), a distinction is made between self-reinforcing policy feedback (which makes policy expansion or the continuation of the policy status quo more likely) and self-undermining feedback (which makes policy dismantling more likely).

This thesis also seeks to advance the policy feedback literature by testing an approach that distinguishes between the impact of policy feedback on three policy components: the policy instrument as a whole (in this case, the EU ETS), the instrument's goals (e.g., "cost-effective emission reductions"), and the instrument's settings (e.g., the economic sectors that are subject to the EU ETS). This distinction allows analysis of situations in which policy feedback affects subsequent politics in complex ways, e.g., by reinforcing the policy instrument while undermining that instrument's ultimate goals. This approach is especially useful in a policy area like climate change, where the degree of uncertainty and technical complexity is high and early policy decisions can lock in suboptimal approaches.

Prior theorizing on feedback mechanisms usefully provides a set of expectations about the types of policy feedback that are more likely to be present in the EU ETS case. Existing research on emissions trading and policy feedback (Boasson and Wettestad, 2013; Patashnik, 2008; Skjærseth, 2018) provides a starting point for how these mechanisms could be expected to work. The same is true for the self-reinforcing/self-undermining distinction and its use when thinking about the ultimate political consequences of policy design. Disagreements in the literature on the overall political consequences of emissions trading provide fertile ground for testing these broad theoretical propositions and prior empirical claims in an in-depth, long-term research design.

The policy feedback literature has already identified the conditions under which different mechanisms and self-reinforcing/self-undermining dynamics may be more or less likely (Jacobs and Weaver, 2015; Jordan and Matt, 2014; Patashnik, 2008; Pierson, 2000a; Weaver, 2010). Prior theorizing on this concept has hypothesized a set of causal mechanisms through which policy feedback takes place (e.g., Jacobs and Weaver, 2015; Pierson, 1993). Empirical research has tested these assumptions in a number of cases (see Chapter 3 for a detailed review of the policy feedback literature). This means that a study of the EU ETS using the policy feedback concept can be informed by existing theory and focus on aspects of the case that have been identified by prior researchers.

Climate change policy is one of the issue areas where policy feedback theory and related feedback concepts are being increasingly used. As noted in Section 1.2, climate mitigation policy as a whole has a particularly wide-ranging and ambitious aim: to fundamentally reconfigure the core systems of modern society like energy, agriculture, and transportation through a process of decarbonization. Policy with the explicit aim of such deep social change would, in turn, be widely expected to have some effects on politics. In addition, much climate policy is explicitly oriented toward the long-term: witness the regular references to 2050 and the second half of the 21st century (e.g., European Commission, 2016, 2011). Over these longer time scales, policy instruments and mixes can be expected to be in operation – at least in some form – over many decades, increasing the importance of effects after policy adoption.

The literature on climate policy is now beginning to engage explicitly with issues of policy feedback (Jordan and Matt, 2014; Lockwood, 2013; Skjærseth, 2018; Skogstad, 2017). Lockwood (2013) argues that the UK Climate Change Act produced some self-reinforcing policy feedback but not necessarily enough to protect it from changes in party politics. Jordan and Matt (2014) argue that the EU voluntary agreement on automobile greenhouse gas emissions was replaced by more stringent regulation in part because it did not create sufficient self-reinforcing policy feedback. They also call for a greater focus on the intentional creation of policy feedback by policy actors (p. 228), a topic that has begun to appear in the policy feedback literature related to other policy issues (e.g., in labor policy, Hertel-Fernandez, 2018). Skogstad (2017) identifies a shift from self-reinforcing to self-undermining policy feedback in EU biofuels policy because of changes how actors interpreted its effects. Skjaerseth (2018) argues that EU member state experiences with various EU climate policies in the 2020 Climate and Energy Package had important effects on the positions they adopted during the negotiation of the 2030 Climate and Energy Framework. In their comparative study of emissions trading systems, Wettestad and Gulbrandsen (2018) discuss path dependencies and self-reinforcing feedback as a possible factor in explaining the policy development of emissions trading systems. These factors were mentioned in cases on the EU ETS (Wettestad and Jevnaker, 2018), the RGGI (Lygre and Wettestad, 2018), and the California ETS (Bang et al., 2018). This study seeks to go a step further, focusing on policy feedback as the main theoretical concept being analyzed, and extending the analysis both in time and into other areas that are key to this type of analytical approach.

1.5 Case selection and research design

This thesis examines the policy feedback generated by greenhouse gas emissions trading through an analysis of the European Union Emissions Trading System (EU ETS). The EU ETS represents a useful case for several reasons. First, it is the world's largest GHG emissions trading system. In 2017, it accounted for 80% of the volume traded in the global carbon market and 74% of its overall financial value (Point Carbon, 2018, p. 3). In 2016, it covered approximately 40% of the European Union's greenhouse gas emissions, which is around 5% of total global emissions (European Environment Agency, 2017, p. 7). It is therefore one of the most extensive climate policies in the world. Second, given its scale and role as a "cornerstone" of EU climate policy, the EU ETS would be expected to create some political effects. Third, it has a longer policy history than any other GHG emissions trading instrument. As of January 2018, policy making related to the EU ETS has been active since 1998 (i.e., twenty years) and the policy itself has been operating since 2005 (i.e., thirteen years). This is long enough for slower, longer-term political processes to play out. In comparison, only two of the other existing cap-and-trade systems (the New Zealand ETS and the RGGI) were operating by 2009 (ICAP, 2017). Therefore, it satisfies the widely-recognized standard in policy studies of examining change over a period greater than ten years (e.g., Jenkins-Smith et al., 2014, pp. 192-193).

In fact, since it began operation, the EU ETS has been through a near-continuous process of reform (Jevnaker and Wettestad, 2017; Skjærseth and Wettestad, 2010b). Since its original adoption, six major pieces of ETS-related legislation have been agreed by the European Union, as well as a large number of other modifications. This provides an opportunity to study multiple policy cycles and contribute to the literature on politics of the ETS, which largely consists of studies that focus on the policy making surrounding one or several pieces of legislation (see Chapter 2, which provides a review of this literature). The large number of distinct reform processes, which elicit explicit policy positions and other information, are useful to study how ETS politics changes over the time period and how that is shaped by prior versions of the policy.

Finally, the EU ETS has been a prominent case of the issue of low allowance prices. Allowance prices have averaged €10 over the lifetime of the policy and €6 since 2012 (European Environment Agency, 2012, 2011; Sandbag, 2018). This is lower than the average of €30 that was projected for 2020 in 2008 (European Commission, 2007c; Tvinnereim, 2014). The timing of the global economic crisis, coming after the ETS's adoption, meant that it had not been designed with that event in mind. This study will analyze how this long-term pattern of low prices affected the politics of the EU ETS.

The time period of study in this thesis stretches from 1998 when the proposal for emissions trading in the EU was first publicly mentioned (European Commission, 1998, p. 20), to 2018 when the most recent reform of the ETS (the 2018 Directive) was adopted (Official Journal of the European Union, 2018). In the multi-level governance context of the European Union, it mainly centers on EU-level policy making as opposed to national-level policy making, although policy feedback between the two are noted when and where relevant.

1.6 Aims and objectives

The aim of this thesis is to offer a systematic examination of the policy feedback created by the EU ETS and to understand how and why that feedback influenced subsequent policy-making processes. It examines if and how the "new policy" of the EU ETS – adopted in 2003 – created a "new politics" of decarbonization, and whether these new politics eventually reinforced or undermined the ETS itself, including its ultimate policy goals such as cost-effective emission reductions.

To reach this goal, a single-case qualitative research design was employed (Maxwell, 2005; Silverman, 2013). This type of qualitative case study requires an in-depth, focused effort, including the review of a large number of documents and interviews. Therefore, this study was framed as a within-case study of policy feedback that seeks both to test existing theory and attempt to build new theoretical insights to contribute to the literature.

The main method used was process tracing, "the analysis of evidence on processes, sequences, and conjunctures of events within a case for the purpose of either developing or testing hypotheses about causal mechanisms that might causally explain the case" (Bennett and Checkel, 2015, p. 7). Within that context, evidence sources included primary and secondary document analysis and elite interviews. Primary documents included official publications of the European Union institutions, non-public documents from those same institutions, position papers by non-governmental actors, video of policy debates, and news media reports on policy discussions. Secondary documents included studies from the existing and extensive academic literature on the EU ETS (see Chapter 2), as well as the grey literature produced by research institutes and think tanks. The thesis brings these existing sources together to answer the research questions. It also ties together different time periods of EU ETS policy making and looks at how they interact through policy feedback.

Within the overall aim of the thesis, three research questions were adopted:

1. To what extent and under what conditions did the EU ETS create policy feedback that subsequently influenced ETS-related politics?

2. Was the policy feedback created by the EU ETS self-reinforcing or self-undermining, and in relation to what policy elements: policy goals, the policy instrument, or policy settings?

3. To what extent were intentional design choices made that consciously aimed at creating policy feedback?

1.7 Plan of the thesis

Having identified these aims and objectives, the rest of this thesis is structured as follows. Chapter 2 reviews the history of the EU ETS and explains how existing literatures have analyzed it, placing special focus on the more political aspects including those related to policy feedback. Chapter 3 presents a new theoretical framework to study the policy feedback generated by the EU ETS, which identifies expectations in relation to the types of policy feedback that are more likely to be created by an emissions trading system. Chapter 4 discusses the overall methodological approach used, as well as the main data collection and analysis methods.

Chapters 5-7 present the results of the analysis of the EU ETS. Chapter 5 focuses on the time period between 1998 and 2009. It shows how policy-design decisions made during the adoption of the EU ETS had an important and long-lasting impact on the next cycle of policy making which culminated in the 2009 Directive. Picking up immediately after the agreement on the 2009 Directive, Chapter 6 examines the next phase of policy making between 2009 and 2015. This period witnessed the adoption of backloading and the Market Stability Reserve, two provisions that modified the volume of allowances in circulation in the ETS. These policy changes responded to the immediate problem of low allowance prices but were fundamentally shaped and constrained by previous policy decisions. Chapter 7 examines the policy making between 2013 and 2018 which culminated in the adoption of the 2018 Directive. This Directive prepared the ETS for a new phase up to 2030.

Drawing on the empirical findings in Chapters 5-7, Chapter 8 analyzes the results using the theoretical framework set out in Chapter 3. Chapter 9 addresses the research questions, identifies the key contributions made to the existing literatures, explores possible lessons for policy makers, and flags priorities for future research in this important and dynamic area of contemporary policy making.

Chapter 2

The EU Emissions Trading System: Existing perspectives

2.1 Introduction

This chapter situates the thesis within a number of existing academic literatures on the EU Emissions Trading System, spanning economics, law, political science, and other disciplines. In order to orient the reader, Section 2.2 provides a historical overview of the EU ETS and its development from 1998 to 2018, then presents and justifies the temporal and legislative focus of the thesis. Section 2.3 reviews the literatures on the ETS. Section 2.4 then focuses on research that examines the main theme of this thesis – the *politics* of the ETS. Section 2.5 reviews the main insights of this existing literature, which often offers "snapshot" accounts of the politics surrounding particular policy processes, namely the adoption of the 2003 Directive, the 2009 Directive, the Backloading Decision, and the Market Stability Reserve Decision.[1] Section 2.6 concludes.

2.2 A History of the EU ETS

To properly analyze the existing literature, it is necessary to first give a general overview of the EU ETS and its development between 1998 and 2018. The following section does not address the policy making surrounding ETS development. Policy making will be covered in later sections of Chapter 2 which review the existing literature on ETS politics, and in the empirical results in Chapters 5-7.

[1] Due to its recent adoption, the 2018 Directive has not yet been analyzed in the published, peer-reviewed literature.

2.2.1 Policy formulation and adoption (1998-2004)

In 1993, the European Commission – the EU executive institution whose responsibilities include proposing and implementing EU legislation – and the twelve EU member states publicly accepted the idea of emissions trading in the 5th Environmental Action Programme (Official Journal of the European Union, 1993, p. 67). However, during the negotiations that led to the 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC), the European Union opposed international-level emissions trading because of concerns that other developed countries would use it to lower their domestic emission reductions (Damro and Méndez, 2003; Grubb et al., 1999). Despite this opposition, the EU eventually agreed to emissions trading under the Kyoto Protocol in exchange for the United States agreeing to legally binding targets on greenhouse gases.

After the Kyoto Protocol was signed, the Commission placed emissions trading on the EU policy agenda in June 1998 as part of its communication on the implementation of the Protocol (European Commission, 1998). In that document, the Commission stated that "…the Community could set up its own internal trading regime by 2005" (1998, p. 20). After this initial communication, DG Environment moved from initial agenda setting to policy formulation by hiring the UK-based Foundation for International Environmental Law and Development (FIELD) and the US-based Center for Clean Air Policy (CCAP) to create scoping papers and early recommendations for the design of a greenhouse gas emissions trading system. These two organizations produced a number of reports (e.g., FIELD, 2000) which heavily influenced the Commission's proposals (European Commission, 1999, 2000a).

In 2000, DG Environment released a Green Paper on emissions trading, which served as the basis for consultations with the EU member states, the EU institutions, and EU-level interest groups. Most policy actors that were consulted accepted the idea of emissions trading, but there was widespread disagreement about the instrument's design (e.g., Skjærseth and Wettestad, 2008a, pp. 84, 96). In a follow-up to the Green Paper, the Commission convened the European Climate Change Programme (ECCP) working group on emissions trading from July 2000 to May 2001 (European Commission, 2000b; Twena, 2012, p. 180). An invitation-only network, the ECCP served as a venue for building sufficient political momentum for emissions trading (European Commission, 2000a).

After the ECCP completed its work, the Commission proposed emissions trading legislation – which would become the 2003 Directive – in October 2001 (European Commission, 2001b). The proposal was considered under the Ordinary Legislative Procedure[2], where the European Parliament and the Council of Ministers were required to approve legislation. The Council came to a joint position on the proposal (Council of the European Union, 2002c) and the European Parliament also released an opinion in October 2002, in which they put forward a number of amendments (European Parliament, 2002). After more negotiations between the Parliament and the Council, the 2003 Directive was enacted in October 2003 (Official Journal of the European Union, 2003). A second Linking Directive on links between the ETS and the Kyoto Protocol's flexibility mechanisms was approved in 2004 (Official Journal of the European Union, 2004). These two pieces of legislation set the parameters for the ETS for its first two trading periods: Phase I (2005-2007) and Phase II (2008-2012). Phase I was a "learning by doing" phase because it was understood as preparation for Phase II, which was a "Kyoto Protocol phase" when EU countries would be subject to their obligations under the UNFCCC (Vis, 2006). Together, the 2003 Directive and the Linking Directive created a cap-and-trade system that largely gave allowances to installations free of charge (free allocation). Member state governments allocated emission allowances with oversight from the Commission. This meant that the amount each installation received was due in large part to decisions within government ministries in each member state.

2.2.2 Implementation and the 2009 Directive (2003-2009)

The EU ETS began operation on January 1, 2005. Member state governments allocated more allowances than the level of verified emissions that actually occurred

[2] Known at the time as the co-decision procedure.

(a discrepancy known as “over-allocation”, e.g., Ellerman and Buchner 2008). This over-allocation, combined with the fact that allowances could not be traded after the end of Phase I, led to a drop in the allowance price from €30 to almost zero by the end of 2007 (Ellerman and Joskow, 2008).

As a result of these developments, combined with the need for the EU to agree to new overall emissions targets leading up to the 2009 UNFCCC meeting in Copenhagen, the EU ETS was reformed by the 2009 Directive. A parallel policy process led to the inclusion of emissions from aviation in the ETS, although this was later limited to EU-only flights (Andlovic and Lehmann, 2014; OJEU, 2009a). Under the 2009 Directive, the ETS cap and allocation were set at the EU level in the 2013-2020 trading period (Phase III). The emissions cap would reduce by 1.74% per year to reach the goal of a 21% reduction in 2020 compared to 2005. The 2009 Directive also added emissions from additional greenhouse gases other than carbon dioxide. However, these additions made little difference in the ETS’s overall scope, accounting for less than one percent of ETS sector emissions (European Environment Agency, 2014, p. 30). Finally, a differentiated policy on free allocation versus auctioning of allowances was agreed on, with electricity generation being subject to full auctioning from 2013, with exceptions for installations in Central and Eastern European Countries under Article 10c (Official Journal of the European Union, 2009b). The energy-intensive industries largely continued to receive free allowances, a decision justified by the risk of *carbon leakage*, when production moves to legal jurisdictions with less stringent controls on GHG emissions (European Commission, 2009).

2.2.3 Backloading and the Market Stability Reserve (2009-2015)

The 2009 Directive was agreed at the same time as the onset of the global financial crisis and the subsequent European economic crisis (Slominski, 2016). Emissions in the ETS sectors saw a large drop in 2009 (see European Environment Agency, 2014, p. 44). In addition, the overall number of surplus allowances in the ETS meant that there was less scarcity in the market as a whole. By 2012 the number of surplus allowances had reached one billion, equal to more than one year of emissions in EU

ETS sectors (European Commission, 2012b, pp. 4–5). This led to falling allowance prices, which dropped from a high of €32 in July 2008 to €7-8 in 2012, and a low of €3 in April 2013 (see Figures 5.2 and 6.2). Once emissions and allowance prices dropped, the overall bank of allowances began to be referred to as an allowance surplus (European Commission, 2012b, p. 4).

The European Commission's first proposed policy response to the allowance surplus was backloading, the temporary delay of the auctioning of 900 million allowances to slow the rise of the surplus and support higher prices. A consultation was run between July and October 2012, the proposal for backloading was introduced simultaneously in July 2012 and, after being initially rejected by the European Parliament in April 2013, was adopted in December 2013 (Official Journal of the European Union, 2013). The second response was the creation of the Market Stability Reserve (MSR), which would withdraw the equivalent of 12% of allowances in circulation from future auctions when the surplus rose above 833 million allowances. In 2012, the Commission released a report on the situation which marked the public start of another round of reform (European Commission, 2012b). The Commission introduced a legislative proposal in January 2014 after a consultation that started in November 2012, the European Council endorsed the concept at its October 2014 meeting, and legislation was adopted in October 2015 (European Commission, 2014; European Council, 2014; Official Journal of the European Union, 2015).

2.2.4 Looking towards 2030: The 2018 Directive (2013-2018)

The 2018 Directive set the initial design of the ETS for Phase IV (2021-2030). Heavily influenced by agreements related to the ETS in the October 2014 European Council conclusions (European Council, 2014), the European Commission organized two consultations: on carbon leakage from May-July 2014, on other aspects of the proposal from December 2014-March 2015, and issued a proposed directive in July 2015 (European Commission, 2015, p. 102). The negotiations between the Council and the European Parliament made significant substantive changes to the proposal, resulting in the 2018 Directive that was agreed in November 2017 and formally adopted in March 2018 (Official Journal of the European Union, 2018). The final Directive increased the LRF to 2.2%, doubled the intake rate of the MSR from 12% to 24% between 2019 and 2023, and created a provision which would begin cancelling MSR allowances starting in 2024 if their amount rose above the number of allowances that had been auctioned in the previous year. It also continued free allocation for energy-intensive industries under the carbon leakage list and expanded free allocation to the Central and Eastern European electricity generation industries under Article 10c.

2.2.5 Temporal and legislative scope of thesis

There were seven major pieces of EU ETS legislation decided through the Ordinary Legislative Procedure between 2001 and 2018 (see Table 2.1 below). This thesis focuses on the policy processes surrounding five of them: the 2003 Directive, the 2009 Directive, the Backloading Decision, the MSR Decision, and the 2018 Directive (bolded with an asterisk in Table 2.1). The Linking Directive and the Aviation Directive policy processes are not within the scope of this research. For the Aviation Directive this decision was made due to a number of factors, including that legislation on aviation has tended to be decided in parallel to that on other ETS topics and that the aviation industry is treated somewhat differently than other ETS sectors (e.g., with a separate type of emission allowances). Further research on the politics of that directive is, however, available (Andlovic and Lehmann, 2014; Pustelnik, 2016). The Linking Directive policy process was also not a major focus, although the process is discussed briefly in the context of the 2003 Directive in Section 5.2. (see Flåm, 2009; Skjærseth and Wettestad, 2008a, pp. 115–118). In addition, the effects of credits from the Kyoto Protocol flexibility mechanisms will be discussed in the context of backloading and the MSR.

In addition to the legislation set out below, a number of implementing regulations and decisions were adopted through comitology committees, staffed by the European Commission and the member states (with European Parliament oversight), that implement EU legislation and often make decisions on “substantial political, economic and financial measures" (Kaeding and Hardacre, 2013, p. 383). Important ETS-related decisions taken through comitology included the Commission's decisions on the National Allocation Plans of each member state for Phase I and Phase II, the implementing legislation regarding the carbon leakage list and the Article 10c free allocation, and decisions regarding the cross-sectoral correction factor that was put into place for Phase III. These processes are important for understanding the implementation and therefore the context of subsequent ETS policy making, and so will be part of the analysis in the empirical chapters.

The thesis focuses on three time periods in the empirical chapters. Chapter 5 focuses on the negotiation of the 2003 Directive, and how that Directive impacted policy making for the 2009 Directive. Chapter 6 focuses on backloading and the Market Stability Reserve, examining how these processes were impacted by the 2003 and 2009 Directives. Finally, Chapter 7 looks at the discussions on the 2018 Directive.

2.2.6 Exogenous events

A number of important exogenous events that impacted the ETS took place between 1998 and 2018. Perhaps the most important was the 2008 global financial crisis and the resulting EU economic and debt crisis (Slominski, 2016; Wettestad, 2014, p. 71). At the international level, the withdrawal of the United States from the Kyoto Protocol in 2001, the failure to agree a successor to Kyoto at the Copenhagen Conference in December 2009, and the adoption of the Paris Agreement in December 2015 were important milestones that each had important effects on ETS politics (Jevnaker and Wettestad, 2017; Skjærseth and Wettestad, 2008a).

Table 2.1 **ETS legislation decided under the Ordinary Legislative Procedure**

Title of Legislation	***Year Adopted***	***Description***
2003 Directive*	2003	• Allocation: Free allocation determined by EU member states; limited auctioning (3%). • Cap-setting: Sum of member state allocations with (increasingly stringent) oversight by Commission on overall level of allocation. • Scope: Electricity generation industry and energy-intensive industries.
Linking Directive	2004	• International credits: Set rules for use of international reduction credits (CDM/JI), linking with other emissions trading systems.
Aviation Directive	2008	• Scope: Included aviation activities.
2009 Directive*	2009	• Allocation: Made auctioning mandatory for most electricity generation and CCS; EU-level allocation; Free allocation to energy-intensive industries at risk of carbon leakage. • Cap-setting: Set at EU-level; 21% reduction from 2005 by 2020. • Scope: Minor scope expansion to new sectors/gases.
Backloading Decision*	2013	• Volume management: Delayed auctioning of 900 million allowances until the end of Phase III.
Market Stability Reserve Decision*	2015	• Volume management: MSR created to withdraw the equivalent of 12% of allowances in circulation from the auction share if the number in circulation rose above 833 million allowances. Backloaded allowances and other unallocated allowances placed in the MSR.
2018 Directive*	2018	• Allocation: Free allocation increased under carbon leakage list and Article 10c. • Cap-setting: 43% reduction compared to 2005 by 2030. • Volume management: Increased MSR withdraw rate to 24%/year (2019-2023) and allowance cancellation starting in 2024.

At the EU level, European Parliament elections in 2004, 2009, and 2014 – as well as the resulting changes to the Commission's leadership structure – also affected ETS politics. More generally, the expansion of the EU from 15 to 28 member states during the time period, as well as the UK's decision to leave the EU in 2016, shaped and reshaped coalitions in the Council of the European Union (Bocquillon and Maltby, 2017; Skjærseth and Wettestad, 2007). The entry into force of the Lisbon Treaty in 2009 also changed some decision-making rules in the Council of the European Union starting in 2017, impacting the negotiation of the 2018 Directive (see Chapter 7). The treatment of these events in the current study will be discussed further in Chapters 3 and 4.

2.3 The academic literatures on the EU ETS

This thesis seeks to contribute to an extensive, and growing collection of distinct academic literatures on EU emissions trading. A search of the Scopus database in October 2015 and January 2018, as well as a further literature review, identified 1,053 peer-reviewed documents that focus on the EU ETS.[3] An overview of these documents – with a categorization according to their area of focus – can be found in Table 2.2. As that table shows, 9% of the documents are themselves reviews of the ETS literature (e.g., Bailey, 2010; Branger et al., 2015; Convery, 2009; Ellerman et al., 2016; Laing et al., 2014; Zhang and Wei, 2010).

The largest single literature (33% of the total) focuses on the impact of the ETS on industrial sectors. The majority of these studies (75%) examine the impact on economic sectors that are covered by the ETS (the electricity generation, energy-intensive, and aviation industries). The substantive focus of this literature includes ETS impacts on costs (Jaraitė et al., 2010), innovation (Rogge et al., 2011), firm behavior (Engels et al., 2008), and carbon leakage (Demailly and Quirion, 2006).

[3] Scopus searches were carried out on October 25, 2015 and January 15, 2018 for journal articles, articles in press, reviews, notes, editorials, book chapters, and books. The following terms were searched for in titles, abstracts, and keywords: “European Union Emissions Trading System”; “EU Emissions Trading System”; “European Emissions Trading System”; “EU ETS”; "European Union Emissions Trading Scheme" “European Emissions Trading Scheme”; “EU Emissions Trading”.

Studies of the impact on the electricity generation industry make up the largest single focus (116 documents), an unsurprising result given fuel combustion's 65% share of ETS verified emissions in 2016 (European Environment Agency, 2017). However, the coverage of ETS sectors is uneven and not necessarily dependent on a sector's relative importance in the ETS. The sixty-eight analyses of the aviation sector (which was responsible for 3% of ETS emissions in 2016) are nearly equal in number to the seventy-four analyses of the energy-intensive industries (which were responsible for 32% of 2016 emissions from their industrial processes).

A second group of literatures (15% of the total) examines the ETS secondary market, where emission allowances are traded. One literature focuses on the determinants for allowance prices (Alberola et al., 2008; Benz and Trück, 2009; Koch et al., 2014). It emphasizes the importance of external factors, such as oil and gas prices, on allowance prices, as well as the key role played by regulatory decisions and announcements. The other literature focuses on the analysis of the overall market for allowances, including its market efficiency, the drivers behind the behavior of traders, and the incidence of speculation and hedging (Balietti, 2016; Chevallier et al., 2009; Montagnoli and de Vries, 2010).

A third group of literatures (around 15% of the total) focus on questions of policy design for the ETS. One literature focuses on the optimal approach to allowance allocation, especially regarding the choice between free allocation and auctioning (Hepburn et al., 2006; Quirion, 2009; Sartor et al., 2014). Another focuses on policy interaction between the ETS and other climate and energy policies. An especially prominent area of focus in this literature is the effect of renewable energy and energy efficiency support policy (such as feed-in tariffs) on the operation of the ETS and allowance prices, whether these effects are beneficial or detrimental, and the optimal mix of policies to reach certain policy goals (Böhringer et al., 2008; Lehmann and Gawel, 2013; Sijm, 2005). The last literature in this group focuses on a wider variety of design issues, for example related to the Market Stability Reserve adopted for the ETS in 2015 (see Table 2.1).

Table 2.2 **Existing academic literatures on the EU ETS**

Literature category	Documents	Illustrative example
Review article (9%)	99	(Laing et al., 2014)
Impacts on industry (33%)		
Aviation	68	(Anger, 2010)
Electricity generation	116	(Sijm et al., 2006)
Energy-intensive industries	73	(Demailly and Quirion, 2008)
General	90	(Anger and Oberndorfer, 2008)
Prices and market (15%)		
Allowance price drivers	119	(Alberola et al., 2008)
Secondary market	46	(Chevallier et al., 2009)
Policy design (15%)		
Allowance allocation	52	(Hepburn et al., 2006)
Policy interaction	45	(Lehmann and Gawel, 2013)
Other design issues	42	(Monjon and Quirion, 2010)
Policy and politics (11%)		
Linking and diffusion	50	(Biedenkopf et al., 2017)
Critical political economy	19	(Lohmann, 2009)
EU-level politics	46	(Skjærseth and Wettestad, 2009)
Other (17%)	183	(Bartels, 2012)
TOTAL	**1,053**	

Source: Scopus and further literature review.

Finally, the literatures that are most closely related to the present study focus on ETS politics and policy-making (11% of the total). One literature looks at the role of international and transnational policy diffusion in the development of the ETS – placing EU emissions trading in the context of other emissions trading systems and the global carbon market (Underdal et al., 2015). Much of this international/transnational literature discusses how the ETS acted as a source of policy diffusion (Biedenkopf, 2012; Biedenkopf et al., 2017; Torney, 2015). There is also growing attention to subsequent policy diffusion to the EU from other emissions trading systems or transnational networks (Paterson et al., 2014). This research suggests that the EU ETS was influenced by diffusion from other emission trading policies. For example, (Wettestad and Gulbrandsen, 2015, p. 25) argue that the centrally determined cap for the EU ETS – the linear reduction factor (LRF) – was inspired by the un-adopted Waxman-Markey emissions trading proposal in the United States. A second literature in the policy and politics group analyzes the ETS from a critical political economy perspective, which is skeptical of the appropriateness of emissions trading in general and the EU ETS in particular as a response to climate change (Lohmann, 2009; Vlachou and Pantelias, 2017). Researchers in this literature see the ETS as an inadequate approach to climate mitigation that benefits major polluting industries while failing to provide sufficient incentives for a low-carbon transition (Bryant, 2016; Vlachou and Pantelias, 2017).

The final literature in the policy and politics group focuses on EU-level politics surrounding the ETS (in contrast to the linking and diffusion literature, which is more oriented to the international level). This literature is the most closely related to the current study and analyzes many of the same topics. It is therefore the focus for the remainder of this chapter.

2.4 The EU-level politics of the EU ETS: A literature review

The EU-level politics literature highlighted in Table 2.2 addresses every major phase of the history of the ETS, with the exception of the recently adopted 2018 Directive. The literature is largely made up of political science research using qualitative methods (90% of the documents). The major exception to the dominance of political science involves four studies by economists using the public choice theory of politics (Olson, 1965) to examine allowance allocation in ETS Phase I (Anger et al., 2016; Markussen and Svendsen, 2005; Svendsen, 2005; Tschochohei and Zöckler, 2008).

Some ETS legislation receives a disproportionate share of the literature's attention (Table 2.3). By far the most-studied policy processes are those related to the 2003 Directive (a focus of 57% of the studies) and the 2009 Directive (a focus of 52% of the studies). One reason for the focus on these two directives is their importance. The 2003 Directive introduced the first major ETS for greenhouse gases and marked a significant shift for the EU on the topic, from skepticism to frontrunner (Wettestad, 2005). The 2009 Directive fundamentally reshaped the ETS and coincided with the rise of climate and energy issues to the high politics arena as part of the lead-up to the 2009 Copenhagen Conference (Boasson and Wettestad, 2013; Dreger, 2014). Another reason for the disproportionate attention is that more time has passed since these two directives were adopted (14 years for the 2003 Directive, 9 years for the 2009 Directive).

Table 2.3 **Legislation analyzed in "EU-level politics" ETS literature**

ETS Legislation	**Number of Studies**	**Example**
2003 Directive	25	(Skjærseth and Wettestad, 2008a)
Linking Directive	5	(Flåm, 2009)
Aviation Directive	2	(Andlovic and Lehmann, 2014)
2009 Directive	24	(Dreger, 2014)
Backloading Decision	6	(Skovgaard, 2017)
MSR Decision	5	(Wettestad and Jevnaker, 2016)

In comparison, the Backloading and MSR Decisions were also relatively high-profile, but largely did not go to the European Council level and were adopted relatively recently (4 years for backloading and 2 years for the MSR). The Linking Directive and Aviation Directive have attracted limited attention in the politics literature, despite the length of time that has passed since their adoption. This could be due to the relatively low salience of the Linking Directive, and the fact that most attention related to aviation has focused on controversy over the aborted attempt to expand the ETS to cover flights from outside the EU. This last topic has been very prominent in the legal literature, given the questions of international law that it brings up (Bartels, 2012).

Focusing specifically on individual pieces of legislation provides a limited understanding of the EU-level politics literature; nearly half of the studies (44%) have more than one ETS-related policy process as an empirical focus (Table 2.4). Therefore, it is useful to classify these studies by their overall focus. Studies of the policy process around one piece of legislation are indeed prominent (56% of the literature). However, studies of multiple policy processes are also common. Many focus on the connections between the 2003 and 2009 Directives from 1998 to 2009 (which make up 60% of the studies that focus on multiple ETS policy processes). These studies examine how the original ETS and its operation affected discussions on the push for centralization in the 2009 Directive (Boasson and Wettestad, 2013; Dreger, 2014; Müller and Slominski, 2013).

The second largest group of multiple-legislative studies focus on the Backloading Decision and the MSR Decision. These two pieces of legislation were adopted in two closely-coupled policy processes, and are largely studied together as a result (Jevnaker and Wettestad, 2017; Wettestad, 2014; Wettestad and Jevnaker, 2016, but see Skovgaard, 2017). Less emphasis is placed on connecting backloading and the MSR to previous policy processes (though they are often mentioned to build context). This is in part because an exogenous event – the economic crisis – played such an important role in that stage of policy making (see Skovgaard, 2017; Wettestad and Jevnaker, 2016). Skjærseth (2018) looks at the processes related to the 2009 Directive and the October 2014 European Council conclusions (which were a key stage in the 2018 Directive policy process, see Chapter 7). Finally, two studies analyze the time period from 1998 to 2015, which includes the 2003 Directive, the 2009 Directive, the Backloading Decision, and the MSR Decision (Wettestad and Jevnaker, 2018, 2016).

Table 2.4 **Overall focus of studies in "EU-level politics" literature**[a]

Overall focus of research	**Number Studies**	**Example**
2003 Directive[b]	12	(Skjærseth and Wettestad, 2008a)
Linking Directive	1	(Flåm, 2009)
Aviation Directive	1	(Andlovic and Lehmann, 2014)
2009 Directive	10	(Skodvin et al., 2010)
2003 to 2009 Directive (1998 to 2009)	11	(Meckling, 2011a)
Backloading/MSR Decisions	4	(Wettestad and Jevnaker, 2016)
2003 Directive to MSR Decision (1998 to 2015)	2	(Wettestad and Jevnaker, 2016)
2009 Directive to October 2014 European Council	1	(Skjærseth, 2018)

[a] There were 42 studies analyzed on this topic. Three studies were excluded because they focused on the National Allocation Plans decided through comitology (Anger et al., 2016; Skjærseth and Wettestad, 2008b; Tschochohei and Zöckler, 2008) , while a fourth was excluded because access was not possible (Skjærseth, 2014). [b] Skjærseth and Wettestad (2008a) focus on the 2003 Directive but also have a secondary focus on the Linking Directive.

The EU-politics literature has also placed more focus on certain policy actors. One key set of actors are the European Union institutions most involved in formulating and adopting ETS policies: the European Commission, the Council of the European Union, the European Parliament, and the European Council. Attention to each institution varies according to both the legislative focus of the research and its theoretical approach. Among these institutions, the Commission has received the most attention, given its key entrepreneurial role in the ETS's adoption and its centrality to subsequent policy reforms (see Section 2.2). A number of publications chose the Commission – and specifically the ETS staff in DG Environment and DG Climate Action – as their main focus of inquiry (Dreger, 2014; Skjærseth and Wettestad, 2010a; see also Skjaerseth, 2017). Both the Council of the European Union (the Environment Council) and the European Parliament (largely the Committee on the Environment, Public Health and Food Safety, or the "ENVI committee") are consistently studied as well (on the European Parliament, see especially Andlovic and Lehmann, 2014). The European Council has been studied at more varied levels of focus, given the variable amount of importance it has had in different ETS legislative cycles. On some legislative files its involvement had been limited (the 2003 Directive, the Linking Directive, the Aviation Directive, the Backloading Decision), while on others it played an important and, in some cases, crucial role (the 2009 Directive, the Market Stability Reserve Decision, and the 2018 Directive). Analyzed in conjunction with the Council of the European Council and the European Council are the EU member states and their national politics related to the ETS (Jevnaker and Wettestad, 2017, p. 111; Skjærseth, 2018; Skovgaard, 2017).

In addition to the EU institutions and the member states, non-governmental actors are also a prominent focus in the study of ETS politics. First are the three main groups of industries covered by the ETS: the electricity generation industry, the aviation industry, and the energy-intensive industries (including steel, cement, refining, paper, ceramics, chemicals, glass, and lime). These industries and their European interest associations are analyzed in most studies (e.g., Eurelectric, the Association of European Airlines, and the Alliance of Energy Intensive Industries). Some studies have looked at the distinction between how these two groups are regulated under the ETS (Skodvin et al., 2010), while other studies have focused attention on the energy-intensive industries (Wettestad, 2009), or the aviation industry (Andlovic and Lehmann, 2014).

Three other groups of non-governmental actors have attracted sustained attention: general business associations, market-intermediary associations, and environmental NGOs. General European business associations such as BusinessEurope play a prominent role in ETS politics and so are often included in academic analysis (Dreger, 2014; Jevnaker and Wettestad, 2017; Meckling, 2015; Skodvin et al., 2010). Organizations associated with market intermediaries, such as the International Emissions Trading Association and the Climate Markets and Investment Association, have their membership made up largely or completely by actors involved in the operation of the ETS secondary market. These actors have received increasing attention from the EU politics literature from the 2009 Directive onward (Meckling, 2015; Voss and Simons, 2014). Environmental NGOs coordinated by the Climate Action Network Europe have also been a focus of the literature since the beginning of the ETS process (Skjærseth and Wettestad, 2010b, p. 110; Wettestad, 2005, p. 10).

One key perspective has been the work of Skjærseth, Wettestad, and more recently Boasson and Jevnaker (Boasson and Wettestad, 2013; Skjærseth and Wettestad, 2008a; Wettestad, 2005; Wettestad and Jevnaker, 2016). Because these authors have placed sustained focus on the EU ETS since before its adoption, their collective body of work covers both the policy's initial adoption and all major policy changes since 2003 except, at the time of writing, most of the 2018 Directive policy process. The overarching research question that runs through this work is: which actors and institutions had more influence on ETS development: the EU member states, the EU institutions and EU interest groups, or international agreements? To address this question, the authors draw on theories of European integration developed in the 1990s (Marks et al., 1996; Moravcsik, 1998) as well as those on the interaction between EU policies and international regimes such as the UNFCCC (Oberthür and Gehring, 2006).[4] In general, they find that the influence of policy actors depends on the stage of policy making. The Commission has more influence in the early stages of the policy process due to its broad powers in policy formulation and initiation in the EU. In contrast, EU member states have more influence in the decision-making phase, alongside their co-legislators the European Parliament (see, e.g., Skjærseth and Wettestad, 2009, p. 119).

[4] See Skjærseth and Wettestad (2009, pp. 103–105) for a concise summary of these theoretical approaches. More recent research involving Boasson also draws on the concept of organizational fields (DiMaggio and Powell, 1983).

Aside from actors, some researchers have analyzed institutions as important factors in ETS politics. The long-running work by Skjærseth and Wettestad takes as one of its possible explanatory factors the institutions created by the international climate regimes under the UNFCCC (Skjærseth and Wettestad, 2010b, p. 104). They explore how rules adopted at the international level influenced the design of the ETS, and how the ETS in turn influenced the position of the European Union in negotiations on international emissions trading. In general, their findings suggest that international regimes were more influential when the ETS was being adopted, whereas the ETS, once it began operation, in turn affected the EU's preferences at the international level and the regimes themselves (Skjærseth and Wettestad, 2009, p. 110, 2010b, p. 119).

Skodvin et al. (2010) also examine the ETS from the perspective of European Union politics. Unlike Skjærseth and Wettestad, they examine the 2009 Directive and one aspect of the EU ETS – which industries were required to buy emissions allowances at auction after 2012. Drawing on the ETS case study, they argue that the energy-intensive industries were able to negotiate opt-outs to auctioning because of greater internal unity and veto-player allies in the Council of Ministers. Their core approach was aimed at explaining broader EU politics, and not the development of the EU ETS per se. Dreger (2014) studies the role of knowledge in the Commission's formulation and negotiation using the 2003 and 2009 Directives. Other authors have used ETS policy making cases to study early second-reading agreements in the European Parliament (Andlovic and Lehmann, 2014), the role of evaluation in policy innovation (Hilden, 2014), the lobbying activity of Norwegian businesses (Miard, 2014), and the role of national finance ministries in EU-level politics (Skovgaard, 2017).

2.5 Literature on specific ETS policy processes

This section builds on Section 2.4 to briefly review the findings of the EU-level politics literature on the 2003 Directive, the 2009 Directive, the Backloading Decision, and the MSR Decision.

2.5.1 The 2003 and 2009 Directives

The 2003 Directive was a seemingly abrupt turn-around for the European Union, which had strenuously objected to international emissions trading leading up to the agreement on the Kyoto Protocol in December 1997. This shift in position was one of the key questions examined by scholars in the early literature on the ETS (Christiansen and Wettestad, 2003; Damro and Méndez, 2003; Wettestad, 2005). Damro and Méndez (2003, pp. 87–90) argue that the EU's adoption of emissions trading was a case of policy transfer from the Kyoto Protocol negotiations. While agreeing on the key role of international negotiations, Christiansen and Wettestad (2003, p. 3) instead argue in favor of "…a synergistic and multilevel mix of explanatory factors for this 'U-turn', including developments at the international, EU, Member State, sub-national, and even down to the personal level". Other factors that have been posited as important in the adoption and design of the 2003 Directive include the positions of EU member states and the EU institutions, especially the Commission (see especially Skjærseth and Wettestad, 2008a, 2009, 2010a), business actors such as Shell (Meckling, 2011b), the influence of international regimes (Skjærseth and Wettestad, 2009), and Commission expertise (Braun, 2009; Dreger, 2014).

If this was a relatively major change, the same could be said for the 2009 Directive, whose centralization was seen by both practitioners and academics as "revolutionary" (see Boasson and Wettestad, 2013, p. 53). In addition, the 2009 Directive presented an opportunity to scholars to compare the two processes over time, and as a result a number of the studies of the 2003 and 2009 Directives are done over the entire period (1998 to 2009), meaning that generally these studies have the longest time period of focus of any of the existing ETS-related politics literature (Boasson and Wettestad, 2013; Dreger, 2014; Meckling, 2011a; Müller and Slominski, 2013). Some studies of this period focus on major policy change, especially the centralization of decision-making at EU level and the shift to auctioning (Skjærseth and Wettestad, 2010b; Wettestad et al., 2012). Others focus on the key components that remained the same, especially the continuation of free allocation despite DG Environment's strong preference for 100% auctioning (Dreger, 2014; Müller and Slominski, 2013; Skodvin et al., 2010; Wettestad, 2009).

As far as explanatory factors for these patterns of policy stability and change in the ETS, some common explanations for key events have emerged. Noting that both the European Commission's DG Environment and the European Parliament had supported auctioning and an EU-level cap during the negotiation of the 2003 Directive, a number of analysts have pointed to the shift in the Environment Council as the key change that allowed the centralization of the ETS (Dreger, 2014, pp. 76–77; Skjærseth and Wettestad, 2010b, p. 119). The success of derogations on free allocation were argued to be because of the windfall profits gained by the electricity industries, the unity of the energy-intensive industries on the issue, and important allies in the institutions including the European People's Party in the Parliament and Germany and Poland in the Council (Skodvin et al., 2010, p. 867).

2.5.2 Backloading and the Market Stability Reserve

The literature on the policy processes surrounding backloading, the structural reform debate on the ETS, and the Market Stability Reserve has grown rapidly since the MSR Decision was adopted in 2015. Due to the fact that these two policy processes were explicitly linked by policy actors (e.g., in European Commission, 2012b), existing studies on these processes examine them as a single empirical focus.

Wettestad and Jevnaker (2016) focus on explaining why the EU was able to move from a position of struggling to adopt backloading in 2013 (a relatively minor policy change) to one in which it was able to adopt the much more complex Market Stability Reserve in 2015. They identified six possible factors that could have caused this shift, including increased unity in the Council, Parliament, and Commission, decreased opposition from energy-intensive industries, increased opportunities for bargaining and trade-offs, and pressure from factors external to the EU (Wettestad and Jevnaker, 2016, pp. 5–17). Their analysis suggests that all of these factors played a role, especially side-payments related to the 2030 Climate and Energy Framework, greater unity in the EU institutions, and especially a shift in Germany's position after the 2013 federal elections (Wettestad and Jevnaker, 2016, pp. 71–97).

Skovgaard (2017) focuses on the Backloading Decision and analyzes the role of national finance ministries in influencing the positions of Germany, the Netherlands, and Denmark in the Council. He emphasizes the differing levels of influence of finance ministries in each member state and examines whether these differences as well as their diverging opinions on backloading could explain support from the Netherlands and Denmark and, in contrast, Germany's long-standing ambiguous stance towards the proposal. After presenting evidence that finance ministries supported backloading (pp. 357-361), he argues that their support was not the deciding factor. Instead, "the political orientation of government (including changes to this orientation due to elections) proved decisive in the Netherlands and Germany, while previous [emission reduction] commitments were crucial in Denmark" (Skovgaard, 2017, p. 361). In other words, in his view the decisive factors in these three governments' positions were external to ETS policy (government makeup and positions on the EU's overall greenhouse gas reduction target).

2.6 Conclusion

This chapter has demonstrated that many literatures on the EU ETS exist which are wide-ranging, empirically-detailed, and theoretically informed. Specifically, the literature on EU-level ETS politics has addressed the entire range of ETS policy making processes from 1998 up to 2015, with the exception at the time of writing of the 2018 Directive policy process which came after the October 2014 European Council conclusions. In the context of the aim of this thesis to shift "from snapshots to moving pictures" (Pierson, 2004, p. 1), the studies in the EU-level politics literature reviewed above already largely take a "moving picture" perspective, studying political processes over time. For example, Boasson and Wettestad (2013) seek to explain the shift over time between a decentralized and a centralized ETS between 2003 and 2009, while Wettestad and Jevnaker (2016) study politics related to backloading and the MSR to explain the EU's increased "reform capacity" on the topic. These studies and many others in the ETS politics literature study political processes over time and provide a detailed foundation on which to base a study of ETS-related policy feedback.

Therefore, this thesis aims to build on and expand from the existing ETS literature in a number of directions. First, it aims to study the legislation currently addressed in the literature – the 2003 Directive, the 2009 Directive, the Backloading Decision, and the MSR Decision – from a longer-term perspective which connects the policy process around each of these pieces of legislation while incorporating a policy feedback approach. This requires a much more sustained focus on the ways in which the ETS influenced policy actors as it has been reformed. Second, it extends that analysis to the 2030 Climate and Energy Framework and to the 2018 Directive. Third, and finally, the scope of analysis regarding non-governmental actors was greatly expanded to better understand the effects of policy feedback on them (see Chapter 4). To prepare for this study, Chapter 3 will now turn to building a theoretical framework to approach the topic from that perspective.

Chapter 3

Policy feedback: A theoretical framework

3.1 Introduction

This chapter builds a theoretical framework appropriate to understanding the development of the EU ETS, drawing on the existing policy feedback literature. There has been extensive theoretical and empirical work on policy feedback, largely focusing on policy issues other than climate change mitigation. Despite this long history of theorizing, recent advancements in the theoretical basis of policy feedback research – for example, the important work on examining both self-reinforcing and self-undermining feedback – necessitates a reconfigured framework. This chapter sets out to create such a framework, reconfiguring existing literatures on policy feedback.

The following sections present this framework in detail. Section 3.2 presents three causal mechanisms through which policy feedback operates: resource/incentive, interpretive, and institutional mechanisms. Section 3.3 discusses the distinction between self-reinforcing and self-undermining policy feedback. It builds on Hall's distinction between policy goals, instruments, and settings to further refine analysis of when feedback is self-reinforcing or self-undermining. Section 3.4 introduces related concepts such as path dependence, path-departing change, and policy sequencing. Section 3.5 identifies preliminary expectations about the types of policy feedback which emissions trading might generate. Section 3.6 builds on these expectations to re-examine the literature on EU ETS politics, looking for evidence of policy feedback. Section 3.7 concludes.

3.2 Policy feedback mechanisms

The policy feedback literature takes its starting point from Schattschneider's claim that "new policies create a new politics" (1935, p. 288) and Skocpol and Amenta's follow-up statement that “policies, once enacted, restructure subsequent political processes” (1986, p. 149). Researchers have done much to operationalize these broad claims, defining various policy feedback mechanisms which connect the original design of a policy to subsequent changes in political processes. Many definitions of causal mechanism exist (Hedström and Ylikoski, 2010; Knight, 2015; Mahoney, 2001; Ylikoski, 2015). For the purposes of this study, a causal mechanism is defined as “the pathway or process by which an effect is produced” (Gerring, 2008, p. 178). Mechanisms are widely referred to in the policy feedback literature (Campbell, 2012, pp. 345–346; Jacobs and Weaver, 2015; Oberlander and Weaver, 2015; Pierson, 1993). Policy feedback mechanisms are generally categorized according to the initial effects a particular policy creates, based on Pierson’s (1993, p. 626) distinction between resource/incentive and interpretive effects of a policy (Campbell, 2012; for other categorizations of effects, see, e.g., Oberlander and Weaver, 2015; Weaver, 2010). This leads to a distinction between resource/incentive mechanisms and interpretive mechanisms (Table 3.1).

The first type – resource/incentive mechanisms – operate through the effects of policies on the resource flows and incentives which confront political actors. Examples include increasing or decreasing the level of resources that actors have at their disposal (Campbell, 2003; Pierson, 1993, pp. 598, 626), changing an actor’s capacity to influence future policy-making processes (Mettler, 2002, p. 353), or changing the incentives for political action (Pierson, 2000a).

The second type – interpretive mechanisms – operate through the effects of policies on actors’ interpretation of those policies by, e.g., influencing a policy’s visibility, by making it easier or more difficult for actors to trace effects back to the original policy (Pierson, 1994, 1993), or by changing how target groups perceive their own efficacy or that of the policy (Mettler, 2002; Soss, 1999). Policy feedback can interact with other factors that influence these processes of interpretation, including actors’ pre-existing policy frames (Benford and Snow, 2000) and influential policy ideas which pre-exist a policy (Hall, 1989).

Table 3.1 **Policy feedback mechanisms**

Policy feedback mechanism	Description	Example
Resource/incentive	Policy affects the resources actors possess and the incentive structures they face.	Old-age pensions distribute financial resources to senior citizens (Campbell, 2003).
Interpretive	Policy affects how actors perceive that policy or policy issue.	Increasing evidence of indirect land use change caused by biofuels production leads to decreased support for EU biofuel targets (Skogstad, 2017).
Institutional	Policy affects decision-making rules related to future policy changes.	Choice of EU treaty basis affects voting rules (Lenschow, 2005); Choice of legislation versus delegation (comitology) affects relative influence of European Commission vis-à-vis the Council and the Parliament (Bergström et al., 2007).

(Modified from Pierson, 1993)

In addition to these two policy feedback mechanisms, this thesis includes a third type of mechanism. This third type – institutional mechanisms – operate through the effects of policies on the formal and informal decision-making rules governing policy-making. These rules – for example the majority which is needed to change legislation – are often decided in high-salience venues that are separate from the venues in which normal policy-making occurs (Jacobs, 2010, p. 99; Moravcsik, 1998; Peterson and Bomberg, 1999). Therefore, in most cases the *possible range* of decision-making rules are decided outside of standard legislative processes. For example, in the European Union, voting rules for issue areas are formally set out in the EU treaties, which are adopted by EU member states in specialized treaty negotiations (Wallace et al., 2015, pp. 4–6).

However, when a policy is adopted, it codifies which of these possible options must be used to change that specific policy at a future date. Two broad institutional choices made in EU policy making are relevant to the discussion of institutional feedback mechanisms. The first is the choice of an EU policy's 'legal basis' (i.e., which article of the EU treaties is used to justify its adoption; see Jupille, 2004). In the EU, policy actors often strategically choose a preferred legal basis based on the likelihood of adoption and their level of influence under that article of the treaty. For example, before the creation of an environmental treaty article in the Single European Act (1987) the Commission justified EU environmental policy based on related articles such as those dealing with the internal market (Jupille, 2004, pp. 128–130; Lenschow, 2005) In this sense, the choice of legal basis is not dictated by the nature of a policy, but is rather a matter of policy design which is subject to contestation. Discussing this process, Jupille writes that:

> "Actors are expected *strategically to frame proposals from their initial conception*, and placing them in one or another category is an obvious tool in support of a policy of strategic issue definition." (Jupille, 2004, p. 101, emphasis added)

A second key EU institutional choice determines the procedure through which future changes to individual design elements will occur. These changes can take place through the EU legislative process or through delegation to implementation committees (comitology) consisting of the European Commission and EU member states (Bergström et al., 2007; Kaeding and Hardacre, 2013). The choice between legislation and comitology gives actors different levels of influence: the European Parliament is a co-legislator under the Ordinary Legislative Procedure, but has a largely advisory role in comitology (Kaeding and Hardacre, 2013). As a result:

> "…the decision whether to delegate or to regulate is also fundamentally a political decision. Different procedures will have different implications for the overall distribution of political influence." (Bergström et al., 2007, p. 342)

These institutional choices can have important implications for the likelihood that a legislative proposal will be adopted. For example, the proposed EU carbon/energy tax, based in the taxation article of the EU treaties, was subject to unanimity voting in the Council with the Parliament having only an advisory role. Under these conditions, sustained opposition from the United Kingdom was enough to block the proposal's adoption (Skjærseth, 1994; Walker, 1993). The institutional feedback mechanism expands this focus to examine the post-adoption effects of these institutional choices. These effects may include influence on which actors are involved in policy making (e.g., the legal basis strongly influences which Council configuration and which European Parliament committee is chosen to take the lead on a proposal). Additionally, post-adoption effects determine the ease with which a policy can be changed (due to the various voting rules under different treaty articles, as well as marked differences between legislative processes and comitology).

Resource/incentive, interpretive, and institutional feedback mechanisms can operate individually, in parallel, or interact. Thus, policy feedback can be the result of multiple mechanisms. For example, Campbell (2003) argues that U.S. Social Security played a key role in mobilizing the "gray lobby" of senior citizens through two distinct but complementary policy feedback mechanisms. A resource/incentive mechanism generated increased financial resources for pension recipients, and an interpretive mechanism increased positive views of the program itself. Together, these mechanisms led to well-financed lobbying organizations and an engaged, effective group of voters.

In order to study these three mechanisms, evidence must be gathered from documentary sources and interviews. A link needs to be made between the influence of a policy on resources, interpretations, or decision-making rules; then these changes need to be connected to changes in political processes such as the position of policy actors or formation/dissolution of coalitions. One challenge in this process is identifying sufficient evidence to make these causal inferences, which can be difficult when data on recent policy processes is often not complete (Kay & Baker, 2015). The methodological approaches used to address this challenge are further described in Chapter 4. A second challenge is that one policy feedback mechanism can be the cause of a second mechanism, for instance if the distribution of resources triggers a change in a policy actor's interpretation of a policy. this second challenge is discussed in detail in Section 8.2.4.

3.2.1 Actors influenced by policy feedback

The existing literature has focused primarily on how policy feedback affects actors and their engagement in the policy process. This is most clearly illustrated in existing conceptual frameworks, where the targets of policy feedback are different actor types (Pierson, 1993, p. 626; Skocpol, 1992, p. 58). For example, Pierson divides affected actors into three broad categories: government elites, interest groups, and mass publics (Pierson, 1993, p. 626). Certain policy types have a stronger effect on mass publics (e.g., public pensions, see Campbell, 2003; Pierson, 1994), while others affect a narrower group of government elites and interest groups (e.g., agricultural subsidies, see Patashnik, 2008).

Much of the work that used the policy feedback concept in the 1990s placed a sustained focus on governments and interest groups (Coleman et al., 1996; Coleman and Grant, 1998; Pierson, 1994; Skocpol, 1992). However, building on Pierson's suggestions, interventions by Soss (1999), Mettler (2002), and Mettler and Soss (2004), pushed many more recent policy feedback studies to focus on mass publics. Using quantitative data and government statistics, these studies explored the links between policy feedback and the level of civic engagement across broad public groups (Campbell, 2003; Mettler, 2002). In addition, some studies tie together policy feedback on mass publics with the creation and strengthening of interest groups and government constituencies (Campbell, 2003).

Policy feedback can also influence political coalitions. Although the resource and interpretive mechanisms directly affect individual actors, the cumulative effect may be on policy-making coalitions. A continuing strand of literature focused on governments and interest groups, suggesting that one of the important ways that policy feedback influences policy is by strengthening or weakening interest group coalitions (e.g., Oberlander and Weaver, 2015; Patashnik, 2008). Actors can be affected in diverging ways by policy feedback, leading previous cooperation to falter. For example, Skogstad (2017) traces how in EU biofuels policy, increasing evidence of indirect greenhouse gas emissions from biofuel production convinced some actors (e.g., the European Commission) and not others (e.g., farm organizations) to support policy change. As a result, "the uneasy coalition that had made [the original policy] possible came unstuck" (Skogstad, 2017, p. 34). In contrast, feedback can bring the interests of opponents together, leading to new coalitions and "Baptist-and-bootlegger" cooperation between unlikely allies (Meckling, 2011a, p. 30; see also Yandle and Buck, 2002).

Coalitions are central to Patashnik's approach to policy feedback (2008, p. 32). He argues that if group affiliations remain stable, then a policy is more likely to be repealed or to become entrenched and difficult to reform. On the other hand, if group affiliations change, then there can be a "reconfiguration" of policy making around the issue that secures the new policy (Patashnik, 2008, p. 32).

3.3 Self-reinforcing and self-undermining policy feedback

When policy feedback occurs, it affects the likelihood of either the continuation of the status quo, of policy expansion, or of policy dismantling. This thesis builds on Jacobs and Weaver (2015, p. 443), who distinguish between self-reinforcing and self-undermining feedback. In their approach, self-reinforcing feedback "… [strengthens] the direction and orientation of status quo policy", while self-undermining feedback creates "…changes that run against the grain of current policy: rolling back existing programs or otherwise effecting a large shift in the distribution of policy benefits and burdens" (Jacobs and Weaver, 2015, p. 444). In an alternative formulation, self-undermining feedback increases support for policy dismantling (Bauer et al., 2012). A third possibility is that limited policy feedback is created (Patashnik and Zelizer, 2013), such as when a policy does not create significant benefits or costs (Jordan and Matt, 2014, p. 242; Patashnik, 2008).

Pierson and others focus most of their attention on self-reinforcing feedback (see especially Pierson, 2000a). In his widely cited study of time and politics, for example, Pierson only mentions negative or self-undermining feedback when introducing self-reinforcing feedback (2004, pp. 22, 73). The focus on self-undermining feedback is more recent; beginning with Weaver's claim that self-undermining feedback is "often extremely important" based on a comparative study of pension policy regimes (Weaver, 2010, p. 138). The emerging literature on self-undermining feedback focuses in principle on both types of feedback (Jacobs and Weaver, 2015, p. 444; Oberlander and Weaver, 2015, pp. 41–42). However, in practice many of the empirical case studies have tended to examine policies where self-undermining feedback overwhelmed self-reinforcing feedback (Jacobs and Weaver, 2015, pp. 449–454; Oberlander and Weaver, 2015, pp. 48–54). In doing so, these studies use specific cases as empirical illustrations of the importance of either self-reinforcing feedback (Pierson, 2000a) or self-undermining feedback (Jacobs and Weaver, 2015).

This focus on self-reinforcing or self-undermining feedback also affects the specific feedback mechanisms that scholars study. Pierson largely focuses on resource mechanisms that increase actor capacities (1993, pp. 598–611). In line with Pierson, Mettler focuses on the "payments, goods, and services" created by a policy (Mettler, 2002, p. 353). This same emphasis is apparent in other key policy feedback studies, including Campbell (2003). The focus makes sense, given that much of the policy feedback literature focuses on self-reinforcing dynamics. If the topic being studied were how a policy strengthens itself, then analytical attention would be expected to turn to the effects that contribute to those dynamics, i.e., the benefits of a policy.

The focus on resource mechanisms that *reduce* actor capacities is much more explicit in studies focusing on how policies undermine themselves, for example, in work on regulatory policies (Jacobs and Weaver, 2015; Jordan and Matt, 2014). Jacobs and Weaver identify costs as a major mechanism for self-undermining feedback. However, costs do not necessarily lead to self-undermining feedback. As Jordan and Matt (2014, p. 235) point out, increased costs can also lead political actors to *support* a policy and its expansion in order to ensure that competitors bear the same costs (Pierson, 2000a).

Other research has studied both self-reinforcing and self-undermining feedback (Jordan and Matt, 2014; Skjærseth, 2018; Skogstad, 2017; Weaver, 2010). This thesis begins from the same starting point. It acknowledges the potential usefulness of the concepts of both self-reinforcing and self-undermining feedback. It therefore starts from the perspective that both types of feedback (or neither) can in principle exist in a particular case. This approach suggests the need to carry out empirical research that is open to the existence of both self-reinforcing and self-undermining feedback.

3.3.1 Disaggregating the dependent variable

In some cases, the durability of a policy and its success at meeting its goals are aligned. In these cases, self-reinforcing policy feedback makes successful policy outcomes more likely, and vice versa. For example, self-reinforcing feedback that strengthened the position of public pensions in the U.S. also helped advance the ultimate goal of those policies to financially support the elderly (Campbell, 2003; Jacobs, 2010). At times, however, the fate of a policy and of its goals can diverge. Hacker (1998) argues that U.S. public health insurance, designed to focus only on those in poverty and the elderly – while in many ways successful – contributed to the lack of wider national public health insurance in that country.

As Howlett and Cashore (2009, p. 36) point out, it is common for researchers to combine "…all the elements of a ''policy'' into a single dependent variable." If policy is treated in this way, self-reinforcing and self-undermining policy feedback can be defined only in relation to how it affects the policy as a whole (be it a policy instrument, a policy regime, etc.). In order to systematically analyze whether these types of divergent effects happened in the ETS case – between e.g., the policy instrument and policy goals – it is necessary to disaggregate the concept of "policy". This conceptual unpacking can be accomplished in many ways, and a number of frameworks have been developed that conceptualize policies as collections of divisible components (Hall, 1993; Howlett and Cashore, 2009).

At a broad level, this thesis draws on Hall's (1993) approach to overall policy structure. This approach was chosen because it is widely used in the policy studies literature and provides a relatively simple, clear way to conceptualize public policy. This relative simplicity is a virtue in that it is being combined with the policy feedback literature, and so approaches that use more concepts (e.g., Cashore and Howlett, 2007) could lead to an overly complex framework and to the analysis of many separate feedback/policy component combinations. Hall's framework divides public policy into policy goals, policy instruments, and instrument settings/policy settings (Hall, 1993, pp. 278–279). Goals are defined as the broad outcome sought by a policy, instruments as the specific 'tools' used to reach those goals, and instrument settings as the more detailed decisions about how policy instruments will be designed.

Hall's categories classify changes in policy according to three "orders" of policy change (Hall, 1993, pp. 278–279). First order change involves alterations to policy instrument settings, while second order change involves altering policy instruments. Third order change – the most significant in Hall's framework – involves change in the fundamental goals of policy and leads to a reconfiguration of instruments and settings. In the policy feedback framework used in this thesis, however, the focus is on the conceptual disaggregation of policy into these three levels of granularity (see Table 3.2). Another modification is that whereas Hall conceptualizes goals as the overall programmatic goals of a policy area, here the focus is on the goals of an individual policy instrument. While Hall's analysis was at the level of a policy regime or policy mix (related to UK economic policy) in this study it is re-purposed to study a single instrument (the EU ETS).

Finally, a distinction must be made between policy change and policy feedback. This distinction is necessary because even significant feedback does not necessarily lead to policy change. Policy feedback is only one of the factors that affect policy stability and change. There are examples in the literature in which self-undermining feedback creates strong pressures for policy change, but where decision-making rules prevent that change from occurring (Jacobs and Weaver, 2015, p. 451; Oberlander and Weaver, 2015). Alternatively, strong self-reinforcing feedback can strengthen support for a policy, but a sudden change in government can lead to policy dismantling

(Pearse, 2018). Therefore, policy feedback may make policy change or stability more likely, but it does not necessarily determine the outcome.

Table 3.2 **Self-reinforcing and self-undermining policy feedback**

Feedback types	Description	Example
Self-reinforcing policy feedback related to…		
Goals of policy instrument	Higher likelihood of achieving or exceeding policy instrument goals.	Pension recipients advocate for policy to be expanded (Skocpol, 1992).
Policy instrument	Higher likelihood that policy instrument choice will continue.	U.S. old-age pensions create highly-engaged constituency that mobilizes to protect existing *policy instrument* (Campbell, 2003).
Policy settings	Higher likelihood of more stringent or stable policy settings.	U.S. old-age pensions create highly-engaged constituency that mobilizes to protect existing *benefit levels* (Campbell, 2003).
Self-undermining policy feedback related to…		
Goals of policy instrument	Lower likelihood of achieving policy instrument goals.	Perceptions of corruption limit expansion of pensions beyond veterans, leading to fewer people being covered (Skocpol, 1992).
Policy instrument	Lower likelihood that policy instrument choice will continue.	Costs force policy-makers to repeal newly-adopted policy (Patashnik, 2008; Oberlander and Weaver, 2015).
Policy settings	Lower likelihood of more stringent or stable policy settings.	Costs of distributive policy increases pressure on government to cut benefits (Weaver, 2010).

(Modified from Jacobs and Weaver, 2015, p. 443; see Hall, 1993)

Policy feedback was chosen as the core concept of the theoretical framework because it provided the best developed and most appropriate analytical approach to studying the role of public policy in influencing political processes. The existing policy feedback literature provided theorized causal mechanisms through which policy could influence politics, concepts for categorizing self-reinforcing and self-undermining effects, and extensive empirical case studies that could be used both to build expectations to be tested related to emissions trading and to develop a methodological approach to studying policy feedback in this case.

Two alternative approaches were considered: the Advocacy Coalition Framework (ACF) and a broader framework based on historical institutionalism (Sabatier & Jenkins-Smith, 1993; Thelen, 1999; Thelen & Steinmo, 1992; Weible & Sabatier, 2006). The ACF is a "policy process framework" (Weible, Sabatier, & McQueen, 2009, p. 121) that focuses on policy subsystems of related actors in an issue area and how they form "advocacy coalitions" to advocate for policy positions. More recent versions of the ACF also explicitly incorporate the role of "policy impacts" and their effects on "actor resources" and "policy beliefs" (see Weible et al., 2009, p. 123). However, the ACF was not used in this study. Policy feedback-like processes are a relatively small component of the ACF model. Given the extensive time and logistical resources needed to study policy feedback in an exploratory case study such as this thesis, it was decided that using the ACF would risk using time and resources on too many aspects of the policy process.

The other alternative was using a broadly historical institutionalist approach, focusing on questions of sequencing, political institutions, and socio-economic developments. Policy feedback was developed by historical institutionalist scholars (Pierson, 1993; Skocpol & Amenta, 1986) and so it could have been integrated as one component of a theoretical framework which also incorporated these other components. This approach had similar risks to using the ACF, in that a focus on more components risked taking focus from the exploratory policy feedback nature of the research. Unlike the ACF, however, many of these components were incorporated into this study, although the focus on policy feedback remained (see Section 3.4 for detail).

3.4 Policy feedback, path dependence, and sequencing

Up to this point, policy feedback has been treated as a stand-alone concept. However, it is important to examine feedback processes with a clear focus on the temporal aspects of politics. Policy feedback was coined as part of the historical institutionalist literature (Steinmo et al., 1992). Four concepts from this literature are outlined below: the importance of studying policy over the long term, path dependence, path-departing change, and sequencing.

First, Pierson (2004, p. 2) argued for the importance of looking not just at "snapshots" of politics, but at the "moving picture" of these processes over time (see Chapter 1). In a similar vein, in his study of health policy, Hacker (1998, p. 127) stated that policy development should be studied "…not as a series of discrete political struggles, but as an ongoing historical process in which past public policies and political battles shape what is possible in the future." This implies taking a long-term view in the empirical focus of a study and paying careful attention to how events in earlier periods interact with and affect later events and processes.

Second is the concept of path dependence. Building on the work of authors such as Abbott (1990) and David (1985), Pierson emphasized the importance of "path dependence", which he defined as a process in which "…preceding steps in a particular direction induce further movement in the same direction" (2000a, p. 252). He posited that path dependence could be caused by an "increasing returns process", where movement down a path in politics increases the benefits of that path and/or increases the costs to change. There is a clear parallel between this concept of increasing returns processes and policy feedback; indeed, Pierson claims that increasing returns processes "can also be described as self-reinforcing or positive feedback processes" (p. 252). Note this definition is not limited to feedback processes generated by a policy, and so it is a wider definition than policy feedback. Therefore, path dependence is a related but more general concept than self-reinforcing policy feedback. It is also a useful way to describe the overall results of a self-reinforcing dynamic over time, which puts the constraining nature of the process into context.

Third is the concept of path-departing change. In the same way that Weaver (2010) brought increased focus to the concept of self-undermining policy feedback, it is important to also focus on the opposite of path dependence, what Béland (2010, p. 575) calls "path-departing change". In other words, until the diversification to self-undermining feedback by Weaver and colleagues, policy feedback and path dependence were discussed together. But after Weaver's intervention, policy feedback should be approached as a possible source of path dependence, but also one of path-departing change.

Fourth is the concept of sequencing, the importance of when a policy is put in place or modified, and how that affects subsequent policy development (Pierson, 2004, pp. 54–78, 2000a). A related concept is that of conjunctures, or the combining of two processes at a certain time, i.e., "to say that timing matters implies the timing of something relative to something else" (Pierson, 2004, p. 55). In his study of welfare state policy, for example, Pierson notes that policy feedback had a longer time to have an effect in pension politics in the United States when compared to the United Kingdom (Pierson, 1994). Special focus is placed on decisions made early in a policy's development, because those decisions can lock-in and constrain future policy making.

A focus on temporal issues also brings up a number of issues related specifically to policy feedback. One is that descriptions of feedback – especially related to its self-reinforcing or self-undermining character – are related not only to a level of analysis (e.g., policy goals, instruments and settings in Section 3.3). They are also related to the time when feedback happened, "not just what, but when" (Pierson, 2000b, p. 72). Self-reinforcing and self-undermining feedback refer to how those processes impact the original policy itself. Therefore, just because feedback is self-reinforcing for the policy does not mean that it will continue to be so or that feedback will make its own continuance more likely. This differs in some ways from Pierson's conception of path dependence, in which "the probability of further steps along the same path increases with each move down that path" (Pierson, 2000a, p. 252). Policy feedback that is self-reinforcing at time T_1 may eventually become self-undermining or lose its force at time T_2.

To summarize, building on the idea that feedback may be self-reinforcing or self-undermining, research needs to take into account the target of that feedback (goals, instruments, and settings). It must also take into account whether feedback changes over time. Finally, the timing and sequencing of both path dependent lock-in and path-departing change can matter crucially in determining how the overall path of policy development moves forward.

3.5 Emissions trading and policy feedback

This section builds on the theoretical framework presented in Sections 3.2 and 3.3 to examine expectations for the policy feedback which might be generated by emissions trading. Are certain types of feedback more or less likely when emissions trading is adopted? Would certain design choices be expected to lead to specific feedback processes?

Starting with the seminal works by Skocpol (1992) and Pierson (1993) on policy feedback, researchers have highlighted the need to move from individual cases to broader generalizations that make claims about the conditions under which certain types of policy feedback are more or less likely (Jacobs and Weaver, 2015; Patashnik and Zelizer, 2013; Pierson, 1993). Pierson outlined conditions under which self-reinforcing feedback is more likely, for example in situations with large set-up costs or where actors invest in the new approach by adapting to the policy and changing their future expectations (Pierson, 2004, 2000a, p. 254, 1993). More recently, others have discussed the conditions under which self-undermining feedback is more likely, including when large losses are created among actors (mass publics and interest groups) or when the list of alternative policy options is expanding (Jacobs and Weaver, 2015, p. 6; Oberlander and Weaver, 2015, pp. 41–42; Weaver, 2010). Finally, Patashnik and Zelizer (2013, pp. 1075–1079) have discussed the conditions under which feedback may be weak, including when there are small resource flows, low per capita benefits, divisive policy adoption, and lack of policy salience.

Jordan and Matt (2014) along with Weaver (2010) and Jacobs and Weaver (2015), focus on the conditions under which policy *change* is more or less likely. Jordan and

Matt put forward a number of conditions that make policy change more likely: strong self-undermining feedback effects, the existence of monitoring provisions, an explicit step for changes to be made, and/or a policy that is perceived as "fungible" (p. 237). In a similar vein, Weaver (2010) theorizes that change is more likely when there is a larger 'menu' of policy options and when incremental changes are possible. This is in part because more policy options allow for more successful coalitions to be formed if one option cannot do so. Additionally, incremental changes, such as a minor change in policy settings, are often easier to create than radical changes such as policy dismantling.

3.5.1 Emissions trading: Goals, instruments, and settings

The basic policy components in Hall's framework – goals, instruments, and settings – are here related to emissions trading. The most prominent and widely-agreed *goal* of greenhouse gas emissions trading is the cost-effective reduction of emissions. This policy goal is held by policy makers (Meadows et al., 2015), academics (Tietenberg, 2006), and is often referenced in policy discussions (European Commission, 2013). The second goal is to create allowance prices high enough to drive mitigation by, e.g., incentivizing switching from coal to gas in electricity generation or by driving low-carbon innovation (e.g., Laing et al., 2014, p. 510; Martin et al., 2016). A third goal – in emissions trading systems that makes use of auctioning – is increasing auctioning revenue in order to use it as funding for other climate and energy policy (Velten et al., 2016). These goals are given various levels of importance by different policy actors; i.e., Hall's "hierarchy of goals" (1993, p. 278) for emissions trading is often a contested topic (compare Laing et al., 2014; Martin et al., 2016 on the relative importance of cost-effectiveness versus low-carbon innovation).

Within the literature on emissions trading, two related but distinct policy *instruments* exist: cap-and-trade systems and baseline-and-credit systems. In a cap-and-trade system, an overall cap is set on the allowable amount to be emitted, allowances to emit are distributed for free or through auctioning, and trading is allowed. A cap-and-trade instrument sets "a cap or absolute limit on the emissions within the ETS and emissions allowances are distributed, usually for free or through auctions, for the amount of emissions equivalent to the cap" (World Bank, 2018). Baseline-and-credit instruments on the other hand are described by the World Bank as those in which "baseline emissions levels are defined for individual regulated entities and credits are issued to entities that have reduced their emissions below this level. These credits can be sold to other entities exceeding their baseline emission levels" (World Bank, 2018). Of the 23 implemented emissions trading systems in 2017, 18 were cap-and-trade systems, responsible for 90% of the emission coverage of emissions trading overall. However, examples of both types of instrument exist: the Canadian province of British Columbia implemented a baseline-and-credit system for liquefied natural gas facilities in 2016 (World Bank et al., 2017, p. 46).

Regarding policy *settings*, the potential complexity of emissions trading requires a focus on a limited number of settings in this thesis to keep the analysis manageable. The current study incorporates categorizations from the literature on the design of emissions trading policy to create a more fine-grained understanding of ETS policy settings. A number of previous authors have written about the policy settings of emissions trading in general (Tietenberg, 2006) as well as the EU ETS in particular (Vis, 2006; Wettestad and Gulbrandsen, 2015, pp. 7–11). Of the instrument settings discussed in the literature, this study focuses on five settings because they have been modified in the EU ETS at least once since adoption and have played a prominent role in policy discussions:

> *Emissions reduction target:* A goal for reducing emissions in a future year or years.
>
> *Emissions reduction pathway:* The timing of reductions in the emissions cap from the starting year to the target year of emissions reductions.
>
> *Scope:* The type of greenhouse gases and the economic activities regulated under the emissions trading system.
>
> *Allocation method:* The two main methods of allowance allocation in emissions trading systems are free allocation and auctioning. If allowances are distributed through free allocation, regulated installations and activities

receive them free of cost. If they are auctioned, regulated entities must purchase required allowances from the regulator.

Price Management: Limits are placed on how high or low the market price of an allowance can go. Price management can be either direct (through price floors and price ceilings that set direct upper and lower limits) or indirect (through volume management, mechanisms that manage the amount of allowances in the market at any one time).

3.5.2 Emissions trading: Policy feedback mechanisms

This section focuses on the policy feedback that emissions trading systems could in principle generate, with emphasis on the emission allowances which they distribute, the other benefits and costs created by emissions trading, and the way they can influence policy interpretations. Emissions trading is not expected to have generalizable effects on the institutional policy feedback mechanism, given that the decision-making rules affected by that mechanism cannot easily be generalized for emissions trading as a policy instrument. Therefore, the institutional mechanism is not included in Table 3.3.

In his study of self-undermining feedback, Weaver seeks to generalize these conditions across policy regimes, showing that the most likely types of self-undermining feedback differed depending on the regime type. Jordan and Matt (2014, p. 235) raise the possibility of moving from studying policy regimes to specific policy instruments. Salamon (2000, p. 1613) discusses the importance of the "political economy" that each type of policy instrument may bring. That the political economy or “political spin” (Salamon, 2002, p. 28, cited in Jordan and Matt, p. 229) of a type of policy instrument may affect politics has a long history in political science (Lowi, 1964; Schattschneider, 1935; Wilson, 1973). Lowi (1964) created a typology of policies and argued that distributive, redistributive, and regulatory policies created distinct politics. Wilson (1973) critiqued Lowi's approach and argued that it was often difficult to categorize real-world policies using his typology. Wilson's solution was instead to focus on the way that costs and benefits were distributed under a policy –

i.e., whether one or both were concentrated or diffuse – and make predictions about how politics, especially interest group politics, might be affected.

When Pierson wrote his seminal article in 1993, he used ideas from both Lowi and Wilson in his argument, but he was skeptical of the ability of scholars to place policies into typologies based on the policy feedback they create (Pierson, 1993, p. 625). The existing literature has made clear that the same policy instrument can have varying effects in different contexts. However, this does not mean that the general components of different policy instruments cannot suggest generic expectations of about the types of policy feedback that could be created by that instrument. Emissions trading in the European Union might generate very different policy feedback than emissions trading in California or Australia. But it may be possible to identify ways that emissions trading as a *generic* policy instrument might be more likely to create certain types of feedback.

Regarding *resource/incentive mechanisms*, the most visible output from emissions trading systems are the emission allowances that are allocated to regulated entities. The existing literature on the politics of emissions trading has emphasized that actors often view these allowances as assets, treating them as an important new resource (Patashnik, 2008, pp. 150–151). Following this line of thinking, emission allowances might be expected to play a similar political role as monetary payouts in pension systems – increasing recipient groups' support for the policy while simultaneously increasing their capacity and willingness to engage in the political process (e.g., Campbell, 2003). However, as noted in Chapter 2, emission allowances are not a clear-cut resource for all actors. For some recipients, allowances are an asset. For others – for example those companies that emit more than they are allocated – allowances are a cost, something that they must buy from others.

If allowances are allocated for free, they do not cost industries up front, and their value in the emissions market accrues to the actor holding them (Tietenberg, 2006, pp. 128–131). However, if they are distributed through an auction, the cost is borne by ETS sectors and the revenues accrue to the recipient of the auction revenue. If electricity companies are able to pass on the cost of allowances to the consumer, then they may accrue extra profits if allowances are freely allocated or break even if they are auctioned (Sijm et al., 2006). This would suggest that ETS sectors would prefer free allocation (Markussen and Svendsen, 2005).

The existing literatures note that another set of resources potentially arises from the operation of the emissions market itself. The cost-effectiveness assumptions related to emissions trading are premised on the idea that regulated installations will trade where appropriate. This trading often requires new roles to be filled by other organizations. Companies and other organizations can help regulated industries trade allowances, as well as to create information about the market, prices, and future strategies. These roles are filled by "helper interests", defined as "actors whose primary interest is in producing the policy outcome, rather than in the outcome itself" (Prittwitz, 1990; Voss and Simons, 2014, p. 739). These actors may depend in part or in full on revenue generated through the operation of an emissions trading system and can therefore be enrolled in what Voss and Simons (2014) call "instrument constituencies": groups that advocate for a specific policy instrument. In other words, the resource effects of emissions trading can create constituencies dependent on resource flows created by emissions trading, making them proactive advocates for the continuation of emissions trading, its further expansion, and its adoption in other jurisdictions.

Under what conditions can the flows of these market-related costs and benefits be expected to be larger or smaller? Emissions trading systems that allow non-regulated entities to purchase and trade allowances would be expected to create larger resource flows. In addition, the larger the market is, the more organizations would be expected to be attracted to its potential revenue streams. Finally, a sufficient price or expectation of future scarcity in the market might be required to induce regulated entities to trade; without this condition volume in the market could be too low to sustain significant flows of resources.

Regarding *interpretive mechanisms*, a number of existing studies have emphasized how policy change in emissions trading systems can be tied to beliefs that the policy is not reaching its stated goals (e.g., Boasson and Wettestad, 2013; Dreger, 2014; Skjærseth and Wettestad, 2008a). How can the design of emissions trading be expected to influence the way that actors understand and frame policy implementation? One aspect is the policy's visibility, which includes the relative visibility of different policy components (Pierson, 1993, p. 626). Emissions trading most directly affects a narrow set of target groups, and these instruments are often lower salience than other policy types. Many policy actors may also have their own images of how emissions trading should work, and this may affect the perceived legitimacy of different reform options.

Two main interpretive policy feedback mechanisms are the focus of this study, both focused on how the policy influences the way that actors interpret the efficacy of the emissions trading instrument: the effect of the allowance price and that of the emission reduction target or cap. The allowance price plays a key role in actor views of efficacy of an emissions trading policy. As a review of the ETS after ten years by a prominent analyst of the ETS and economist notes:

> "As the most visible manifestation of a cap-and-trade system, allowance prices receive a great deal of attention and are often viewed as indicating how well the system is functioning." (Ellerman et al., 2016, p. 98)

Allowance prices are much more visible than other design elements that are required for an ETS to function, such as monitoring and verification. Prices are also tied to the policy goals set out in Section 3.5.1: e.g., they determine the amount of auctioning revenue that is produced and are the link between the cap and firms' behavior change (Ellerman et al., 2016; Hintermann et al., 2016; Tietenberg, 2006). The level of emission reduction chosen in the emissions trading instrument is also important for how actors interpret the effectiveness of the policy. Although emissions trading is often understood as a cost-effective approach to meeting a pre-defined emission reduction target (Tietenberg, 2006), in actual climate policy reduction targets are set iteratively, meaning that the reduction target changes over time.

Table 3.3 **Potential policy feedback mechanisms related to emissions trading**

Policy feedback mechanism	**Description**	**Citations**
Resource/incentive		
Free allocation	Free allocation distributes value of emission allowances to recipients.	Patashnik, 2008; Wettestad, 2009.
Auctioning revenues	Auctioning distributes value of allowances to revenue recipient.	Skjærseth and Wettestad, 2010a; Dreger, 2014.
Revenues from financial services and price speculation	Revenues generated by providing financial services or speculating in ETS-related market.	Voss and Simmons, 2014; Meckling, 2015; Newell and Paterson, 2010.
Direct costs	Direct costs of buying additional allowances (sectors covered by ETS).	Skjærseth and Wettestad, 2008a; Wettestad, 2009.
Indirect costs	Increased costs as a result of ETS price (e.g., rise in electricity prices).	Wettestad, 2009; Skodvin et al., 2010.
Interpretive		
Interpretations of efficacy	Operation of ETS affects actor interpretations (e.g., allowance prices, stringency of emission reductions).	Boasson and Wettestad, 2013; Skjærseth and Wettestad, 2010a; Dreger, 2014.

3.5.3 Emissions trading: Self-reinforcing and self-undermining feedback

The relatively limited previous research on policy feedback from emissions trading has mainly discussed possible future effects (e.g., Newell and Paterson, 2010) and, less commonly, empirically examined those effects after the fact (Boasson and Wettestad, 2013; Patashnik, 2008; Skjærseth, 2018). Much of this work has speculated on the political benefits and drawbacks of emissions trading in comparison with other policy instruments, such as carbon taxes and direct regulation (Grubb, 1990; Svendsen, 1998; Tietenberg, 2006). Because emissions trading is often assumed to be more cost-effective than other policy approaches, it has been argued that once in place, interest groups will prefer it to other policy alternatives and hence support its continued existence (Meckling, 2011a). Emissions trading may also be supported by interest groups such as the finance industry that stand to profit from a market regardless of the environmental objective (Newell and Paterson, 2010). Because affected organizations are given what they may consider a valuable asset – the allowances to emit greenhouse gases – they may also support a policy after the fact to protect that stock of assets (Patashnik, 2008). Finally, the creation of an emissions trading system can create "instrument constituencies" (Voss and Simons, 2014), groups that depend on emissions trading for income and policy-making influence.

Less has been written about the negative political consequences of emissions trading. However, emissions trading policies are not immune to repeal. In 2011, Australia successfully adopted a Carbon Pricing Mechanism (CPM), but it was repealed in 2014 after a change in government (Bailey et al., 2012; Pearse, 2018). Another issue is the flow of revenue, or the lack thereof. While emissions trading can create revenue streams if allowances are auctioned, this is not a requirement. And research suggests that free allocation is common for operating trading systems (Betsill and Hoffmann, 2011). This would potentially limit the self-reinforcing feedback that could be possible if auctioning revenues were distributed to governments or the public (as advocated by Skocpol, 2013).

Table 3.4 **Self-reinforcing/self-undermining feedback from emissions trading**

Feedback types	**Examples from emissions trading literature**
Self-reinforcing policy feedback related to…	
Goals of policy instrument	• Auctioning-revenue recipients and others who benefit from high allowance prices support larger emission reductions to raise price (Newell & Paterson, 2010).
Policy instrument	• Financial industry supports emissions trading because of revenue (Voss & Simmons, 2014) • ETS sectors support instrument because it distributes valuable allowances (Patashnik, 2008). • Perceptions of increasing policy efficacy lead to stronger engagement from environmental NGOs (Skjærseth & Wettestad, 2010b).
Policy settings	• Free-allocation recipients support *status quo* allocation settings to retain flow of resources (Wettestad, 2009; Skodvin et al., 2010).
Self-undermining policy feedback related to…	
Goals of policy instrument	• Free-allocation recipients oppose larger emission reductions because it reduces number of allowances (Jevnaker & Wettestad, 2017).
Policy instrument	• Free-allocation recipients support switch to less stringent instrument type (baseline-and-credit, see Skjærseth & Wettestad, 2010b).
Policy settings	• Perceptions of low policy efficacy decrease support for *status quo* policy settings (Skjærseth & Wettestad, 2010a; Dreger, 2014).

Some authors have argued that emissions trading can lead to more stringent emissions reductions. Paterson and Newell claim that once financial institutions become involved in emissions trading-related services, they will have an incentive to push for more emissions reductions (Newell and Paterson, 2010; Paterson and Newell, 2012). These reductions will lead to higher allowance prices, increasing the profits of financial intermediaries and giving them an interest in further stringency increases. A similar dynamic may develop in regulated industries. Some companies will have access to low-cost reduction options or will be able to pass costs on to their customers. These companies may support increased reductions.

On the other hand, emissions trading could lead to reduced support for emission reductions in several ways. First, countries or industries which bear a disproportionate share of the cost may oppose greater reductions because they will increase allowance prices (Skjærseth, 2014). The existence of a less stringent policy may dampen momentum for further reductions. Second, one of the goals of emissions trading is to create a price on greenhouse gas emissions to serve as an investment signal. Other climate and energy policy types, such as financial support for renewable energy generation, may contribute to lowering allowance prices (Nilsson et al., 2009). This means that emissions trading may indirectly lead to the repeal or weakening of parallel climate policies, thereby lowering overall policy stringency (Lohmann, 2012, p. 1180).

Specific design choices also might make self-reinforcing or self-undermining feedback more likely. In emissions trading systems that auction allowances, authors have suggested strategies for earmarking auction revenue to increase political support. These options include lowering other taxes, funding research and development projects (R&D) that reduce the costs of compliance with emissions reductions, and returning the resulting revenue to the general public through a dividend (Keohane, 2015; Skocpol, 2013; Tietenberg, 2006). These strategies are meant to increase political support for climate policy amongst both regulated industries and the general public.

Some academics have been optimistic about the potential for emissions trading to create coalitions of industries that have an incentive to push for stricter reductions and higher allowance prices (Meckling, 2015, 2011b, 2011a; Meckling et al., 2015; Newell and Paterson, 2010). Design choices that aid this dynamic are, for example, ones that lead to higher allowance prices, such as a minimum allowance price (a price floor). Another option which has been considered is governance-related: to create an independent agency to make decisions about the operation of an emissions trading policy (Brunner et al., 2012).

3.6 Evidence of policy feedback in the EU ETS politics literature

Chapter 2 reviewed the literature on the politics of the EU ETS; this section reexamines that literature for explicit and implicit references to policy feedback. At least two existing studies incorporate feedback-related theoretical concepts (Boasson and Wettestad, 2013; Müller and Slominski, 2013), while another explicitly studies policy feedback (Skjærseth, 2018). Müller and Slominski (2013, p. 1438) in their study of the 2003 and 2009 Directives, suggest a self-reinforcing dynamic related to support for the policy instrument, stating "…sustained investments in the scheme, learning effects and the adaptation of expectations firmly locked the EU's climate policy in the emission trading path". They also draw attention to the successful strategy by energy-intensive industries and Eastern European electricity industries to build in derogations and delays that protected some of their previous free allocation. Although they do not explicitly mention policy feedback in their study, the authors' approach to self-reinforcing dynamics draws heavily on Pierson's work (Pierson, 2004, 2000a).

Boasson and Wettestad (2013) study the concept of "institutional feedback" in the ETS case between the 2003 and 2009 Directives. Like Mueller and Slominski, they note the lock-in effect to the emissions trading path that the ETS created (p. 71). They also argue that the ETS created "…powerful institutional feedback forces pointing towards a Single European Market design" with the cap and allowance allocation decided at the EU level (p. 72). They note as well that the ETS forced energy-intensive industries to engage more directly with the policy from 2005 and argue that the over-allocation and low prices of Phase I led to greater support for centralization (pp. 69-72).

Skjærseth (2018) draws directly on the policy feedback literature to examine how the EU's 2020 Climate and Energy Package influenced the Polish government's approach to the subsequent 2030 Climate and Energy Framework. The ETS was one of the policies studied, along with the Renewable Energy Directive, the Effort Sharing Decision, and the Carbon Capture and Storage Directive (pp. 502-504). He argues that – despite negative experiences with implementing the 2020 Package, Poland supported the ETS as a "key pillar" of the 2030 Framework, in part because "…the combination of revenues and subsidies from the ETS and the collapse in the carbon price made the system more appealing and less threatening to the government and industry than expected" (p. 510).

Other researchers, while not explicitly using feedback-related theoretical concepts, also discuss processes that implicitly invoke a model of feedback. In line with Boasson and Wettestad's argument, a number of authors that study the 2009 Directive note the increased engagement and coordination between energy-intensive industries on ETS issues after the policy's adoption (Dreger, 2014; Skodvin et al., 2010; Wettestad, 2009). Others argue for the existence of what can be classified as an interpretive mechanism, whereby increasing stringency in the ETS led environmental NGOs to be more enthusiastic about the instrument because its design was moving closer to their preferences (Skjærseth and Wettestad, 2010b, pp. 111–112).

Related to the concept of instrument constituencies attracted by the revenue streams created by an operating ETS, other authors have pointed out the creation and increasing engagement of ETS-involved market intermediaries in policy discussions (Meckling, 2015, pp. 31–32; Voss and Simons, 2014). Voss and Simons argued that "constituencies sustain the instrument and are themselves sustained by the instrument as it persists and expands its realm of validity" (2014, p. 735). They argue that the EU ETS played a key role in "an immense expansion of the carbon-trading constituency, mainly with regard to the emergence of specialised businesses and market players, living off the activities in and around carbon markets" (p. 746, see also Simons and Voss, 2018). Meckling argues that the constituency became increasingly involved in

ETS politics and was positive toward the instrument, and that "only the emergence of market opportunities— rather than the prospect thereof—mobilized the financial services industry as a serious lobbying force [related to emissions trading]" (2015, p. 32).

At an overall level, this potential evidence for policy feedback can be described in a few ways. First, much of the feedback is focused on non-governmental actors, including the electricity industry, the energy-intensive industries, the environmental NGOs, and the market intermediaries. Less attention is focused on policy makers such as the European Commission, the member states in the Council, or the European Parliament. Second, the feedback processes studied are largely presented as self-reinforcing. The literature's emphasis is on how the consequences of the ETS served to reinforce and lock in its place in the EU climate policy mix. Less attention is given to how the ETS might have created impacts that undermined its position or created path-departing change.

Third, feedback is studied primarily on a narrow class of actors; the focus is on specific classes of actors and often specific policy feedback mechanisms (e.g., the market intermediaries and resource/incentive mechanisms in Voss and Simons, 2014, and the energy-intensive industries in Wettestad, 2009 and Skodvin, Gullberg, & Aakre, 2010). Fourth, the studies examined in this section deal almost exclusively with the time period between the 2003 Directive and the 2009 Directive (the exception is Skjærseth, 2018). Therefore, they do not include the backloading, MSR or 2018 Directive policy processes.

Finally, on the topic of the interpretive mechanism tied to the allowance price and emission reductions, much of the political science literature equates low prices with a malfunctioning system (e.g., Skjærseth and Wettestad, 2010b, p. 102; Wettestad, 2014, p. 64), as opposed to an understanding held and contested by policy actors (this approach is taken in Wettestad and Jevnaker, 2018 see p. 45). Like Wettestad and Jevnaker (2018) this thesis examines allowance prices and emission targets as central points of contestation in the policy making process which were closely tied to the winners and losers from changes in both the price and the target. Therefore, these studies provide valuable empirical evidence of policy feedback in the EU ETS, and the more in-depth study presented in this thesis will expand on the existing evidence base. The ultimate aim is to better understand policy dynamics surrounding the EU ETS using the policy feedback concept, and potentially to build theoretical expectations on the operation of feedback in emissions trading more generally, expectations which can then be tested in future research.

3.7 Conclusion

This chapter has presented a novel theoretical framework for studying policy feedback, drawing heavily on and reconfiguring previous theory on the topic (see Figure 3.1).

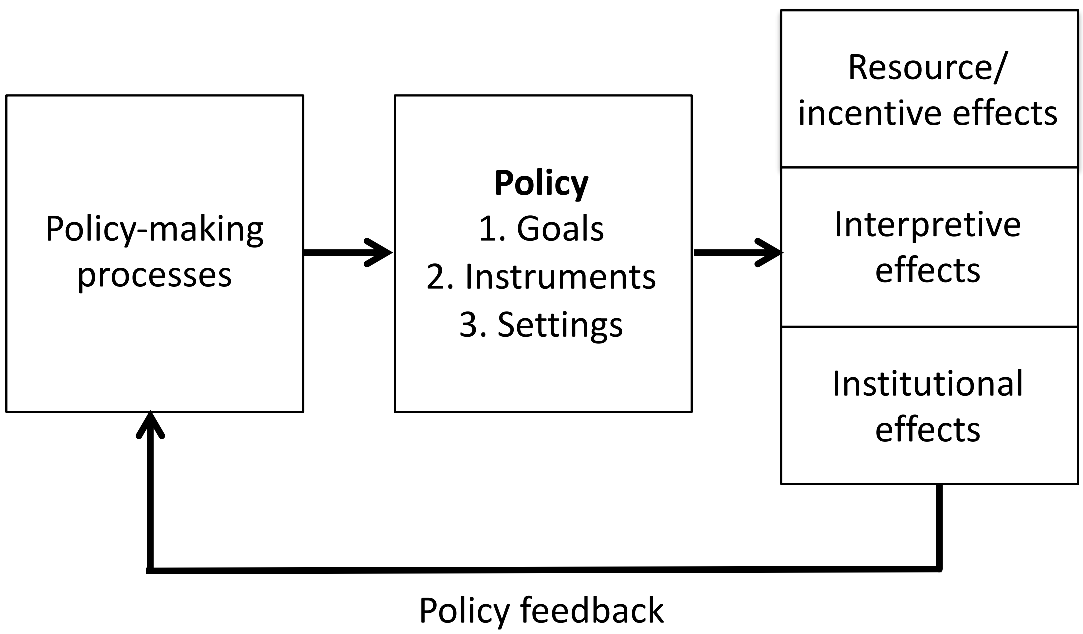

Figure 3.1 **Theoretical framework**

The key concepts of policy feedback mechanisms, self-reinforcing and self-undermining feedback, and path dependency and policy sequencing have all been incorporated into this framework. Building on this synthesis of past theoretical approaches, another contribution was the integration of policy goals, instruments, and settings into the policy feedback framework in order to more systematically distinguish how feedback interacts with the existing policy design. Then, through a synthesis of the emissions trading and policy feedback literatures, the chapter generated expectations about the policy feedback that may be generated by emissions trading. Finally, the chapter revisited the literature on the politics of the EU ETS reviewed in Chapter 2 to explore the evidence in pre-existing studies for policy feedback in that case.

A few key themes arise from this chapter. One is that policy feedback can take many forms and operate through several causal mechanisms. And once those mechanisms are elucidated, a level of analysis is added to determine whether feedback is self-reinforcing or self-undermining. To avoid confusion, the goals/instruments/settings framework adopted requires a final level of analysis. Because the analysis in this thesis focuses on one policy instrument – the EU ETS – it is also important to carefully examine causal mechanisms within the case. Chapter 4 will therefore discuss the methods for data collection and analysis that were used to operationalize the framework.

Chapter 4

Methods

4.1 Introduction

This chapter presents the methods used in this thesis. Section 4.2 gives an overview of critical realism – the philosophical approach underpinning the research – as well as process tracing – the core research method used. Section 4.3 provides a detailed overview of data collection, followed by Section 4.4 which does the same for data analysis. Section 4.5 concludes the chapter and sets the context for the empirical findings in Chapters 5-7.

4.2 Critical realism and process tracing

4.2.1 Critical realism

The approach used in this thesis focuses on elucidating the mechanisms underlying policy feedback, drawing on largely qualitative evidence and analysis. In line with most mechanism-based causal analysis (see e.g., Knight, 2015), it adopts a *critical realist* approach to the philosophy of social sciences (Bhaskar, 1979). This philosophical approach makes several core claims. One is 'realism' – that there is an external world that the researcher can examine, which exists apart from and in addition to individual or social constructions. This differs from transcendental idealism, an approach which holds that "reality is only accessible to people as an individual or social construction" (Baert, 2005, p. 91). Critical realism also differs from radical empiricism, a position that holds that research should be based only on observable phenomena. In contrast, critical realism "opposes [radical] empiricism in treating [reality] as layered, not simply limited to the instantly observable" (p. 91). A number of the concepts studied in examining policy feedback are not readily observable and so must be inferred, such as an actor's interpretation of a policy.

Therefore, in this thesis, the study of the (ultimately unobservable) causal mechanisms through which policy feedback operates rests on critical realist assumptions.

Critical realism also makes claims about the relationship between social structures and the agency of actors. In opposition to societal determinism (which strongly downplays the role of agency) and voluntarism (which downplays the role of social structures), critical realism holds that:

> "…society is a precondition, not an impediment, for agency […] social structure is both the medium and the output of people's agency." (Baert, 2005, p. 97)

Policy and policy design are in this sense 'structure', in that they do not have agency, but are the outcome of the agency of policy actors. But the outcomes of policy feedback processes are not seen as *only* due to the structure of policy. Indeed the policy feedback literature has been quite focused on how feedback impacts actors and their strategic use of agency (Campbell, 2012; Pierson, 1993, 2000a). In addition, policy feedback is centered on the idea of an initial structure (the policy) affecting and shaping the agency of actors and thereby influencing the development of the original structure. As a result, it is in line with critical realism's claims about the interactive relationship between agency and structure.

To summarize, the critical realist approach adopted here was chosen because the thesis studies causal mechanisms using process tracing, in line with the policy feedback literature. A critical realist approach is line with existing literature on the study of causal mechanisms (see e.g., Knight, 2015) and this presents a strong argument that alternative philosophical positions are not compatible with the mechanistic approach. Critical realism assumes a world external to the researcher, including causal mechanisms (and so is more appropriate than transcendental idealism), assumes that evidence can be used even if it is not directly observable (in contrast to radical empiricism), and posits an interactive relationship between structure and agency (unlike social determinism and voluntarism, which emphasize structure and agency, respectively). Critical realism is therefore the philosophical approach that best fits the topical and methodological focus of the thesis.

4.2.2 Process tracing

The choice of a single case study – as in this thesis – fits well with the qualitative analysis of causal mechanisms, as Gerring argues (2008, p. 173):

> "…the modal research design for mechanismic analysis is probably focused on a single example (or a few examples) of a larger phenomenon. This is because the sort of causal questions that we usually refer to as mechanismic are often difficult to approach in a large-N cross-case format. Thus, one finds that, as a practical matter, a strong affinity exists between causal mechanisms and case study investigation - that is, investigation focused on one (or several) instances of some broader topic. Usually, it is difficult to get inside the box without also narrowing the scope of investigation. One case can be taken apart - usually a time-consuming procedure - while it would be difficult to do the same for a large number of cases"

The overall methodological approach used in the thesis was process tracing, "…the analysis of evidence on processes, sequences, and conjunctures of events within a case for the purpose of either developing or testing hypotheses about causal mechanisms that might causally explain the case" (Bennett & Checkel, 2015, p. 7). Process tracing was introduced into political science by Alexander George (George, 1979) and further elaborated by George and Bennett (2005). In recent years, its use has increased in political science: the number of documents mentioning process tracing in the Scopus database rose from 24 in 2006 to 118 in 2017. This increased attention can also be seen in policy studies (Kay & Baker, 2015) and specifically in the study of environmental politics (Vanhala, 2017). Vanhala further argues that many scholars of environmental politics use methods that could be classified as process tracing, but do not explicitly use the term (Vanhala, 2017, p. 93).

Process tracing has a number of benefits when carrying out a single-case, qualitative study of policy feedback.[5] Kay and Baker (2015, p. 2) state that one of the challenges of policy studies is "access to valid, reliable, and useful data. Almost invariably in

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[5] Researchers in the policy feedback literature use both qualitative approaches and correlational approaches. Correlational approaches are used largely for studies of policy feedback related to mass publics (e.g., Mettler, 2002).

policy studies, we focus on the contemporary or near past, and key variables are often hidden from view, by official decree or political imperatives, and data are fragmented and not conveniently additive". They then argue that process tracing provides an effective approach to dealing with the challenge of this "poor, fragmented, and incommensurable data" by drawing on a wide variety of data sources to provide a "rich account" of policy processes and study causal mechanisms over time (p. 2).

Tannenwald (2015, p. 220) states that another strength of process tracing is in issue areas where "complicated multicausality" makes doing quantitative studies difficult. This thesis aims to study the multi-causal process of interaction between policy feedback and other factors such as political institutions and the pre-existing viewpoints of policy actors. Process tracing can be used as an approach to "formalize and be more transparent about the inferential steps" involved in making claims and to allow a more rigorous, transparent discussion of the decisions made in that analysis (Tannenwald, 2015, p. 221). Process tracing is also seen as an effective qualitative approach to theory testing (e.g., Mahoney, 2015). This attribute of the method is especially valuable, as one of the aims of this thesis is to test the expectations and findings of the existing policy feedback literature (Chapter 3).

Process tracing has also been specifically mentioned by authors as an effective within-case method for studying path dependence and self-reinforcing feedback (Bennett & Elman, 2006a, 2006b, pp. 463–465; Falleti & Lynch, 2009, p. 1150). According to Bennett and Elman (2006a, pp. 259–264), the benefits of process tracing in this case include allowing a detailed yet holistic analysis of a case, the explanation of rare events, and discovering explanatory factors previously omitted from existing research. These studies do not, however, cite work on policy feedback specifically, e.g., Pierson (1993) or Skocpol (1992). Therefore, this thesis makes a contribution by expanding the focus outward from path dependence and self-reinforcing feedback to study self-undermining feedback and takes an approach that can be incorporated within a more explicitly policy-feedback-centered theoretical framework.

Literature also exists on implementing process tracing as a method (e.g., Bennett & Checkel, 2015; Collier, 2011). The thesis drew on the guidelines to process tracing laid out in Beach and Pedersen (2013) and summarized in Vanhala (2017). An important subset of these guidelines call for researchers to gather “diverse and relevant evidence” and to “consider the potential biases of evidentiary sources” (Bennett & Checkel, 2015, p. 21). Therefore, in this study an attempt was made to be transparent about the inferential steps used to trace the connection between policy design, its effects through the three policy feedback mechanisms, and finally the impact of policy feedback on subsequent policy making.

Collier (2011, p. 824) argues that process tracing requires a careful focus on description:

> “As a tool of causal inference, process tracing focuses on the unfolding of events or situations *over time*. Yet grasping this unfolding is impossible if one cannot adequately describe an event or situation *at one point in time*. Hence, the *descriptive* component of process tracing begins not with observing change or sequence, but rather with taking good snapshots at a series of specific moments.” (emphasis in original)

In other words, studying politics over the long-term – “shifting from snapshots to moving pictures” (Pierson, 2004, p. 2, see Section 1.4) – still requires the building of convincing snapshots as the basis for analysis.

4.2.3 Treatment of exogenous factors

Policy feedback is self-evidently not the only factor that can affect policy development; multiple factors exogenous to a policy are crucial to understanding patterns of stability and change. Some of the most important such events in the EU ETS case – such as the economic crisis in the European Union, the failure of the Copenhagen Conference, and the adoption of the Paris Agreement – have been introduced in Section 2.2.5. This thesis does not attempt to test policy feedback as an explanatory factor to the exclusion of these other potential factors (as others have attempted to do, e.g., Pierson, 1994). Instead, these exogenous factors are conceptualized as interacting with feedback mechanisms to lead to the observed outcomes. This approach follows Falleti and Lynch (2009) in arguing that causal mechanisms cannot operate in isolation from contextual factors. The mechanisms of policy feedback (see Chapter 3) operate in interaction with factors exogenous to the policy. As an illustration of these interactions, in Phase I of the EU ETS, free allocation of allowances was determined, in part, by both the allocation rules set out by each member state and by the existing structure of ETS sectors. Electricity generation installations that used fossil fuels received free allocation due to their greenhouse gas emissions, whereas renewable energy installations did not (see, e.g., Bryant, 2016). Therefore, two factors – one endogenous to the policy (allocation rules) and one exogenous (the structure of the electricity industry) – were both necessary but not sufficient on their own to lead to the feedback mechanism that operated: significant free allocation that transferred value to ETS sectors (see Chapter 5).

4.3 Data collection

The core data sources used in this thesis were primary and secondary documents (including relevant academic and grey literature), as well as semi-structured elite interviews. The choice of these data sources was appropriate given existing methodological advice on process tracing and more generally for qualitative research, which calls for the use of a wide array of evidence (Bennett & Checkel, 2015; Maxwell, 2005; Vanhala, 2017, p. 93).

4.3.1 Documents

A key component of the research was the collection and analysis of documents. Most documents were publicly available, and collection related to this category was carried out largely online. Public documents fell into three broad categories. The first category of public documents consisted of the publications of governmental organizations from the European Commission, the Council of the European Union, the European Council, the European Parliament, the European Environment Agency, and member state governments. These documents included those produced as part of the policy making process (e.g., European Parliament, 2002; UK Government, 2000), as well as those produced for other purposes, such as research (e.g., European Commission, 2017; European Environment Agency, 2015). The second category of public documents were produced by non-governmental actors engaged in ETS policy making, such as business associations, environmental NGOs and individual companies. These documents included policy positions (e.g., CEPI, 2000; Climate Action Network Europe, 2013; Eurelectric, 2008), research reports (e.g., Sandbag, 2013), and documents containing information about non-governmental actors themselves (e.g., Arcelor, 2006; International Emissions Trading Association, 2008). The third category of public documents were produced by media organizations. In large part, these documents were drawn from two publications oriented towards environmental professionals: the ENDS Report and ENDS Europe. In addition, other sources were used, such as the Financial Times, Carbon Pulse, and Reuters.

To supplement publicly-available documents, requests for internal documents were made to the European Commission, the Council of the European Union, the European Council, and the UK Government under the EU Access to Documents Regulation (Official Journal of the European Union, 2001) and the UK Freedom of Information Act.[6] Sixteen document requests were made to the European Commission (fifteen to DG CLIMA and one to DG Environment), the majority of which were related to internal discussion on ETS legislation carried out through inter-service consultations. Eight document requests were made to the Council of the European Union (seven) and the European Council (one) regarding ETS-related negotiations that were not available in the Council public document register. These documents largely related to negotiations on the 2018 Directive (see Chapter 7). Four information requests were made to the UK Government concerning negotiations on the ETS in the Council of the European Union, mostly related to the 2009 Directive. The percentage of requests that resulted in a positive response (i.e., at least one requested document was released) stood at 53% for the European Commission (8 of 15 requests), 88% for the Council of the European Union and the European Council (7 of 8 requests), and 25% for the UK Government (1 of 4 requests). A total of 182 documents were released as a result

[6] Freedom of Information Act 2000: https://www.legislation.gov.uk/ukpga/2000/36/contents

of these requests, 149 from the European Commission, 28 from the Council of the European Union and the European Council, and 5 from the UK Government.

An additional supplementary approach to document collection was the digital archive of the worldwide web created and maintained by the Internet Archive (Internet Archive, 2018). This archive was used to address the fact that relevant organizations have inconsistent approaches to preserving documents. For example, the European Electricity Association's (Eurelectric) website includes position papers which were published starting in January 2012, while the European Steel Association does so starting in April 2008 (Eurelectric, 2018; Eurofer, 2018). The Internet Archive was searched for documents through the entire history of ETS policy (since 1998). It was used to analyze the change in membership for key ETS-related actors, including the Alliance of Energy Intensive Industries (see Chapter 5), the International Emissions Trading Association (IETA), and the Carbon Markets and Investment Association (CMIA, see Chapters 5 and 6). The archive was also used to identify possible interviewees and background information for document requests. One limitation to this approach was that documents in PDF format were sometimes not cached (e.g., membership information for IETA in 2007 and 2008). However, this was relatively uncommon for the information sought.

Another source of data and analysis came from the existing academic literatures on the ETS reviewed in Chapter 2. With such a large and methodologically diverse group of literatures already available, one of the contributions of the thesis – and approaches to building the "diverse and relevant evidence" needed for process tracing (Bennett & Checkel, 2015, p. 21) – is the synthesis of findings from existing research. Two literatures deserve special mention. First, research on the ETS's distributional impacts on various industries, largely carried out by economists, was an especially important source of evidence when tracing the resource/incentive mechanism of policy feedback (e.g., Chen, Sijm, Hobbs, & Lise, 2008; Demailly & Quirion, 2008). Second, research on the politics of the ETS (reviewed in Sections 2.4 and 2.5) provided a wealth of empirical detail on most of the policy processes studied here, including those related to the 2003 Directive, the 2009 Directive, the Backloading Decision, and the MSR Decision (see Chapter 2 for a detailed overview). This evidence was combined with other data sources where appropriate. It should be noted that any implicit or explicit claims made in the existing literature about the role of policy feedback in ETS policy making were mentioned and, where possible, assessed, in Chapter 2, Chapter 3, or in the empirical chapters themselves (Chapters 5-7).

Chapter 2 (Section 2.4) demonstrated that the existing literature on EU ETS politics focuses on a core set of non-governmental actors at the European Union level. For example, Wettestad (2009) and Skjaerseth & Wettestad (2010a) cited documentation from seventeen such actors in their reference lists: EU-level environmental NGOs and actors representing ETS sectors including electricity generation and energy-intensive industries. A strong case could be made for focusing on these actors, as they are the most engaged in the ETS policy processes. However, in this thesis, a stronger case was found for expanding the scope to look at the broader universe of non-governmental actors that participated in ETS consultations.

The first argument for expanding the scope in this way was to address the expectations in both the policy feedback literature and instrument constituency literature that policies can influence which actors engage in policy making (Pierson, 1993, pp. 598–603; Simons & Voss, 2018; Voss & Simons, 2014). This suggested a focus on ETS-related non-governmental actors as a whole, and not just the most prominent European-level representatives. This expanded focus also enabled a comparison of these organizations' engagement over time. The second argument for an expanded scope was to explore the extent of differing policy preferences of actors represented by EU-level associations. For example, in the consultations that led to the Market Stability Reserve (European Commission, 2013), the electricity generation industry's EU association Eurelectric supported reform, while one of its constituent members, the Polish Electricity Association, explicitly opposed it (Eurelectric, 2013; Polish Electricity Association, 2012). By expanding beyond an analysis of the key EU-level actors which had received most of the attention in the literature to date, these types of internal divisions could be more effectively analyzed systematically over time.

In order to study the broad range of non-governmental actors that participated in ETS policy processes, data were collected on the participants in 15 of the 17 consultations that the European Commission carried out on the ETS between 2000 and 2015. The consultations analyzed included all consultations up to September 2015, with the exception of two consultations on aviation in 2005 and 2013.[7] The collection focused on organizations only, and not individuals. A list of the consultations included in the analysis can be found in Table 4.1. In most Commission consultations, a certain percentage of actors wished to remain anonymous. Within the analyzed consultations, there were 2,380 responses from non-governmental actors (excluding public authorities and individuals). Of these, 2,054 responses (86%) were public and included in the analysis of consultation engagement. Only two consultations publicly identified less than 80% of the actors that provided responses (the 2006 ETS Review and the 2011 MRV consultations).

4.3.2 Interviews

In addition to documentary evidence, data were also collected through interviews. Between May 2016 and May 2018, 32 semi-structured, elite interviews were carried out with 29 interviewees that included European Commission officials, Members of the European Parliament and staff, government officials in the Environment Council, as well as staff at environmental NGOs and business associations. The interviews were carried out in Brussels, London, via phone/Skype, and in one case via email at the interviewee's request. An overview of these interviews can be found in Table 4.2.

[7] The participant list for the 2005 aviation consultation was not available, and so the analysis was limited to non-aviation consultations for consistency.

Table 4.1 **Overview of EU ETS consultations analyzed**

Consultation	**Year**	**Number of actors**	**Percentage identified**
Green Paper on Emissions Trading	2000	86	100%
First European Climate Change Programme	2001	13	100%
Review of EU ETS (Survey)	2006	302	40%
Second European Climate Change Programme	2007	81	100%
Auctioning Regulation	2009	124	87%
Carbon Leakage Report	2010	49	86%
Industrial Gas Credit Restrictions	2010	23	100%
Early Auctioning for Phase III	2010	12	100%
Monitoring, Reporting, and Verification	2011	90	52%
Backloading Decision	2012	128	100%
Structural Reform (MSR Decision)	2012	204	99.5%
Carbon Leakage List (2015-2019)	2013	393	97%
Carbon Leakage List (2018 Directive)	2014	397	84%
2018 Directive (Pre-proposal)	2014	396	99%
2018 Directive (Post-proposal)	2015	82	98%

Elite interviews were chosen as a core method for a number of reasons. First, interviewing has strengths when carrying out longitudinal research, because it allows the researcher to collect information from those who were involved, which can be used to reconstruct past events (Bryman, 2012, pp. 495–496). In some cases, interviews are able to fill gaps left by document analysis. Because EU ETS policy-making processes occurred relatively recently – in the last twenty years – access to internal documents in government or EU institution archives was limited despite the use of document requests. This means that the documents analyzed were largely public. Interviews were used to explore and understand what happened and what groups privately thought by speaking to those directly involved. In addition, informal governance is prevalent in the EU political system (Christiansen & Piattoni, 2003; Jordan & Fairbrass, 2003), and prior research suggests that this holds true for the EU ETS as well (e.g., Twena, 2012). Evidence about informal governance processes was only partially available through documentary sources, another area in which interviews were invaluable in filling the gap.

Table 4.2 **Overview of interviews and interviewees**

Organization Type	**Number of interviewees**	**Number of interviews**
EU member state officials	7	10
European Commission officials	4	5
European Parliament (Members of the European Parliament and staff)	6	4
Environmental NGOs	5	6
Business associations	7	7

Interviewees generally fell into two groups. One group worked on ETS issues during 2016 and 2017. Questions for these interviewees focused on ETS politics and possible policy feedback, as well as the negotiations on the 2018 Directive, which were on-going during the time that most interviews were carried out. The second group of interviewees were chosen because of their participation in specific ETS policy-making processes (e.g., the 2003 Directive or the 2009 Directive).

Interviewees were most often identified using primary documents from the time period, especially meeting minutes in which the interviewee was identified as a participant. In some cases, interviewees in both of these groups were identified by "snowball sampling" in response to a question asked to all interviewees about other potential interviewees. Potential interviewees were contacted by email and by telephone when the interviewee was considered especially valuable for the study and email contact had not been successful.

Two types of interview questions were used. The first type were exploratory and used to gain a broad understanding of ETS politics (Bogner & Menz, 2009, p. 46). The second type were similar to the question types during what Bogner and Menz (2009, pp. 46–47) call the "systematizing expert interview" and Pettigrew calls the "retrospective interview" (1985, cited in Bryman, 2012, p. 495). These questions were aimed at reconstructing past events by eliciting more detailed, specific information from interviewees who were directly involved.

Interviews were semi-structured. Each interviewee was asked a set list of questions depending on their involvement in ETS policy making processes and the stage that the thesis research had reached at the time the interview took place. However, if other topics were raised during the interview, the interviewer was able to follow up on those topics. In general, early interviews (taking place in 2016) included mostly open and exploratory questions, while later interviews (taking place in 2017 and 2018) included more detailed, narrow questions about individual policy processes as the focus and identified gaps in the evidence narrowed (see Appendix 1 for examples of interview protocols from early-stage and late-stage interviews).

A number of potential limitations of interviewing were identified related to validity, i.e., "the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account" (Maxwell, 2005, p. 106). One set of limitations was related to interviewee recall of events. When discussing more temporally-distant events, interviewees sometimes could not recall sequences of events or motivations. On the other hand, when discussing more recent events, in some cases interviewees offered less information because of the sensitivity of the issue or because they were still actively involved in the process (this was especially the case for some member state government interviewees in relation to the 2018 Directive). In all cases, there is also the risk that interviewees – because of their elite status – will answer questions strategically. In many cases, elite interviewees have access to a wide variety of information that is not available to the interviewer and can therefore choose what to divulge and in what way (Brinkmann & Kvale, 2015, pp. 46–48, 171–172). Another potential limitation was the risk of asking "leading questions" to the interviewee that overly pre-disposed them to answering in a specific way (Bryman, 2012, pp. 257, 473). This risk needed to be balanced with the goal, as the research progressed, of including questions that tested preliminary findings with interviewees.

To reduce these risks, the following steps were taken. A wide variety of potential interviewees were contacted who had been involved in ETS policy-making processes based on existing documents, in order to gain viewpoints from a wide array of actors. Regarding interviewee recall of past events – both recent events and those farther in the past – interviewee claims were triangulated with the existing literature, public documents, and other interviewees. To address the issue of strategic interviewee responses, and to deal with the issue of the common power and expertise differential which favors the expert interviewee over the interviewer (Brinkmann & Kvale, 2015, p. 171), the approach followed the advice of many writers by undertaking in-depth preparation before elite interviews (Brinkmann & Kvale, 2015, pp. 171–172; Bryman, 2012; Vromen, 2010). The aim was to become what Pfadenhauer (2009) calls a "quasi-expert": an interviewer with high familiarity with the interviewee's subject matter. In cases where interviewee responses and other evidence sources led to inconsistent conclusions, those conclusions were either not reported or done so with appropriate qualifications related to the level of certainty that could be ascribed to these claims. Finally, interview questions were designed to avoid leading the interviewee to a specific conclusion. In later research stages, questions which tested preliminary findings were asked at the end of the interview.

The ethical implications of the elite interviews were carefully considered. Although elites have more social, financial, and political resources than other types of interviewees (Brinkmann & Kvale, 2015, pp. 171–172), they are still vulnerable in some ways. Because the networks and number of individuals working on these issues are often close and tight-knit, the improper release of responses or identifying information could have negative implications for interviewees, regardless of their status. The following precautions were therefore undertaken.

Prior to contacting interviewees, ethical approval was obtained from the University of East Anglia General Research Ethics Committee. Interviewees were given an informed consent document prior to the interview that explained the research project, how the interview responses would be used, and who would have access to them. In regard to confidentiality, interviewees were asked if they would like their responses to be anonymous. Use of interview data was largely anonymized. When interviewees were quoted, a copy of the quote and its context (as well as additional information if requested) were sent to the interviewee to confirm that the interpretation of their response was correct.

4.4 Data analysis

Bryman and Burgess (1994, p.217) argue that in qualitative research, "…research design, data collection and analysis are simultaneous and continuous processes." They also highlight the challenge of analyzing qualitative data, which they describe as "voluminous, unstructured, and unwieldy" (p. 216). Data analysis did in fact proceed iteratively, guided by focused empirical questions derived from the broader research questions. In the early stages of the research, a review of previous research on the ETS as well as a review of primary documents was used to focus the inquiry on more detailed questions of interest for the current study. The overall approach to data analysis was informed by the process-tracing approach undertaken, and specifically the guidelines provided in Collier (2011), Bennett and Checkel (2015), and Beach and Pedersen (2013). Following from Collier's advice to build robust empirical "snapshots" as a first step to causal inference (see Section 4.2), a systematic approach was taken to analyze the impacts of the ETS as well as the policy positions of relevant actors over time. Much of the data analysis consisted of qualitative coding, and followed methodological advice to initially review data without coding, continually review codes and prior analysis, and connect coding to general theoretical ideas (e.g., Bryman, 2012, pp. 575–578).

The analysis of policy feedback involved two connected classes of causal processes. First, evidence must be provided that the policy in question caused impacts via policy feedback mechanisms (i.e., resource/incentive, interpretive, and institutional mechanisms). Second, those effects must be connected to subsequent changes in political processes. Early document analysis and interview questions focused on broader questions, informed by initial research into the existing literature and primary documents. The semi-structured nature of the interviews allowed for flexible questioning when unexpected responses were given by interviewees.

Data sources were of varying importance depending on the time period being studied. Internal documents were more likely to be provided through document requests if a significant amount of time had passed since the process to which they referred. For example, requests to the European Commission documents related to inter-service consultations were granted for the 2003 Directive, the Linking Directive, the Aviation Directive, and the 2009 Directive, but refused for the Backloading Decision, the MSR Decision, and the 2018 Directive. In contrast, publicly-available documents were often more difficult to access when they were related to temporally-distant events. Attempts to address this issue through use of the Internet Archive were often successful, but limitations remained due to the necessarily incomplete scope of these archives.

Interviewees were in some cases more willing to talk in detail about policy positions adopted by other actors further in the past, but interviewees speaking about more recent processes (especially the 2018 Directive) were generally able to recall discussions in much more detail. Outside academic literature was also less available the closer to the present the research ventured. In general, internal documents and the academic literature were more important as sources of evidence in Chapters 5 and 6. Interviews were especially important as evidence regarding the 2018 Directive in Chapter 7.

Documentary evidence was analyzed in a number of ways. Generally, documents were collected and analyzed in an iterative process and were organized sequentially by date. In some cases, analysis took the form of "descriptive snapshots" of a large amount of data at a specific time. This was the case during the qualitative analysis of policy actor positions during the backloading and MSR consultations, which analyzed 330 documents from non-governmental actors and coded them according to actor support or opposition to the two proposals. In other cases, similar documents were analyzed over a long period of time, for example in relation to the coding of websites and position papers to examine the membership of the International Emissions Trading Association and the Alliance of Energy Intensive Industries between 2000 and 2018.

Analysis of the non-governmental actors who participated in ETS consultations consisted of two separate but interacting approaches. The first was an analysis of which actors participated in which consultations. The information was drawn from the list of publicly-identified actors discussed in Section 4.3.1 above on data collection and limited to organizations which were non-governmental (this excluded national governments, other public authorities, and individuals). Information on actor participation in consultations was collated in a database and assigned a category based on the type of actor and, in the case of business actors, the industry they represented. Where possible, actors were matched to their registration in the European Union Transparency Register, which includes a unique ID and further information about funding and staff levels (European Union, 2018). This information was then used to analyze the evolution of participation in ETS consultations (these findings are discussed throughout Chapters 5-7).

Table 4.3 gives an overview of the non-governmental actors that participated in ETS consultations. In total, 993 organizations were identified as participating in at least one of the ETS-related consultations analyzed in this study. Nearly 90% of all organizations were business associations or companies; 73% of organizations were affiliated with ETS business sectors (electricity generation, energy-intensive industries, and aviation). Non-business organizations included academic/research institutions (3%) and NGOs (5%, largely environmental NGOs).

Table 4.3 **Non-governmental actors responding to ETS consultations**

Actor type	**Number responding to ETS consultations (% of total)**	**Average number of consultation engagements**
Business associations and companies	887 (89%)	2.1
Aviation	25 (3%)	1.3
Electricity generation	102 (10%)	2.5
Energy sector (other)	37 (4%)	2.0
Energy-intensive industries	589 (60%)	2.1
General	36 (4%)	3.4
Market intermediaries	38 (4%)	1.5
Other	60 (6%)	1.4
Academic/research institutions	31 (3%)	1.6
NGOs	54 (5%)	2.2
Other	22 (2%)	1.2
TOTAL	**993**	**2.0**

The level of engagement – measured by the number of consultations which were responded to or attended – was an average of two engagements per actor. Engagement levels varied greatly (see the right-hand column of Table 4.3). A clear majority of 614 actors (61%) engaged with only one of the fifteen consultations (Figure 4.1). Only 10% (103) responded to five or more consultations. The energy-intensive industries, energy sector, NGOs, and business actors overall engaged at the same average level as the organizations as a whole. The electricity generation industry and general business associations representing multiple industries had higher-than-average engagement, while the aviation industry, market intermediaries, other businesses, and the ‘other’ category had lower-than-average engagement.

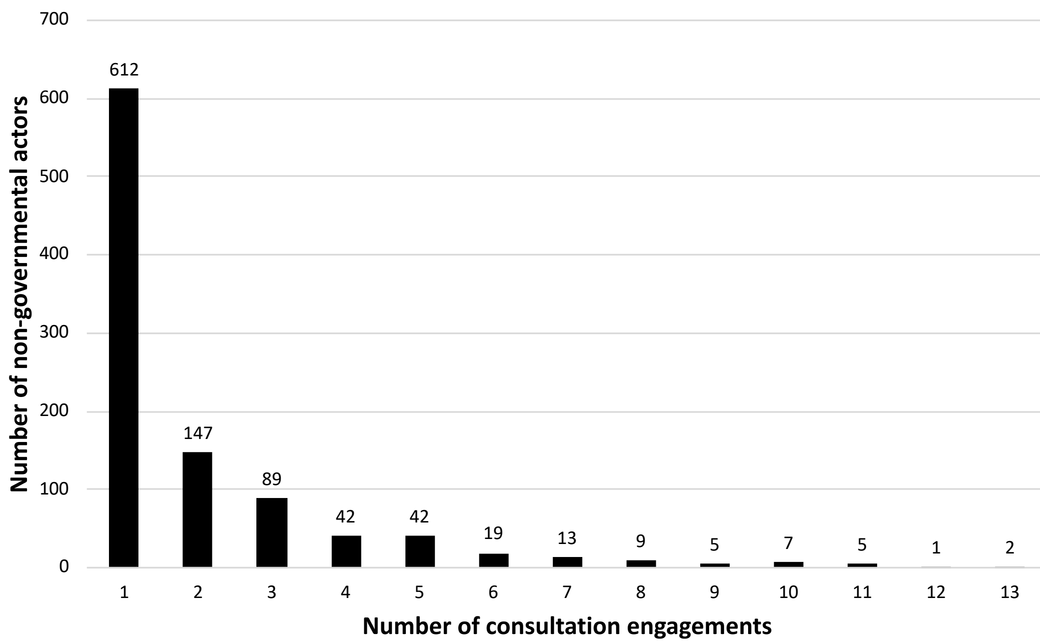

Figure 4.1 **Number of consultation engagements by non-governmental actors**

In addition to the analysis of consultation participation, the database of participants also served as a means to choose the scope of which policy positions would be analyzed and on what topics. In consultations which asked for free-text answers, the very large number of respondents made analysis of all responses infeasible in some cases (e.g., the pre-proposal 2018 Directive consultation, see Table 4.1). In all, of the 15 consultations included in the initial analysis of participants; policy positions of organizations were analyzed in 10 of them. Evidence used to code for a particular position was compiled in a separate document for double-checking and to preserve the evidence base. These findings were integrated with those from other sources of evidence (including other documents and interviews). Although the consultations for the 2050 Roadmap to a Low-carbon Economy and the 2030 Climate and Energy Framework were not used when analyzing participation in consultations, they were used to supplement policy position analysis related to the Backloading Decision, the Market Stability Reserve Decision, and the 2018 Directive (Chapters 6 and 7). The analysis was also supplemented by existing overviews and analysis responses produced by the European Commission and other organizations.

Documentary evidence was analyzed by coding for information of interest, such as the positions of policy actors, evidence of resource distribution, and reasons for actor policy positions. As noted previously, this process was iterative, e.g., evidence of a shift in member state government positions on auctioning in 2007 led to analysis of further evidence sources to attempt to explain why that shift had occurred. Information drawn from documentary sources was compiled in summary documents which labeled each piece of evidence, listed the document or documents that the evidence was drawn from, and noted which time period it was relevant for. Evidence drawn from documentary sources in this way was then combined with evidence from interviews, described below.

Interview responses were audio recorded and transcribed, with three exceptions. In one case, an interviewee requested that audio recording not be used, and so detailed notes were taken instead (Interviewee 18, energy-intensive industry). In two other cases, two follow-up interviews with previous interviewees were carried out and recorded in April and May 2018 (Interviewees 20 and 25, member state governments). Due to time constraints, notes were taken based on the audio recordings in lieu of full transcription.

Each transcript was read in detail at least twice. During this analysis of the transcripts, information of interest was highlighted and coded according to topic. Unlike the analysis of consultation responses, codes were not equivalent across all interviewees, but instead were organized in related topics (e.g., the positions of member state governments). The relevant sections of each interview transcript were then moved into a single summary file which collated all coded sections of all transcripts, allowing for comparison between interviewees. In later stages, evidence from interview transcripts were combined with evidence from documentary sources in summarizing documents, which were then used as the basis for process tracing.

New findings were cross-checked with other interviewees and documentary evidence to build a multi-layered evidence base for key claims in the empirical chapters. For example, a claim made in Chapters 6 and 7 is that high-carbon and low-carbon electricity generators had systematically diverging positions on whether intervention in ETS policy design was appropriate to raise allowance prices. This claim was based on a number of evidence sources, including interviews, analysis of policy positions taken in consultations, and the academic literature on the impact of the ETS on the electricity industry. Qualitative, coding-based analysis of both interview transcripts and documents was undertaken in parallel, and common themes were used to combine separate lines of evidence. Central claims were backed up with as many lines of evidence as possible. In cases where the preferred documentary or interview evidence was not available, efforts were made to find alternative data collection strategies.

4.5 Conclusion

This chapter has given an overview of the methods used to answer the research questions set out in Chapter 1. It began by explaining the critical realist foundations of the approach and the choice of process tracing as the over-arching method for exploring policy feedback. Data collection related to documents and interviews was then introduced. This was followed by an overview of the overall approach to analysis.

These methods were informed by the overall aim and research questions set out in Chapter 1, as well as the theoretical framework on policy feedback introduced in Chapter 3. The analysis of the importance of policy feedback and its three mechanisms – resource/incentive, interpretive, and institutional – shaped the methods chosen. In that way, Chapters 1-4 have created an overall structure. Chapter 1 provided the context as well as the overall research approach and research questions. Chapter 2 then reviewed the existing literature on the selected case, the EU ETS, and Chapter 3 built a theoretical framework based on the existing policy feedback literature. Now Chapter 4 has presented the methods used to gather evidence to answer the research questions.

The thesis now moves on to the empirical results in Chapters 5-7. Chapter 5 examines both the initial policy making between 1998 and 2003 on the original ETS, as well as between 2004 and 2009 on the 2009 Directive. Chapter 6 focuses on the Backloading Decision and Market Stability Reserve Decision, which were debated between 2011 and 2015. Finally, Chapter 7 analyzes policy making from 2014 to 2018 on the 2018 Directive. These results are then drawn together and discussed in Chapters 8 and 9.

Chapter 5

Adoption and centralization (1998-2009)

5.1 Introduction

The period between 1998 and 2009 is crucial to understanding ETS politics over the long term. During this twelve-year period, the ETS was established, began to operate, and then underwent a fundamental shift in design. Under the 2003 Directive, the original ETS was a decentralized system, with individual member states able to decide to whom allowances would be distributed and whether to auction some allowances. The ETS cap was, in effect, an aggregation of individual decisions made by EU member state governments, with relatively limited oversight from the Commission. By the beginning of Phase III in 2013, things had changed dramatically: the ETS had an EU-wide cap, as well as EU-level allocation of allowances, both for free and via much-expanded auctioning. This chapter examines the policy process that led to the initial, decentralized ETS, the effects that this initial ETS had on policy actors, and how those effects influenced the negotiation of the 2009 Directive. In doing so, it examines to what extent the ETS – chiefly meant to reduce emissions at least cost – also reconfigured the politics of decarbonization.

The remainder of this chapter is organized as follows. Section 5.2 examines the policy making between 1998 and 2003 which led to the adoption of the 2003 Directive. Section 5.3 looks at the unfolding effects of the ETS between 2003 and 2006. Sections 5.4 and 5.5 focus on the new round of policy making between 2005 and 2009 which led to the 2009 Directive. Section 5.6 summarizes the changes to the ETS over this time period, and Section 5.7 concludes the chapter.

5.2 The 2003 ETS Directive (1998-2003)

The policy process which led to the 2003 ETS Directive can be usefully divided into two periods. The first, a policy formulation period, began in 1998 and ran until the European Commission released a proposal for an ETS Directive in October 2001. The second period was one of decision-making; it ran from the publication of that proposal to the adoption of the Directive by the Environment Council and the European Parliament in October 2003. This division is justified because before the Commission's 2001 proposal, the overall design of the ETS was unclear, whereas after that proposal discussion focused on the EU-wide cap-and-trade system that the Commission suggested.

5.2.1 Initial design and consultations: 1998-2001

The European Commission first publicly mentioned the possibility of EU emissions trading in 1998 after the Kyoto Protocol was agreed (European Commission, 1998, p. 20). One of the key motivations behind choosing emissions trading as an instrument was political: the legislation could be adopted under the environment article of the EU treaties, meaning that it could be adopted under Qualified Majority Voting (QMV) in the Council of the European Union (Interviewees 3, 4, and 17, European Commission, May and June 2016; Interviewee 2, European Parliament, May 2016; Interviewee 9, member state government, June 2016; see also Dreger, 2014, p. 74; Skjærseth and Wettestad, 2008a, p. 30). This was seen as critical in the wake of the Commission's failed attempt to adopt an EU-wide carbon and energy tax, which had been blocked in the Council – largely by the UK – under unanimity voting rules (Skjærseth, 1994; Walker, 1993; Interviewee 2, European Parliament, May 2016).

The European Parliament's engagement in ETS policy-making processes was heavily shaped by the policy's legal basis in the EU treaties, because that basis gave the Parliament a role as the co-legislator in the Ordinary Legislative Procedure (OLP, until 2009 this was known as the co-decision procedure). The Committee on Environment, Public Health and Food Safety (ENVI) took the lead, appointing rapporteurs. ENVI rapporteurs also played key roles, and Members of the European

Parliament (MEPs) on that committee tended to be more environmentally-oriented than their peers across party groups (Interviewee 2, European Parliament, May 2016; Interviewee 4, European Commission, May 2016). The Committee on Industry, Research, and Energy (ITRE) was also involved, but did not have more than an advisory role.

Like the role of the European Parliament, the leading role of the Environment Council in the Council of Ministers was determined by the legal basis of the 2003 Directive in the EU treaties. And like the ENVI committee in Parliament, the Environment Council was seen as more pre-disposed to environmental policy than other Council configurations, as suggested by one European Commission official:

> "To some extent, if you already have the backing of the Heads of Government in the European Council, it is not the environment ministers of governments who are going to upset that status quo." (Interviewee 4, European Commission, May 2016)

In early 1999, DG Environment commissioned consultants – the Foundation for International Environmental Law and Development (FIELD) and the Center for Clean Air Policy (CCAP) – to carry out a number of scoping studies on the design of an EU emissions trading system (European Commission, 1999). Their reports advocated the benefits of an EU-wide system together with the auctioning of allowances (FIELD, 2000). In 2000, DG Environment released a Green Paper on emissions trading, which served as the basis for consultations with member states, other EU institutions, and non-governmental organizations. In a bid to build support for emissions trading, the Commission also convened a European Climate Change Programme (ECCP), an invitation-only working group on emissions trading which ran from July 2000 to May 2001 (European Commission, 2000b).

During these early consultations, there was widespread disagreement among member states, the European Parliament, and non-governmental actors about whether a cap-and-trade system was an appropriate EU-level policy response (European Commission, 2001a; Skjærseth and Wettestad, 2008a, pp. 97–98). Even among those who supported cap-and-trade (as opposed to voluntary agreements or other forms of emissions trading, such as baseline-and-credit), there was disagreement on many fundamental issues of design, including whether the system should be voluntary or mandatory, whether it should have an absolute cap on emissions or have targets relative to a baseline, and whether it should be EU-wide or comprise a looser network of national systems (Skjærseth and Wettestad, 2008a, pp. 84, 96).

Eighty-eight non-governmental actors responded to the 2000 Green Paper or were invited to participate in the first European Climate Change Programme working group on emissions trading (Table 5.1). These actors represented only around a tenth of the 993 actors that eventually participated in ETS consultations between 2000 and 2015. However, they also made up some of the most engaged over the whole period. Fully 69% of the actors that engaged in more than half of the ETS consultations (eight or more) between 2000 and 2015 participated in the Green Paper consultation or the 1st ECCP. For those that participated in ten or more consultations, this figure is 87% (13 of 15).

Seventy-seven (88%) of the actors who responded were business-related, heavily drawn from the economic sectors that would eventually be covered by the ETS (energy-intensive industries accounted for 38% of this total and electricity generation a further 18%). The electricity generation industry engaged from the very outset of the formulation process in 1999, when they began sponsoring a series of modeling studies of emissions trading known as the Greenhouse Gas and Electricity Trading Simulation (GETS) (Eurelectric, 1999, 2000a). The second GETS study, carried out from January to July 2000, revealed that the design of the ETS would likely have important financial implications for electricity generators. It also suggested that these implications would differ starkly depending on the extent to which a company had a high-carbon or low-carbon generation mix: “all types of allocation will prove favorable for some companies and unfavorable for others” (Eurelectric, 2000a, p. 55). This prediction was important given the widely diverging emission intensities of major European electricity companies.

Table 5.1 **Actors that responded to the 2003 Directive consultations**[8]

Actor type	**Number responding**
Business associations/companies	77 (88%)
Electricity generation	16 (18%)
Energy sector (other)	5 (6%)
Energy-intensive industries	33 (38%)
General	11 (13%)
Market intermediaries	3 (3%)
Other	10 (10%)
Academic/research institutions	5 (6%)
NGOs	5 (6%)
Other	1 (1%)
TOTAL	**88**

As an illustration, the coal-dependent German company RWE had an average carbon intensity nearly six times higher than the largely nuclear French company EDF (Chen et al., 2008, p. 260). In the simulation, grandfathering free allocation favored high-carbon electricity generators, while benchmarking favored low-carbon generators (Eurelectric, 2000a, p. 55). A subsequent simulation found that auctioning would also have "major distributional effects" favoring low-carbon generators (Eurelectric, 2002, pp. iv, 11). Skjaerseth and Wettestad (2008a, p. 80) described the GETS studies as an attempt by the electricity generation industry to "prepare for the coming design of the system". They did more than that: they gave the industry an early understanding of the likely impacts of different design choices, and in some cases strongly

[8] Actors that responded to the 2000 Green Paper on emissions trading and/or participated in the 1st European Climate Change Programme working group on emissions trading.

influenced the strategies of particular electricity companies (Interviewee 28, electricity generation industry, April 2017).

The electricity industry's early studies of ETS design meant that when the Commission consulted them, clear divisions between high-carbon and low-carbon companies and associations were already apparent. Sixteen organizations that responded to the Green Paper were engaged in electricity generation. The two organizations that advocated for full auctioning both had low-carbon energy mixes: British Energy (nuclear; British Energy, 2000) and the Swedish Power Association (Swedish Power Association and Swedish Electricity Distributors, 2000). The CO_2 emission intensity of electricity generation in Sweden was only 2.4% of the average in what would become the EU-28 countries (European Environment Agency, 2018).[9]

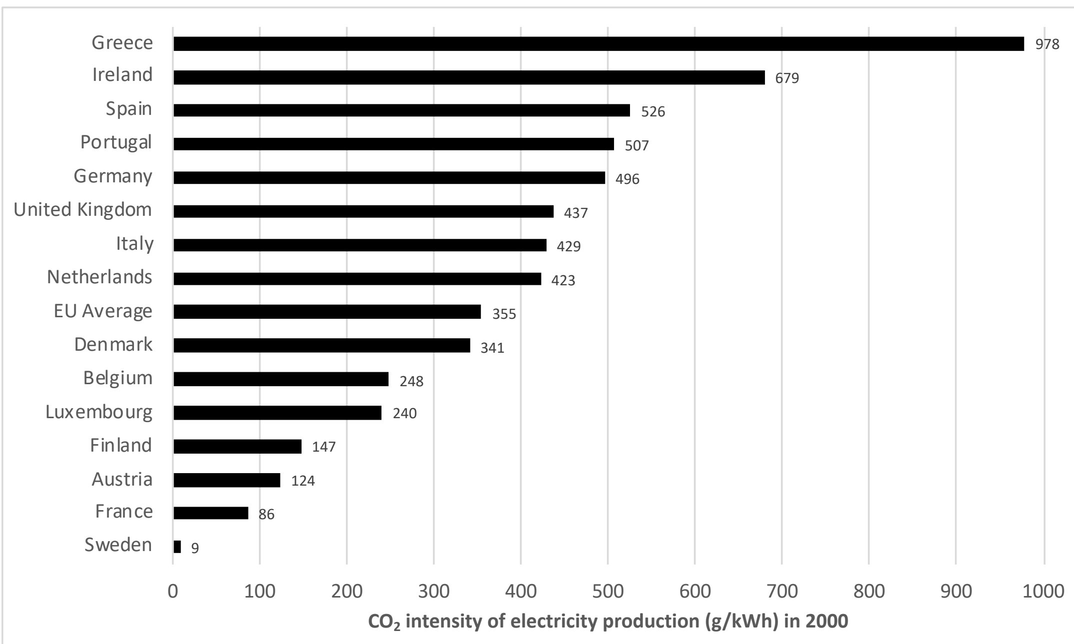

Figure 5.1 CO_2 intensity of electricity production in the EU-15 and overall in 2000. Source: EEA, 2018.

In contrast, the German electricity association – with high relative shares of fossil fuels and a CO_2 intensity 40% above the EU average – supported voluntary

[9] Sweden's CO_2 emission intensity of electricity generation in 2000 was 8.8 grams of CO2 per kilowatt-hour (g/kWh) versus 355g/kWh in the EU-28.

agreements instead of emissions trading (VDEW, 2000). The four electricity companies that advocated historical free allocation – Powergen, Endesa, RWE, and E.ON – had significant coal-fired generation and above-average emission intensities (Endesa, 2005, p. 74; E.ON, 2004, p. 17; Powergen, 2004, p. 4; RWE, 2000a, p. 137).

There were exceptions: Finland's emission intensity was only 40% of the EU average, but the Finnish energy association advocated a voluntary agreement (Finnish Energy Industries Federation, 2000). But a clear division between low-carbon and high-carbon generators on allowance allocation was nevertheless apparent. Unsurprisingly given these divisions, Eurelectric did not take a firm position on allocation and called for an unspecified "mixed solution" (Eurelectric, 2000b, p. 6). Positions on whether the cap should be decided at EU or member state level were not aligned with positions on allocation. Seven organizations supported an EU-level cap (e.g., British Energy, 2000; Endesa, 2000), while five others preferred member state caps (e.g., RWE, 2000b).

The energy-intensive industries also disagreed on many design elements. Twenty-eight energy-intensive organizations responded to the 2000 Green Paper. Sixteen argued against a cap-and-trade system in favor of voluntary agreements or a baseline-and-credit system (e.g., ENER-G8, 2000; Eurometaux, 2000; European Aluminium Association, 2000). Prior to the ETS, some industries had negotiated voluntary agreements on energy efficiency or emission reductions with their national governments, a differentiated approach that they were keen to maintain (Skjærseth and Wettestad, 2008a, p. 76; for Germany, see Wurzel, 2008). Many energy-intensive industries did not adopt clear positions on ETS design, and those that did were not unified. Two metal industry organizations preferred EU allocation (European Metalworkers' Federation, 2000; Nordic Metal, 2000), while the paper industry preferred member state allocation (CEPI, 2000). Differences were even more pronounced in relation to free allocation versus auctioning. The lime industry did not mention the allocation method, the steel industry did not have a common position, the paper industry called for free allocation, and the ceramics industry supported full auctioning (Cerame-Unie, 2000, p. 1; CEPI, 2000; EuLA, 2000; Eurofer, 2000, p. 1). General business associations such as UNICE (now BusinessEurope) were explicit about the need for free allocation (UNICE, 2000). Environmental NGOs – represented by the Climate Action Network Europe (CAN Europe) – pushed for full auctioning (Climate Network Europe, 2000, p. 4). CAN Europe stated that emissions trading was "a potentially useful measure towards meeting the EU's vital Kyoto Protocol target" but "not the most important", and that the "advantages [of emissions trading] can only be realised if the details of the system are right from the start" (Climate Network Europe, 2000, p. 1).

These disagreements were in part due to the fact that the ETS was still on the drawing board and hence largely theoretical:

> "…in the beginning we were dealing with stakeholders who themselves didn't really know how their businesses would be affected. […] when we were talking about allocation, we were talking about a concept that the businesses themselves didn't fully appreciate the implications of." (Interviewee 4, European Commission, May 2016)

The member states were also split on ETS design. When the ETS was being formulated between 1999 and 2003, the Council was composed of fifteen EU Member States largely in Western Europe (the EU-15). EU climate legislation was still in its infancy (Jordan and Rayner 2010, pp. 64-71). Within the EU-15, a group known as the 'Green Sextet' generally pushed for more stringent environmental protection: Germany, the Netherlands, Denmark, Sweden, Finland, and Austria (Liefferink and Andersen, 1998). However, especially in the early consultations, these traditional distinctions broke down somewhat and member state positions did not fit neatly into this typology. In part, this was again due to the theoretical nature of EU emissions trading: the basic architecture of the system had not yet been decided. Another reason was that for the member states – in the same way as for the non-governmental actors – the implications of the instrument were unclear:

> "The politics at the time was influenced by [the fact] that very few people understood what was really going to happen. Some countries didn't even know what types of installations would be covered on their soil." (Interviewee 9, member state government, June 2016)

Of the member states, only three adopted a clear position on allocation in their Green Paper responses: Sweden and Denmark wanted full auctioning, and Ireland supported a mix of free allocation and auctioning (European Commission, 2001a). Belgium and Denmark supported an EU cap, while Ireland, Italy, and the Netherlands advocated member state caps. The European Parliament's ENVI committee supported an EU cap and auctioning, and the ITRE committee joined it in supporting auctioning (Committee on the Environment, Public Health and Consumer Policy, 2000, p. 9). In summary, the different groups – the electricity industry, the energy-intensive industries, other industries, the European Parliament and member states – held widely diverging preferences on ETS design.

5.2.2 Policy formulation in the European Commission: 1999-2001

After the consultation process, the policy formulation process continued apace within the Commission. DG Environment had already been drafting ETS legislation in parallel with the ECCP and had been strongly influenced by the scoping studies and informal discussions that were carried out with outside experts from 1999 to 2001 (Dreger, 2014, pp. 32–36, 38). Internally, from a very early stage DG Environment had a clear preference for an EU-wide cap, EU-level allocation, and auctioning (Boasson and Wettestad, 2013, p. 64; Dreger, 2014, pp. 36–37, 53; European Commission, 2000a, p. 18, 2000c, p. 2; Skjærseth and Wettestad, 2010b, p. 113). Despite its internal preference for a centralized ETS that auctioned allowances, the ETS team and the political leadership of DG Environment believed that an EU cap and auctioning would not be successfully adopted due to anticipated resistance from "industry, DG Enterprise (DG ENTR) and many member states" (Dreger, 2014, p. 37).

> "[DG Environment] would have wanted a system with one single cap and everything to be auctioned […] but then of course the politics come in between and then you create something else." (Interviewee 9, member state government, June 2016)

Therefore, in September 2001, DG Environment circulated an ETS proposal for inter-service consultation within the Commission that featured member state-led allocation and cap-setting, and 100% free allocation in Phase I, with future allocation methods to be decided through comitology (DG Environment, 2001; European Commission, 2001b). This proposal drew generally positive responses from DG Competition (DG COMP), DG Economic and Financial Affairs (DG ECFIN), DG Taxation and Customs Union (DG TAXUD) and DG Energy and Transport (DG TREN), the last of which Dreger (2014, p. 50) has described as being "very skeptical about the [ETS] proposal" as recently as 2001 (DG Competition, 2001; DG Economic and Financial Affairs, 2001; DG Energy and Transport, 2001; DG Taxation and Customs Union, 2001). Both DG ECFIN and DG TAXUD were positively disposed to auctioning, discussing its benefits for cost-efficiency and simplicity (DG Economic and Financial Affairs, 2001, p. 6; DG Taxation and Customs Union, 2001, p. 3). DG TREN supported free allocation, stating that "the principle that allowances must be given for free to operators should be without time limit" because of "the high costs that [auctioning] inflicts on companies" (DG Energy and Transport, 2001, p. 4).

In contrast, DG Enterprise and Industry (DG ENTR) opposed the initial proposal (Dreger, 2014, p. 50). DG ENTR had initially demanded co-responsibility for the proposal (ibid., p. 50), had attempted to change the treaty basis to require unanimity voting[10] in the Council (ibid.), and had played a key role in blocking the proposal from being published early after a first inter-service consultation in May 2001 (ENDS Europe, 2001a). Although its response to the second inter-service consultation was "favorable", DG ENTR made clear that it opposed a mandatory system. Its response stated that "…we consider that it would be hazardous to seek to impose at this stage a fully-fledged Community scheme of emissions trading". It cited "the risk of disruption to emissions reduction programs being developed or already in operation in some Member States, e.g. UK and Germany", as well as "further burdens on particular industries and enterprises" (DG Enterprise and Industry, 2001, p. 1). However, DG Environment did not abandon its proposal, and although the Enterprise and Industry Commissioner argued against the ETS in the College of Commissioners,

[10] Unanimity voting would allow a single member state to block the legislative proposal.

the proposal eventually garnered sufficient support and was published in late October 2001 (Dreger, 2014, p. 57).

5.2.3 Decision-making (2001-2003)

The proposal (European Commission, 2001b) was considered under the Ordinary Legislative Procedure by the Environment Council and the European Parliament between October 2001 and July 2003. The Commission's proposal was for a mandatory, EU-wide system where each member state allocated allowances to installations on its territory. The overall ETS cap would be determined by combining these national, bottom-up allocations. It proposed 100% free allocation in Phase I (2005-2007) and an unspecified "harmonized method of allocation" for Phase II (2008-2012) to be determined through the comitology procedure.

However, even at this stage, the basic architecture of the ETS was still far from settled. For example, the mandatory nature of the ETS proved to be a long-running point of contention, especially in the Environment Council. In December 2001, the Belgian Presidency reported that "the majority of Member States [were] in [favor] of a mandatory system" (Council of the European Union, 2001, p. 13), but it was also reported that there was a blocking minority against a mandatory system (ENDS Europe, 2001b). The UK continued to push for a voluntary system – which would have mirrored its national ETS – for eight months after the Commission released its proposal (Council of the European Union, 2002a, fn. 32). Some industries also adopted similar positions. In response to the 2001 proposal, Eurelectric supported a voluntary ETS in Phase I (Eurelectric, 2001). As noted above, energy-intensive industries had strongly pushed for a voluntary system. But by September 2002, discussion of a voluntary system ended, likely due to the fact that by then a sufficient majority in the Council favored a mandatory system (Council of the European Union, 2001). On this issue, the Council also had the backing of the European Parliament (Committee on the Environment, Public Health and Consumer Policy, 2000).

According to the 2001 proposal, the ETS cap would be set at the member state level, and member state governments would have the authority to allocate allowances within certain criteria and under Commission oversight (Articles 9 and 11). This general approach to allocation was not a major point of contention in the Council, and was subject to limited comments in Council drafts (Council of the European Union, 2002a, pp. 17, 18). However, Belgium and France pushed for stricter allocation criteria (Skjærseth and Wettestad, 2008a, p. 106; Vis, 2006, pp. 188–189), as did Greece and Austria (Council of the European Union, 2002a, p. 10). This proposal failed to gain momentum: the stricter proposed criteria were not discussed after June 2002 and were not adopted by the Council.

In February 2002, the European Parliament's rapporteur, MEP Jorge Moreira da Silva, had initially proposed an EU cap (Interviewee 2, European Parliament, May 2016; ENDS Europe, 2002a). However, when amendments were tabled in April 2002 he abandoned this approach in favor of stricter allocation criteria based on each member state's Kyoto commitment (ENDS Europe, 2002b). Although these harmonized criteria for member state caps were not adopted, they were a key priority for the Parliament, as evidenced by the prominent role they played in the final trilogue meetings in June 2003 (Council of the European Union, 2003a, pp. 2–3, 2003b, pp. 2–3).

The split between auctioning and free allocation was another important issue in the Council. Immediately after the Commission published its proposal, the Belgian Presidency noted that the "vast majority" in the Council preferred free allocation, and many preferred that all member states be required to use the same form of allocation (Council of the European Union, 2001, p. 13). In the early Council negotiations between January and June 2002, Sweden emerged as a strong advocate of full auctioning alongside Denmark (Council of the European Union, 2002a, fn. 32). At this stage, auctioning in Phase II was supported by the Netherlands (100% auctioning) and Ireland (mixed free allocation/auctioning). Germany supported some auctioning in both phases. The rest of the member states supported free allocation in Phase I and a yet-to-be-determined method in Phase II. In September 2002, Sweden changed its proposal to a 30% maximum level of auctioning for Phase I (mirroring proposals then on the table in the European Parliament), which the UK said it could support (Council of the European Union, 2002b, fn. 9). To summarize positions at this point, there were two member states (Sweden and Denmark) that advocated full auctioning. A further four states supported partial auctioning in Phase I or Phase II (namely, the Netherlands, Ireland, Germany, and the UK). When the Council reached an initial common position in December 2002, it reflected a compromise that favored the supporters of free allocation: there would be 100% free allocation in Phase I, and optional auctioning up to 10% in Phase II (Council of the European Union, 2002c, p. 7).

Table 5.2 **Member state positions on allowance allocation (Jan.-June 2002)**

Actors	Phase I (2005-2007)	Phase II (2008-2012)
Sweden, Denmark	100% Auctioning	100% Auctioning
The Netherlands	Free Allocation	100% Auctioning
Ireland	Free Allocation	Mixed
Germany	Some Auctioning	Some Auctioning
Austria, Belgium, Finland, France, Greece, Italy, Luxembourg, Portugal, Spain, UK	Free Allocation	Harmonized; To be determined.

Source: Council of the European Union, 2002a, fn. 32.

The European Parliament strongly advocated a higher percentage of auctioning. Initial proposals from rapporteur Moreira da Silva foresaw 30% mandatory auctioning in Phase I and 100% auctioning in Phase II (ENDS Europe, 2002b). The Parliament's first reading position in October 2002 reduced this to 15% mandatory auctioning in both phases (European Parliament, 2002). The Commission responded negatively to the amendment, stating it was "…opposed to any auctioning in the first period and wishes to take account of experience before deciding on the method of allocation for the second" (European Commission, 2002, p. 9). In response to the EP, the Council refused to change its position on auctioning when it adopted its second common position in March 2003 (Council of the European Union, 2003c). In the end, the Parliament was not able to push through mandatory auctioning, in part because Germany's then coalition government refused to support it (Vis, 2006, p. 190). However, the Parliament included increased auctioning as one of its core amendments in trilogues. The final agreement created 5% optional auctioning in Phase I, to be added to the Council's existing proposal for 10% optional auctioning in Phase II (Council of the European Union, 2003b, p. 9).

5.2.4 Summary

The text of the 2003 Directive was officially published in October 2003 (Official Journal of the European Union, 2003). The Commission had succeeded in securing a relatively swift adoption of a mandatory EU system in the face of significant opposition. On cap-setting and allocation authority, the Council (along with DG Enterprise and Industry and the energy-intensive industries) had prevented the Commission from proposing an EU-level allocation system or mandate allowance auctioning, and largely resisted efforts to constrain the amount of allowances that member states could allocate. On auctioning, a combination of internal Council pressure from Sweden and its allies, combined with pressure from the Parliament during trilogues, produced a limited, optional system of auctioning. This was much less than the 100% auctioning that Sweden and Denmark had initially advocated, the 30% mandatory auctioning that the Parliament had considered, or the 15% that it adopted in its first reading. It did, however, make auctioning an option in the first two phases of the ETS. At the same time, it severely limited the ability of member states to auction allowances. For member states that supported full auctioning, such as Sweden, this put a cap on the amount of auctioning they could implement.

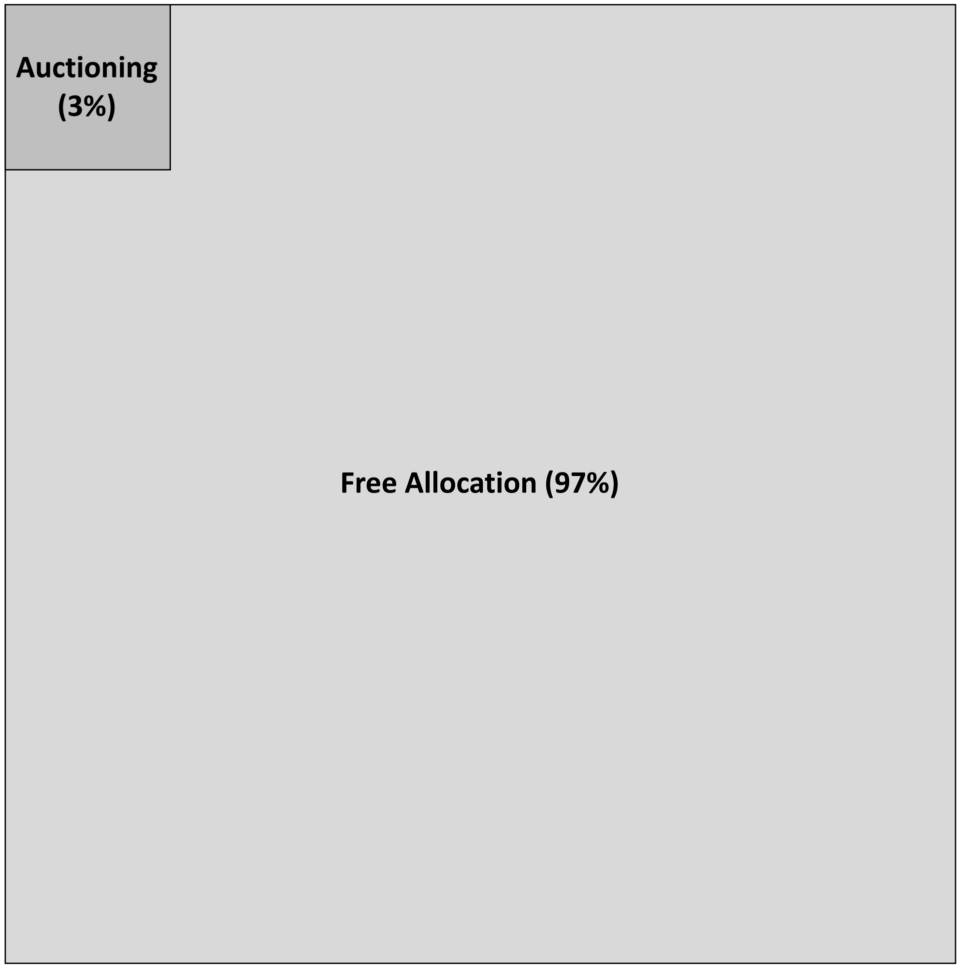

Figure 5.2 **Allocation of allowances in Phase I and Phase II (2005-2012)**[11]

When the 2003 Directive was implemented between 2005 and 2012, it led to the distribution of allowances shown in Figure 5.1. On average, member states had the ability to auction a maximum of 8% of allowances between 2005 and 2012. In reality, only around 3% of allowances were auctioned during this time, almost all of them in Phase II (European Environment Agency, 2017).[12] The remainder were allocated by the member states for free to their ETS sectors.

[11] This figure does not include credits from the Kyoto Protocol flexibility mechanisms (CERs and ERUs) surrendered in Phase II, which were equivalent to 6% of the directly-allocated allowances (Source: European Environment Agency, 2017).
[12] Comparison of "1. Total allocated allowances" and "1.3 Allowances auctioned or sold" (see reference).

5.3 The EU ETS: Initial effects (2002-2006)

The ETS began operation on January 1, 2005. Even before that date, the policy had begun to have effects on the actors that were involved in policy formulation and decision making. One example of this was the increase of resources for the Commission to implement and oversee the policy. The ETS's adoption led to an increase in the size of the core team in DG Environment (Interviewees 4 and 17, European Commission, May and June 2016). Building the registry for regulated installations, scrutinizing member state allocations, and reviewing the policy required significantly more resources than the ETS team had at the end of 2003. In the early 2000s, there was a small group of staff in the European Commission, originally based in both the climate change and economic analysis units of Directorate-General Environment (DG ENV). When the Green Paper on emissions trading was published in 2000, one or two staff members were working on the policy full time in DG Environment (Interviewee 4, European Commission, May 2016). By 2005, one interviewee estimated 5-6 people were working on the ETS (Interviewee 3, European Commission, May 2016). In 2006, a separate emissions trading unit was created in the Climate Change and Air department of DG Environment (European Communities, 2008, p. 247; Interviewee 3, European Commission, May 2016). By 2009, there were an estimated 10-12 ETS-focused staff in this unit (Interviewee 3, European Commission, May 2016). DG ENV also built up expertise on ETS-related issues, which in the technical ETS policy discussions were an important resource. Its detailed ETS-related knowledge had given DG Environment a key advantage in the policy process, leading to the successful and rapid adoption of the 2003 Directive. As the ETS grew steadily more complicated, the need for expert knowledge increased and the demands on the DG grew (Braun, 2009, p. 483; Dreger, 2014, p. 51).

Energy-intensive industries were among the groups to be most immediately affected by the ETS. In Phase I, nearly all energy-intensive industries were allocated more allowances than their emissions (European Environment Agency, 2017). By selling unused allowances, many energy-intensive companies were able to generate significant revenue. For example, Arcelor Steel made €85 million in allowance sales in 2005 and €101 million in 2006 (Arcelor, 2007, p. 108, 2006, pp. 195–196). Revenue streams on this scale were valuable to the companies that received them.

From the perspective of some policy actors, this had negative consequences for ETS policy making. Asked how free allocation affected ETS politics, one interviewee stated:

> "It changes everything. [The energy-intensive industries] want to keep getting allowances for free. You create a constituency that lobbies very heavily against anything that would mean fewer free allowances." (Interviewee 5, environmental NGO, May 2016)

Another interviewee stated of energy-intensive industries that:

> "...their business models now rely on this stream of free allocation […] they are now dependent on it in a way that we never would have designed the system to have allowed. But we are where we are." (Interviewee 19, member state government, July 2016)

Free-allocation revenue streams were even more valuable because the ETS also imposed costs. First of all, there were the direct costs of allowances needed for emissions. Approximately one-third of the emissions that were covered were "non-energy-related industrial processes" emitted directly from industrial production processes (European Commission, 2011c, p. 71). The industries claimed that these "process emissions" would be more expensive and difficult to reduce than other emission sources. One estimate suggested that industries such as cement and refining were dependent on free allocation to offset these increased costs (Grobbel, 2007, p. 6). Many of the industries were also electricity-intensive, and were therefore sensitive to any effect (real or perceived) that the ETS had on electricity prices (Lund, 2007; Power Intensive Industries, 2004). As a result, the ETS created shared policy concerns for the energy-intensive industries. Crucially, these concerns cut across industries that in many respects were very different from each other and in some cases, were direct competitors, e.g., the steel and aluminum industries competed to supply automobile production (Mayyas et al., 2012; Roth et al., 2001).

During the Green Paper consultation and the European Climate Change Programme meetings, the energy-intensive industries did not place a high priority on ETS negotiations and did not coordinate common policy positions (Interviewee 4, European Commission, May 2016; Skodvin et al., 2010; Wettestad, 2009). As it became clear that the ETS would be mandatory and would encompass most of their activities, the energy-intensive industries began to coordinate more intensively. In April 2002, six industry associations – representing producers of steel, cement, paper, glass, metals, and lime – released an "Energy Intensive Industries' Position" focused on allowance allocation (Energy Intensive Industries, 2002). Altogether, these six industries released five position papers between April 2002 and the political agreement on the ETS in July 2003 (e.g., Energy Intensive Industries, 2003, 2002). They continued to call for fundamental changes to be made to the Commission's proposed cap-and-trade system (e.g., with relative targets), stating that "the adoption of a cap and trade system limits growth and distorts competition" (Energy Intensive Industries, 2003, p. 2). If a cap-and-trade system was adopted, they opposed auctioning.

In total, between 2002 and 2005, this group released ten position papers on the ETS (e.g., Energy Intensive Industries, 2005, 2003). In 2005, these six industries formed the Alliance of Energy Intensive Industries (AEII) as a direct and explicit response to the ETS (Interviewee 18, energy-intensive industry, July 2016). In November 2005, the newly-formed AEII released a statement calling on policy makers to address the effect of the ETS on rising electricity prices (Alliance of Energy Intensive Industries, 2005). Although climate policy was not the group's only focus (Eikeland, 2011, p. 256), every AEII position paper between 2002 and 2005 mentioned the ETS. An interviewee from an energy-intensive industry association explained the reasons for the Alliance's creation:

> "You need to join forces to be heard. This is the *raison d'être* of alliances. If you ask for your sector [only], you are unlikely to succeed. When you see that you share issues with others, you join forces, you represent more of the economy." (Interviewee 18, energy-intensive industry, July 2016)

The Alliance grew quickly. Between 2004 and 2005, four other associations joined. They represented industrial energy consumers, the chlor-alkali industry, the ferro-alloy industry, and the ceramics industry (cf. Alliance of Energy Intensive Industries, 2005; Energy Intensive Industries, 2004). A fifth member – the European Expanded Clay Association – joined in 2007 (Alliance of Energy Intensive Industries et al., 2007). Although the chemicals industry was not yet a full member or even within the scope of the ETS, it began to coordinate with the AEII during ETS negotiations (European Commission, 2007a). As a result, by 2007 the energy-intensive industries covered by the ETS were almost all part of the AEII or coordinating with it – with the exception of the refineries association FuelsEurope, which joined in 2010.

In contrast to the energy-intensive industries, the divisions within the electricity generation industry on ETS design proved to be far more long-lasting. These divisions were based on the differential impact of the ETS on high-carbon and low-carbon electricity companies. In Phase I, free allocation to the electricity industry meant that there were two important pathways by which the ETS directly affected electricity companies: the change in the price of electricity and the value of freely-allocated allowances. First, the ETS affected the electricity price because companies were able to pass on costs to energy consumers. In many EU countries, the price of electricity was determined by the marginal cost of fossil fuel electricity generation, which was increased by the ETS (Sijm et al., 2006). Low-carbon and high-carbon electricity companies both benefited from this increase in the electricity price. The second pathway was the value of the freely-allocated allowances. This pathway was much more important for high-carbon generators, in that they emitted more and hence received more allowances. It was also important because free allocation reduced their need to buy allowances on the secondary market. Low-carbon generators received relatively limited free allocation, and also needed to buy fewer allowances. For low-carbon electricity companies, high allowance prices raised the price of electricity, increasing their revenues, with a relatively limited increase in costs from buying allowances because of their low average emissions (Keppler and Cruciani, 2010; Interviewee 6 (May 2016), Interviewee 27 (March 2017), and Interviewee 28 (April 2017), electricity generation industry). If free allocation was shifted to auctioning, low-carbon generators would still receive revenue from higher electricity prices, but high-carbon generators would lose the revenues since they were dependent on free allocation, and if they were not able to pass through all the cost, they could also lose money (Chen et al., 2008). A staff member from an electricity-related business association stated:

> "We have a diverse membership. The generation asset portfolio of the companies in our membership differs a lot, some still rely more heavily on coal while others own more nuclear or renewables capacities, and as such those interests don't always match." (Interviewee 6, electricity generation industry, June 2016)

The electricity industry successfully passed through a significant percentage of the cost of allowances to consumers, including energy-intensive industries, meaning that in practice the purchase of allowances was not necessarily a large net cost for them (Laing et al., 2014, p. 514; Sijm et al., 2006). Therefore, many companies could gain revenue by charging for the price of allowances they had been freely allocated. This revenue meant that many electricity companies benefited from a higher allowance price, as evidenced by the rising stock prices of electricity companies whenever ETS allowance prices increased (Ellerman et al., 2016). This was in line with economic theory: the companies were simply passing on the "opportunity cost" they had incurred by using the allowances to achieve compliance rather than selling them (Laing et al., 2014, pp. 513–515).

In response, the energy-intensive industries began to refer to the electricity industry's ETS-related revenues as "windfall profits" (European Daily Electricity Markets, 2004). In March 2004, a statement from the "Power Intensive Industries" said that the ETS would induce "…an unjustifiable increase in power prices and consequently unjustifiable windfall profits for electricity producers" (Power Intensive Industries, 2004). The possibility of windfall profits was initially downplayed by DG Environment and the electricity industry (European Spot Gas Markets, 2004; Platts Coal Trader International, 2005). However, increasing evidence of these revenues, achieved through higher electricity prices, built up from academic research (Sijm et al., 2006). The energy-intensive industries were responsible for approximately 40% of EU electricity consumption between 2005 and 2007 (European Environment

Agency, 2016), meaning that there was a concentrated and organized constituency that was concerned about the effect that the ETS had on electricity prices.

The energy-intensive industries raised the issue of windfall profits to reduce the impact of the ETS on electricity prices. At the national level, they convinced several member state governments to take policy action. In Spain, electricity companies were prohibited from raising electricity prices (European Daily Electricity Markets, 2007). The Netherlands proposed a transfer of some of its electricity industry's free allocation to energy-intensive industries in its second National Allocation Plan, but this was rejected by the Commission (European Commission, 2007b, pp. 11–12). However, rising concern over windfall profits was an important driver in the Commission's decision to establish a High Level Group on Competitiveness, Energy and Environment (Wettestad, 2009, pp. 314–315), convened by the Enterprise Commissioner. The High Level Group was used effectively as a platform by those arguing that there were important risks related to windfall profits and carbon leakage (Dreger, 2014, p. 95; European Commission, 2005; High Level Group on Competitiveness, Energy and the Environment, 2006; Wettestad, 2009).

In addition to the direct effects on industry from ETS sectors, there were further effects due to the rapidly growing secondary market (European Daily Electricity Markets, 2005; Lecocq, 2005; Lecocq et al., 2003). In terms of the volumes traded, 9 $MtCO_2e$ was traded in 2004, rising to 1,101 $MtCO_2e$ in 2006, by which point ETS-related trading made up 67% of the global carbon market (Capoor and Ambrosi, 2007, p. 3, 2006, p. I; Lecocq, 2005, p. 34). Attendance at the related Carbon Expo conference of carbon traders and policy makers rose from 700 people in 2004 to about 2,200 in 2006 (Carbon Expo, 2008, p. 2, 2004). Much of the interest was London-focused; that city had made a concerted effort to become the home of carbon trading in Europe (Voss and Simons, 2014, p. 11). As noted above, the electricity industry played an important and active role in growing the European carbon market. The growth of the ETS attracted market intermediaries and other similar organizations. In Phase I, 99.9% of allowance transfers were made by only 143 trading accounts (2% of the total, Betz and Schmidt, 2016, p. 482). Electricity companies were also directly engaged in trading, via their existing trading desks (Interviewee 6, electricity generation industry, June 2016). Half of the active accounts were owned by energy companies, mostly electricity companies with some oil and gas companies. A further 40% of the active trading accounts were owned by financial companies (Betz and Schmidt, 2016, p. 483).

The growing role of market intermediaries – including the financial industry, consultancies, and law firms – led to increased resources for and engagement by these companies in the ETS policy process. Three actors in particular led the majority of engagement. The first, the International Emissions Trading Association (IETA) was founded in 1999 in Geneva and was a global, cross-sectoral organization (Interviewee 1, market intermediary, May 2016). IETA's membership grew from 40 members in 2000 to 181 in 2008 (IETA, 2008, IETA, 2000). In 2006, 40% of its 83 EU-based members were ETS industries (electricity and energy-intensive), and 60% were non-industrial market intermediaries including banks, traders, certifiers/verifiers, and law firms (IETA, 2006). The second actor was the Carbon Markets and Investors Association[13] (CMIA). Formed in London in February 2007, the CMIA described itself as a "trade association for carbon market service providers", and had around 60 members in August 2008 (CMIA, 2008). Unlike IETA, its members were drawn solely from outside ETS sectors. In 2009, the first year data is available, the largest number of members came from banks, trading firms, law firms, and consultancies (CMIA, 2009). Like IETA, the CMIA represented both European and non-European companies, and focused on emissions trading. The third actor was the European Federation of Energy Traders (EFET). Unlike IETA, EFET members were exclusively European. In 2005, 75% of their members came from industry and were heavily concentrated among electricity companies, which alone made up 65% of the membership (EFET, 2005). Although they had not responded to the 2000 Green Paper or been invited to the 1st ECCP, both IETA and EFET had released position papers after the publication of the 2001 Commission proposal (EFET, 2002; IETA, 2002). As the importance of the EU ETS in the global carbon market grew, IETA opened a

[13] The CMIA was founded as London Climate Change Solutions (LCCS) and changed its name to CMIA in August 2008.

Brussels office in 2007 (IETA, 2018; Interviewee 13, market intermediary, June 2016).

5.3.1 Over-allocation and a fall in allowance prices

Phase I (2005-2007) witnessed the first major ETS-related policy crisis. Each EU member state during this time created a draft National Allocation Plan (NAP) that set the total number of allowances to be allocated between 2005 and 2007, as well as how many allowances each installation would receive. Outside observers warned that member states were distributing more allowances than their installations would conceivably need in Phase I (e.g., Grubb et al., 2005). ETS sectors moved from government to government asking for generous allocations, sometimes referring to what other governments had allocated or offering to invest further in a country that allocated a higher number of allowances:

> "One of the explanations for the excessive caps individual member states sought at the start was the lobbying they were subject to by companies active in various member states. I can imagine some of these lobbyists going from capital to capital suggesting allowances be created beyond current emissions to accommodate growth in the National Allocation Plan. These demands were made with promises that the company would invest and create jobs in the member state in that case." (Interviewee 17, European Commission, June 2016)

A former member state official agreed:

> "When we had these discussions [with industry about National Allocation Plans, they would say]: 'You think you are generous? See what we got in the UK. See what we got in Germany. See what we got in France.' And that made us realize, from the start, that this system would be significantly over-allocated." (Interviewee 9, member state government, June 2016)

Not only was the process uncomfortable for those directly involved, but it also led to steep drop in allowance prices, which were strongly influenced by the level of scarcity of allowances allocated under the ETS. If there were more allowances distributed than emissions of carbon dioxide verified, then the price would drop. The allowance price was not only affected by the design of the ETS. Other factors exogenous to the ETS were also important, such as the worldwide price of oil and gas and the level of global economic activity (European Commission, 2006, p. 4; Hintermann et al., 2016). However, the supply in the secondary market was ultimately determined by allocations, and so the ETS policy design played a key role in allowance price formation (e.g., Alberola et al., 2008, p. 789; Koch et al., 2016).

In April 2006, the then-25 EU member states collectively reported emissions approximately 4% lower than the allowances they had allocated. The allowance price immediately dropped from a high of €31 in April 2006 to an average of €15 in June 2006 (Alberola et al., 2008, pp. 787–788; European Environment Agency, 2011). A year later in 2007, verified emissions were 2% lower than allocations (ENDS Report, 2007a). Because Phase I was occurring before the Kyoto Protocol's commitment period began in 2008, allowances from Phase I were not valid in subsequent phases. When it became clear in mid-2007 that there were more allowances than were needed to meet emissions, prices of Phase I allowances fell to near €0 and did not recover (see Figure 5.2).

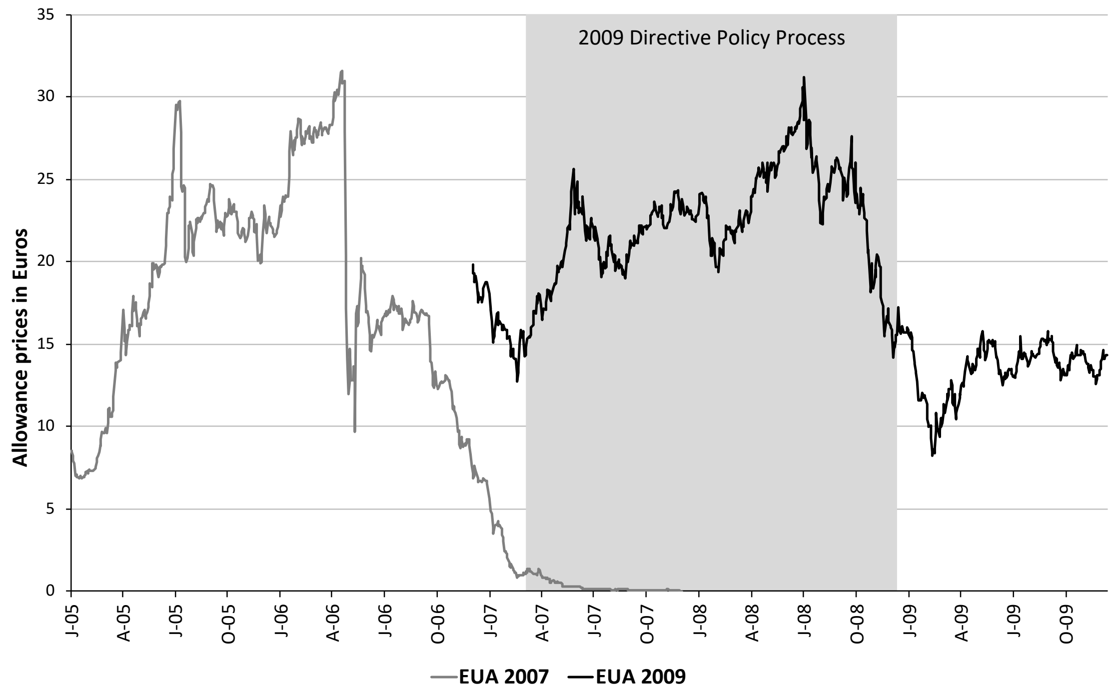

Figure 5.3 **Allowance prices between January 2005 and December 2009**

Note: 'EUA 2007' refers to futures contracts for allowances that expired at the end of Phase I in December 2007. 'EUA 2009' refers to futures contracts that expired in December 2009 (Source: European Environment Agency, 2011).

The price crash pushed the ETS into a period of crisis. In May 2006, the ENDS Report stated that:

> "The first year's data from the EU emission trading scheme revealed a massive surplus in allowances, causing the price of carbon to plummet. Governments are under intense pressure to set tighter caps for the scheme's second phase." (ENDS Report, 2006a)

Although member states had broad authority to decide how allocation to individual installations was carried out, under the 2003 Directive the Commission had an oversight role to ensure that overall allocations in each country met certain criteria, including being in line with Kyoto Protocol targets (Skjærseth and Wettestad, 2008a, pp. 172–174, 2008b). Using this authority, the Commission cut the overall allocations proposed by the member states by 4.5% in Phase I and 9.5% in Phase II (Skjærseth and Wettestad, 2008b, p. 280, 2008a, p. 175). This forced national governments to make politically difficult decisions about how to distribute these cuts. In many cases, the electricity generation industry bore the brunt of these adjustments, e.g., in the UK (ENDS Report, 2006b). This led, amongst other things, to legal battles between the Commission and member states including the United Kingdom, Germany, and Poland over DG Environment's role, which eventually resulted in ECJ judgments (e.g., European Court of Justice, 2005). One of Dreger's interviewees described this process as "excruciating" (Dreger, 2014, p. 62). A European Commission interviewee, in describing the NAP process, stated:

> "…it was horrible rejecting 23 countries, and it was horrible for them as well. To my knowledge this hadn't happened in other areas, so everyone agreed we move to a better system." (Interviewee 3, European Commission, May 2016)

5.4 The 2009 Directive: Stakeholder consultation and the Council

The 2009 Directive policy process can be defined as the time period between June 2005, when the first stakeholder consultation on the topic was released (DG Environment et al., 2006), and April 2009 when the final legislation was signed (Official Journal of the European Union, 2009b). The 2003 Directive had included a provision for a mandatory report from the Commission on the ETS by June 2006 (Article 30). In this context, a survey was sent to ETS-related stakeholders from June to September 2005, followed by meetings under the 2nd European Climate Change Programme that took place in the first half of 2007. The Commission released its proposal in January 2008 (as part of the 2008 Climate and Energy Package), and a political agreement was reached between the Council and the Parliament in December 2008 (Council of the European Union, 2008; European Commission, 2008a). The remainder of Section 5.4 examines the position of non-governmental actors and the shift in the Environment Council to support a more centralized ETS in the first half of 2007. Section 5.5 analyzes the formulation of the Commission's January 2008 proposal and the subsequent negotiations that led to the 2009 Directive.

5.4.1 Non-governmental actors

Combining the 2005 ETS survey and the 2nd European Climate Change Programme meetings, 177 publicly-identified non-governmental actors participated in early discussions on the 2009 Directive (see Table 5.2). This brought the total number of cumulative consultation participants to 229 actors in 2008 (Figure 5.3). Around 20% of the 2009 Directive participants (36 actors) had previously participated in the consultations on the 2003 Directive, including Eurelectric, many energy-intensive industries (e.g., Eurofer), general business associations (BusinessEurope), and environmental NGOs (CAN Europe). Some actor types increased their share of participants, including energy-intensive industries (from 38% in 2000-2001 to 44% in 2005-2007) and especially market intermediaries (from 3% to 10%, much higher than their average 4% share in all consultations). General business associations had the biggest decrease (from 13% to 7%).

As in the 2003 Directive policy process, the electricity generation industry was split on the 2009 Directive. In responses to a 2005 survey from the Commission, 64% of the 50 electricity companies that responded opposed increased auctioning, 26% were in favor, and 10% were indifferent (DG Environment et al., 2006, p. 48). In their submissions to the 2nd ECCP, Dansk Energi, EDF, and E.ON supported auctioning (for the latter, this was a marked shift since 2003), while Finnish Energy explicitly opposed it (Dansk Energi, 2007; EDF, 2007; E.ON, 2007; Finnish Energy Industries, 2007). Given this continuing lack of consensus, it is not surprising that Eurelectric's 2007 contribution to the 2nd ECCP explicitly stated that it did not have a position on auctioning (Eurelectric, 2007, p. 16).

Table 5.3 **Actors that responded to the 2009 Directive consultations**[14]

Actor type	**Number responding**
Business associations/companies	155 (84%)
Aviation	1 (0.6%)
Electricity generation	27 (15%)
Energy sector (other)	8 (5%)
Energy-intensive industries	77 (44%)
General	13 (7%)
Market intermediaries	18 (10%)
Other	11 (6%)
Academic/research institutions	9 (5%)
NGOs	10 (6%)
Other	3 (2%)
TOTAL	**177**

The energy-intensive industries had largely joined together in the AEII – at the time of the ECCP2, 8 of 11 energy-intensive ETS sectors were part of the Alliance or affiliated to it. This contrasted sharply with the situation in 2000, when their positions had diverged. The AEII submission suggested a baseline-and-credit system (AEII, CEFIC and IFIEC, 2007); the steel industry's entire submission was devoted to advocating this possibility (Eurofer, 2007). Therefore, although AEII-affiliated industries at times supported emissions trading, and were silent on the level at which a cap should be placed, these positions should be treated cautiously. First, baseline-and-credit systems are a type of emissions trading. Voicing general support for

[14] This includes actors responding to the 2006 ETS Survey and/or participating in the 2nd European Climate Change Programme working group on emissions trading.

emissions trading was not a vote for the policy instrument as it stood in 2007: a cap-and-trade system. Second, the AEII-affiliated industries did not mention the level of the cap, but their submissions and the minutes of the ECCP2 meeting make clear that was because they were actually suggesting a system without a cap (European Commission, 2007a, p. 13).

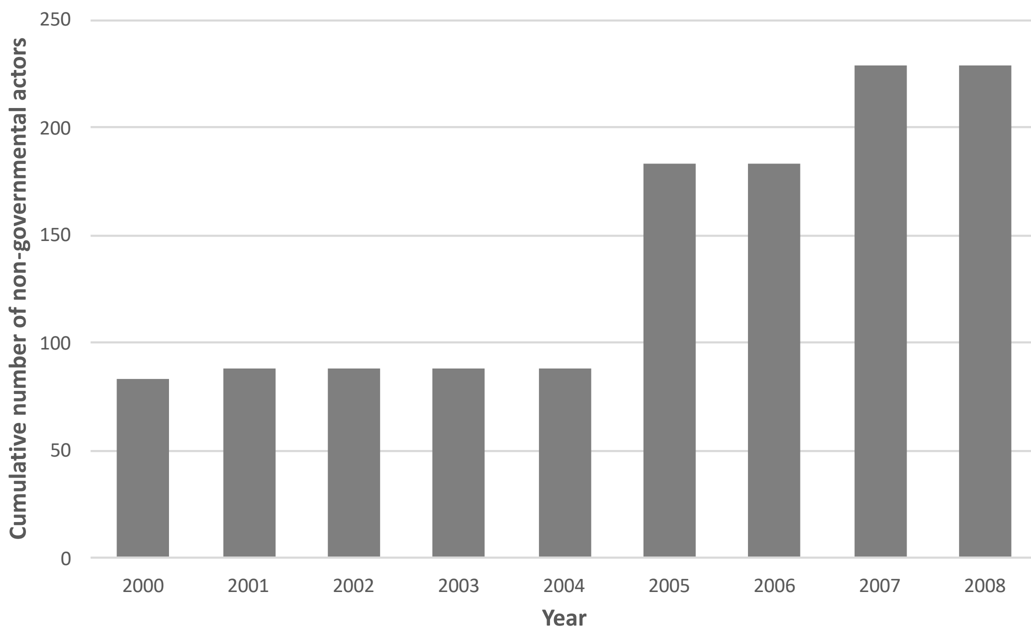

Figure 5.4 **Cumulative participants in ETS consultations (2000-2007)**

Source: Author's calculations based on consultations presented in Table 4.1.

In addition, the fact that many of the key design elements of the ETS had been settled in 2003 (e.g., a mandatory, EU-wide cap-and-trade system) made it difficult for the energy-intensive industries to advocate wholesale change in the policy instrument. For example, at the ECCP2 meeting on the cap, Head of Unit of the climate unit Jos Delbeke said that a "baseline and credit system, presented by Eurofer, however, would not be compatible with the EU ETS" (European Commission, 2007a, p. 13). Although a baseline-and-credit system may have been possible before the ETS was adopted in 2003, once a cap-and-trade system was a reality it became much more difficult, both logistically and politically, to change it (see, e.g., Müller and Slominski, 2013, p. 1434).

The AEII was solidly against auctioning. Its opposition was not simply limited to auctioning for energy-intensive industries. The AEII framed free allocation as compensation for ETS costs to industries that could not easily pass on their costs and hence were at significantly greater risk of carbon leakage. AEII members coordinated positions, arrived at meetings under the umbrella of the AEII (see, e.g., European Commission, 2007a), and released joint position papers. They also successfully coordinated with DG Enterprise and sympathetic member states. They were also opposed to increased auctioning to the electricity industry, because they feared that doing so would raise electricity costs (European Commission, 2007a, p. 6). The AEII had requested that freely-allocated allowances be transferred from the electricity generators to the energy-intensives as compensation for indirect costs from electricity prices (p. 9). If the electricity industry was subject to auctioning, this potential pool of allowances would no longer be available for this purpose. But once it was clear that electricity industry auctioning would happen, the AEII pushed for compensation from auctioning revenue (European Commission, 2007a, p. 7). In this case, they preferred the compensation regime to be harmonized at the EU level.

The Climate Action Network supported allowance auctioning with an argument based on economics as well as the polluter pays principle (CAN Europe et al., 2007). The environmental NGOs had also become more positive towards the ETS as its design shifted towards their preferences (Skjaerseth and Wettestad, 2010b, pp. 111–112) . Skjaerseth has gone as far as to claim that at this time the ENGOs had become the “most enthusiastic supporters” of the ETS (Skjærseth, 2010, p. 301). Although one interviewee who worked for CAN Europe at this time felt that ENGOs were not as enthusiastic as this description implies (Interviewee 9, environmental NGO, May 2016), they were clearly more positive towards the ETS than they had been in 2000 (compare CAN Europe et al., 2007; Climate Network Europe, 2000).

Market intermediaries such as IETA and EFET did not take strong positions on most issues, but they did agree that there should be an EU-wide cap (EFET, 2007, p. 2; IETA, 2007, p. 18). Their submissions were detailed and technical, and tended to weigh the benefits and drawbacks of policy options such as auctioning or an EU-wide cap. Neither IETA nor EFET took a position on how much auctioning should take place after 2013, despite the fact that they provided detailed suggestions to be used for auction design if EU-wide auctioning were adopted (EFET, 2007, p. 2; IETA, 2007, p. 22).

As this overview suggests, the preferences of non-governmental actors witnessed both continuity and change between 2000 and 2007. Energy-intensive industries began to coordinate and to push for a baseline-and-credit system, oppose auctioning, and request compensation for increased costs. The electricity generation industry remained split on the main ETS design issues, while the environmental NGOs advocated EU cap-setting and full auctioning. Both DG Environment and the European Parliament had supported more harmonized cap-setting and allocation as well as auctioning from early in the process that led to the 2003 ETS Directive (although, as noted in Section 6.2, the Commission did not propose such a system for strategic reasons). This meant that the Environment Council played a key role in the shift to change the ETS. The next section therefore turns to describing that process.

5.4.2 The Environment Council shifts on centralization

In March 2007, the European Council agreed to a unilateral greenhouse gas reduction target of 20% by 2020, and an optional increase to a 30% reduction if other nations made comparable efforts under the UNFCCC (European Council, 2007). This policy decision was driven by preparations for the Copenhagen Climate Conference in December 2009, and pre-dated much of the discussion on ETS policy-making (Bocquillon and Dobbels, 2014; Interviewee 17, European Commission, June 2016). Shortly after (i.e., in April 2007), a draft was circulated to the Environment Council on the ETS. This draft of the Environment Council's conclusions on April 5, 2007 described a significant movement on cap-setting, allocation, and auctioning:

> "…the Council […] SUPPORTS a standardisation of allocation methods and rules so as to ensure a level playing field across the European Union […] IS OF THE VIEW that a significant and mandatory percentage of auctioning has to be seriously considered, at least for activities currently gaining extra profits by passing through CO_2 costs […] UNDERLINES that the setting of the caps

> needs to be done in a more transparent and predictable way in the forthcoming periods…" (Council of the European Union, 2007a, pp. 2–3)

This draft suggested that the Council had shifted even before the meeting of the European Climate Change Programme on May 21-22, 2007, where the cap and allocation were discussed. At that meeting, the Climate Action Network gave a presentation on an EU cap:

> "And one of the first presentations we did there was the call for an EU-wide cap. And I had informally discussed this with the Commission before, and the Commission said: 'Ok, these are stakeholder meetings. If there is sufficient interest by the stakeholders, then we might propose this.' …and there was basically no negative feedback [from the member states], only some positive, definitely for the ones that had to do allocation plans. They were all sitting there, [and they said] we would have no problem with that approach." (Interviewee 9, Environmental NGO, May 2016)

This shift in member state positions on an EU cap was noted in the media as well, with reports that "member states have agreed 'in principle' to the move" to a more centralized cap (ENDS Europe, 2007a). A Council conclusions draft on May 31 stated that member states would invite "the Commission to propose standardized methods for determining the caps", and suggested modifying the NAP criteria (Council of the European Union, 2007b, p. 3). By June 8, the draft had removed the discussion of NAP criteria but still asked for standardized methods, and it was this version that made it into the final conclusions on June 28 (Council of the European Union, 2007c).

One explanation shared by a number of interviewees for this shift was the sheer frustration with the previous, i.e., NAP-led, process:

> "It proved to be a tough process, both for the Commission and for the member states themselves. Everybody hated this process […] And I think that was one of the main triggers why we saw EU-wide cap setting after 2012." (Interviewee 9, member state government, May 2016)

However, the Council was still divided on two points: whether the allocation decisions should move up to the EU level from the national level; and to what extent they should involve auctioning instead of free allocation. The spring and summer 2007 meetings of the Environment Council had led to agreement on an EU-wide cap and eventual moves toward EU-level allowance allocation (ENDS Europe, 2007b).

The Council supported harmonized allocation in the draft on April 5, 2007 (pp. 2-3), and that section remained largely the same throughout the process. Finally, the initial auctioning section had mentioned windfall profits, but this reference was taken out in the post-ECCP draft, which now referred to auctioning and "differentiated allocation methods" based on "the degree of global competition", a reference to free allocation for industries at risk of carbon leakage (Council of the European Union, 2007b, p. 3). Throughout the working group in the summer, "increasingly positive" signals came from the Council about increasing the share of auctioning in the newly-Europeanized ETS (ENDS Europe, 2007a). The biggest change was in Germany's position, given its key role in blocking an EU cap and mandatory auctioning previously (ENDS Report, 2007b).

The shift in the Council on three important elements of the ETS – cap-setting, allocation authority, and auctioning – is noteworthy. Increased support for EU cap-setting was influenced by member state frustrations with the NAP process, and the contentious political processes with the European Commission that it created. Similar frustration related to industries moving from one member state to the next looking for more allowances was put forward as one reason for the shift to EU-level allocation (Interviewee 9, member state government, May 2016). Another interviewee stated:

> "…at national level, more and more decision-makers did not want to prolong a system which allowed lobbyists to play off one member state against another." (Interviewee 17, European Commission, June 2016)

Windfall profits for electricity generators played a central role in the Council shift on the third element: auctioning (Interviewee 28, electricity generation industry, April 2017). Another possible factor that has been suggested was the attraction of greatly increased auctioning revenue for the member states (Dreger, 2014, p. 76; Skjærseth, 2010, p. 303). One interviewee agreed that this was a factor (Interviewee 9, environmental NGO, June 2016), while another did not recall it being a major discussion point (Interviewee 3, European Commission, May 2016).

5.5 The 2009 Directive: Policy formulation and decision-making

5.5.1 Formulation in the European Commission

After the June Environment Council, there was enough member state support for an EU cap and harmonized allowance allocation that DG Environment was able to draft them into its legislative proposal. A total of 25 DGs participated in the decisions leading to the 2009 Directive (up from 15 that responded to the inter-service consultation on the 2003 Directive). Of these, the written responses of four DGs in particular were the most extensive (making up around 60% of the length of responses by page numbers): DG Economic and Financial Affairs (DG ECFIN), DG Energy (DG ENER), DG Enterprise and Industry (DG GROW), and DG Taxation and Customs Union (DG TAXUD).

Prior to the inter-service consultation, DG Environment initially pushed for 100% auctioning, but this was blocked early in the late-2007 internal Commission process by the direct intervention of the DG Enterprise Commissioner (Dreger, 2014, p. 87). In January 2008, DG Environment circulated a draft proposal for inter-service consultation (DG Environment, 2007). For auctioning, DG Environment proposed that electricity generators, refineries, and carbon capture and storage installations be required to acquire allowances through auctioning, with other energy-intensive industries to do so by 2020 (DG Environment, 2007, p. 8). The proposal stated that measures to address the risk of carbon leakage would be discussed, but detailed criteria were not included in the draft proposal. These proposals would have significantly reshaped allowance allocation in the ETS, reducing freely-allocated allowances to approximately 17% of the total in Phase III (see Figure 5.4)

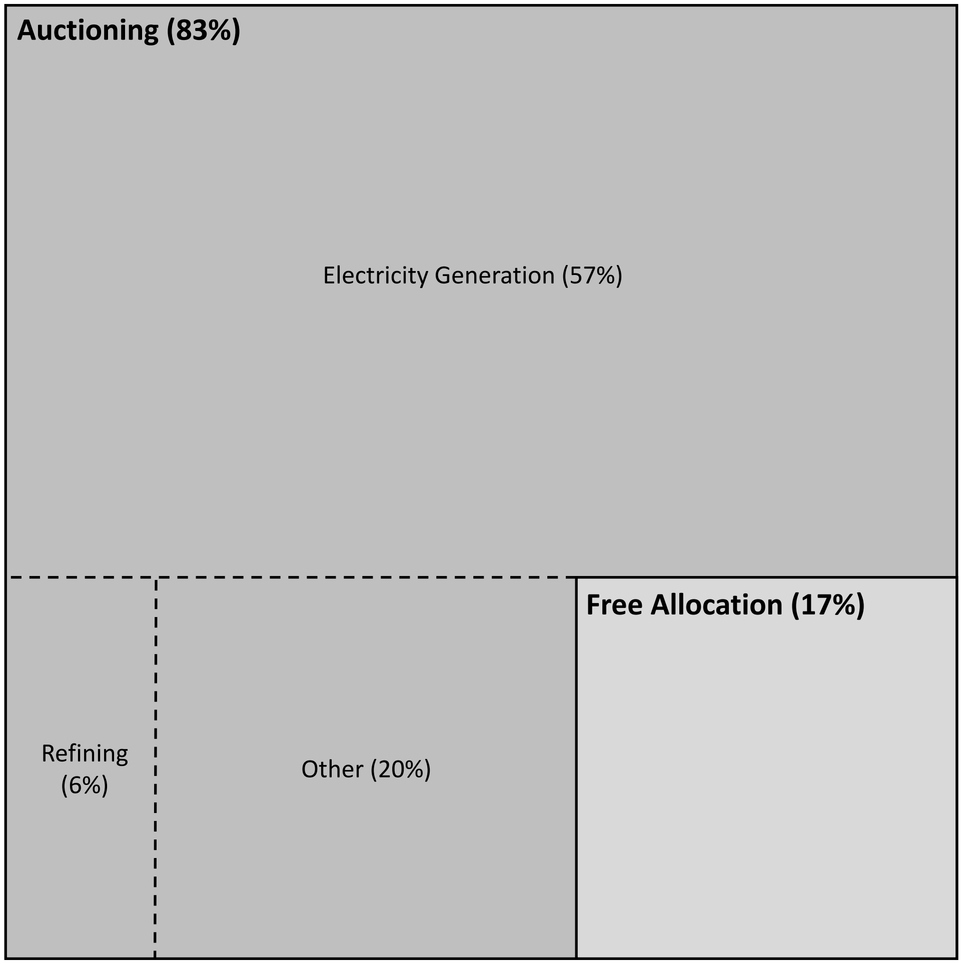

Figure 5.5 **DG Environment proposal for allocation in Phase III (2013-2020)**

Auctioning mandatory for electricity generation and refining industries, reducing over the phase to 30% for other energy-intensive industries, with unspecified measures to combat carbon leakage (Source: DG Environment, 2007).

There was widespread support within the Commission for mandatory auctioning for the electricity industry, especially due to the windfall profits issue (Dreger, 2014, p. 86). DG Energy and Transport also supported the idea (Dreger, 2014, p. 86) and auctioning for electricity generation was included in the published Commission proposal (DG Environment, 2007, p. 5). However, DG Energy objected to including refineries as an auctioning sector, arguing that they were more akin to energy-intensive industries than electricity (DG Energy and Transport, 2008). Its response stated that "the refinery sector is both more subject to international competition and to the risk of carbon leakage than is the case for the power sector" (DG Energy and

Transport, 2008, p. 2). Refineries were removed from the 100% auctioning category in the final proposal (compare DG Environment, 2007, p. 5; European Commission, 2008a, p. 7).

DG ECFIN agreed with DG Environment on free allocation to the energy-intensive industries, and pushed for strict criteria to define the industries that would receive transitional free allocation until 2020 (DG ECFIN, 2008). DG Enterprise and Industry took the strongest stance, giving the proposal a “negative opinion” and arguing that energy-intensive industry should have 100% free allocation until 2020 (DG Enterprise and Industry, 2008b). DG Enterprise also objected strongly to the lack of specificity on carbon leakage (DG Enterprise and Industry, 2008a). However, carbon leakage criteria were not included in the final proposal, despite a strong push from DG Enterprise (Dreger, 2014, p. 103). DG Enterprise also pushed for additional allowances to compensate for the rise in electricity prices (DG Enterprise and Industry, 2008b, p. 13, 2008c, p. 6).

As a result of these internal disagreements, in the Commission’s proposal only electricity generation and CCS companies were required to buy all allowances at auctioning (European Commission, 2008a, pp. 7–8). However, other energy-intensive sectors would get only 80% of their share of allowances freely allocated, reducing to no free allocation by 2020 (p. 8).

5.5.2 Decision-making in the Council and European Parliament

This section focuses on derogations on free allocation negotiated after the Commission’s proposal was published. Much of the public pressure for these derogations came from the Council, and so negotiations there will be the focus in this section. Because the 2008 Climate and Energy Package was agreed at the European Council level in December 2008, the Parliament’s influence was relatively limited (Skjærseth and Wettestad, 2010b, p. 116). The Commission’s proposal was that the electricity industry should be automatically subject to auctioning. The Central and Eastern European member states first negotiated with the French Presidency to switch to voting by unanimity in the Council on the 2008 Climate and Energy Package

(Bocquillon and Maltby, 2017, p. 93). They then successfully negotiated a derogation allowing them to use an average of 40% of the allowances they would otherwise auction to give a declining amount of free allocation to their electricity industries via Article 10c of the 2009 Directive (ENDS Europe, 2008a). Bocquillon and Maltby (2017, p. 94) describe the Article 10c derogation as being "negotiated directly between the French Presidency and Poland". These allowances would be taken out of the share of the member state in question, and so in practice would be a transfer of the allowance value from national governments to the electricity industry. Finally, 12% of auction revenues would be redistributed to Central and Eastern European member states (Article 10(2)(a) and Article 10(2)(c), see Skjærseth and Wettestad, 2010b, p. 106).

The other key issue was which industries would be given free allocation, and when and by whom this would be decided. The Commission's proposal was that this would be decided after the Copenhagen Conference in December 2009, but Germany and other member states pushed for an earlier decision (ENDS Europe, 2008b). The Commission had already begun working on carbon leakage approaches in April 2008 (ENDS Europe, 2008c). In September 2008, it released a report on carbon leakage criteria which suggested that only some energy-intensive industries – aluminum, steel, and cement – would benefit from free allocation (ENDS Europe, 2008d; European Commission, 2008b). Germany proposed criteria based on the amount of CO_2 that would be needed to produce a company's economic value (ENDS Europe, 2008e, 2008f). The final compromise on carbon leakage criteria in December 2008 was based on a sector's cost increases from the ETS and export-orientation (Council of the European Union, 2008, p. 2). These criteria led to most energy-intensive sectors being included on the carbon leakage list.

This outcome meant that there would be a divided allocation process between free allocation and auctioning. It should be noted that this was a compromise: no actors specifically wanted this outcome. DG Environment would have preferred 100% auctioning, while DG Enterprise preferred that the electricity industry's free allowances were given to the carbon-leakage industries. It was now clear that there would be multiple 'pots' of EU allowances, including revenues from auctioning, and the question turned to how they would be distributed. A Commission interviewee made clear that DG Environment saw these revenues as a secondary consideration in the move to auctioning:

> "Initially, auction revenues were a side effect of the ETS, because [auctioning] was an efficient method of allocation. […] In terms of public support for the policy, spending that money on solving the climate problem is helpful. […] Again, this is a side effect from the ETS, it was never the intention." (Interviewee 3, European Commission, May 2016)

Regardless, these newly-created EU-level allowances were also to be put to other uses. One of these was the NER300, a new funding mechanism to support carbon capture and storage (CCS) and early-stage renewable technologies in which the European Parliament played a key role (Boasson and Wettestad, 2014).

5.6 Summarizing the changes to the ETS

The ETS has been the subject of many reforms (see Chapter 2). Amongst these, the 2009 Directive is widely regarded as making very important system-wide changes (Wettestad et al., 2012). The entire architecture of allocation was replaced and moved to the EU level, and auctioning was greatly expanded (Figure 5.5). The free-allocation and auction shares of this new EU allocation amount were created in principle with the Council's acquiescence in summer 2007 and in practice by the Commission's January 2008 proposal. This relatively simple division was then immediately rendered more complex by the 2009 Directive policy process as carve-outs and derogations were made for the NER300, the carbon leakage list, and Article 10c free allocation. The rights to auctioning revenues were also traded between member states. This process was rapid. The new allocation architecture was proposed, and these additions were immediately layered on top. This led to the curious result that the energy-intensive free allocation came from the dedicated free-allocation share, and Article 10c free allocation came from the auction share.

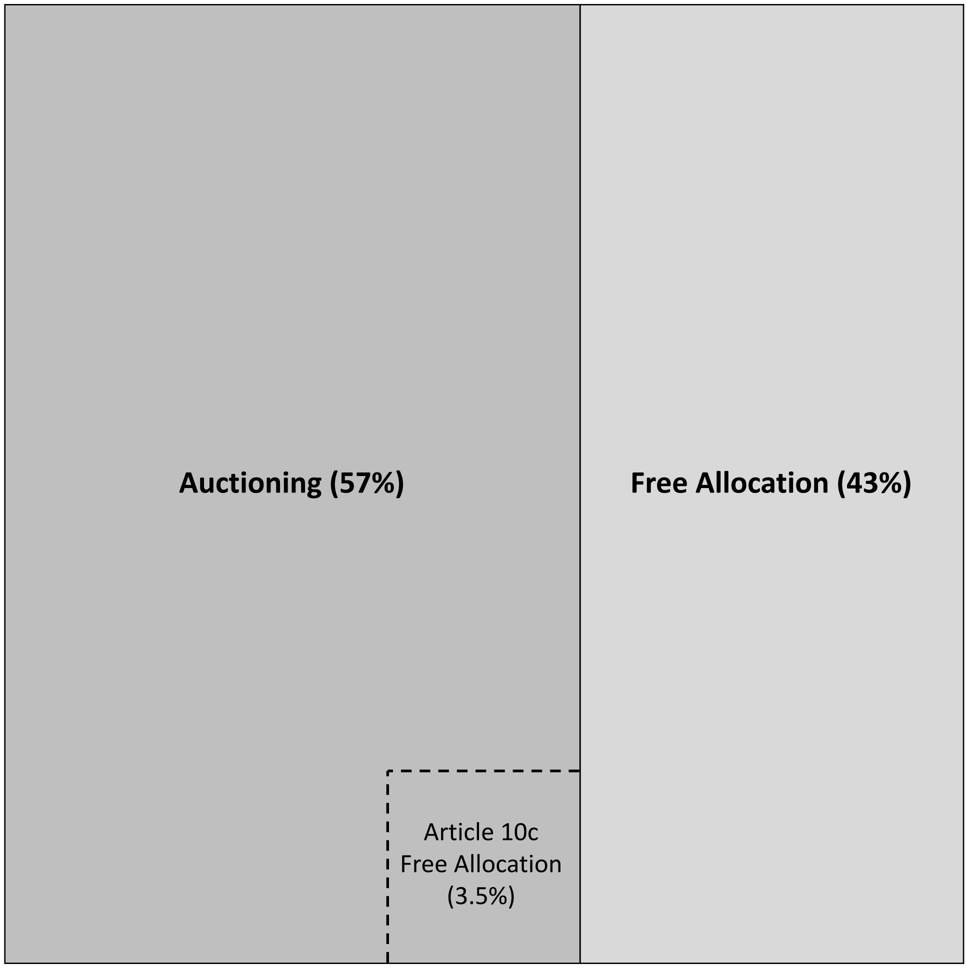

Figure 5.6 **Allowance allocation under the 2009 Directive (2013-2020)**

Compared to the original DG Environment proposal, the refining industry was not subject to mandatory auctioning, most energy-intensive industries were included on a carbon leakage list, and Central and Eastern European member states could freely allocate 40% of their auction share to electricity industries under Article 10c of the Directive (Source: Official Journal of the European Union, 2009).

This was not an outcome that would have been predicted or sought by any of the major players in the free allocation debate. It was a result of intense bargaining over the topic, and reflected an uneasy, complex compromise agreed to over a short time "in the shadow of Copenhagen". This complexity exceeded that which would have existed if DG Environment's preferences had been adopted in full, but that very complexity would also play a key role in the long-term struggle against the effects of the economic crisis that will be covered in the rest of the empirical chapters.

5.7 Conclusion

This chapter has shown that the original ETS had a significant effect on the policy-making process which culminated in the adoption of the 2009 Directive. In response to the ETS's adoption, energy-intensive industries became much more focused on the ETS policy process and successfully formed the AEII to advance their preferences for continuing free allocation. New groups, especially from the financial industry in IETA, EFET, and CMIA, participated in the rapidly expanding market for allowances and engaged in the policy process. The direct resource flows from the ETS, in the form of emission allowances, split the electricity industry between low-carbon generators (who would benefit regardless of whether allowances were freely allocated or auctioned), and high-carbon generators who depended on free allocation because of the large resource flows they received. Energy-intensive industries attempted to limit the ETS-related rises in electricity prices by focusing on the "windfall profits" collected by electricity companies. But while this led to policy responses at the national level (e.g., Spain's prohibition against ETS-related electricity price rises), at the EU level the Commission used these concerns to push for a strengthening of the instrument – i.e. through promoting and securing agreement for greater auctioning (which did not directly affect electricity prices). Finally, member state frustrations with the NAP process, concern about windfall profits, and interest in the potential revenue from auctioning drove a shift in the Council to support a more centralized ETS.

These processes weakened support for the policy instrument as it existed after the 2003 Directive, but this in turn led to stricter policy goals, namely more stringent emission reductions. Although energy-intensive industries clearly had not been moved to support cap-and-trade over baseline-and-credit, they supported the ETS's policy settings on free allocation. They were also relatively successful in preserving their existing privileges in the face of a concerted and sustained effort by DG Environment and others to curtail free allocation. The move to centralization also served to reinforce itself, as expectations for future high prices and volumes attracted more financial institutions to trade in allowances and gained greater support among previously skeptical actors such as environmental NGOs.

The 2009 Directive addressed specific issues that had arisen in the first trading period. However, the first allowance price crisis in 2006-2007 was soon followed by a second price crisis starting in late 2008. The response to this second crisis, which was unexpected when the 2009 Directive was agreed in December 2008, was constrained by the new, more centralized ETS and drew on the resources it created, leading to backloading and the Market Stability Reserve. This policy process is the focus of the next chapter.

Chapter 6

Intervening in the Market (2009-2015)

6.1 Introduction

In December 2008, there was optimism about what the 2009 Directive meant for the ETS and allowance prices. On December 12, European Commission President José Manuel Barroso called the climate and energy package "by far the most ambitious program on climate ever adopted in the world" (International Herald Tribune, 2008). Jos Delbeke, who at the time had moved into the role of deputy director-general of DG Environment and head of ETS policy, stated that emissions trading was "the most important piece of the [climate and energy] package and the heart of driving a low-carbon economy" (Irish Examiner, 2008). Analysts expected the 2009 changes to contribute to higher allowance prices (e.g., The Times of London, 2008). At first, this optimism seemed to be borne out as the allowance price climbed steadily from €20 to €30 during most of the 2007-2008 reform process (European Environment Agency, 2012).

However, the agreement on the 2009 Directive coincided with the onset of the global financial crisis in September 2008, which precipitated a long-running economic crisis in the European Union (Slominski, 2016). One year later in December 2009, the international climate negotiations in Copenhagen failed to produce a successor to the Kyoto Protocol (Dimitrov, 2010). These exogenous factors – in interaction with the newly-centralized ETS itself – drove a growing allowance surplus and a sharp fall in allowance prices. In response, the European Commission was forced to propose two new responses that will be covered in this chapter: a delay of the auctioning of allowances (backloading) and the Market Stability Reserve (European Commission, 2014, 2012a).

To analyze these policy processes, this chapter examines ETS policy making beginning after the adoption of the 2009 Directive and ending when the MSR Decision was adopted in October 2015. It examines how the changes made by the 2009 Directive affected the EU's ability to respond to the impact of exogenous events on the ETS and influenced this new, unplanned phase of policy making. Section 6.2 looks at the effects of the ETS after the adoption of the 2009 Directive. Section 6.3 addresses backloading, the Commission's initial response to the issues raised by the crisis. Section 6.4 examines the closely related policy process on structural reform of the ETS which led to the Market Stability Reserve. Section 6.5 provides an overview of the changes to the ETS created by backloading and the MSR. Section 6.6 concludes.

6.2 Policy effects: The 2009 Directive and the economic crisis

The European Commission and market analysts had initially expected the post-2008 ETS cap to be difficult for ETS sectors to meet (ENDS Europe, 2008; ENDS Report, 2007c; Engels et al., 2008, p. 277). This increased stringency was projected to lead to higher prices for emission allowances and thus drive emission reductions (ENDS Europe, 2007). However, the 2008 financial crisis and the 2011 Eurozone crisis undermined both predictions. The economic crisis had two main effects. First, it led to a sharp reduction in greenhouse gas emissions in ETS sectors, driven in large part by reductions in the energy-intensive sectors (European Environment Agency, 2015, pp. 17–18). This meant that emissions in ETS sectors were once again lower than allocations, leading to a growing allowance surplus (see Figure 6.1). Second, allowance prices were also pushed lower by companies selling large numbers of allowances as they struggled to raise cash in a crisis-hit financial environment (Capoor and Ambrosi, 2009, p. 6). This situation was also exacerbated by ETS sectors utilizing a large number of credits from the Kyoto Mechanisms at the end of Phase II ahead of new restrictions on their use (European Commission, 2017a, p. 5; Wettestad and Jevnaker, 2016, pp. 40–41). As a result, starting after September 15, 2008, prices dropped rapidly from above €32 to below €10 by February 2009, then stayed near €15 from March 2009 to June 2011 (European Environment Agency, 2012). The price fell further during the Eurozone economic crisis in 2011, to around €7 after June 2011 (see Figure 6.2).

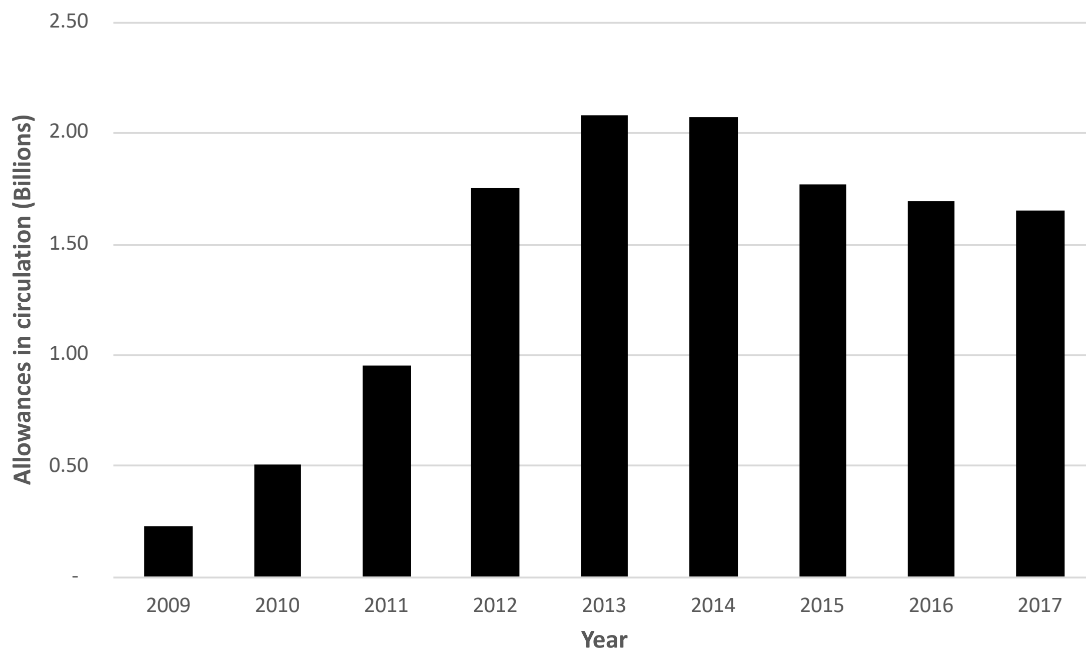

Figure 6.1 **Allowances in circulation (the allowance surplus), 2009-2017**

(Sources: European Commission, 2018a, 2017a; European Environment Agency, 2016, p. 79).

When prices had dropped to nearly zero in Phase I because of over-allocation, the impacts on member state budgets had been small given the very low level of auctioning at the time (see Section 5.2). From 2008 onwards, the EU member states were much more exposed to the consequences of falling allowance prices. In Phase II, seven member states moved to some level of auctioning (European Commission, 2018b). This was followed by the significant expansion of auctioning under the 2009 Directive starting in 2013. Approximately 80% of auctioning revenue in 2013-2015 was earmarked for climate and energy national projects and policies, and many countries heavily depended on this revenue to fund their policies (Interviewee 26, member state government, March 2017; European Commission, 2017). Low allowance prices reduced the auctioning revenues available for these purposes.

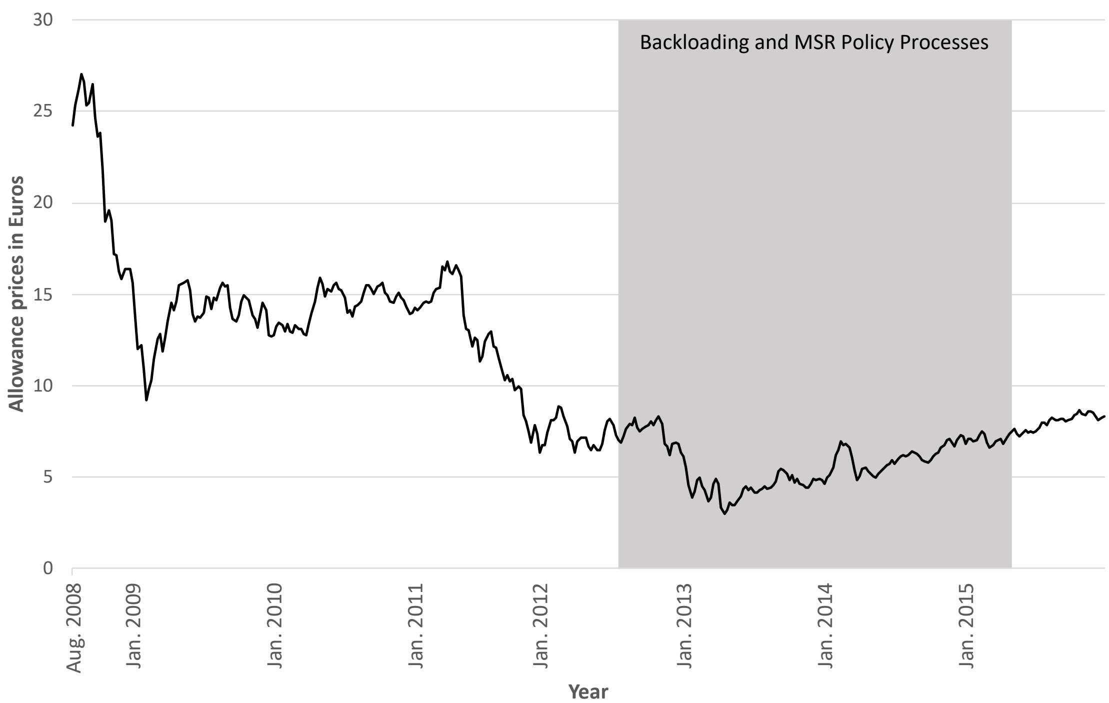

Figure 6.2 **Allowance prices between August 2008 and December 2015**

Shaded area shows the time period between the release of the European Commission's public consultation on backloading (July 2012) and the political agreement on the Market Stability Reserve Decision (May 2015). Source: Sandbag, 2018.

The effect of low allowance prices on budgets first became apparent in member states that had expanded auctioning in Phase II, including the United Kingdom, the Czech Republic, the Netherlands, and Germany. Germany is a useful illustration of this dynamic. Under the government's original assumptions, Germany's climate and energy fund was meant to receive €300 million annually from ETS auctioning in Phase II but took in merely €75 million in 2011. This left the fund "massively under-financed due to low [allowance] prices" (ENDS Europe, 2012a). The German finance ministry took this under-financing "very seriously," and the impact of allowance prices on revenue shaped its perceptions of the ETS (Skovgaard, 2017, p. 360).

These impacts continued as auctioning expanded starting in 2013. In 2007 and 2008, predictions indicated that the ETS would produce €30 billion in annual revenue for member states by 2020 (ENDS Report, 2008). However, the average annual revenue generated between 2013 and 2015 was only €3.9 billion per year (European

Commission, 2017b, p. 16). An expected income of €9 billion for the NER300 research and development fund was reduced to €2 billion, weakening the EU's strategy for funding early-stage renewables and carbon, capture, and storage (ENDS Report, 2014a). As the price dropped, several national governments began to discuss and in some cases adopt alternative policies in this area, such as the UK's Carbon Price Floor, adopted in 2011 (HM Revenue and Customs, 2012). This was anathema to the ETS team in DG CLIMA; it had long argued that one of the benefits of the EU ETS was avoiding a "patchwork" system of national climate policies (e.g., European Commission, 2013a).

Low-carbon electricity generators stood to lose from low allowance prices, which reduced the upward pressure on the price of electricity as well as the increased revenue that the low-carbon generators earned from this phenomenon (Kara et al., 2008, p. 201; Interviewee 27, electricity generation industry, March 2017; Keppler and Cruciani, 2010, p. 4289). High-carbon electricity generators were impacted in the opposite way, with lower allowance prices reducing their costs under the ETS. The price drop also meant lower overall costs for the energy-intensive industries on the carbon leakage list, both through lower direct costs of purchasing allowances and lower electricity prices (de Bruyn et al., 2013).

Low allowance prices also affected participation by market intermediaries. First, they reduced the incentives for intermediaries to stay in that market by, e.g., decreasing margins for allowance traders (Cludius and Betz, 2016; Wallner et al., 2014). For example, in a study for the German Federal Environment Agency, Wallner et al. (2014, p. 46) state that for market intermediaries like banks, "…since carbon prices have been low in recent years, more capital is needed to generate the same return". Straw et al. (2013, p. 3) state that low prices were "a major contributory factor to the closing or scaling back of London-based carbon trading desks" in 2012 and 2013 (see also ENDS Report, 2013a; Financial Times, 2013; Interviewee 1 [May 2016] and Interviewee 13 [June 2016], market intermediaries). Companies that disengaged included Barclays, Deutsche Bank, JP Morgan, Morgan Stanley, and UBS (Straw et al., 2013, p. 25)

Second, ETS policy also had an important effect on market intermediaries through its indirect impact on the Kyoto flexibility mechanisms, especially the Clean Development Mechanism (CDM). The Commission had limited CDM use under the National Allocation Plans (Flåm, 2009), the 2009 Directive had included only a small increase in the amount of credits that could be used after 2013 (OJEU 2009, p. L 140/68), and in 2013 the European Commission banned the use of one of the most widely-used types of credits (from industrial gas projects) in the ETS (ENDS Report, 2011a). In large part as a result, CDM prices collapsed, new projects ground to a halt, and many related businesses struggled (ENDS Europe, 2014, 2013a, 2013b, 2013c; Reuters, 2011; The Globe and Mail, 2013; Interviewee 3, European Commission, May 2016).

Third, ETS allowances were used in a number of Value Added Tax (VAT) fraud schemes across the EU (Frunza et al., 2011). Emission allowances were acquired in member states that did not levy Value Added Tax (VAT) on their purchase. They were then sold in member states such as France which charged VAT, but the VAT mark-up was kept instead of being given to the government (Frunza et al., 2011, pp. 185–187). Employees at several ETS market intermediaries were charged in the fraud schemes, including Deutsche Bank, Royal Bank of Scotland, KO Brokers, and CNI UK (ENDS Report, 2010a; Reuters, 2012; UK Insolvency Service, 2016).

The fall in allowance prices, the collapse of the CDM, and ETS-related VAT fraud had an important negative impact on policy actors representing market intermediaries.[15] IETA membership fell 27% between 2009 and 2014, from 175 to 128 organizations (see Figure 6.3). Mirroring their decision to scale back their carbon trading desks, the number of banks in IETA fell 50% between 2009 and 2014, from 14 to 7. Although IETA also represented organizations outside of Europe, the drop in EU-based organizations was comparable over this time period (23%). Similarly, membership in the CMIA fell from a high of 53 organizations in 2012 to 42 in 2014 and then, in a single year, to only 20 members in 2015 (CMIA, 2015, 2014, 2012a).

[15] This impact happened in combination with other factors affecting market intermediaries, such as stricter financial regulation in the aftermath of the global financial crisis (Cludius and Betz, 2016; Wallner et al., 2014).

This stood in stark contrast to the trends evident prior to the 2009 Directive policy process, when the membership of these organizations expanded rapidly.

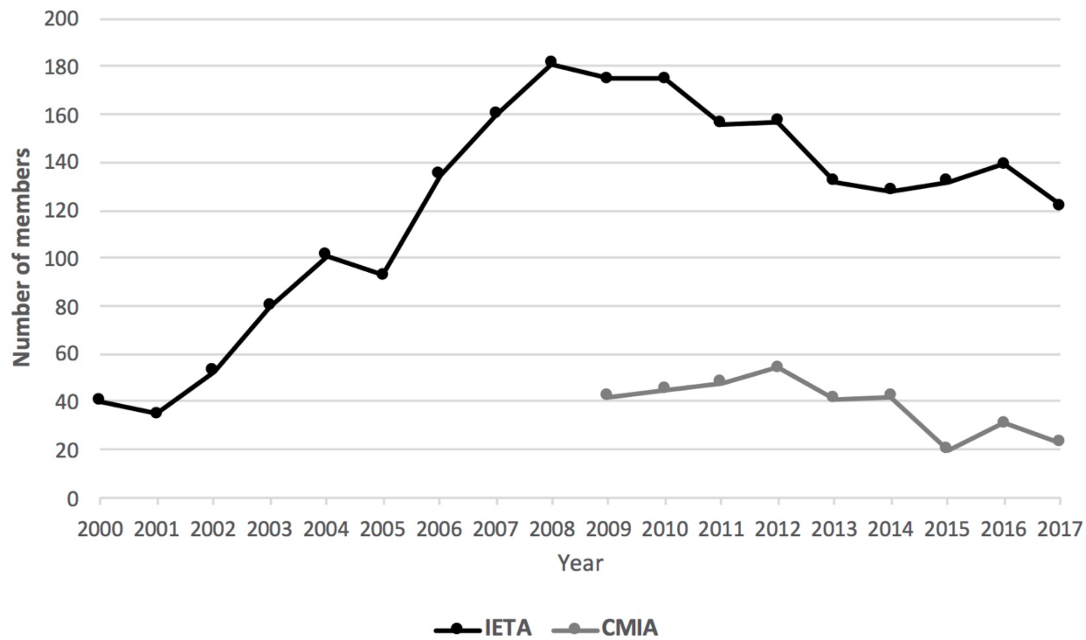

Figure 6.3 **Membership of IETA and the CMIA (2000-2017)**

Source: IETA and CMIA websites, accessed via the Internet Archive (e.g., CMIA, 2012a; IETA, 2008).

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6.2.1 Other impacts of the 2009 Directive

In 2010, Commission President Jose Manuel Barroso created DG Climate Action (DG CLIMA) by drawing on the ETS unit in DG Environment. This occurred during the periodic restructuring of the Commission after the European Parliament elections (European Commission, 2010a). After its creation, DG CLIMA maintained stable staff numbers of approximately 180 people, with 46, representing about 26% of staff, working directly on the EU ETS in 2016 (European Union, 2016, pp. 35–36). This included staff responsible for policy-making, those working on benchmarking for free allocation, as well as an increased information technology staff (Interviewee 3, European Commission, May 2016). One European Commission official described the changes in the ETS team as:

> “A transformation almost beyond belief […] it has grown a lot. And it has become much more sophisticated, so it needs to have grown. All these things about benchmarking and allocation according to benchmarking, […] it is a lot of work, very data intensive.” (Interviewee 4, European Commission, May 2016)

Another Commission official had similar reflections:

> “[The team working on the ETS] has obviously grown over time, but [the ETS] has grown in levels of complexity and detail, we have positions on many things that we never had the ability to have positions on to begin with.” (Interviewee 3, European Commission, May 2016)

As the 2009 Directive was being implemented, policy making related to allowance allocation diverged into two distinct topics of discussion. On the one hand was the electricity industry in Western Europe, whose companies needed to buy allowances at auction. An exception for heat production was made, but this was small in comparison to the pre-2009 Directive allocation to these installations. The Central and Eastern European electricity generators could still receive free allowances, and many energy-intensive industries were entitled to collect transitional free allocation, provided they were included on the carbon leakage list.

The electricity generation industry consequently turned its attention to auctioning: between December 2008 to July 2010, Eurelectric released seven position papers on the Auctioning Regulation (e.g., Eurelectric, 2009). While the energy-intensive industries responded to the auctioning regulation consultation, their input was less detailed and focused instead on free allocation and carbon leakage. For example, CEFIC’s submission to the consultation began with a lengthy discussion about free allocation (CEFIC, 2009, p. 1).

Assuming an allowance price of €30 per ton in 2020 – based on the impact assessment which had accompanied the proposal for the 2009 Directive – the Commission drew up the carbon leakage list in December 2009 (European Commission, 2009). In the end, the list included industries emitting 77% of the ETS's industrial greenhouse gas emissions (ENDS Report, 2010b). The Commission created the benchmarks by working with each industrial sub-sector to analyze the overall energy efficiency of the sector measured by greenhouse gas emissions per ton of production. The top 10% most efficient installations were identified, and installations meeting this average efficiency would be awarded 100% of their allowances free of charge up to the level of the benchmark (European Commission, 2011a).

Free allocation was set at 43% of the allowances in Phase III. Benchmarking was a bottom-up process: the sum of allocations to all installations by benchmarking could be more than the amount available. The 2009 Directive had established a response to this problem: a cross-sectoral correction factor (CSCF). Under the correction factor, if the benchmarked free allocation for all member states summed to more than the amount available for free allocation in Phase III (43% of the total allowances), then allocation to all installations would be reduced by a uniform percentage. In September 2013, the Commission announced that the CSCF would need to be used at the level of 11.5% in Phase III. In 2013, an installation's free allocation would be reduced by 5.75%. This would rise to 17.5% in 2020 (European Commission, 2013b, p. 7). The correction factor was later increased further for the years 2019 and 2020 in the wake of a European Court of Justice ruling (European Commission, 2017c). Importantly, this time-intensive policy process happened in parallel with discussions about backloading and the MSR.

These two processes – auctioning and free allocation – marked a significant shift in the ETS's allocation politics. During Phase I and II allocation, companies from all ETS sectors competed for allowances in their respective national contexts, with the overall level of allocation subject to Commission reductions. In Phase III, most of the electricity industry and the energy-intensive industries acquired allowances in distinct ways and from separate shares of overall ETS allowances. This would have profound implications as the EU grappled with a second, more serious crisis in the ETS.

The compromise embedded in the 2009 Directive (see Section 5.6) greatly increased auctioning but left a large percentage of industries with free allocation based on the carbon leakage list and Article 10c. This created a split in the allowances that would be distributed from the ETS in Phase III. The amount of allowances to be auctioned was fixed based on a previous amount of free allocation allotted to the electricity generation industry (European Commission, 2010b). This fixed amount (57% of the allowances allocated in Phase III) was known as the "auction share”. Free allocation to electricity generators under Article 10c came from the auction share. This left what can be termed the "free-allocation share", or the number of allowances that were available to freely allocate to the industries deemed at risk of carbon leakage. These two allowance shares - the auction share and the free-allocation share, became important policy issues and resources for future policy-making on the ETS. Most importantly, the auction share presented a unified amount of allowances – controlled and allocated at EU-level and through the decisions of EU institutions – that was more tractable than the myriad auction shares in previous National Allocation Plans.

6.3 Backloading: An initial response to the price crisis

6.3.1 Paths not taken: The reduction target and direct price management

Despite these issues, initially DG CLIMA was reluctant to support changes to the ETS before 2021. In February 2009, Jos Delbeke was reported to have “rejected any intervention in the market on the grounds that this would lead to distortion and expectation of further interventions” (ENDS Report, 2009; see also Wettestad and Jevnaker, 2016, p. 38). However, as the allowance surplus grew, and prices continued to fall, DG CLIMA and other policy actors began considering possible responses. Three possible approaches garnered much of the attention: an increase in the ETS’s reduction target, direct management of allowance prices, and indirect price support through volume management—how and when allowances were allocated.

The first potential approach was to push for a tightening of the EU’s 2020 reduction target, a tightening which in principle was consistent with the European Union’s conditional offer to move to 30% before the Copenhagen Conference (European Council, 2007). Crucially, it would have only required changes to one policy setting – the linear reduction factor – and not a change to the ETS architecture put in place by the 2009 Directive. After the 2009 Copenhagen conference, DG CLIMA was reported to have lobbied heavily for a move to 30%, arguing it could be accomplished with little extra cost because of the economic crisis (ENDS Report, 2010c; Skjærseth, 2014; Skovgaard, 2014). However, the move was blocked by Poland in the European Council amidst objections to the proposal internally in the Commission from DG Energy and DG Enterprise (ENDS Report, 2010c). The move was also opposed by the Alliance for Competitive European Industries, which included a number of energy-intensive industries (Wettestad and Jevnaker, 2016, p. 38). A year later, the Commission proposed a move to 25% by 2020 as part of its 2050 roadmap to a low carbon economy (European Commission, 2011b). Poland once again blocked the 25% target proposal in June 2011 and again in March 2012 (ENDS Europe, 2012b; ENDS Report, 2011b). Later in 2012, DG CLIMA again referred to an increase in the linear reduction factor as a possible structural reform of the ETS (European Commission, 2012b, p. 7). Once again, this approach was not adopted. The European Parliament's ENVI committee – generally on the side of greater emission reductions – rejected an amendment in September 2013 to increase the LRF (ENDS Europe, 2013d). Regardless, it is likely that the proposal would have needed to be addressed at the European Council level given that it changed the LRF, which was set according to the overall 20% EU greenhouse gas reduction target (European Council, 2007).

With this route blocked, new more interventionist options needed to be considered. The second potential approach was to put limits on how low the price could go – either in the secondary market by using a floor price, or using a reserve price in allowance auctions (Carbon Trust, 2008, p. 55; European Commission, 2012b, pp. 9–10). These options would address the government revenue problem and the issue that the ETS was not sufficiently driving low-carbon investment and affecting the decisions of businesses inside and outside ETS sectors. Germany's finance ministry and Poland had pushed for price controls during the 2008 negotiations (ENDS Report, 2009). Price floors were becoming more common in other emissions trading systems as well: the Regional Greenhouse Gas Initiative, the Quebec ETS, and the California ETS all included a form of direct price management (see Narassimhan et al., 2018). However, price management did not garner enough support to be seriously considered. A report by the European Commission on stakeholder views on the topic (in the context of the MSR) stated that:

> "The vast majority of stakeholders highlight that the process for determining the true economic cost of abating greenhouse gas emissions is best determined through market principles and not via discretionary price management." (European Commission, 2013c, p. 6)

In addition, the idea did not get broad support in the Council (Interviewee 19, member state government, July 2016) or the Commission (ENDS Report, 2012).

6.3.2 A shift to volume management

With an increased linear reduction factor blocked in the European Council, and direct price management lacking support, a third route was now the main approach: volume management. This involved supporting allowance prices indirectly by changing the volume of allowances in circulation (i.e., by reducing the allowance surplus). Initially, discussion included the prospect of setting aside of allowances, but it was left unclear whether the allowances set aside in this manner would be cancelled or returned to circulation at a later date (see, e.g., in the 2050 roadmap: European Commission, 2011b, p. 11). During the drafting of the Energy Efficiency Directive (EED) in 2011, DG CLIMA gave the file a negative opinion and insisted that a portion of ETS allowances be removed to respond to the projected amount of emission reductions from energy efficiency measures, stating that the EED should:

> "…adjust the number of emission allowances auctioned by setting aside a number of allowances corresponding to the expected reductions of greenhouse gas emissions pursuant to this Directive and any other energy efficiency measures adopted in the meantime…" (DG Climate Action, 2011, p. 2)

Although the European Parliament included this approach in an amendment, it was not adopted after opposition from member states, including Poland and Denmark (Wettestad and Jevnaker, 2016, pp. 40–41). Therefore, focus shifted to backloading, another volume-management approach. Backloading was a process by which allowances would be withdrawn from the auction share temporarily and returned at the end of Phase III. The Commission hoped that it could make the change quickly via comitology (e.g., ENDS Europe, 2012c). However, this approach was opposed by DG Enterprise within the Commission (Wettestad and Jevnaker, 2016, p. 87). In its impact assessment of the proposed regulation, the Commission acknowledged that backloading would have a limited long-term effect on allowance prices because the backloaded allowances would eventually be returned to the market (European Commission, 2012c, pp. 20–23). But it projected that backloading was expected to have a positive but short-term effect on allowance prices.

By moving allowance allocation to the European Union level and creating the auction and free-allocation shares, the 2009 Directive had made the backloading proposal possible. The next issue was which part of the allowances would be withdrawn: auction share, the free-allocation share, or both. In the Commission's proposal, the backloaded allowances were to be taken from the auction share and would not affect free allocation to either the energy-intensive industries or the Article 10c electricity companies. There were simple logistical reasons for these decisions. For example, it was easier to withdraw allowances from the auction share because they were not pre-allocated to specific installations and were distributed at regular intervals.

Political reasons drove the decision as well. A Commission official argued that the energy-intensive industries and the Central and Eastern European electricity generators, as the beneficiaries of post-2012 free allocation, were already not likely to support changes to the ETS that would raise allowance prices:

> "The whole political debate has been about addressing the supply-demand imbalance by working on auction supply, not touching the excess of free allowances, which was a deliberate political choice to facilitate decision-making […] Heavy industry still after all these years are still not really supportive of [the ETS] […] So if you also make them a contributor with allowances to strengthening, you double the hurdle that you have to [overcome]." (Interviewee 17, European Commission, June 2016)

The Commission created a proposal along these lines which backloaded 900 million allowances until the end of Phase III. In response, DG Enterprise questioned the need for backloading (Wettestad and Jevnaker, 2016, p. 41), but the proposal was nevertheless published for consultation in July 2012 (European Commission, 2012d). The backloading consultation attracted participation from actors who were, on average, highly engaged in ETS policy making. The 128 publicly-identified backloading consultation actors participated in an average of five consultations between 2000 and 2015, the highest average engagement of the five major ETS-related pieces of legislation studied in this thesis (see Figure 6.4). Only 9% of participating actors were limited to participating in only the backloading consultation (i.e., actors with an engagement score of 1; this compared to 61% overall, 44% for the 2003 Directive, and 39% for the 2009 Directive).

Business associations and companies made up 88% of respondents, close to the overall average from 2000 to 2015 (see Table 6.1). Actor types which made up a significantly higher percentage of participants than average included the electricity generation industry, the energy sector, general business associations, and environmental NGOs. The energy-intensive industries and the market intermediaries represented a smaller than average percentage of the participants.

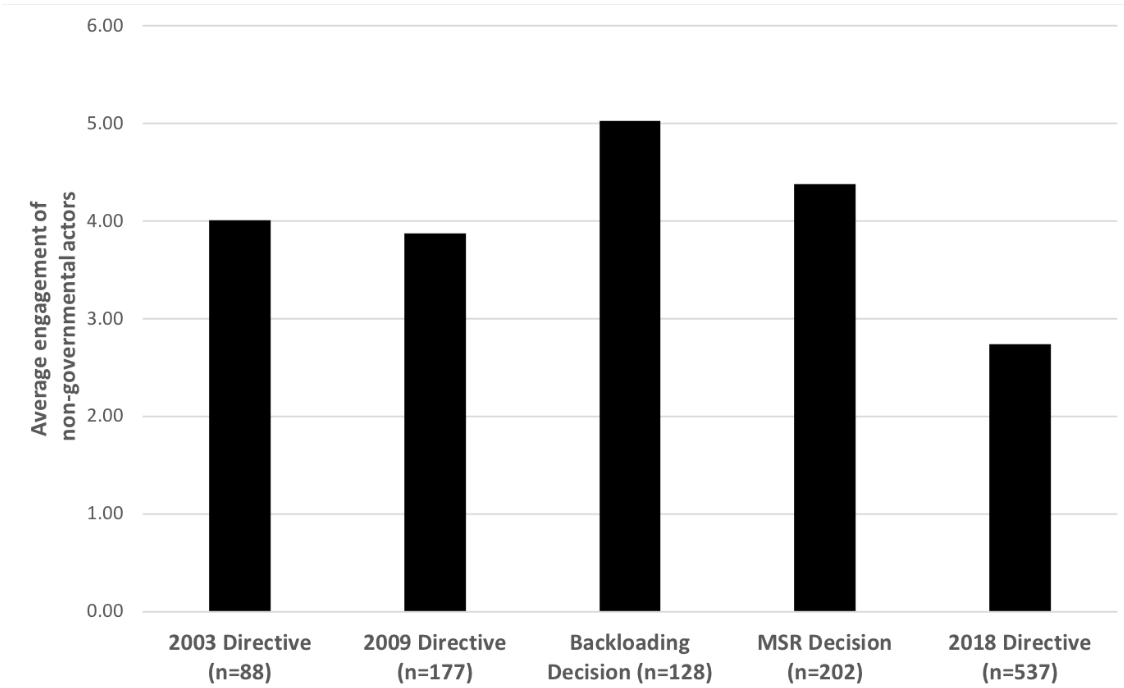

Figure 6.4 **Average engagement of non-governmental actors, by legislation**

Average engagement across all consultations by the actors that responded to consultations on the five major ETS legislative proposals (maximum engagement = 15 consultations). Source: Author's calculations based on consultations presented in Table 4.1.

Regardless of the attempt to ease adoption of the proposal by drawing backloaded allowances from the auction share, the proposal was almost universally opposed by the energy-intensive industries (Interviewee 15 [June 2016] and Interviewee 18 [July 2016], energy-intensive industries). They were joined by the aviation industry and general business associations. All but three of the 44 energy-intensive industry actors opposed backloading (the exceptions were Shell, Statoil, and the Danish agriculture association). The Alliance of Energy Intensive Industries was strongly against backloading. Its position paper, published in January 2012, stated that it was "opposed to any modification of the EU ETS rules which would damage further industry's competitiveness" (AEII, 2012, p. 1). The AEII lobbied especially hard against backloading when it went to the European Parliament (ENDS Report, 2013b; Jevnaker and Wettestad, 2017, p. 117; Skovgaard, 2017, pp. 358–359). It called into question any intervention that would raise costs. Although backloading did not affect the free-allocation share directly, it was predicated on raising the allowance price, and therefore would affect the direct and indirect costs of energy-intensive industries.

Table 6.1 **Actors that responded to the backloading consultation**

Actor type	**Number responding**	**Percent supporting backloading**
Business associations/companies	112 (88%)	35%
Aviation	3 (2%)	0%
Electricity generation	33 (26%)	70%
Energy sector (other)	9 (7%)	56%
Energy-intensive industries	44 (34%)	7%
General	15 (12%)	0%
Market intermediaries	4 (3%)	100%
Other	4 (3%)	75%
Academic/research institutions	5 (4%)	100%
NGOs	11 (9%)	100%
TOTAL	**128**	

A large majority (70%) of the electricity generation industry actors supported backloading – including Eurelectric – but a split between low-carbon and high-carbon generators was apparent. EDF had been one of the first actors to call for intervention to raise the price in February 2009, at a time when even eventual supporters such as the Commission and the UK's Department of Energy and Climate Change were still opposed (ENDS Report, 2009). During the consultation, low-carbon companies such as GDF Suez, Fortum, and Statkraft also supported backloading. Many called for higher amounts to be backloaded (SSE called for 2.6 billion) as well as cancellation of allowances (including SSE, DONG, and Energias de Portugal). In contrast, high-carbon generators and actors that represented them opposed backloading. Many were based in Poland (6 out of 10, e.g., the Polish Electricity Association, PKEE, and Tauron Polsksa Energia). They were joined by others, such as Wien Energie, Iberdrola (which agreed there was a problem but preferred longer-term structural reform), and the Finnish energy association. Opposition extended beyond the actors who responded directly to the Commission consultation. For example, Skovgaard (2017, p. 361) writes that in Germany "…energy-intensive industry and *the coal-consuming part of the electricity producers* were against backloading" (emphasis added), despite the fact that no German electricity company explicitly opposed the measure in the Commission consultation.

While discussing these splits within the electricity industry, one interviewee stated that these outcomes were driven by the differing economic impacts of a rise in allowance prices on high-carbon and low-carbon companies:

> "If [high-carbon electricity generators] would support a message that said, 'We want to get to more scarcity and higher prices' that basically puts a lot of pressure on their existing assets that would most likely destroy a lot of value and a lot of shareholder value for them, also at the cost of loss of jobs." (Interviewee 6, electricity generation industry, June 2016)

Other actor types were uniformly in favor of backloading. The market intermediary actors – IETA, EFET, and CMIA – all supported backloading (CMIA, 2012b; EFET, 2012; IETA, 2012). All fourteen environmental NGOs and think tanks that took a position supported it as well. The Climate Action Network Europe supported both increased backloading and allowance cancellation:

> "CAN-E recommends back-loading of at least 1.4 billion allowances, starting with the highest volume in 2013 and gradually decreasing until 2015, followed

> by permanent retirement of 2.2 billion allowances to be otherwise auctioned." (CAN Europe, 2012, p. 2)

This meant that actors that had opposing positions on other climate and energy issues began to cooperate on the question of raising ETS allowance prices:

> "…there are some very unusual alliances that are taking place […] some of the electricity companies are allies because they also want a high carbon price. Same for Shell […] There are these progressive companies on the ETS that are not necessarily progressive companies on climate change in general, if you're talking about Shell, for example." (Interviewee 8, environmental NGO, June 2016)

A loosely-coordinated group of these actors, the Friends of ETS, formed in 2012 in the context of the backloading debate (Friends of ETS, 2017a). The network included NGOs such as Carbon Market Watch, associations like IETA, Eurogas, and Eurelectric, and companies such as Shell. It was coordinated by the Change Partnership, an NGO funded by the European Climate Foundation. The positions of the organizations in the group were highly divergent (Interviewee 1, market intermediary, May 2016), but it served as a discussion and information-sharing network for the narrower goal of creating higher allowance prices in the ETS.

Backloading did enjoy some support among the member states, but there were significant divisions within the Council through much of the backloading negotiations. A group of member states explicitly supported it, including Denmark, France, and the UK (Skovgaard, 2017, p. 355; Wettestad and Jevnaker, 2016, p. 45). The German government was undecided until late 2013 (Jevnaker and Wettestad, 2017; Skovgaard, 2017). Poland, Greece, and Cyprus explicitly opposed the proposal (Skovgaard, 2017, p. 355). For the member states, there was a balance to be struck. On the one hand, backloading would withdraw allowances from the auction share, reducing the number that could be sold immediately. On the other, those withdraws could theoretically increase the allowance price, meaning that each remaining allowance should be worth more. However, there was uncertainty on what the overall effect on revenues and prices would be.

> "When we were working on backloading and the MSR there was a lot of… this was not always an outspoken thing, but many Member States were busily analyzing, what is the impact of this on my auction revenue?" (Interviewee 17, European Commission, June 2016)

For example, Skovgaard (2017, p. 360) writes that the German finance ministry "took a keen interest in backloading, which they saw as crucial for avoiding a collapse in the allowance price", which was important because Germany's Energy and Climate Fund received funding from auctioning revenues. One member state official stated that their government was "…looking at the impact on [the carbon] price and then what that meant for costs to business versus national revenue" (Interviewee 19, member state government, July 2016). As an Eastern European government official stated: "In general, most if not all member states are very attached to their auctioning revenues" (Interviewee 21, member state government, March 2017). This gave member states a direct incentive to support higher allowance prices, which competed with concerns about the impact of those higher prices on their industries (Interviewee 19 [July 2016], Interviewees 21, 25, and 26 [March 2017], member state governments). As Skovgaard notes for the case of Denmark, "a large increase in the allowance price would increase revenue but also raise production costs for Danish industry" (2017, p. 359).

Stronger opposition to backloading came from the European Parliament, where the full plenary first voted on the proposal in April 2013. A key reason was the center-right European People's Party (EPP), which was largely opposed to the proposal. The EPP shadow rapporteur on backloading stated that the ETS "should be left to work as intended" and recommended the party reject intervention to raise prices (ENDS Europe, 2012d; see also Korhola, 2014). The party group voted internally to oppose backloading (ENDS Europe, 2013e), and then voted 75% against in the plenary vote on April 16, 2013 (European Parliament, 2013a, pp. 23–26). The EPP was joined by the ECR (87% against), the EFD (97%), and 41% of ALDE. Voting largely in favor were the S&D (84%), the Greens/EFA (98%), and the left GUE/NGL (88%). Overall, the Parliament voted against backloading in April 2013 by 51% to 49% and sent the proposal back to the ENVI committee.

The Parliament's rejection of backloading greatly increased the sense of crisis around the ETS (ENDS Report, 2013c). The progress of backloading negotiations also became an increasingly influential factor affecting allowance prices. This had already been apparent in July 2012, when prices dropped 11% in one day amid rumors that the backloading proposal would be delayed because of objections from DG Enterprise (ENDS Europe, 2012e, 2012c). Subsequent academic research found evidence of market participants reacting more strongly to negative policy news than positive policy news related to backloading; the authors hypothesized this was due to the general sense that the policy was in danger of irrelevance (Koch et al., 2016, pp. 132–133). In this context, German ministries believed that "…backloading would not raise the price, but failure to adopt backloading would lead to a significant drop in the price" (Skovgaard, 2017, p. 360). In this way, backloading became a backstop against the complete collapse of allowance prices mirroring the events at the end of Phase I in 2007.

Some actors who supported higher prices began to use more insistent rhetoric. For example, on the day of the plenary vote, ENDS Report reported that:

> "European power association Eurelectric called the vote 'a dangerous set-back for the internal energy market and for EU carbon goals', adding that the carbon market's reaction shows 'how low the credibility of the ETS has fallen'."

In another illustration, the president of the CMIA wrote that:

> "The low carbon price means we have reached the stage now that the EU ETS has ceased to be delivering its original objectives and has instead become an exercise in moving electronic permits from place to place." (Hobley, 2013)

The backloading debate also led to the creation of a new group of member states, the Green Growth Group of ministers, made up of environment and climate ministers from the UK (who convened the group), Germany, France, the Netherlands, Sweden, Portugal, Finland, Slovenia, and Denmark. The group, formed in 2013, released its first statement in May 2013 calling for the process to move forward on backloading (Green Growth Group, 2013). The ministers did not necessarily represent the position of their entire government. For example, when the statement was released, the

German Environment Minister cautioned that the "German coalition government's position is not yet decided" (ENDS Europe, 2013f). The Friends of ETS coalition was also very active during this period. For example, its Twitter account sent more than 3,000 tweets in 2013, 97% of the total up to August 2017 (Friends of ETS, 2017b).

In June 2013, the ENVI committee voted on compromise amendments in an attempt to gain the support of the EPP, which would have returned backloaded allowances starting the year after they were removed (instead of 2019). The amendments also earmarked the revenue from 600 of the 900 million backloaded allowances for a research and development fund aimed at energy-intensive industries (ENDS Europe, 2013g). However, there were reports that "member states held divergent views on [the earmarking of 600 million allowances], which would have cut their income from carbon auctions" (ENDS Europe, 2013g). Many member states also held a standing objection to earmarking of revenues, including in issue areas outside of the ETS (Interviewee 19, member state government, March 2017). This led to the European Chemical Industry Council to push for the Parliament to keep to its position:

> "Early indications show that the earmarking of funds for research will not find favour in the Council of Ministers, but we urge the Parliament to stick to its guns to make them available for low-carbon technology and energy efficiency in energy-intensive sectors." (ENDS Report, 2013b)

But both of these compromise proposals were voted down in the Parliament plenary after being approved by the ENVI committee (European Parliament, 2013b). As a result, the final Backloading Decision was nearly identical to the Commission's initial proposal, with the addition of an impact assessment and an explicit statement that backloading would be a one-time removal. This last provision constrained the Commission's authority to change auction timetables in the future without going through the Ordinary Legislative Procedure and involving the European Parliament. Approval in the Council was delayed until after Germany's federal elections in September 2013 (ENDS Europe, 2013h), after which the coalition between the center-right CDU and the center-left SPD agreed to backloading (Jevnaker and Wettestad, 2017, p. 111; Skovgaard, 2017, p. 360). The legislation was approved by the Council in December 2013, with Poland voting against (Council of the European Union, 2013;

ENDS Report, 2013d). The European Parliament gave final approval to the legislation over a last-minute objection by the ITRE committee tabled by EPP and ECR MEPs (ENDS Europe, 2014b; Official Journal of the European Union, 2013).

6.3.3 Summary

The backloading process was crisis policy-making. Originally meant to be low-prominence and technical, it inadvertently increased the sense of crisis. The near-rejection of the Backloading Decision remains the closest an ETS-related legislative proposal has come to not being adopted. The process also highlighted important emerging dynamics. One was the role that auctioning revenues played in how member states evaluated a policy proposal, illustrated by the increased analysis of backloading's impact on revenues, and the increased weight these considerations played in decision making. In addition, the discussion around backloading suggested hardening viewpoints on the overall hierarchy of policy goals for the ETS. One coalition led by the energy-intensive industries, the EPP in the Parliament, and Poland in the Council, argued that the single goal of the ETS was a cost-effective approach to reaching the EU's 20% reduction target in 2020. The other coalition, which included many member states, much of the electricity industry, the environmental NGOs, the market intermediaries, as well as the Greens and the S&D in the Parliament, argued that that there were other goals – namely low-carbon innovation, the extent to which the ETS affected decisions, and the amount of auctioning revenue – sufficiently important to justify policy change very soon after Phase III had begun.

Although backloading itself was a limited intervention with limited scope for a major impact, it became a component of the wider push for volume management that led to the adoption of the MSR in 2015. Through this process of linking, backloading changed from a temporary stop-gap measure to a long-term change in the way allowances would – or would not be – auctioned. The next section covers that topic as part of the review of the MSR policy process.

6.4 Structural reform and the Market Stability Reserve

From early in the policy process, backloading and the MSR were closely linked. In 2012, DG CLIMA explicitly tied backloading to a process of “structural reform”, i.e., changes to the EU ETS that would have a longer-term impact on allowance prices. In November 2012, the Commission released a “Carbon Market Report” on the ETS that sought to build the case for intervention to reduce the allowance surplus and raise allowance prices (European Commission, 2012b). This report set out six possible policy responses to raise allowance prices: an increase of the EU’s 2020 target to 30%, allowance cancellation, an early increase in the LRF, a limit on the use of international credits, an increase in the ETS’s scope, and direct price management similar to the UK’s carbon price floor. Four of these options (the 30% target, allowance cancellation, the LRF increase, and direct price management) had already been blocked or had failed to receive sufficient support (see Section 6.3). Notably, the report did not include an option for volume management similar to the MSR.

From December 2012 to February 2013, DG CLIMA ran a consultation on structural reform based on the Carbon Market Report (European Commission, 2012b). The 202 publicly-identified actors that responded, when combined with the 128 actors who participated in the backloading consultation, brought the total cumulative number of publicly-identified consultation participants to 477 actors (45% of the total, see Figure 6.5). The actors who responded, like those in the backloading consultation, were more likely to be engaged in ETS policy making. Their average engagement score was 4.4 (the second highest of the major legislation, see Figure 6.4) and only 17% responded to only one consultation, compared to 61% overall. Nearly half – 94 actors – had also participated in the backloading consultation. Actors that had participated in both consultations overwhelmingly continued to hold the same position on backloading and structural reform. Of 90 actors that took explicit positions on both topics, all but one either supported both or opposed both (the exception was the Danish Agriculture and Food Council, which supported backloading but opposed structural reform).

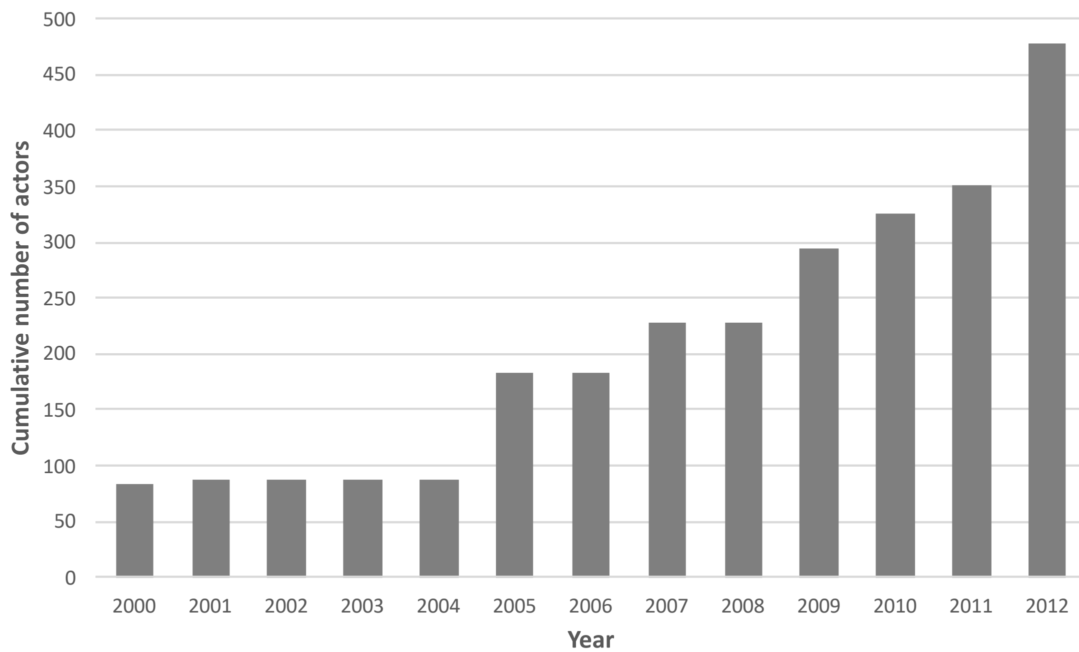

Figure 6.5 **Cumulative participants in ETS consultations (2000-2012)**

Source: Author's calculations based on consultations presented in Table 4.1.

Business associations and companies made up 82% of respondents, lower than their overall average from 2000 to 2015 (see Table 6.2). Actor types which made up a significantly higher percentage of participants than average included those from the electricity generation industry, general business associations, and environmental NGOs. The energy-intensive industries and the market intermediaries represented a smaller than average percentage of the participants.

The positions of actor groups on structural reform largely mirrored their positions on backloading. About a third of all business associations supported reform, including most of the electricity generation actors, as well as the renewable energy sector, market intermediaries, and research institutions. The split in the electricity industry continued, with Eurelectric supporting structural reform along with low-carbon companies (e.g., Dong, EDF, and the Danish Energy Association), and high-carbon companies including RWE and Tauron Polska Energia opposing it. In an unusual move, the Polish Electricity Association (PKEE) refused to sign off on Eurelectric's position paper and eventually submitted its own responses (PKEE, 2013, PKEE, 2012). The aviation industry, energy-intensive industries, and general business associations continued to oppose changes that would raise allowance prices.

Table 6.2 **Actors that responded to the structural reform consultation**

Actor type	**Number responding**	**Percentage supporting structural reform**
Business associations/companies	165 (82%)	33%
Aviation	2 (1%)	0%
Electricity generation	41 (20%)	78%
Energy sector (other)	10 (5%)	50%
Energy-intensive industries	83 (41%)	4%
General	17 (8%)	6%
Market intermediaries	5 (2%)	100%
Other	8 (4%)	63%
Academic/research institutions	8 (4%)	75%
NGOs	26 (13%)	76%
Other	3 (2%)	33%
TOTAL	**202**	

The structural reform consultation provided evidence of a noticeable shift amongst NGOs, one which would presage important long-term trends. The NGOs were strongly engaged in the consultation (the 26 NGO actors and their 13% share of the publicly-identified participants were the highest of any consultation). Despite this fact, many NGOs were more negative about the prospects of the ETS. Increasingly negative views of the ETS were illustrated by the fact that seven NGO participants actively called for the dismantling of the ETS and its replacement by other policy instruments:

> "After two years of decline, the prices of emission permits and carbon credits have reached historic lows. Numerous institutional as well as private actors are now leaving the carbon market, acknowledging the effectual end of a scheme that from its early days has been crippled by profound contradictions and structural failures." (Corner House, 2013, p. 1)

This was supported by a letter from 125 NGOs in and outside Europe:

> "After seven years of failure, the EU's claims that it can 'fix' its collapsing Emissions Trading Scheme (ETS) no longer have any credibility. We believe that the ETS must be abolished no later than 2020 to make room for climate measures that work." (Corporate Europe Observatory et al., 2013)

An interviewee from an NGO that signed the Scrap the ETS letter expanded on these points:

> "We do not think it can be reformed. As soon as they close a loophole they open another one. Since its creation it has been shown to be too permeable to lobbying. Moreover, it is used by industry as a firewall against more effective policies, and it reinforces the wrong framing for a severe climate crisis." (Interviewee 7, NGO, June 2016)

The NGOs that spearheaded the Scrap the ETS campaign had long been emissions trading skeptics (Lohmann, 2012, 2011, 2009). However, it is notable that they made their position explicit in an ETS consultation and used low allowance prices as a key piece of evidence to support their contention that the policy was a failure.

In parallel to this, a process of gradual disengagement by other ENGOs from ETS policy making had begun (Interviewee 5 [May 2016] and Interviewee 8 [June 2016], environmental NGOs):

> "Some of [the members of CAN Europe] work on the EU ETS, others have given up, especially at the national level such as WWF Germany […] Oxfam used to work on it here in Brussels but then it stopped. Greenpeace has stopped as well. […] It is too complex, and people don't have faith that it will ever work, so they have started to work on other policies that do actually work." (Interviewee 8, environmental NGO, June 2016)

Interviewees identified the backloading debate as a key moment, with ENGOs disengaging after it became clear that there would be no allowance cancellation (Interviewee 5 [May 2016] and Interviewee 8 [June 2016], environmental NGOs) .

6.4.1 The MSR: Formulation and decision making

After the structural reform consultation, DG CLIMA moved to choose between the six options that it had presented in the 2012 Carbon Market Report. The Market Stability Reserve (MSR) emerged out of discussions with non-governmental actors, which offered a policy option that would not directly set price floors or ceilings (European Commission, 2013c, pp. 6–7). During the backloading consultation in mid-2012, market intermediaries were already suggesting a volume-based approach to reducing the allowance surplus (CMIA, 2012b, pp. 3–4; IETA, 2012, p. 9). CMIA suggested that a percentage of allowances be taken from the auction share and placed in the New Entrants' Reserve, to be released only if there was an increase in allowance prices. IETA suggested that a volume reserve could be included and could release allowances for auctioning when the surplus was reduced.

Both of these suggestions presaged the Market Stability Reserve (MSR) that the Commission would eventually propose (European Commission, 2014). Two expert meetings were held on this idea in 2013, and it became clear that volume management – which had not been one of the six options the Commission presented in 2012 – would be the approach to structural reform (European Commission, 2013d, 2013e). Just as had been the case with backloading, the MSR proposal was designed to draw from the auction share, not the free-allocation share. Eurelectric, while discussing a change to the LRF, stated a point that also applied to the MSR:

> "We note that a retirement would affect only auctioned EUAs, not free allocations, thereby maintaining the regulatory stability of the wider legislative ETS framework for phase 3." (Eurelectric, 2013, p. 9)

According to the Commission's January 2014 proposal, which was published as part of the 2030 Climate and Energy Framework, the MSR would withdraw the equivalent of 12% of the allowances in circulation from the auction share and place them in the reserve if the amount in circulation went over a threshold of 833 million allowances (European Commission, 2014). In response, the CMIA called for "the whole oversupply to be calculated and removed", and for allowance cancellation from the MSR "so there is no temptation to auction them to fund special projects" (ENDS Europe, 2014c).

Actors who had been opposed to backloading specifically and to the overall idea of structural reform largely continued to oppose the MSR. Energy-intensive industries were reportedly "not keen on the idea of a reserve" (ENDS Europe, 2013i). However, they were not as focused on the MSR as they had been for backloading (Interviewee 18, energy-intensive industry, July 2016). Another interviewee stated that "in the whole MSR discussion, the energy intensives were a bit absent" (Interviewee 14, European Parliament, June 2016). In its position paper on the 2030 Framework, the AEII criticized the MSR proposal for creating a "unilateral burden on EU industry" but focused on free allocation and did not explicitly oppose the proposal (Alliance of Energy Intensive Industries, 2014, p. 2). Poland publicly opposed the MSR at various points during 2014 (e.g., ENDS Report, 2014b), and with the Czech Republic, Slovakia and Hungary pushed for the MSR to be discussed as part of the European Council negotiations on the 2030 Framework (ENDS Europe, 2014d). In late September 2014, a spokesperson for the Polish government stated:

> "We consider [the MSR] proposal, alongside backloading, to be a mechanism to distort the market to artificially increase prices. It is clearly *contradicting the main goal of the ETS directive*, which is to achieve the reduction target at least possible cost." (ENDS Europe, 2014d, emphasis added)

However, during the October 2014 European Council meeting the member states supported the MSR proposal in principle, "in line with the Commission proposal", along with agreement on the 2030 Framework[16] (European Council, 2014). This was the result of "a very careful political balance" (Interviewee 19, member state government, July 2016). The conclusions stated that the European Council would "keep all the elements of the framework under review and will continue to give strategic orientations as appropriate" (European Council, 2014, p. 1), an attempt to create unanimity voting requirements for the 2030 Framework, similar to the situation with the 2008 Climate and Energy Package. ENDS Europe reported that this provision was in part due to "demands from Poland, which wants a veto on emissions trading rules" (ENDS Europe, 2014e). However, this attempt to shift decision-making authority to the European Council led the chair of the Parliament's EPP group to criticize the member state leaders, saying they had "overstepped their powers" (ENDS Europe, 2014e). Ultimately, both the MSR Decision and the 2018 Directive were decided under the Ordinary Legislative Procedure (although important decisions related to the 2018 Directive were set by the October 2014 conclusions, see Chapter 7).

After the October 2014 European Council meeting, MSR-related negotiations focused on two issues. The first was what year the MSR would begin operating. The Commission proposal had suggested 2021, the start of Phase IV, which meant that the rules of Phase III would not be changed (European Commission, 2014, p. 3). In the Council, the UK, France, and Germany led a coalition that pushed for an early start date in 2017, squarely within Phase III (ENDS Europe, 2014d). Poland, having conceded to the creation of the MSR in the European Council, successfully formed a blocking minority with other Central and Eastern European member states in the Council in opposition to an earlier start date (including the Czech Republic and Latvia, ENDS Europe, 2015a). Member states continued to circulate analysis of the impact of the MSR on auctioning revenues (e.g., a publicly-available example is UK Government, 2014). The impact on revenues was a justification for the MSR, similar to its role in the backloading negotiations (Interviewee 17, European Commission,

[16] The other outcomes of the October 2014 European Council meeting related to the ETS will be discussed in more detail in Chapter 7 (see especially Section 7.3).

June 2016; Interviewee 19, member state government, July 2016). In the Parliament, the EPP, S&D, and ALDE supported a 2019 start date (ENDS Europe, 2015b). The Greens/EFA and GUE/NGL supported a 2017 start date and cancellation of the backloaded allowances (similar to the UK position supporting cancellation).

The second issue was the handling of backloaded and unallocated allowances from the New Entrants' Reserve. These allowances could either be returned to the market starting in 2019, as the Commission had proposed, or placed directly into the MSR. By December 2014, most member states who supported a 2021 MSR start date did not support putting these allowances into the reserve, and those that supported an early start also supported the proposal (Council of the European Union, 2014, p. 4). This also affected_auctioning revenues by increasing the size of the MSR and preventing the additional allowances to return in a short time at the end of Phase III. In the Parliament, a proposal to put these allowances in the MSR was introduced by EPP rapporteur Ivo Belet, and enjoyed support across the party groups (ENDS Europe, 2015b, 2015c).

The final agreement between the Council and the Parliament in May 2015 settled on a compromise 2019 start date and placed the backloaded/unallocated allowances directly into the MSR (Official Journal of the European Union, 2015). When the Council voted on the agreement in September 2015, Poland, Bulgaria, Romania, Croatia and Hungary voted against the legislation, arguing that the October 2014 European Council had precluded an early start date, that the MSR (as well as backloading) amounted to an increase in the EU's 2020 reduction target, and that the decision should be subject to unanimity voting in the Council because it would "…significantly affect the Member States' choice between different energy sources and the general structure of its energy supply" (Council of the European Union, 2015, pp. 2–3). Poland also launched a legal challenge to the ECJ about the result of the MSR process, arguing that it was not in line with the European Council conclusions (European Court of Justice, 2016).

6.4.2 Summary

Backloading and the MSR can be seen as an attempt to deal with the allowance surplus by alternative means once Poland had repeatedly blocked an increase in the EU's 2020 target to 25% or 30%. Unlike a change in the EU target, this policy pathway broke new ground, introducing a volume-management component into the ETS that had only been implemented before in a very limited way (i.e., the early auctioning of allowances in 2012). Despite its relative lack of salience in European Commission discussions of the topic, price management was the ultimate goal of these volume-management strategies. Therefore, the price management/volume management issue had been successfully introduced to ETS policy making. This would have important implications for future policy making, as will be shown in Chapter 7.

An important change is apparent in the European Parliament during this period. Whereas voting on the 2003 Directive and Linking Directive were not recorded due to high cross-party support, and the Aviation Directive and the 2009 Directive had majorities in the 90% range, it is clear that the backloading/MSR processes did not gain the same support. Much attention was focused on the first failed vote on backloading in the Parliament in April 2013, but it may be more important that the vote only changed marginally to 53% in favor when backloading was passed in July 2013. In addition, the MSR vote was also lower than earlier legislation, despite the fact that it had been agreed upon in principle at the European Council level. The increased disagreement was mirrored by the statement in the Council from some member states after the MSR was adopted, and the legal challenge against the MSR Decision by Poland. These changes suggest increasingly strong disagreements in both institutions about the direction of ETS policy.

6.5 Summarizing the changes to the ETS

Just like the 2009 Directive, the Backloading Decision and MSR Decision made important changes to the ETS. The MSR Decision created an "MSR share" that withdrew allowances from the auction share created by the 2009 Directive As of 2020, this MSR share would have amounted to 13% of allowances allocated in Phase III once the backloaded and unallocated allowances were placed in the MSR (Figure 6.6). Crisis-induced policy making, driven by the fall in allowance prices after 2008, had reconfigured the distributional politics of the EU's largest climate policy by taking allowances out of the market. However, this process had left untouched both the free-allocation share distributed to energy-intensive industries on the carbon leakage list and the Article 10c portion of the auction share. Although the actors who benefited from free allocation had failed to stop volume management provisions which raised their costs, their own free allocation was not directly affected. Despite the creation of the reserve share, the MSR was explicitly meant only to raise allowance prices through volume management. In theory, the allowances in the MSR would eventually be released to be auctioned once emission reductions became more stringent leading up to and beyond 2050.

A temporal aspect to the redistribution should be noted. Member states in effect gave up auctioning revenue in the short-term in the hopes of price increases and – in principle – the opportunity to auction the same allowances in the future. As reductions were projected to become more stringent, allowance prices were generally expected to increase.

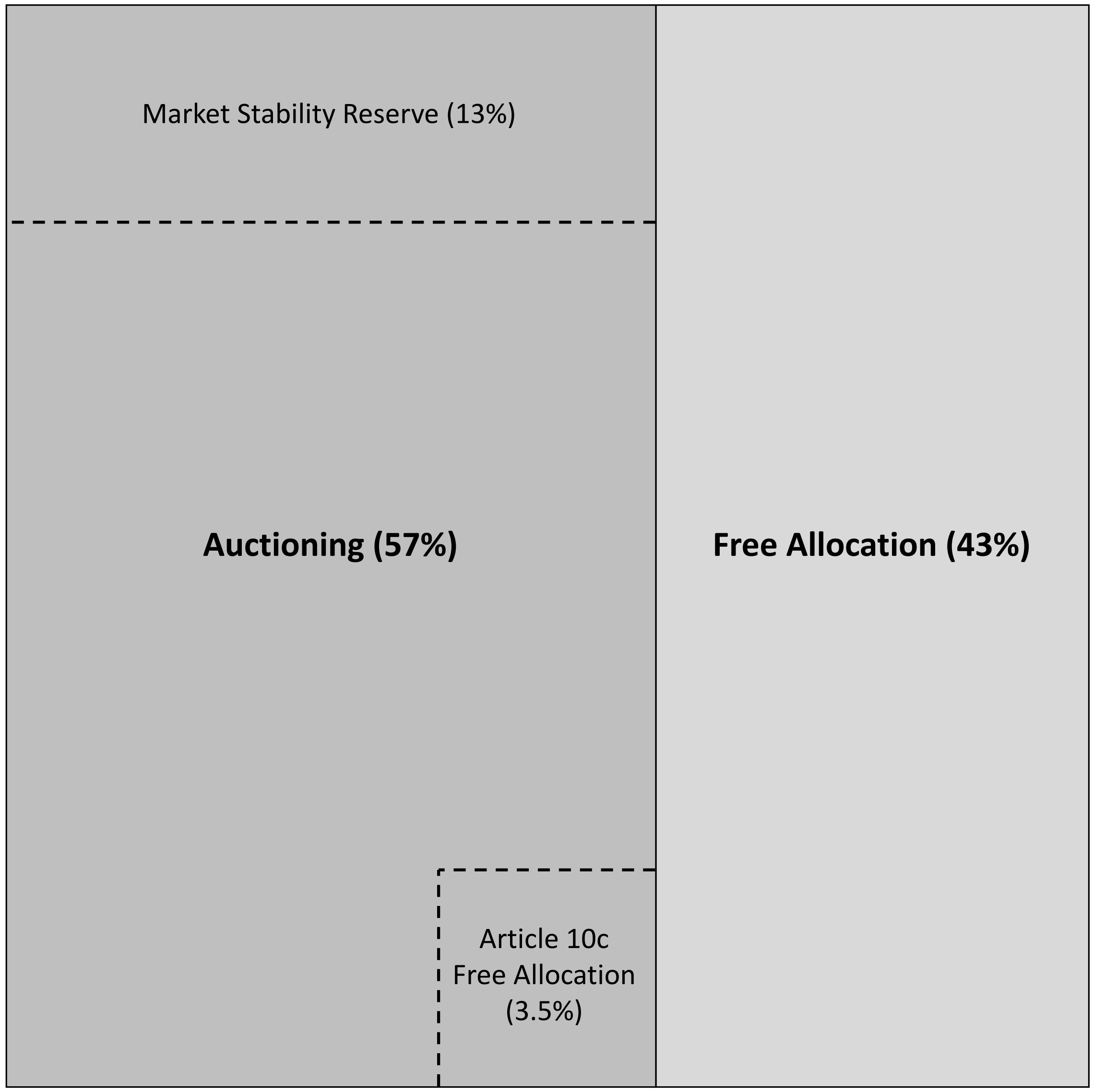

Figure 6.6 **Phase III allocation after the adoption of backloading and the MSR**

MSR percentage is as of the end of Phase III in 2020. It consists of 900 million backloaded allowances, 700 million unallocated allowances (the higher end of the Commission's projections in 2015, see European Commission, 2015, p. 225), and 200 million allowances withdrawn per year in 2019 and 2020, based on a 12% withdraw rate and actual allowances in circulation in 2017 (European Commission, 2018a).

6.6 Conclusion

This chapter has reviewed the first major intervention in the ETS's operation outside of the major internationally-driven reduction target setting periods. These interventions were driven and justified by falling allowance prices in the wake of the economic crisis. Low prices had complex, somewhat contradictory effects on ETS politics. On the one hand, they convinced a large group of actors that the ETS was in danger of failing, because it was not sufficiently changing behavior in ETS sectors and auction revenues were well below earlier projections. They also solidified the previously loose network of high-price supporting actors into two supportive coalitions - the Green Growth Group and Friends of ETS. Without this belief in policy failure, backloading and the MSR would not have been proposed. On the other hand, falling prices had direct impacts on some supporters of more emission reductions – especially market intermediaries – and led some environmental NGOs to call for the abolition of the ETS, creating splits in a group that is highlighted in the existing literature on the 2009 Directive for their enthusiasm for the ETS at the time (Skjærseth, 2010).

The MSR and the backloaded allowances would quickly be involved in a new round of policy making, this time to negotiate the 2018 Directive that would revise the ETS to operate after 2020. This new process would draw on the MSR and also be oriented towards the policy problem that it was ultimately unable to solve in the short term: low allowance prices. Chapter 7 now turns to this process.

Chapter 7

Emissions trading towards 2030 (2013-18)

7.1 Introduction

This chapter analyzes the most recent round of ETS reforms, which set the policy instrument's parameters for Phase IV (2021-2030) and resulted in the 2018 Directive (Official Journal of the European Union, 2018). It covers the period beginning in 2013 when Phase IV was being discussed as part of the 2030 Climate and Energy Framework and ending in March 2018 when the Council of the European Union gave the 2018 Directive its final approval. The 2018 Directive was supposed to be a return to "normal" policy making after the backloading and MSR interventions in 2013 and 2015. This aim was codified by the conclusions of the October 2014 European Council, which set detailed guidelines for the ETS after 2020 and largely continued the status quo. But multiple long-running tensions in ETS policy making combined to create another round of major policy changes that departed significantly from the European Council conclusions. Continued low allowance prices and the 2015 Paris Agreement were key factors sparking a new discussion on the allowance surplus and free allocation. The result was both increased free allocation and increased volume management, results shaped by the compromises of the past and the European Council conclusions.

The remainder of this chapter is organized as follows. Section 7.2 examines the period after the MSR agreement in May 2015, and the continuing effect of the ETS on policy actors. Section 7.3 examines the period leading up to the Commission's July 2015 proposal for the 2018 Directive, with special focus on the October 2014 European Council conclusions that set many of the parameters for subsequent negotiations. Section 7.4 then examines the process through which the consensus reached in October 2014 was modified in significant ways, by studying the Commission's proposal and how it was changed by the Council and the Parliament in their initial negotiations. Section 7.5 discusses the subsequent trilogue negotiations and the adoption of the 2018 Directive. Section 7.6 summarizes the changes created by the 2018 Directive, and Section 7.7 concludes.

7.2 Policy effects: A continuing price crisis

Two months after the MSR Decision was informally agreed upon in May 2015, the European Commission's impact assessment of the proposed 2018 Directive stated that because of the MSR and the 2030 ETS target, "…the EU ETS will deliver a meaningful carbon price and stimulate cost-efficient emission reductions" (European Commission, 2015a, p. 15). Analysts and market participants also predicted that allowance prices would rise in the wake of structural reform; for example, Point Carbon projected an average price of €11 in 2016 (ENDS Europe, 2015d, 2015e). Prices did indeed rise marginally in 2015 from €7 to €8, continuing a trend of increases from the lows of €3 in 2013 (Intercontinental Exchange, 2015). In September 2015, ENDS Europe (2015c) reported that Jos Delbeke stated "…that short-term reforms already adopted over the past two years have resulted in the carbon price gradually rising, adding that he expects the development to continue over the next three years."

However, these expectations were to prove to be frustrated once again (see Figure 7.1). Over a one-month period starting in January 2016, allowance prices rapidly fell 40% to €5 and stayed between €4 and €6 until August 2017 (Intercontinental Exchange, 2017). Market participants attributed this decrease to either falling energy prices, speculation, or a belief that a large allowance surplus would continue until 2030 (Point Carbon, 2016, p. 14). In 2016 and 2017, participants in the IETA GHG Market Sentiment Survey expected prices to be as low as those predicted before the backloading/MSR debates in 2013 (IETA, 2017a, p. 8). Despite the return of low prices, in March 2016 DG CLIMA officials stated that they would not propose further changes to the ETS in response (Carbon Pulse, 2016a).

Prior to the fall in allowance prices, member state auctioning revenue had risen by a third between 2013 and 2015, from €3.7 billion to €4.9 billion (Le Den et al., 2017,

p. 16). This was due in part to rising allowance prices in 2015, as well as the reduced impact of backloading (400 million allowances were removed in 2014, followed by 300 million in 2015, and 200 million in 2016). But the price decrease in January 2016 signaled a return to prices – and revenues – closer to those seen in 2013. Revenues in 2016 amounted to only €3.8 billion, despite the fact that 10% more allowances were auctioned as backloading neared completion (European Commission, 2017a, p. 12; MaxiMiser Project, 2018).

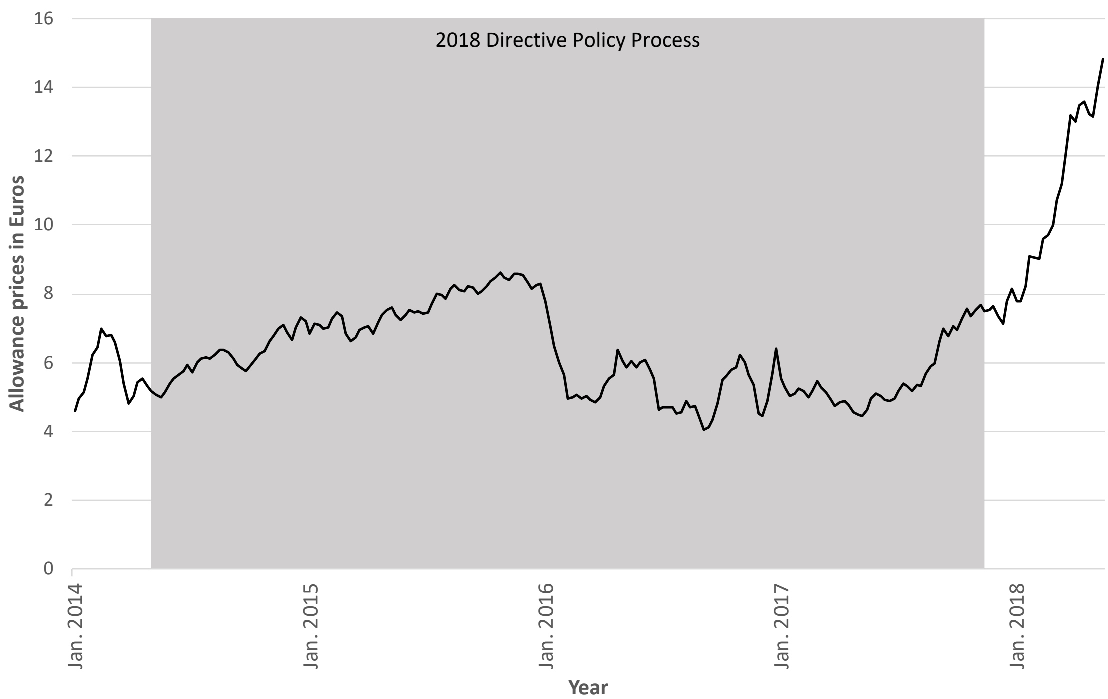

Figure 7.1 **Allowance prices between January 2014 and April 2018**

Source: Sandbag, 2018.

Continued low allowance prices implied lower electricity prices and reduced benefits for low-carbon electricity generation companies than would have otherwise been the case (Lise et al., 2010). High-carbon electricity companies, which needed to buy a significant number of allowances, had lower costs when the allowance price was lower. Prices also had less of an impact on the investment decisions of electricity companies (Interviewee 27, electricity generation industry, March 2017). Reflecting during this period, an interviewee from a renewable energy association stated:

> "A more robust carbon price would have helped [...] the old-fashioned utilities to have moved earlier away from their high carbon assets to more renewable assets." (Interviewee 14, renewable energy industry, June 2016)

The electricity generation industry in Central and Eastern Europe also had Article 10c free allocation to consider. Because the amount of the free allocation was determined based on verified emissions, backloading and the MSR did not directly affect the amount (CDC Climat, 2013). However, under the 2009 Directive Article 10c free allocation was to be phased out by 2020. As a result, the amount of available allowances for Article 10c fell from 151 million in 2013 to 81 million in 2017 (European Commission, 2018, 2014a).

The market intermediaries continued to be directly affected by low allowance prices and the continuing decline in the Clean Development Mechanism (see Section 6.2). In 2017, the International Emissions Trading Association listed 67 EU-based members on its website, a decrease of 14% from 2014 and 36% from the peak of 105 members in 2010 (IETA, 2017b, IETA, 2014). The number of EU members from ETS industries (energy-intensive and electricity generation) remained steady between 2014 and 2017, while the number of other market intermediaries fell by 20%, especially banks (a 57% decrease), exchanges (75% decrease), and standards/others (67% decrease). Only 3 EU-based banks remained in the organization by September 2017, an 80% drop from the 15 participating in 2010. The Climate Markets and Investment Association – made up solely of market intermediaries – continued to see its membership fall by nearly half from 42 to 23 organizations between 2014 and 2017 (CMIA, 2017, CMIA, 2014). However, both organizations – as well as the European Federation of Energy Traders – continued to engage in the 2018 Directive policy process (CMIA 2015; EFET, 2015; IETA, 2015).

Continuation of free allocation to energy-intensive industries was under pressure for several reasons. As noted in Chapter 6, the cross-sectoral correction factor (CSCF) had been triggered, meaning that every installation that received free allocation through the carbon leakage list had that allocation cut by 16.3% on average in Phase III (European Commission, 2017b). The 2009 Directive had codified rules for carbon leakage risk that ensured most industries continued to receive significant free allocation. In December 2009, however, the Commission had set carbon leakage criteria for the years 2013 and 2014, "subject to the outcome of the international negotiations," referencing the Copenhagen Conference occurring during the same time period (European Commission, 2009, p. L1/13). As a result of the failure of UNFCCC parties to agree to a successor to the Kyoto Protocol in Copenhagen, the context had changed for the carbon leakage criteria set between 2015 and 2019. In addition, the calculation of carbon leakage exposure depended on an assumption of €30 allowance prices (European Commission, 2009, p. L1/11). One estimate by the consultancy CE Delft argued that if a price assumption of €12[17] was used instead, the percentage of energy-intensive industrial emissions included in the carbon leakage list would fall from 95% to 10% (de Bruyn et al., 2013, p. 5). In a Commission consultation on the 2015-2019 carbon leakage list from June to August 2013, 90% of the respondents were energy-intensive industries, with only 1% from the electricity generation industry (own analysis). The industrial respondents overwhelmingly preferred maintaining the existing carbon leakage list and retaining the assumption of €30 allowance prices, with some calling for a higher price assumption of €60 or €90 to "ensure the EU is 'resistant to carbon leakage'" (European Commission, 2013, pp. 2, 4). Research organizations and NGOs viewed largely saw the list as too long and called for a reduction in the assumed allowance prices (European Commission, 2013, pp. 9–10). Since the issue had not yet been resolved at the time that the Commission was preparing its proposals for the 2030 Climate and Energy Framework, however, it became part of the discussion on the October 2014 European Council conclusions (see Section 7.3 below). The final factor putting pressure on free allocation was the linear reduction factor, which steadily reduced the overall allocation available. The energy-intensive industries opposed the EU setting a unilateral increased greenhouse

[17] At the time the report was released, actual allowance prices were between €3 and €4 (see Sandbag, 2018).

gas target for 2030, with Eurofer stating that "targets should not be set unilaterally" (Eurofer, 2013, p. 2).[18]

According to interviewees, many environmental NGOs continued to disengage with ETS policy making, a process which had been gathering pace since the failure to cancel allowances in 2012-2013 (Section 6.4). In 2016, in the wake of the decrease in allowance prices, one ENGO interviewee noted:

> "[The MSR] only temporarily removes allowances from the system, and we actually don't know how the market reacts to that, and so far the market hasn't reacted at all." (Interviewee 5, environmental NGO, May 2016)

Frustration with the ETS continued to increase among environmental NGOs because problems had continued despite repeated interventions. (Interviewee 5 [May 2016], Interviewees 7, 8, and 9 [June 2016], environmental NGOs; Interviewee 19, member state government, July 2016/March 2017).

> "NGOs, for the most part, have stopped working on the ETS. […] [it] has been in place for ten years and it is still not really working, a lot of NGOs have moved away from it and said, 'We would rather focus on national policy work, because we are not really able to get the political support to get the revisions that are needed.'" (Interviewee 5, environmental NGO. May 2016)

In combination with the significant number of ENGOs that had called for the ETS to be replaced in the 2012 consultation on structural reform, this suggested growing disenchantment with the policy. Speaking in June 2016, one interviewee stated:

> "If it is not fixed now, at some point the debate on the loss of trust and the ideas for scrapping it might pick up and get a much larger audience and much larger group of NGOs that support it, depending on how this reform goes." (Interviewee 8, environmental NGO, June 2016)

[18] In addition to Eurofer, energy-intensive industry associations that opposed a unilateral EU 2030 target included Cembureau, Cerame-Unie, Euroalliages, Eurometaux, Cefic, Fuels Europe, and the Glass Alliance (own analysis).

In the opinion of one interviewee, the impact of ENGO disengagement with ETS policy making was somewhat mitigated by the fact that responses were coordinated by a small group of experts in Brussels (Interviewee 9, environmental NGO, June 2016). An interviewee who was part of that group stated:

> “Most of the engagement is from the maybe four people that are here in Brussels that work on it. Very little engagement from the national level.” (Interviewee 8, environmental NGO, June 2016)

Reflecting on these trends with ENGOs and other non-governmental actors, a member state official stated:

> “I worry that with each successive round of negotiation, everyone loses confidence a little bit more in the regime.” (Interviewee 19, member state government, July 2016)

But the ETS was viewed as a permanent part of the policy landscape:

> “They're going to continue to try to fix it. Because the people in [DG CLIMA], they are the ones that set it up. It is their baby, they are not going to let it go. Also, it all obviously has global ramifications. There is the Commission, but also EU member states like the UK as well, that are funding the carbon market developments elsewhere, in China, in all these different countries. If the EU gives up on its own carbon market, what's going to happen to all those other ones?” (Interviewee 8, environmental NGO, June 2016)

7.3 Setting the agenda (2013-2015)

The ETS played a role as a bargaining chip in the negotiations on the Commission’s proposal for the 2030 Climate and Energy Framework, released in January 2014 (European Commission, 2014b). ETS negotiations under the 2030 Framework were connected with those on the EU’s greenhouse gas reduction targets:

> “These days when we discuss [EU reduction] targets, while this affects many things, the first thing people think about are the implications for the ETS. […]

> the ETS debate is very prevalent there. And you can sometimes link issues." (Interviewee 17, European Commission, June 2016)

This was in contrast to the negotiations on the 20% reduction target for 2020, which the same interviewee stated "…was a really different process. There it was driven by being ready for Copenhagen" (Interviewee 17, European Commission, June 2016), and the 20% target was decided prior to the main ETS negotiations. In the 2030 Framework negotiations, in contrast, the ETS revision and the EU reduction target were being negotiated in parallel. This became apparent within the Commission during negotiations on whether the 2030 Framework proposal, released in January 2014, should call for a 40% EU reduction target or for a 35% target that was supported by DG Energy (ENDS Report, 2014c). In order to secure agreement on the 40% target, DG CLIMA agreed to continue assuming €30 allowance prices when calculating the carbon leakage list for 2015-2019, as the energy-intensive industries had called for in the consultation on the issue (European Commission, 2013, see Section 7.2). This ensured that most energy-intensive industries would remain on the list until at least 2019:

> "…there was a lot of debate, can we go ahead with a [2015-2019 carbon leakage] list [with an assumption] of €30, and we said ok because we are going to go for something aggressive now [the 40% target], which in all likelihood will [strengthen] the carbon price over time again. In view of this, we are not going to change the carbon price assumption underlying this. And this was in terms of facilitating the negotiation. It turned out to be <u>the</u> facilitator so to say." (Interviewee 17, European Commission, June 2016)

In 2014, the formal policy making process for the 2018 Directive began. In preparation for its legislative proposal, the Commission held two consultations: one from May to July 2014 on the carbon leakage list (329 publicly-identified participants), and a second from December 2014 to March 2015 on free allocation for the electricity generation sector, ETS-related funding, and general evaluation of the policy (390 publicly-identified participants; European Commission, 2015a, pp. 102–118, 2014c). In addition, 85 actors sent feedback after the 2018 Directive proposal was published (European Commission, 2016). These consultations contributed to a doubling of the cumulative participating actors from 2013 to 2015. The consultation on the 2015-2019 carbon leakage list referenced in Section 6.2 had attracted 257 newly-engaged actors, overwhelmingly from the energy-intensive industries. The three 2018 Directive consultations attracted a further 259 actors, bringing the number who had engaged publicly in ETS consultations to 993 actors (see Figure 7.2).

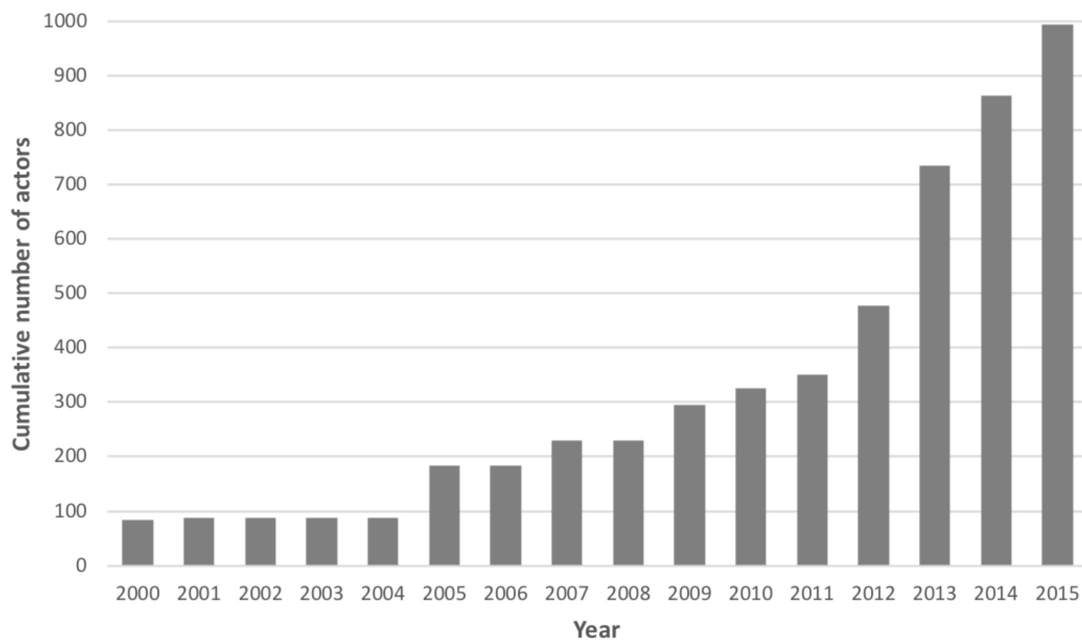

Figure 7.2 **Cumulative participants in ETS consultations (2000-2015)**

Source: Author's calculations based on consultations presented in Table 4.1.

The 2018 Directive consultations attracted participation from actors who were, on average, previously less engaged in ETS policy making. The 537 publicly-identified actors participated in an average of 2.75 consultations between 2000 and 2015, the lowest average engagement of the five major ETS-related pieces of legislation studied in this thesis (see Figure 6.4). Approximately 43% of participating actors were limited to participating in only the 2018 Directive consultation (i.e., actors with an engagement score of 1; this compared to 61% overall, 44% for the 2003 Directive, 39% for the 2009 Directive, and 9% for the Backloading Decision). Business associations and companies made up 93% of respondents, their highest average in the five major legislative consultations (see Table 7.1). The other major actor type which made up a significantly higher percentage of participants than average were the energy-intensive industries. Actor types that made up a lower percentage than average included the electricity generation industry, research institutions, NGOs, and especially market intermediaries (who made up 75% less than average).

Table 7.1 **Actors that responded to the 2018 Directive consultations**

Actor type	Number responding
Business associations/companies	537 (93%)
Electricity generation	48 (9%)
Energy sector (other)	24 (4%)
Energy-intensive industries	365 (68%)
General	21 (4%)
Market intermediaries	5 (1%)
Other	31 (6%)
Academic/research institutions	11 (2%)
NGOs	23 (4%)
Other	14 (3%)
TOTAL	**537**

In this section, the focus will be on the 2014 carbon leakage consultation, as the later consultation on other topics largely responded to the October 2014 European Council conclusions, which are discussed below. On the free-allocation share, 73% of respondents from industry stated that there should be no limit to the amount of free allocation within the cap, including energy-intensive industries and general business associations (European Commission, 2015a, p. 113). This implied that any additional amount would come from the auction share. In addition, the energy-intensive industries largely opposed free allocation to the electricity industry under Article 10c, even though these allowances were taken from each member state's auction share (European Commission, 2015a, p. 108). In addition, 21 actors from the electricity generation industry responded, though the industry was not highly engaged in the carbon leakage consultation (European Commission, 2014d). A first group made up of largely low-carbon generators called for a reduction in the size of the free-allocation share (e.g., Fortum, the Danish Energy Association, and CEZ). A second group made up of Eastern European district heat providers called for no limit to free allocation (e.g., the Association of Hungarian District Heating Enterprises). A third group of large generators with varying carbon intensities did not take a position (e.g., EDF and RWE). Most environmental NGOs stated that "there should be no free allocation post-2020" (e.g., WWF and CAN Europe; European Commission, 2014d).

7.3.1 The October 2014 European Council

In the context of the positions of non-governmental actors in the Commission consultation, the initial 2018 Directive negotiations involved the European Commission and the European Council in preparation for the October 2014 Council meeting on the EU 2030 Climate and Energy Framework. Discussing why the European Council was again more involved in climate and energy policy, an interviewee stated that:

> "That is because the stakes have grown. […] Decarbonizing is a very fundamental transformation of the way you run society. […] So you need a much broader societal [change] and so a much broader support base." (Interviewee 17, European Commission, June 2016)

The main components that needed to be decided were the EU's targets for greenhouse gas reductions, renewable energy, and energy efficiency. The outcomes from this meeting were a binding 40% reduction in greenhouse gas emissions, a 27% target for renewable energy, and a 27% target for improvement in energy efficiency (European Council, 2014). The EU reduction target translated into an increase in the ETS linear reduction factor from 1.74% to 2.2%, leading to a 43% reduction in 2030 compared to 2005.

The European Council also agreed to detailed guidelines related to ETS policy making, in contrast to its more limited role with backloading and the MSR. It supported the continuation of free allocation to the Central and Eastern European electricity sector – which had been slated to end in 2020 under the 2009 Directive (Official Journal of the European Union, 2009 Article 10c) – and agreed on the creation of a Modernization Fund for the sector as well. It stated that "free allocation [for energy-intensive industries] will not expire; existing measures will continue after 2020 to prevent the risk of carbon leakage", and supported the creation of an Innovation Fund to support low-carbon innovation (European Council, 2014, p. 2). The Council also supported setting the auction share at 57% of allowances allocated, the same percentage as in Phase III. This result was described as "a very careful political balance" (Interviewee 19, member state government, July 2016) which set "astonishingly detailed instructions" for the ETS (Interviewee 3, European Commission, May 2016). Another interviewee stated that the conclusions were:

> "…the result of a very careful compromise […] every member state has got what they wanted; not everything, but something." (Interviewee 6, electricity generation industry, June 2016)

Through the October 2014 conclusions, the European Council sought, to an unprecedented degree in ETS policy making, to constrain the direction of change for the policy in Phase IV. Although this would be unsuccessful in important ways (see Section 7.4), it was nevertheless a success in setting many of the starting parameters of debate on the 2018 Directive, not least by heavily constraining and dictating the Commission's legislative proposal. This second stage of the process now began in earnest, to which the next section will turn.

7.4 Modifying the consensus (2015-2017)

In late 2014, it seemed that the European Council had made many of the key decisions related to the 2018 Directive outside of the confines of the Ordinary Legislative

Procedure. The Council conclusions settled many issues and constrained the Commission's response. As a result, the 2018 Directive was initially framed as a straightforward implementation of the European Council's October 2014 conclusions. The second 2018 Directive consultation from December 2014 to March 2015 (on topics such as free allocation for the power sector and ETS-related funding) was also structured around the Council conclusions (European Commission, 2014e). The MSR Decision was agreed in May 2015 and the 2018 Directive proposal was quickly published in July 2015 (European Commission, 2015b). The proposal explicitly stated that:

> "The European Council outlined the main principles to achieve the reduction in the EU ETS [in its October 2014 meeting]. This proposal creates the necessary legal framework implementing these principles" (European Commission, 2015b, p. 2).

An interviewee described it in similar terms:

> "The ETS proposal was really business as usual [...] a copy/paste of the 2014 Council conclusions on the 2030 Framework." (Interviewee 14, renewable energy industry, June 2016)

Despite this, in September 2015 Commission officials stated that the "proposal is fairly open" and "likely to be significantly altered during negotiations between lawmakers" (ENDS Europe, 2015f). As policy discussions progressed, it became clear that the proposal was likely to depart significantly from the European Council conclusions. One of the key reasons for this divergence identified by interviewees was the adoption of the Paris Agreement in December 2015 (e.g., Interviewee 25, member state government, March 2017). In a surprise move, the Paris Agreement stated that parties should have a goal of "…holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C" (UNFCCC, 2015, p. 2). Despite this new, very ambitious target, in December 2015 UNFCCC parties' mitigation pledges were projected to lead to a temperature increase of 2.7°C by 2100 (Climate Action Tracker, 2015).[19]

> "…the Paris Agreement […] fundamentally changed the dynamics, especially in the Parliament but also in the Council. […] [some member states] will actively come on board because they agree, some will come on board because they cannot politically be seen to be left out." (Interviewee 25, member state government, March 2017)

Despite the fact that the EU greenhouse gas reduction goal was inadequate as a contribution to reaching either the 2°C or 1.5°C target, in early 2016 the Commission stated that the Council's 2030 target would not be immediately reviewed after Paris (ENDS Europe, 2015g). In response, some actors pushed for an increase in the EU's reduction target, including environmental NGOs and renewable industries (ENDS Europe, 2015g) as well as member states such as Germany, Austria, Luxembourg Portugal, France, Denmark, and the UK (ENDS Europe, 2016a). Others including Poland, Italy, Bulgaria and the Czech Republic disagreed. With any headline change in the target requiring consensus in the European Council, and the Commission not pushing for a revision, significant responses to the low allowance prices and the calls for increased post-Paris EU ambition would once again be found elsewhere.

In this context, direct price management was once again introduced into the debate. A proposal for a price collar (the combination of a price floor and a price ceiling) was introduced by the French government in February 2016 (Carbon Pulse, 2016b; French Government, 2016). The report they circulated drew on the experience of price floors in other emissions trading systems (p. 5). In parallel, prominent European economists had begun to advocate price floors for the EU ETS in the academic literature (Edenhofer et al., 2017; Hepburn et al., 2016). An Eastern European member state official noted that the national finance ministry was interested in the idea (Interviewee 26, member state government, March 2017), and Skovgaard has documented similar support in other member states (Skovgaard, 2017). However, direct price

[19] The projected temperature change has been subsequently increased to 3.2°C after the United States signalled its intention to withdraw from the Paris Agreement by 2020 (Climate Action Tracker, 2018).

management ran into the same issues of low political support in the Council as previously (Interviewees 23 and 24, European Parliament, March 2017; Interviewee 26, member state government, March 2017). DG CLIMA was also skeptical and reportedly "...preferred to set the scheme's emissions cap and let the market freely determine the price…" (Carbon Pulse, 2016b). In April 2016, Climate Action and Energy Commissioner Miguel Arias Cañete "expressed strong opposition to the idea" of a price corridor in an appearance before the EP's ENVI committee (ENDS Europe, 2016b).

Similar proposals were introduced in the European Parliament, but a Parliament interviewee stated that they "were not seriously discussed in the negotiations. There is not the support across the groups" (Interviewee 24, European Parliament, March 2017). So once again, the intermittently-suggested idea of direct price management through a price floor or price collar did not find sufficient support in the EU institutions. As a result, the discussion turned – as it had in 2011 and 2012 – to volume management. The following sections trace this process in more detail through the discussions in the Council (Section 7.4.1) the Parliament (Section 7.4.2), and the trilogues (Section 7.5).

7.4.1 The Environment Council

Through 2015 and the first half of 2016, discussion in the Council focused on analysis of the Commission proposal (Interviewees 19 and 25, member state governments, March 2017). Starting from the second half of 2016, negotiations then shifted to discussing possible changes to the proposal (and indirectly the "careful political balance" struck in the October 2014 European Council conclusions).

One of these changes was increased volume management through an increased intake rate for the MSR of 24%, and, more controversially, the cancellation of allowances. Cancellation had come up before during the backloading and MSR debates. As noted in Chapter 6, the Commission had mentioned the possibility of cancellation in the 2050 Roadmap to a Low Carbon Economy (European Commission, 2011b, p. 11). DG CLIMA had pushed for what appeared to be cancellation in the inter-service consultation on the Energy Efficiency Directive (DG Climate Action, 2011), and cancellation had been one of the options for structural reform that DG CLIMA put forward in the consultation which led to the MSR (European Commission, 2012b, pp. 7–8). This approach had also been supported by environmental NGOs, the Greens/EFA in the European Parliament, and the UK Government (see Chapter 6).

However, these suggestions for allowance cancellation had always been set aside in favor of other options. Indeed, in the first half of 2016 an interviewee from an environmental NGO stated that "so far there has been very little appetite" for cancellation in the 2018 Directive negotiations (Interviewee 5, May 2016). Despite this history, in the Council the combination of the low allowance price and the adoption of the Paris Agreement gave impetus to discussions on increased volume management (ENDS Europe, 2016a; Interviewees 20, 21, 25, member state governments, March 2017). A group of member states – which one interviewee called "the like-minded group" (Interviewee 25, member state government, March 2017) – began meeting informally in the second half of 2016 to push for further volume management. In October 2016, the like-minded group consisted of Denmark, France, Luxembourg, the Netherlands, Sweden, and the UK, with the addition of Slovenia later (Interviewees 19, 20, and 25, member state governments, March 2017). They were in part influenced by negotiations in the Parliament, where volume management provisions were also discussed (see Section 7.4.2 below). Belgium and Germany interacted with the group, but Germany wanted an increase in the free-allocation share, which the like-minded group opposed, and Belgium preferred a different volume management approach (Interviewee 25, member state government, March 2017). France initially proposed an increase in the Linear Reduction Factor to increase EU ambition and as a strategy for volume management (Interviewee 25, member state government, March 2017). This proposal did not gain support in the like-minded group, with one interviewee stating that "…[the LRF] was something that was very much set from the European Council, so we didn't have a mandate [to change it]…" (Interviewee 25, member state government, March 2017). One proposal was to double the MSR intake rate to 24%, in order to create a short-term impact on allowance prices. As one interviewee stated:

> "We saw big risks for the ETS generally if there wasn't to be an immediate impact on the price following this round of negotiations, [i.e., the risk of] a continued very low price that wasn't giving the right investment signals and that was causing low confidence in the ETS as an instrument." (Interviewee 19, member state government, March 2017)

The UK introduced the intake rate proposal, and Sweden introduced a second proposal that automatically cancelled MSR allowances after five years (Interviewees 19 and 25, member state governments, March 2017). The like-minded group then supported these proposals and advocated for them in the Council.

Volume management proposals were strongly opposed by many Central and Eastern European member states (Interviewees 19, 20, 21, 25 and 26, member state governments, March 2017). In December 2016, these member states included Romania, Bulgaria, Croatia, Lithuania, Latvia, and Poland (ENDS Europe, 2016c). They argued that the MSR had just been adopted and should be allowed to operate before changes were made in the form of the 24% intake rate and cancellation. Opposition was firmest against volume cancellation, which one interviewee stated was a red line for their Eastern European member state (Interviewee 26, member state government, March 2017). Other member states were also skeptical of the volume management proposals initially, including Greece, Ireland, and Spain (Interviewee 25, member state government, March 2017; ENDS Europe, 2016c).

In addition to volume management, sustained discussion continued on approaches to avoid triggering the cross-sectoral correction factor (CSCF) in Phase IV. Though this aim held widespread support among member states, there was little agreement on the best approach to reach it. Member states disagreed on whether the CSCF would even be triggered under the Commission's proposal (Interviewees 19, 20, and 25, member state governments, March 2017). The UK, France, Slovakia, and the Czech Republic initially advocated a "tiered approach" to free allocation which would have reduced the amount allocated to energy-intensive industries at less risk of carbon leakage according to four tiers of risk (French Government and UK Government, 2016). However, this proposal ran into strong opposition in the Council (including from members of the like-minded group) who felt their industries would suffer under the proposal. Its prospects were also weakened by the UK's vote to the leave the EU in June 2016, and by late 2016, the tiered approach was no longer being seriously discussed (Interviewees 19 and 25, member state governments, March 2017).

This left discussion on the split between the free-allocation share and the auction share, which was highlighted as "an incredibly divisive issue" (Interviewee 19, member state government, March 2017). A group of member states pushed consistently and forcefully for the free-allocation share to be increased from 43% to 48%, in order to avoid triggering the CSCF and increase competitiveness for energy-intensive industries (Council of the European Union, 2016a, p. 7, 2016b, p. 4; Interviewees 20 and 25, member state governments, March 2017). This group included Germany, Italy, Belgium, Greece, and Austria (Interviewee 20, member state government, March 2017).

This group's voting weight in the Council was just below the share needed to form a blocking minority, but they continued to place an expanded free-allocation share "on the table" throughout the negotiations. They were also supported by an intense lobbying campaign by the energy-intensive industries. Speaking in June 2016, one member state official stated:

> "From lots of industry, certainly everyone I have seen in the two or three months that I have been here, that is almost the only thing they want to talk about […] they just want to talk about free allocation and maintaining that." (Interviewee 19, member state government, June 2016)

Another member state official agreed, stating the energy-intensives were much more focused on free allocation than they were on volume management:

> "[Concern about the volume management provisions] was not something that really seemed to be an issue [for the energy-intensive industries]. They were very focused on free allocation." (Interviewee 25, member state government, March 2017)

The like-minded group of member states was against an increased free-allocation share, but were willing to negotiate a conditional increase in return for allowance cancellation over and above the 24% MSR intake rate, which by the end of 2016 had largely been agreed (Council of the European Union, 2016b; Interviewee 25, member state government, March 2017). The situation was different for the Central and Eastern European member states. According to a Central and Eastern European official involved in the negotiations, at least one major member state from this group had supported the 57% auction share provision in the European Council conclusions in order to maintain their auctioning revenues (Interviewee 29, member state government, April 2018). In addition, the free allocation for the Central and Eastern European electricity industry depended on the size of the auction share, not the free-allocation share. Therefore, if the auction share was reduced, the 10c free-allocation share would also be reduced along with auctioning revenues. Therefore, although many Eastern European member states were against further volume management, they were also strongly against an increase in the free-allocation share. This was especially true of Poland:

> "[Poland] wanted the auction share to be as high as possible. […] They wanted something higher than the Commission's proposal of 57% and they were very much against lowering it." (Interviewee 25, member state government, March 2017)

Publicly, Poland pushed to increase the auction share above 57%, introducing an amendment that the auction share "shall be <u>at least</u> 57%" (Council of the European Union, 2017a, pp. 9, emphasis in original). Therefore, the like-minded group and the Central and Eastern European member states shared a position on the size of the auction share, despite their strong disagreements on volume management.

However, the Council progressively moved towards an increase in the free-allocation share, in large part due to Germany's firm position on the issue:

> "For Germany [increasing the free-allocation share] was a very strong priority, probably the strongest one. Although they also wanted structural reform [i.e., increased volume management], but they wanted [increased] protection of their industry more. And we all knew that. So we knew, ok, we need to give

> in here [by increasing the free-allocation share] to get Germany on board." (Interviewee 25, member state government, March 2017)

On volume management, the increased MSR intake rate of 24% was agreed relatively early, in late 2016 (Interviewees 19 and 25, member state governments, March 2017). Building support for the volume management proposals outside of the like-minded group – but especially the more controversial cancellation proposal – was helped by the fact that these proposals were meant to raise the allowance price and projected to increase auction revenues. Another Eastern European official from a member state that ultimately voted against the general approach confirmed that concerns about the impact on industry of higher allowance prices had to compete with the fact that auctioning revenues were a key source of funding for national climate and energy policy (Interviewee 26, member state government, March 2017). An official from a member state that was a part of the like-minded group argued that the effect of further volume management on auctioning revenues was key in building support for the proposal:

> "…for many of the [member states outside of the like-minded group], [the effect on auctioning revenues was] definitely something that got them on board." (Interviewee 25, member state government, March 2017)

Another interviewee argued that the fact that cancelled allowances came from the MSR, and not directly from the auction share, also helped build support:

> "It just cancels allowances from the MSR, which is sort of like a cushion itself. It doesn't address the oversupply of allowances on the market, which is still there. In that respect it is a relatively safe measure because it doesn't directly hurt anyone." (Interviewee 20, member state government, March 2017)

At the February 2017 Environment Council meeting where the Council's general approach to the trilogue negotiations was adopted, France, Sweden, the United Kingdom, and the Netherlands – all core members of the like-minded group – jointly proposed a change that would see allowances in the MSR over a threshold of 500 million cancelled after five years, with the first cancellation taking place in 2024 (Council of the European Union, 2017b). However, at that meeting the Czech

Republic was not able to agree to a specific number for the threshold. The Commission was not enthusiastic about the cancellation proposal, due in part to concerns that it would create a strong "East/West split" with Western European member states voting in favor of the general approach and Central and Eastern European member states voting against (Interviewees 19, 20, and 25, member state governments, March 2017). So the proposal was rewritten to cancel allowances in the MSR "above the total number of allowances auctioned during the previous year" in order to gain the support of the Czech Republic and Slovakia (Council of the European Union, 2017c, p. 13). An interviewee described this process as:

> "…a political discussion, rather than something that was fully impact assessed and discussed at length. There was the political will to do this even without having all elements of it analyzed up front." (Interviewee 25, member state government, March 2017)

The cancellation provision meant a very large projected cancellation; Sandbag projected 3.1 billion allowances would be cancelled in 2024 alone (Sandbag, 2017). This was more than double the amount that the Commission had previously suggested was necessary to move from a 20% to a 30% EU reduction target for 2020 (European Commission, 2010c, p. 7). In return, the general approach foresaw a 2% increase in the free-allocation share conditional on the CSCF being triggered in Phase IV.

7.4.2 The European Parliament

In the European Parliament, rapporteur Ian Duncan released a draft 2018 Directive report in May 2016 (Committee on the Environment, Public Health and Food Safety, 2016). The report included amendments to allow member states to place allowances in the MSR when national policies caused the closure of electricity generation installations and increased the LRF to 2.2% (in line with the European Council conclusions) with a review in 2023. It also increased the free-allocation share from 43% to 45%, a key priority of the center-right EPP group (ENDS Europe, 2016d; European People's Party, 2016). It did not, however, include any allowance cancellation or changes to the MSR intake rate. An interviewee from the Greens/EFA voiced frustration with the negotiations in the Parliament at this point, when volume management still had not gained sufficient support:

> "The debate this time around is very frustrating. I feel we are no longer talking about climate. It is all about funds and distribution to industry. It seems like […] environmental ambition is very secondary, if at all present, in the debate. It has become about distribution and who gets to have a share of the pot. […] …the failure of Copenhagen to achieve a global agreement meant that political will after [the 2009 Directive] has been waning, and it has just been very difficult to fix anything, and it has been tedious." (Interviewee 16, European Parliament, June 2016)

However, as in the Council, volume management began to be seriously considered in the debate. Volume-management provisions had not yet appeared in the amendments tabled in ENVI in July and August 2016 (e.g., European Parliament, 2016). In October 2016, rapporteur Duncan introduced a 300-million allowance cancellation provision based on proposals introduced in the ITRE committee (ENDS Europe, 2016e). This proposal also included a compensation fund financed by the sale of 256 million allowances, in order to compensate energy-intensive industries from the EU level for electricity price increases. When the political groups announced a final compromise in ENVI in December 2016, it included a cancellation of 800 million allowances in 2021 and a temporary increase in the MSR's intake rate from 12% to 24% (Committee on the Environment, Public Health and Food Safety, 2017; ENDS Europe, 2016f). The original proposal for moving allowances to the MSR when electricity capacity closed was also changed to outright cancellation of those allowances if electricity installations closed due to "additional national measures" (see European Parliament, 2017a, p. 52).

However, the compromise set in ENVI partly unraveled when the plenary voted on the Parliament's position for trilogues with the Council. The agreement had included a more stringent linear reduction factor of 2.4% and provisions to exclude cement from the carbon leakage list (paired with border adjustments for cement imports). However, the European People's Party and ALDE voted against these provisions, causing the Greens and the GUE/NGL to vote against the overall position and for the

Socialists and Democrats to split (ENDS Europe, 2017a). As a result, the Parliament's trilogue position was passed with only a majority of 59%, much lower than the MSR Decision and close to the 53% majority for the Backloading Decision (European Parliament, 2017b, p. 11).

7.5 Trilogues

The Council and the Parliament held six trilogue meetings between April and November 2017 (Council of the European Union, 2017d). On the Council side, negotiations were led by the Maltese Presidency in the first half of 2017, shifting to the Estonian Presidency for the second half of the year. In the Parliament, the rapporteur remained ECR MEP Ian Duncan until June 2017, when he was replaced by fellow ECR MEP Julie Girling. The Council's general approach was more stringent than the EP's report in a number of ways: allowance cancellation was larger, although delayed, and the increase in the free-allocation share was 2% instead of the EP's proposed 5% (Interviewees 22-24, European Parliament, March 2017; Interviewee 19, member state government, March 2017). However, the Parliament's report included limits on free allocation and funding to coal-based electricity installations and a Just Transition Fund for employee retraining.

Several member state interviewees identified a "dual negotiation" dynamic in the 2018 Directive trilogues (Interviewees 20 and 25, member state governments, March 2017). One negotiation was between the Council and the Parliament to bridge differences between their approaches. The second occurred within the Council, to broaden the majority in favor of the final 2018 Directive and reduce the possibility of the "East/West split" that had concerned the Commission during discussions on the Council's general approach.

As the trilogues began, negotiators identified three issues as major discussion points: volume management, free allocation to energy-intensive industries, and funding/Article 10c free allocation to the electricity industry (ENDS Europe, 2017b). Volume management was the first of the three issues to be informally agreed (Interviewee 25, member state government, May 2018). In September 2016, the

Estonian Presidency announced that agreement had been reached on the doubling of the MSR intake rate to 24% and the unilateral cancellation of allowances by national governments (ENDS Europe, 2017c). The Council was also forced to move toward the Parliament on the size of the free-allocation share, agreeing to 2.5% and eventually 3% as the portion that would be used for free allocation if the CSCF was triggered (Council of the European Union, 2017e, p. 3, 2017d, p. 3).

Broadening the majority in the Council required gaining the support of Central and Eastern European member states. They continued to be strongly opposed to both an increase in the free-allocation share as well as volume management provisions (Interviewee 20 [April 2018] and Interviewee 25 [May 2018], member state governments). However, free allocation expansion remained a key priority of Germany and the EPP group, and the same was true for volume management for member states from the like-minded group and Parliamentary groups such as the S&D, Greens/EFA, and GUE/NGL. Therefore, a compromise was sought on the third issue: modernization funding and Article 10c free allocation to the electricity industry. There had already been a push from 10c-eligible electricity generators for increased free allocation. In response to volume management proposals, in December 2016 five electricity associations in Eastern and Southern Europe pushed for compensation through increased free allocation for the electricity industry under Article 10c and increased funds for the electricity-focused Modernization Fund (Polish Electricity Association et al., 2016). The Polish Electricity Association pushed for 10c-eligible member states to be able to use 60% of their auction share for electricity free allocation and to double the number of allowances that would be used to set up the Modernization Fund (Polish Electricity Association, 2017).

After the general approach was adopted and trilogues began, Poland and other Central and Eastern European member states pushed hard for an increase in the Article 10c electricity free allocation from 40% to 60% of an eligible member state's auction share (ENDS Europe, 2017d, 2017e). In a letter circulated in mid-September 2017, Poland offered to consider supporting the compromise if it included the increase to 60% as well as an increase in the size of the Modernization Fund from 2% to 4% of Phase IV allowances, and a modification to the Fund's criteria so that coal-based installations could receive funding (Polish Government, 2017). Many Central and Eastern European member states supported the letter (Interviewee 25, member state government, May 2018). After the letter was circulated, an expansion of the Article 10c derogation to 60% of a member state's auction share was first mentioned (Council of the European Union, 2017e, p. 4). In October 2016, as the negotiations ended, the last major point of contention was whether coal-based electricity generation would be prohibited from receiving free allocation or funding from the Modernization Fund through an emission standard of 450g CO_2 per kilowatt hour (ENDS Europe, 2017f).

In November 2017, a political agreement was reached (see European Parliament, 2017a). On volume management, the MSR intake rate increase to 24% was adopted, as was the Council's cancellation of MSR allowances above the previous year's auctioned amount, and the Parliament's unilateral member state cancellation amendment (Council of the European Union, 2017d, pp. 2–3). Contingent on the triggering of the CSCF, the free-allocation share was increased by 3% to 46%. Left over allowances from this free-allocation share expansion would be moved to the Modernization Fund and the Innovation Fund if the CSCF was not triggered. The 450g CO_2 emission standard was not adopted, but Modernization Fund aid could not be used for solid fossil fuels (i.e., coal), except in the case of Bulgaria and Romania. Additionally, the percentage of their auction share that 10c-eligible member states could use for free allocation to the electricity industry was increased from 40% to 60% (compared to the original intent of the 2009 Directive for Article 10c allocation to be phased out by 2020).

The final vote in the European Parliament was 84% in favor (ENDS Europe, 2018), returning that body closer to the large majorities seen for the 2008 Aviation Directive and the 2009 Directive. For the first time in a major ETS vote, no MEPs from the European People's Party abstained or voted no, and only six MEPs from the Socialists and Democrats abstained (European Parliament, 2018, p. 8). Despite the closer votes on backloading and the MSR between 2013 and 2015, and despite the acrimony and splits brought about during the pre-trilogue vote on the 2018 Directive, a large majority of the Parliament was able to agree on the final shape of the Directive. The vote in the Council was also largely a return to the pre-backloading consensus pattern, with Poland, Hungary and Croatia abstaining (Council of the European Union, 2018), which one interviewee saw as an important achievement (Interviewee 25, member state government, May 2018).

7.6 Summarizing the changes to the ETS

With the adoption of the 2018 Directive, a Commission legislative proposal presented as merely implementing the October 2014 European Council conclusions became a vehicle for a significant expansion of free allocation in parallel with a suite of volume-management provisions that marked a substantial ratcheting up of the EU ETS's expected emission reductions (see Figure 7.3 below). This outcome was heavily influenced by two long-running issues in ETS politics: the shrinking pool of allowances available for free allocation, and low allowance prices. The 2018 Directive negotiations pitted organizations benefiting from the different shares against each other, and to find a compromise the actors involved drew on the only major resource they had at their disposal: ETS allowances.

The auction share already had a long history as a target of policy makers for making compromises, as was seen with its use as the source of allowances for backloading and the MSR. This pattern intensified during the negotiations on the 2018 Directive. The free-allocation share's expansion, the continuation and expansion of free allocation to Central and Eastern European electricity industries under Article 10c, and the doubling of the MSR intake rate all relied on auction-share allowances. The free-allocation share was protected during this period and was conditionally expanded. However, the MSR share of allowances was also used, both as a source for the New Entrants' Reserve and for allowance cancellation starting in 2024. Like the auction share, allowances in the MSR share were not distributed to specific actors, meaning that cancelling these allowances did not result in their removal from a specific organization (even though the lost revenue was taken from individual member states). This was even more true for the MSR share than it was for the auction share because expectations that a significant allowance surplus would remain throughout Phase IV lowered expectations that those allowances would be released for auctioning before 2030.

Derogations such as the carbon leakage list and Article 10c that were meant to delay, but not reverse, the onset of the costs of the ETS (Müller and Slominski, 2013) instead became quasi-permanent features of allowance allocation. In addition, through the volume-management provisions of the 2018 Directive, the MSR became not only a volume management reserve, but also an allowance cancellation instrument. The long-term implications of these changes are unclear, but in the short-term allowance prices rose to €15 in May 2018 for the first time since 2011 (see Figure 7.1 and Sandbag, 2018).

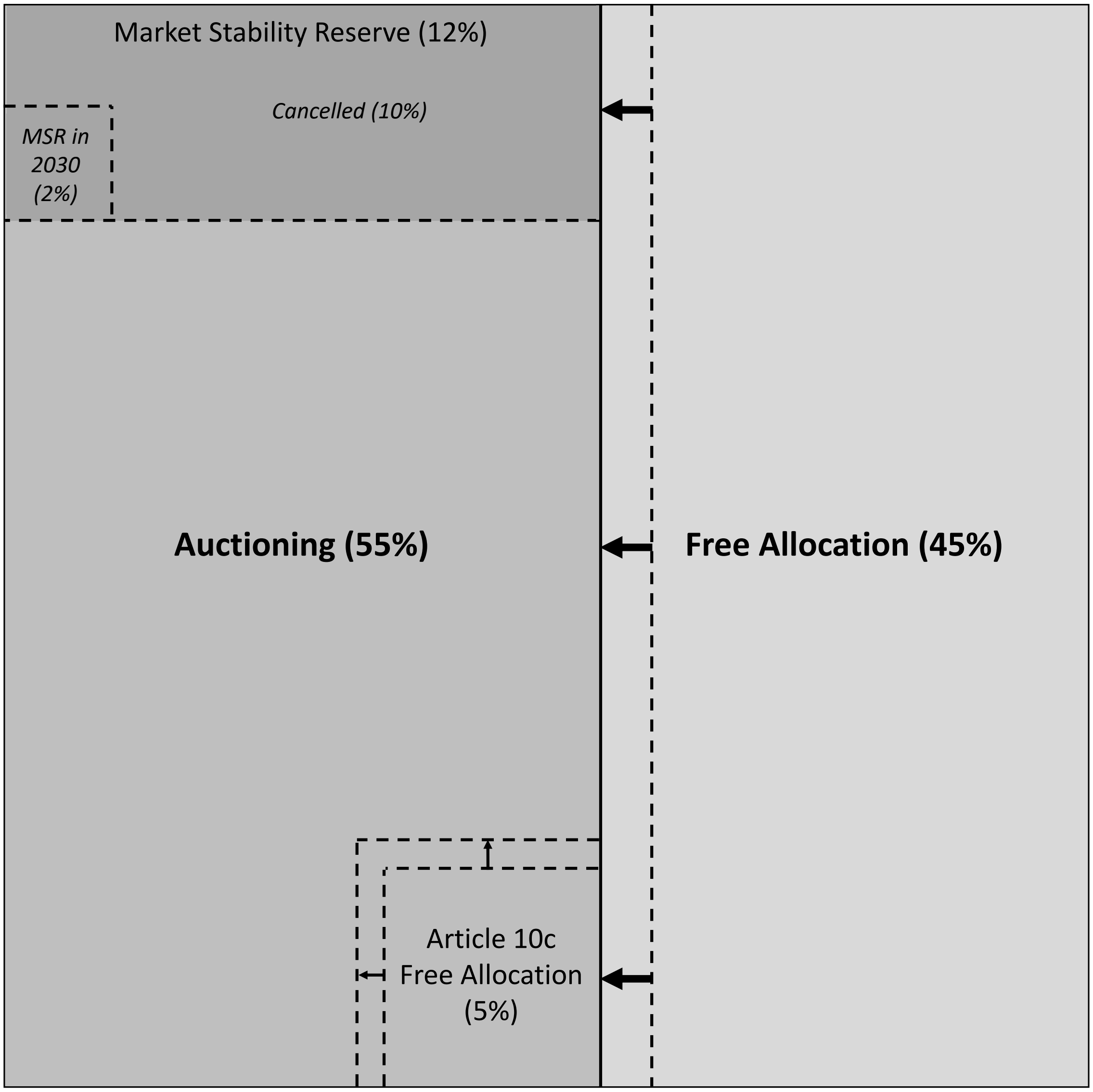

Figure 7.3 **Projected allocation under the 2018 Directive (2013-2030)**

Arrows indicate changes relative to the 2009 Directive. Derived from projections in the Sandbag State of the ETS 2017 report (Buckley, 2017, p. 45). Not included: Modernization Fund and Innovation Fund.

7.7 Conclusion

This chapter has examined a time period in which low allowance prices and the free allocation policy issue interacted during a critical time period for the ETS that would determine its basic architecture for ten years after 2020. This interaction created new impetus for volume management to raise allowance prices, in parallel with increased pressure for free allocation from those groups already receiving it. The result of this process was both a continuation of “temporary” free allocation and a surprising, late shift in volume management that saw allowance cancellation adopted in the ETS after nearly seven years of unsuccessful discussion. As noted, both of these outcomes were the product of the strong pressure to protect free allowances for energy-intensive industries and the Central and Eastern European electricity generators, and an equally long-term push from actors in the Council, Parliament, and Commission to cancel allowances.

The thesis now shifts from the empirical results and moves to an analysis of these findings through the lens of the theoretical framework on policy feedback. Chapter 8 will present this analysis, followed by Chapter 9, which will provide answers to the research questions, discuss contributions to the literature, and suggest future directions for research.

Chapter 8

Policy feedback from the EU ETS: A theoretical analysis

8.1 Introduction

This thesis has examined policy developments in the EU ETS over a twenty-year period, from 1998 to 2018. Since its adoption, some design elements of the ETS have changed markedly, including the centralization of cap-setting and allowance allocation between the 2003 and 2009 Directives, the addition of volume-management provisions in the Backloading and MSR Decisions, and the shift to volume cancellation in the 2018 Directive. Other elements have remained relatively stable, often in the face of significant exogenous and endogenous pressures for change, including free allocation to the energy-intensive industries. Chapters 5-7 have provided a detailed empirical account of these processes and as well as the effects of the ETS on policy actors and institutions throughout this period. Chapter 3 identified three policy feedback mechanisms: resource/incentive, interpretive, and institutional mechanisms (Tables 3.1 and 3.3). It also distinguished between self-reinforcing and self-undermining policy feedback, and how these could differ depending on whether the policy goals, policy instruments, or policy settings were affected (Tables 3.2 and 3.4). Finally, it indicated the potential importance of temporal concepts when explaining the development of the ETS, including sequencing and path dependence.

This chapter examines the empirical findings (Chapters 5-7) through the lens of the theoretical framework presented in Chapter 3, in order to analyze the role of policy feedback in the ETS's development. In doing so, it connects the "snapshots" of individual pieces of ETS legislation that are well-researched in the existing literature, to produce a more dynamic, longer-term analysis of the instrument over time. This analysis is organized as follows. Section 8.2 examines the operation of the three policy feedback mechanisms in the EU ETS case. Section 8.3 analyzes to what extent

ETS-related policy feedback was self-reinforcing (increasing the likelihood of the status quo or policy expansion) or self-undermining (increasing the likelihood of policy dismantling). It also considers how the self-reinforcing or self-undermining character of feedback differed depending on whether that feedback affected the politics surrounding the policy instrument's goals, the policy instrument, or its settings. Section 8.4 reviews the interactions between the three policy feedback mechanisms and Section 8.5 examines the role of path dependency and sequencing. Section 8.6 concludes.

8.2 The operation of policy feedback mechanisms

8.2.1 Resource/incentive mechanisms

This section provides an overview of the most important policy feedback mechanisms which operated in the EU ETS case. Resource/incentive mechanisms operated through the effects of the ETS on the resource flows and incentives which confronted political actors. One example of this type operated through the free allocation of allowances. As a side effect of the attempt to create a cost-effective mitigation pathway through tradable allowances, the ETS distributed resources with significant financial value. Free allocation meant that this value was transferred directly to industry. Almost all actors who directly received freely-allocated allowances pushed consistently and aggressively – throughout the time period studied and in multiple forums – for those resource flows to continue. For example, the energy-intensive industries, who were relatively unengaged at the outset, rapidly turned their extensive lobbying resources towards the ETS to advocate for continued free allocation. They were joined by a substantial number of high-carbon electricity generators, especially from Central and Eastern Europe. These industries were able to form strong alliances with policy-making actors – such as the European People's Party, DG Enterprise, and the governments of Germany and Poland – that already enjoyed close ties to industry.

Another resource/incentive mechanism operated through the increased resources for the ETS team in the European Commission, first in DG Environment and then in DG Climate Action. As shown throughout Chapters 5-7, the ETS team's resources, staff, and background knowledge increased significantly over the twenty-year period. The most visible manifestation of this change was the large rise in staff numbers working on the ETS, which increased from two people in 1998 to 46 in 2016. Over time, there was a remarkable degree of continuity: of the nine people from DG Environment listed in Delbeke et al. (2006, pp. vii–xiv), five were still working at DG CLIMA eleven years later at the end of 2017. Aside from staff and the funding to support them, the most significant resource the Commission gained over this time was ETS-related expertise. It could draw on outside expertise and use its existing institutional agenda-setting and legislative initiation powers to guide policy discussions in certain directions, for example the 2003 Directive and 2009 Directive in the European Climate Change Programme. These increased resources further empowered a policy actor that had a long-standing preference – based in large part on economic theory and analysis – for a centralized ETS with 100% auctioning as the main allocation method.

One of the most consequential resource-related – and political – changes was the shift of resources to member state governments through expanded auctioning, especially after 2013. For DG Environment, which played a central role in advocating increased auctioning, this shift was justified because it would improve economic efficiency and welfare. The revenue flows to EU member state treasuries – €11.8 billion between 2013 and 2015 (European Commission, 2017, p. 16) – were an important side effect but were viewed as secondary in the Commission. The elevation of auctioning to the default method of allocation significantly impacted the views of the member states, creating a material incentive to support reforms designed to raise allowance prices, including backloading, the MSR, and allowance cancellation in the 2018 Directive.

Once a larger percentage of the value of allowances went to member states, and once free allocation to the Central and Eastern European electricity industry depended indirectly on the number of allowances that were auctioned, an important new incentive was created for a broad coalition of member states to support the protection and expansion of the auction share. In negotiations on the 2018 Directive, Central and Eastern European member states, while being skeptical of raising allowance prices, supported the continuation and even expansion of the status quo auction share percentage of 57%. They were joined by Western European member states, including Luxembourg, the Netherlands, the UK, France, and Sweden, who supported the 57% share out of concern about the policy's efficacy.

Turning to the costs imposed by the ETS, the most visible were those imposed on the ETS sectors through the requirement to purchase allowances to cover greenhouse gas emissions. The importance of these costs varied depending on the industry; in practice their impact was reduced by the surplus allowances available in both Phase I (due to over-allocation) and subsequent trading periods (due to the crisis-induced allowance surplus). However, the shift to auctioning for electricity generation led to increased direct costs for generators (especially high-carbon companies) as well as energy-intensive industries, which needed to buy allowances if they did not reach the benchmark and if they generated their own electricity. In addition, many energy-intensive industries (with the exception of cement and paper) were projected to lose much of their built-up surplus towards the end of Phase III due to benchmarking, subsequently increasing direct costs (Luta and Lytton, 2016).

The ETS also had important indirect effects on the benefits and costs to actors. Politically, the most salient mechanism was the interaction between the allowance prices and electricity prices. The electricity generation industry successfully passed through a significant share of the cost of allowances to energy consumers – a revenue source for the generators but an extra cost for electricity users, including the energy-intensive industries. The importance of the direct connection between allowance prices and electricity prices which gave low-carbon electricity generation companies more revenue was key to their position on ETS reform throughout the period (e.g., Interviewee 27, electricity generation industry). Potential increases in electricity prices also led to cost increases for energy-intensive industries (in addition to the direct cost of purchasing allowances) as well as impacts on other industries. This contributed to energy-intensives and general business organizations opposing both increased auctioning and the introduction of volume management to raise allowance prices.

Another indirect resource/incentive mechanism operated through the revenue streams created by trading in the secondary market and other activities closely tied to the ETS, such as Clean Development Mechanism project development, banking, and speculation. This revenue led to an increased membership in the organizations that represented major market intermediaries and lobbied on ETS topics. The importance of this mechanism weakened starting in late 2008– due to the fall in the allowance price, the collapse of the CDM, and VAT fraud, among other issues – but still served as an important link keeping market intermediaries, and the policy actors that represented them, supportive and engaged with the ETS.

The combination of the low level of EU taxation and a general resistance to price ceilings and floors at EU level meant that policy actors had limited outside resources on which to draw to negotiate acceptable compromises on ETS reform. As a result, emission allowances themselves became the major source of resources used to make the side payments and trade-offs that moved ETS policy-making forward. This led to a situation in which using allowances for one purpose meant they were not available for another purpose. Cancelled allowances could not be auctioned for revenue. Those used for free allocation to energy-intensive industries could not be distributed to Central and Eastern European electricity generators. Allowances auctioned to create the Modernisation Fund could not be auctioned to support research in the Innovation Fund. These trade-offs created increasingly intense distributional conflicts between competing interests. And a coalition's success in securing a certain percentage of allowance allocation was limited by the added pressure from the overall cap. Starting in 2013, the LRF steadily reduced the total amount available, reaching zero emissions (and hence zero allowance distribution) around 2060 under the 2018 Directive.

8.2.2 Interpretive mechanisms

Interpretive mechanisms operated through the effects of the ETS on policy actors' interpretation of the policy. One interpretive mechanism, for example, operated through policy actors' interpretations of ETS efficacy. Many actors – though far from all – saw sustained low allowance prices as a symptom of a malfunctioning system. This fueled their demands for reform. This interpretive mechanism was more important with actors that had less of a direct resource stake in the continuation of the

ETS (including environmental NGOs), as well as actors that placed less emphasis on those resource flows, including some member states (e.g., the UK and the Netherlands in negotiations on the 2018 Directive). As noted in Chapter 3, the focus in this thesis was on how actors interpreted two key aspects of the ETS: allowance prices and the reduction target. The interpretation of both of these design elements was heavily contested. Many actors that stated that the allowance price was too low also had a material stake in a high price: the low-carbon electricity companies, the market intermediaries, and member states. In the same way, actors such as the energy-intensive industries, who benefited from low allowance prices, worked to build support for the interpretation that, in the context of the economic crisis, low prices were the intended result of a properly functioning emissions trading system. Both allowance prices and the reduction target served as broad, if contested, indicators of the ETS's efficacy, and simultaneously had important direct and indirect material impacts on many of the organizations involved in ETS policy making.

Some actors did not have a direct material stake in price levels yet still believed prices were too low, e.g., the environmental NGOs. Other actors who did have a direct stake, such as some member states, were still concerned about the efficacy of the allowance price as a major reason why they pushed to raise it. Another topic was the adequacy of the emission reduction targets in the ETS, embodied after 2013 in discussions about the optimal settings for the LRF. The actors who pushed for greater stringency argued that the emission reduction target was not sufficient to reach the EU's international commitments, and that the allowance price was too low to adequately incentivize reductions. Actors who supported lower stringency, however, argued that emission reductions should not be increased without comparable effort from other regions of the world, and that low allowance prices were an expected and correct reaction of the ETS to the economic crisis. On one hand, a sense of policy crisis drove policy changes that increased the ETS's alignment with reduction goals, innovation support, and revenue generation. But after a long-term sense of unending policy crisis, some environmental NGOs became disengaged, many shifting their advocacy focus to other policies.

8.2.3 Institutional mechanisms

Finally, institutional mechanisms operated through the effects of the ETS on the decision-making rules governing subsequent policy-making. The use of the environment article of the EU treaties as the ETS's legal basis – a strategic choice successfully advocated by DG Environment to avoid the fate of the failed EU carbon/energy tax – had an early and important influence on which EU institutions subsequently became active in the policy area. At the broadest level, it brought in the ENVI committee in the European Parliament and the Environment Council among member states. It also enshrined the use of Qualified Majority Voting as the default decision-making rules in the Environment Council. However, policy actors acted strategically to attempt to modify the decision rules set down in the 2003 Directive. Twice, in 2008 and 2014, member states successfully moved the locus of decision-making away from the OLP and towards consensus voting in the European Council. In 2008 this strategy was successful until the end, with the final decisions being taken by Heads of State and Government in December 2008. During the 2018 Directive negotiations, this success was more limited. The consensus and constraints of the October 2014 European Council conclusions broke down as the Paris Agreement and low allowance prices drove further increases in volume management and, in response, an expansion in free allocation to energy-intensive industries and Central and Eastern European electricity generators. In the European Parliament, the ITRE committee successfully won shared responsibility for issues such as carbon leakage. When unsuccessful attempts are taken into account, contestation over policy-making authority was even more widespread. For example, DG Enterprise pushed for responsibility for ETS legislation during the 2003 Directive negotiations, and during the 2018 Directive negotiations, Poland pushed for unanimity voting in the Environment Council because of the ETS's effect on national energy mixes.

Decisions about awarding policy making authority to the OLP or comitology were also on-going. The Commission unsuccessfully tried to make a number of key ETS policy decisions through the comitology process: the division between free allocation and auctioning for Phase II, the setting of criteria for the carbon leakage list, and backloading. In each case, these decisions were made under the OLP at the insistence of member states (carbon leakage and Phase II allocation) or the Parliament (backloading). This expanded the number of actors involved (e.g., the European Parliament) and their relative influence. In other areas, important decisions were made under comitology, including the restriction on the use of international gas credits and the triggering of the cross-sectoral correction factor. In the case of the CSCF, the use of comitology was possible in part because key policy actors did not understand the implications of the provision or how it would be implemented, as illustrated by the strong reaction against the decision by the energy-intensive industries.

Table 8.1 summarizes ETS-related resource/incentive and interpretive policy feedback mechanisms and their development over time. When comparing these findings to Table 3.3, which presented potential policy feedback mechanisms generated by emissions trading, the evidence suggests that all of the mechanisms discussed in the existing literature played a role in the EU ETS case. Resource/incentive mechanisms operated through free allocation, auctioning, market revenues, and direct/indirect costs. The size of the resource flows and their importance over time varied. Auctioning was much more extensive in 2018 than it had been in 2005, and the opposite was true for free allocation. However, a decline in the relative size of resource mechanisms did not necessarily make them less important politically. Indeed, the decline in the amount of free allocation and in the revenue opportunities from ETS-related markets pushed the energy-intensive industries and many of the market intermediaries to be more engaged and take stronger positions in policy debates. The interpretive mechanism tied to the understanding of allowance prices and emission reductions led to largely negative opinions of ETS efficacy overall and drove policy change. Table 3.3 did not include generic expectations on institutional mechanisms, because emissions trading as a policy instrument was not expected to create specific mechanisms different from other instruments (i.e., the decision-making rules surrounding emissions trading in the EU would look very different than those in the United States). This chapter has made clear that in the EU context, however, the institutional mechanisms played important, structuring roles on ETS politics (see Table 8.2).

8.2.4 Cumulative political impacts of the policy feedback mechanisms

Together, the feedback mechanisms discussed in Sections 8.2.1 to 8.2.3 generated a number of cumulative effects on the political landscape. One was the growth in the number of non-governmental actors who engaged in ETS policy making. As noted throughout Chapters 5-7, the cumulative number of actors that were involved in official Commission consultation exercises grew rapidly, from 88 actors in 2000-2001 during the formulation of the 2003 Directive to 993 actors in 2015 during the 2018 Directive policy process. This growth was the combined result of several feedback mechanisms. The industrial actors were largely drawn by resource/incentive mechanisms, be it free allocation and costs for the energy-intensives or market-related revenues for market intermediaries. Overall, 80% of the industry actors that publicly participated in ETS consultations were from ETS sectors, and many of the remaining actors were directly or indirectly affected by the ETS (e.g., the energy production sector and the market intermediaries). Others, such as academic institutions and environmental NGOs were drawn by interpretive mechanisms, because of the ETS's prominence and key indicators like allowance prices. Institutional mechanisms were important for policy makers, determining that the European Parliament's ENVI committee and the Environment Council would have central roles in the policy making sphere alongside the European Commission and, at times, the European Council.

Table 8.1 **ETS resource/incentive & interpretive policy feedback mechanisms**

Policy feedback mechanism	Description
Resource/incentive	
Free allocation	Significant throughout entire period: 95% of allocation from 2005 to 2012, 43% from 2013 to 2020, expanded to 46% from 2021 to 2030.
Auctioning revenues	Increasingly significant: 3% from 2005-2012, 57% from 2013-2020, 54% from 2021-2030. Reduced by volume management, the increase of free-allocation share, and the Article 10c derogation.
Revenues from financial services and price speculation	Projected size of market and revenues led to rapid increase in engagement of market intermediaries. Lower price and ETS-related CDM collapse led to subsequent fall in number of actors.
Direct costs	Over-allocation from 2005-2007 and allowance surplus from 2008 meant many industries had low initial direct costs (but see high-carbon electricity companies). Costs increased for carbon-leakage industries as benchmarks became more stringent.
Indirect costs	Indirect electricity price impact led to “windfall profits” discussion; indirect costs also created revenues for low-carbon electricity companies.
Interpretive	
Interpretations of efficacy	Over-allocation, allowance surplus, and low allowance prices led to widespread interpretation of ETS as ineffective.

Table 8.2 **ETS institutional policy feedback mechanisms**

Institutional mechanism	Description
Legal basis	Under OLP, QMV made policy change more likely, but multiple instances of successful contestation (decision-making in the European Council). Strongly affected which policy making actors were involved and their relative influence (ENVI and Environment Council lead).
OLP vs. comitology	High-salience ETS design elements decided under OLP at member state/EP insistence (Phase II allocation, carbon leakage list inclusion, backloading); instances of other elements decided under comitology when implications unclear (CSCF).

Another cumulative effect was on the formation of coalitions. The formation of the Alliance of Energy Intensive Industries between 2002 and 2005 was key to those industries' coordination on ETS issues. The coalition that supported the shift to auctioning in the 2009 Directive was composed of a number of groups. Actors such as DG Environment, the ENVI committee, and member states like Sweden and Denmark had a pre-existing preference for auctioning before the adoption of the 2003 Directive. They were joined by member states and part of the European Parliament that had shifted position as a result of both frustration with the National Allocation Plan process and the view that windfall profits for the electricity generation industry needed to be reduced. However, other groups blocked and watered down this shift, especially the energy-intensive industries, the Central and Eastern European electricity generation industry, Poland, Germany, and DG Enterprise.

Another instance of policy feedback bringing together a coalition was related to the MSR intake doubling and allowance cancellation in the 2018 Directive. The member states who voted for this position included a combination of the "like-minded group" (e.g., Sweden, the Netherlands, and the UK), which evidence suggests was driven in large part by interpretive effects related to ETS efficacy. They were joined by other member states that were more concerned with auction revenues, and finally others that did not agree with the approach but went along as part of a package deal. Other loose coalitions formed around the Green Growth Group and the Friends of ETS, though as noted in Chapters 6 and 7, their diverse range of positions often made a united front difficult to create.

However, coalitions that formed due to policy feedback were in some cases vulnerable to those same initial feedback effects. For example, increasing revenue from the ETS for market intermediaries led to a growth both in the organizations that represented them – e.g., IETA and CMIA – and also their engagement in ETS policy making. The same happened through the interpretive mechanism for the environmental NGOs, as noted in both this section and the existing literature (Skjaerseth and Wettestad, 2010b; see also Table 3.4). However, after 2009 these effects reversed. The ENGOs saw the ETS as increasingly ineffective and many disengaged. The market-intermediary organizations were hit by declines in membership, and the market on which they depended struggled and in some cases shrank in value (especially the CDM, which was closely tied to the EU ETS). Both of these processes were somewhat mitigated by the fact that representation in Brussels continued at a high level.

In other cases, policy feedback made the formation of coalitions more difficult. The energy-intensive industries and the Central and Eastern European electricity generators shared a key concern: they agreed that free allocation should continue in the ETS and were both against the direct and indirect costs that stemmed from the policy. However, their interests collided in the design of the 2018 Directive. By comparison, during the discussions on the 2009 Directive, the energy-intensive coalition in the Council led by Germany and the electricity industry coalition led by Poland gained parallel concessions in late 2008, giving both groups derogations from auctioning. Those resource flows continued and were extended to 2030 by the October 2014 European Council. However, because these derogations came from the free-allocation and auction shares respectively, in the 2018 Directive the two groups did not have the same shared interests. Germany and allies pushed hard and consistently for an expanded free-allocation share, while Poland fiercely opposed a reduction in the auction share and pushed for its expansion. As a result, an unintended side-effect of the complex compromise agreed to in the midst of the 2008 Climate and Energy Package led to a split between two politically powerful industry/member state coalitions.

8.3 Self-reinforcing and self-undermining policy feedback

8.3.1 Self-reinforcing feedback

Self-reinforcing policy feedback leads to a higher likelihood that policy instrument *goals* will be achieved or exceeded, that the policy *instrument* will remain in place, and that policy *settings* will remain stable or become more stringent. In this section, the feedback on all three levels is discussed.

Beginning with *goals*, there were essentially three goals noted in Chapter 3: making emission reductions, creating allowance prices high enough to induce behavior change/low-carbon innovation, and generating increased auctioning revenues. These goals were given different priorities by different policy actors. Self-reinforcing feedback on the policy goals of the ETS was in evidence in relation to the goal of emission reduction. This was the case because low allowance prices led a wide range of policy actors to support volume management and cancellation of allowances. While not explicitly about increasing the EU's reduction target – indeed actors that supported backloading, the MSR, and cancellation took pains to distinguish these provisions from such an increase – they de facto led to a reduction in the amount of emissions allowed under the cap. The second goal, of creating higher allowance prices, was reinforced by the same rise in support that reinforced the reduction goal, but more directly (i.e., volume management and cancellation were explicitly intended to increase allowance prices). The third goal of generating auctioning revenue was reinforced by both member state support for a stable auction share and for increased allowance prices.

Turning to the policy *instrument* itself, it was also subject to self-reinforcing feedback. Once it had been adopted, the EU institutions became invested in the continuation of the instrument, especially DG Environment and DG CLIMA. But it also was apparent in the European Parliament and the Council, including among actors (such as the Polish government and the EPP) that argued for less intervention and disagreed with the attempts to raise allowance prices. These policy makers were joined by actors who supported the instrument because of beneficial resource flows (the low-carbon electricity generation industry and the market intermediaries) and those that saw it as a prominent leverage point for emission reductions and decarbonization (most environmental NGOs).

Finally, there were self-reinforcing dynamics in relation to certain ETS policy *settings*. One of these was free allocation for energy-intensive industries and the Central and Eastern European electricity generators. The clear, consistent goal of DG Environment/CLIMA, the ENVI committee, some party groups in the European Parliament, and many member states was to progressively reduce free allocation to all sectors. These attempts were repeatedly thwarted and watered down. Derogations were first agreed to for limited time periods in the 2009 Directive, then extended multiple times as side-payments in prominent negotiations on the European Union's overall strategic direction on climate and energy. The energy-intensive industries created strong, long-lasting coalitions with many member states and European Parliament party groups such as the EPP and ECR. Central and Eastern European electricity companies did the same with their governments, most prominently Poland. Ironically, in the 2018 Directive discussions these two coalitions found themselves at odds, because allowances for the electricity generators ultimately came from the auction share, while allowances for the energy-intensive industries came from the free-allocation share.

8.3.2 Self-undermining feedback

In contrast to self-reinforcing feedback, self-undermining policy feedback leads to a *lower* likelihood that policy instrument *goals* will be achieved or exceeded, that the policy *instrument* will remain in place, and that policy *settings* will remain stable or become more stringent.

The emission reduction *goal* of the ETS was subject to self-undermining feedback as a result of the connection between free allocation and the emissions cap. Increasing the emission reduction target reduced the total amount of allowances available for allocation under the free-allocation share. For example, the energy-intensive industries opposed a unilateral increase in the EU's reduction target for 2030, citing increased costs for their industries. The goals of creating higher allowance prices and generating auctioning revenues were undermined by the surpluses of allowances that built up – and dampened prices – in the case of over-allocation in Phase I and the economic crisis afterwards.

The policy *instrument* was subject to self-undermining feedback operating through the effects on actors such as the energy-intensive industries, some of the environmental NGOs, and the market intermediaries. For the energy-intensive industries, in an attempt to re-design the ETS to reduce their costs, they consistently but unsuccessfully pushed for a switch to a new baseline-and-credit system. For the environmental NGOs, their support for the instrument wavered as repeated reforms failed to raise allowance prices or reduce free allocation to industry. As a result, some disengaged and others called for the ETS to be dismantled. For the market intermediaries, low allowance prices and the collapse of the CDM led many actors to leave the market and therefore ETS policy making.

Policy *settings* were subject to dominant self-undermining feedback in the cases of the National Allocation Plans. The shift away from the NAP process was the most prominent example of policy change in the history of the ETS. This is puzzling because the NAPs gave member states significant authority and gave industries the incentive and opportunity to push successfully for generous allocation. The distribution of member state power would suggest the NAPs would have been a durable part of the ETS, especially given member state influence in the policy process. However, frustration with the process among member state governments was sufficient to serve as an impetus for the shift to centralized control. Importantly, this was a clear example of an endogenously-driven shift influenced most heavily by policy design. During the 2005-2007 period when allowance prices fell to near-zero and the frustrations with the National Allocation Plans mounted, there was little external pressure on the ETS that could be used to explain these patterns (e.g., the economy was growing). These events were, instead, unintended consequences of the compromises that had been necessary for the adoption of the 2003 Directive, compromises which most member states strongly supported at the time. Therefore, in contrast to later policy feedback – which in important ways was about how the ETS reacted to the external pressure of the economic crisis – the NAP over-allocation crisis was created almost entirely by the internal tensions of the policy. The NAP process did indeed give many ETS industries crucial influence over how allowances were allocated. But in the end, it was that very influence which led to member state frustration and eventually to the shift to EU-level allocation.

Table 8.3 summarizes the key self-reinforcing and self-undermining policy feedback generated by the ETS. Comparing the findings to Table 3.4, which presented evidence of self-reinforcing and self-undermining feedback in the literature on emissions trading, a number of expectations from that literature have been confirmed, while others have not. Regarding policy goals, many actors who benefited from high allowance prices did support steeper emission reductions (e.g., market intermediaries), while free-allocation recipients largely opposed them (e.g., energy-intensive industries). However, some actors who benefited directly from higher allowance prices did not support greater reductions because they would disadvantage allied actors. This is most clearly the case with the Polish government, who would have directly benefited from the increased auctioning revenues generated by higher prices, but who nevertheless blocked increased EU reduction targets and opposed the MSR and cancellation due to their impacts on Polish industries. This was because there were many routes to maintaining or increasing auctioning revenues. In the 2018 Directive negotiations, Poland chose to do so through supporting a 57% share for auctioning.

Regarding the cap-and-trade policy instrument, the self-reinforcing feedback discussed in Table 3.4 was in part confirmed: the market intermediaries supported the instrument due to revenue flows, and many ENGOs became more supportive as the policy was changed in the 2009 Directive. However, this self-reinforcing feedback shifted to self-undermining feedback in both cases, suggesting that they are dependent on sufficiently high allowance prices and perceptions of instrument efficacy. The strongest opposition to the instrument came from the ENGOs that supported the "Scrap the ETS" campaign (who were generally skeptical) and, more challenging to expectations, the energy-intensive industries. These industries benefited from free allocation but were also impacted by ETS costs. Instead of supporting cap-and-trade, they shifted from supporting voluntary agreements before the ETS was adopted to pushing for a baseline-and-credit system afterwards.

Regarding policy settings, free-allocation recipients such as the energy-intensive industries supported *status quo* settings on that topic as emphasized in previous literature (e.g., Wettestad, 2009). The perceptions of low policy efficacy did build additional support for changing policy settings related to volume management among some member states, environmental NGOs, DG CLIMA, and others (backloading, the MSR, and cancellation). However, in both cases support for the *status quo* or policy change on one policy setting did not hold for other settings. Energy-intensive industries supported policy change related to compensation for indirect costs, while supporters of volume management largely supported the *status quo* for the auction share. These examples illustrate that policy feedback related to policy settings generally did not lead policy actors to support the status quo or policy change related to all ETS policy settings. Policy complexity meant that an actor which supported the status quo related to one policy setting was likely to support change related to others.

Table 8.3 **ETS self-reinforcing and self-undermining policy feedback**

Feedback type	Key examples
Self-reinforcing policy feedback related to…	
Goals of policy instrument	• Dissatisfaction with low allowance prices drives indirect emission reductions through volume management and allowance cancellation (self-undermining feedback for policy settings). • Auction revenue influences Eastern European member states to support 57% auction share.
Policy instrument	• Post-adoption lock-in of ETS as "fact on the ground" in EU climate policy leads to support from most actors.
Policy settings	• Energy-intensive industries and Article 10c electricity industries strongly support continuation of *status quo* settings on free allocation.
Self-undermining policy feedback related to…	
Goals of policy instrument	• Free allocation determined by overall allowances allocated; recipients largely oppose further emission reductions.
Policy instrument	• Free allocation leads to energy-intensive industries pushing for different instrument (baseline-and-credit) to increase resource flows and decrease direct costs. • Perceptions of low policy efficacy leads to disengagement by environmental NGOs. Low prices negatively affect market intermediaries.
Policy settings	• Dissatisfaction with low allowance prices undermines settings of 2009 Directive related to allowance volumes (leading to self-reinforcing feedback for policy goals).

8.4 Interacting mechanisms

Policy feedback mechanisms interacted with one another in complex ways, which means that drawing too sharp an analytical distinction between mechanisms is misleading. In many cases, one mechanism set a second mechanism into operation. In these cases, the mechanism of policy feedback consisted, not of distinct resource/incentive, interpretive, or institutional effects, but causal chains that incorporated multiple mechanisms. This phenomenon was especially common in the interaction between resource/incentive and interpretive mechanisms. Free allocation created a resource effect through the distribution of allowances, which then had the interpretive effect of orienting recipient industries toward protecting these resource flows. In this case, this did not involve one stream of resource effects and another of interpretive effects, but rather a co-existing, mutually reinforcing relationship between resource/incentive and interpretive effects which supported the long-term prolongation of the allocation approach.

Another example of interacting mechanisms was the role of the scope of the ETS in determining the extent to which actors engaged in ETS policy making. Once industries that had been excluded between 2005 and 2012 were included in the policy's scope – most importantly the chemicals and aluminum industries – the policy created expectations among those industries about the resource effects they could expect based on the cost of allowances, free allocation, and other topics. The industries re-oriented to more active engagement once it became clear that they would be included. Therefore, the expansion of the scope had multiple, simultaneous effects that interacted to then create more engagement from powerful energy-intensive business actors.

Policy feedback caused by resource/incentive mechanisms also shaped how actors interpreted subsequent events. The drop in the allowance price beginning in 2008 was alternatively seen as a policy crisis by those who benefited from higher prices (electricity generators with low-carbon intensity and many member states) and as the proper functioning of an emissions trading policy by others that had further costs imposed (energy-intensive industries, Central and Eastern European electricity generators and allied member states such as Poland). Therefore, although the ETS –

through its significant influence on the allowance price – undoubtedly caused interpretations to change, those effects were heavily mediated through resource-related policy feedback.

Taking as a starting point the Commission's 2009 Directive proposal, the EU auction share was subject to both self-reinforcing and self-undermining dynamics. It was reduced by the semi-permanent Article 10c derogation (a provision championed by the Central and Eastern European member states who were eligible to use it) and reduced further by the successful push for an expanded free-allocation share in the 2018 Directive (pushed by a different, largely Western European coalition led by Germany). Ironically, the 10c derogation, while a major contributor to a smaller auction share, also led to a "Baptist-and-bootlegger" coalition between mostly Western European pro-stringency member states and those such as Poland generally opposed to greater stringency but who had an interest in keeping the potential source of Article 10c allocation and auction revenues as large as possible.

A single process – such as the increased engagement and support for free allocation from the energy-intensive industries – could involve both self-reinforcing and self-undermining feedback, depending on whether the goals, instrument, or settings were being affected. Table 8.2 above illustrates the dual nature of key policy feedback dynamics. The dissatisfaction with low allowance prices among the coalition of pro-stringency member states, DG CLIMA, much of the electricity industry, and environmental NGOs was self-undermining for policy settings and self-reinforcing for policy goals. The coalition was brought together by various feedback mechanisms. Environmental NGOs and member states like Sweden, the UK, and the Netherlands were more influenced by the interpretation of the policy as not being effective, whereas other member states and the electricity industry had interests to raise the price to indirectly profit – from electricity price increases in the case of the industry, and from increases auction revenues for the member states. This process undermined the settings agreed to in the 2009 Directive, a pre-condition for the increase in emission reductions embodied in the volume-management provisions of the Backloading Decision, the MSR Decision, and the 2018 Directive.

The interpretive mechanism of policy feedback related to ETS efficacy had mixed results as well. For the policy instrument and policy settings, this process was self-undermining: the menu of policy options expanded, policy settings were changed, and the nature of the ETS was altered with approaches like the MSR and allowance cancellation. These same processes reinforced the ETS's policy goal of reducing emissions. In addition to the crisis, the long-running nature of low prices and their seeming resistance to reforms led to a ratchet effect on emission reduction ambitions unforeseen at the beginning of the process. However, as the price stayed below €10, this sense of crisis led to disengagement and negative impacts for groups such as the environmental NGOs and market intermediaries respectively.

Patashnik (2008, p. 32) laid out scenarios for the post-adoption development of a policy, including *reversal* of the policy, *entrenchment*, and *reconfiguration* of the policy actors and coalitions that would fundamentally reorganize the politics surrounding the issue to support the new policy. However, in the ETS case, policy feedback – while significant – did not lead to policy reversal or reconfiguration. Self-undermining feedback was not strong enough to push the ETS and its secondary market into complete collapse (although this appeared to be a distinct possibility after the European Parliament rejected the Backloading Decision in April 2013). On the other hand, low allowance prices meant that many of the more resistant industries – high-carbon electricity companies, the energy-intensive industries – had less incentive to shift to a business model that would have made them more open to climate policy. In fact, by definition free allocation was distributed to those who produced more greenhouse gas emissions, and so that flow of value went disproportionately to the groups that were already against greater stringency. The balance of the forces at work led to a middle ground: an entrenched policy that nevertheless had to contend with resilient existing networks of actors.

The general lesson to draw from the fact that these extreme scenarios did not occur is that the uneven distributional politics of the ETS led to the formation of opposing coalitions on many issues. In most cases, a single coalition did not command the authority across the three EU institutions to get everything that they wanted. Instead, policy adoption and reform could only be achieved through political compromises that led neither to reconfiguration nor policy collapse, but something in between. Coalitions between policy actors were complex, overlapping, and sometimes contradictory. This was consistent with the steadily increasing complexity of the ETS itself as one reform followed another, modifying the original policy design. An instrument that was considered complex from the beginning, was made progressively more so as a result of the political trade-offs and compromises which were necessary in part due to that initial complexity.

8.5 Path dependency, path-departing change, and sequencing

In line with existing literature on the ETS (Boasson and Wettestad, 2013; Mueller and Slominski, 2013), once the ETS was in place, its role in the EU climate policy mix was largely secure. A path dependent process progressively closed off many potential instrument options, including a voluntary agreement and a baseline-and-credit system. However, this was clearly and prominently not the case regarding the initial cap-setting and allocation design, which was significantly changed by the 2009 Directive. Yet this initial design had a number of supporters, not least the ETS sectors that were able to venue shop between member state governments for higher free allocation. If the allocation regime had remained national, it is also unlikely that mandatory auctioning would have been adopted, as member state governments closely guarded their authority in this area. So why then did it change? As noted in Section 8.3.2, this episode arguably highlights the importance of policy feedback's effects on policy makers: especially the European Commission and the member states. In the end, the self-undermining feedback from the NAPs was most important in relation to the member state governments, joining the European Commission and European Parliament in preference for an EU-level system with more auctioning in the face of split, indifferent, or hostile industry actors.

At a broad level, each ETS reform shaped the policy landscape on which subsequent reforms were carried out, even in the face of major path-departing change, as in the shift from the 2003 to the 2009 Directive (see also Mettler, 2016). The 2003 Directive created the basic architecture of the ETS, including a cap, allowances, and most of the general principles of the policy, such as its cap-and-trade approach. Most of these elements remained stable up until 2018. The 2009 Directive created the auction and free-allocation shares at the EU level. These shares in turn provided the landscape for volume management with backloading and the MSR. In the 2018 Directive negotiations, the auction, free-allocation, and MSR shares were joined in importance by the Article 10c portion of the auction share. These shares became the focus of reform efforts, including the doubling of the MSR withdrawal rate, allowance cancellation, the increase in Article 10c free allocation to the Central and Eastern European electricity generators, and the conditional expansion of the free-allocation share.

Temporal sequencing was important in a number of ways. The economic crisis, and the resulting allowance surplus in the ETS, occurred in the context of the 2009 Directive, providing policy makers the allocation shares – especially the auction share – as a source of allowances to manage in order to reduce the surplus. The combination of auctioning – which stopped allowances from being distributed to specific installations – and EU control of that share meant that a provision like the MSR was possible. At each step, policy makers were constrained by what had gone before. And each reform was layered on the last, even in the case of the 2009 Directive, which fundamentally altered the architecture of the policy. In the 2009 Directive, the structure of a cap-and-trade system covering the ETS sectors was entrenched, channeling policy making and making a shift to another policy instrument difficult at EU level (despite the energy-intensive industries' repeated attempts to do so). In backloading and the MSR, the policy intervention to manage allowance volumes drew from and layered new provisions on top of the EU-level allocation implemented from the 2009 Directive. While the 2018 Directive was being discussed, debate on free allocation focused on the existing derogations: the carbon leakage list and Article 10c. Volume management focused both on increasing the settings of the MSR through the doubled intake rate of 24%, and the layering of another automatic cancellation provision onto the MSR architecture with the dual goals of meeting the EU's Paris Agreement commitments and raising allowance prices.

The shift from free allocation to auctioning in the context of the European Union's multi-level governance system implied a significant re-ordering of who was assigned allowances. Under free allocation, regardless of the allocation formula each allowance was initially assigned to an ETS installation. Under expanded auctioning, the allowances were no longer assigned to individual installations; they were instead available to the highest bidder (although the right to auction revenues was divided between the EU member states). This meant that if auction-share allowances were used for volume management purposes, they would not be taken away from individual industrial installations, but from the member states, who would theoretically benefit from the higher allowance prices such volume management was intended to create. This change happened at a relatively early stage of ETS history, making changes such as the MSR easier to adopt later in the process.

In some cases, self-undermining feedback early in the process opened up space for later self-reinforcing feedback. The clear example of policy collapse related to self-undermining feedback was the unraveling of the National Allocation Plan process, in which the rapid shift among the member states was the key change (given that positions among industry and other non-governmental organizations showed little change, and the Commission and the European Parliament had already been pushing for EU cap-setting and allocation). This opened up the possibility for a wide range of modifications in its wake during the 2009 Directive discussions, remaking the ETS's architecture. After this, self-reinforcing feedback took over, strengthening support for auctioning among the member states and for free allocation among energy-intensive industries. However, this politically-reinforced dual allocation system was put under severe strain by the combined effects of the allowance surplus on prices, and the pressure on free allocation from the cross-sectoral correction factor. The first led to the addition of the MSR and allowance cancellation, the second to the extension and expansion of the free-allocation share. Both also led to a situation in which parallel processes of self-reinforcing feedback strengthened three coalitions supporting higher allowance prices, free allocation for energy-intensives, and free allocation for Central and Eastern European electricity generators. This situation set up a distributional conflict that resulted in competition for a limited number of allowances in what at its base was a zero-sum game.

8.6 Conclusion

Examining the results of this study through the theoretical framework from Chapter 3 has revealed several new patterns. Policy feedback emerges as a key factor – in interaction with a number of exogenous factors such as the economic crisis – which helps explain the ongoing development of the ETS over a period of twenty years. Resource/incentive feedback mechanisms played an especially prominent role, owing to the fact that the ability to pollute was turned into a tangible asset in an emissions trading system. Interpretive mechanisms also played an important role, especially with organizations such as the environmental NGOs that did not have a direct resource stake in the ETS or its design. Finally, institutional mechanisms helped to determine the overall composition of the policy network that engaged with the ETS. These mechanisms led to a complex array of self-reinforcing and self-undermining feedback which often operated in parallel and differed between policy goals, instruments, and settings, as well as between different settings.

Sequencing of policy changes fundamentally shaped and constrained each step in the development of the ETS. Each reform of the policy created new resources and cut back others, so that the separate policy processes were linked together. The modifications to existing theory that Chapter 3 introduced – especially the distinction between goals, instruments, and settings – revealed patterns that would not have been visible by treating the dependent variable as “policy” without further conceptual disaggregation. One such finding is that emissions trading is a policy instrument that is vulnerable to creating policy feedback capable of undermining policy goals such as emission reductions and simultaneously reinforcing sub-optimal instruments and settings.

Having analyzed the empirical findings in light of the theoretical framework, in the next chapter the thesis now turns to the original aims and research questions and uses the answers to those to frame the findings in the wider literature.

Chapter 9

Conclusions and new directions for research and policy

9.1 Introduction

This thesis has examined the role of policy feedback in the long-term development of the EU Emissions Trading System. By focusing on policy feedback and tracing it over multiple policy cycles, it has demonstrated how the ETS has fundamentally reshaped and constrained its own political development. It has also provided a new perspective on the ETS when compared with the existing political science literature on the topic – a perspective that sheds new light on many important and understudied aspects of its development.

The role of this final chapter is to answer the three research questions introduced in Chapter 1, to relate the main findings back to existing literatures to reveal the original contributions made by the thesis, and to identify future research avenues. The rest of the chapter is organized as follows. Section 9.2 answers the three research questions, drawing on the findings presented in Chapters 5-8. Section 9.3 lays out the thesis's contribution to the existing literatures, namely on the EU ETS, the politics of emissions trading, on policy feedback in climate policy, and on the policy feedback more generally. Section 9.4 critically reflects on the research approach adopted in this thesis and makes suggestions for future research. Section 9.5 offers lessons for policy actors involved in the design and reform of emissions trading. Section 9.6 concludes the thesis.

9.2 The three main research questions

1: To what extent and under what conditions did the EU ETS create policy feedback that subsequently influenced ETS-related politics?

This thesis has revealed that the EU ETS produced multiple, significant instances of policy feedback, and that these played a crucial role in structuring and influencing subsequent political dynamics. All three types of policy feedback mechanisms played important roles.

The *resource/incentive mechanisms* operated through the direct allocation of free allowances, the creation of auctioning revenues for the member states, the indirect revenue flows created by the operation of the ETS market, the policy's effects on rising electricity prices, the costs of buying additional allowances for ETS sectors, the increase in resources for the Commission, and the use of revenues for various funding mechanisms. Taking each of these in turn, actors who received benefits from the ETS – namely the energy-intensive industries through free allocation, the market intermediaries through the secondary market, the member states through auctioning revenues – attempted to influence subsequent policy making to sustain and when possible expand them. Rising electricity prices were a cost for actors such as energy-intensive industries but a benefit for electricity generators, especially those with low carbon intensity. The ETS also imposed costs, most visibly the requirement to buy allowances if allocations did not cover emissions. It also indirectly led to an increase in resources for DG Environment and DG CLIMA and served as a source of finance for EU-level funds such as the NER300 and the Modernization Fund. For non-governmental actors, and especially business associations and companies, resource-related policy feedback played an important role in influencing which actors engaged with ETS policy making. The industries most directly affected were in the ETS sectors, and they made up 81% of consultation participants. As the ETS began to operate, the ETS sectors were joined by industries that benefited from the policy instrument, such as the market intermediaries.

The *interpretive mechanisms* operated through the impact of the ETS on policy actors' beliefs about the policy's success or failure, regarding the allowance price, emission reductions, and the importance of the policy. Allowance prices were determined in the secondary market and were also impacted by a range of exogenous factors. Indeed, for many actors, price levels became the most visible and hence the most important measure of how well the ETS was working. Together with the emission reduction targets, allowance prices became a key source of contestation, with some actors claiming it was too low and others claiming that existing prices were the result of a properly functioning emissions trading system.

The *institutional mechanisms* operated through the influence of the ETS on the broad range of actors involved in policy making. They principally arose from the legal basis used by the Commission to justify its initial proposal (a decision pushed by DG Environment during the adoption of the 2003 Directive). The choice of legal basis, which permitted QMV and co-decision making with the Parliament, greatly empowered DG Environment and later DG Climate Action, the Environment Council, and the ENVI committee. The effect on decision-making rules played a key contextual role by setting the 'rules of the game' for a succession of policy design debates (e.g., on the 2003 Directive, the Backloading Decision, and the MSR Decision). In other cases, however, final decisions were moved up to the European Council and its rules on consensus as a negotiating tactic around the 2009 Directive and the initial round of 2018 Directive policy making. Decisions on – and contestation over – the role of comitology versus the Ordinary Legislative Procedure also played a significant role. Member states and the European Parliament were often successful in pushing for key decisions to be made under the OLP instead of comitology (in which the Commission enjoyed greater autonomy). These included changes to certain NAP criteria, allowance allocation in Phase II, the criteria determining the risk of carbon leakage, and backloading. In other cases, important decisions were handled in comitology in part because their full significance was not recognized (e.g., the cross-sectoral correction factor).

In many cases, these three feedback mechanisms operated in parallel and/or interacted in some way. Thus, constrained by the institutional feedback mechanism, policy feedback operating through the resource/incentive and interpretive mechanisms helped bring enduring coalitions together. On allowance prices, the high-price/interventionist coalition was a collection of actors impacted by resource/incentive mechanisms: low-carbon electricity generators gained increased revenue tied to the allowance price, member states stood to gain auctioning revenue, and market intermediaries gained from price increases and were also concerned about a low-price driven collapse of the ETS for their business models. They were joined by DG CLIMA in the Commission, the S&D, Greens/EFA, and GUE/NGL in the Parliament, and environmental NGOs drawn into this position by interpretations of policy failure and concern about a move away from the ETS. The low-price/non-intervention coalition included industries whose net costs increased with rising prices (energy-intensives and high-carbon electricity generators, especially in Eastern Europe), joined by the EPP and ECR in the Parliament, DG Enterprise, and member state governments more focused on the impact of rising allowance prices on industry competitiveness than on auctioning revenue.

Shared costs and benefits from free allocation were a strong incentive for the energy-intensive industries to form a coalition with member states – most notably Germany – who wanted to protect them from a loss of international competitiveness. The same was true of the Central and Eastern European electricity generation industry and member state governments, but not of Western European electricity companies who had widely diverging carbon intensities and policy positions. However, the fact that energy-intensive free allocation came from the free-allocation share, and the Article 10c free allocation came from the auction share, created a distributional battle between these two industry groups.

Policy actors' positions on whether or not the ETS was working effectively were often in line with material interests related to resource flows from the ETS. Many of the actors had views on whether the policy was working as expected, but their views often had more to do with how changes would affect them directly than whether the ETS was driving cost-effective emissions reductions (its principal, largely uncontested objective). For example, energy-intensive industries opposed increasing the EU's reduction target unilaterally because of the impact of those changes on the costs of their industries (see Chapter 7). In contrast, low-carbon electricity companies and market intermediaries had an interest in higher prices, as it would increase the flow of resources to them. Actors that did not have strong material links to ETS allowance prices – including the European Parliament, the European Commission, and the environmental NGOs – tended to view price levels from the perspective of their economic efficiency and impact on low-carbon innovation.

2: Was the policy feedback created by the EU ETS self-reinforcing or self-undermining, and in relation to what policy elements: policy goals, the policy instrument, or policy settings?

Feedback did not operate in a single direction. Neither self-reinforcing nor self-undermining policy feedback predominated throughout the entire period, in contrast to examples where this was the case in the wider policy feedback literature (Pierson, 1994; Patashnik, 2008). The inherent, and steadily increasing, complexity of the ETS meant that distinct feedback dynamics often played out in parallel to each other, affecting various design elements differently. Some elements of the ETS proved very difficult to change (e.g., free allocation to energy-intensive industries) while others were completely dismantled (e.g., the National Allocation Plan approach to allocation) or were repeatedly modified (e.g., the auction share). The initial effects of the ETS could have multiple and contradictory impacts on politics. For example, free allocation under Article 10c reduced the amount of auctioning but inadvertently strengthened the separate push for an expansion of the auction share vis a vis the free-allocation share by giving the Eastern European electricity generators and their member state allies an incentive to support the 57% auction share provision. The National Allocation Plan process and the size of the auction share were put under pressure by self-undermining feedback, while free allocation was subject to self-reinforcing feedback. Because policy actors were largely limited to drawing on ETS-related resources (e.g., allowances) in negotiations and for side payments, a zero-sum game existed related to allowance allocation. For example, in order for the free-allocation share to be increased by the 2018 Directive, the auction share would need to be decreased, and vice versa. In this situation, self-reinforcing feedback related to one design element (e.g., Germany's support for an increase in the size of the free-allocation share) could contribute to self-undermining feedback related to another element (the size of the auction share).

As noted in Chapter 8, policy feedback had differentiated impacts on the internal elements of policy: on political support for policy goals, on the policy instrument itself, and on its policy settings. Overall, the belief among many actors that allowance prices were too low undermined the policy settings of the ETS, by increasing support for the idea that they must be changed. But this same belief reinforced support for proposals – such as backloading, the MSR, and cancellation – that indirectly led to more emission reductions and potentially more auctioning revenue, two policy goals of the ETS (albeit contested by actors such as the energy-intensive industries and Poland). Free allocation strongly reinforced itself, but did not necessarily increase support for cap-and-trade among beneficiaries (as evidenced by the energy-intensive industries' consistent advocacy for a baseline-and-credit system). And it actually weakened support for emission reductions by creating a direct connection between increases in EU greenhouse gas reduction targets and decreases in the allowances available for allocation to industry. It also undermined the auction revenue goal by reducing the percentage of allowance allocation that went to auctioning revenues.

Early design choices and reforms created new resources for future negotiations (e.g., the facilitative role of the auction and free-allocation shares in post-2009 policy making). Early choices could also constrain the path those reforms could take as new components were locked-in and ceased to be a subject for policy discussion (e.g., the existence of the EU-level auction and free-allocation shares). In the end, policy feedback did not lead to a reconfiguration of the policy actors and coalitions in a way that safely entrenched both the policy instrument and its goals. Neither did it cause a complete collapse of the allowance price and the abandonment of the ETS. Instead, the overall direction of policy was locked-in, but within those constraints important shifts took place, some rapidly and some gradually.

3: To what extent were intentional design choices made that consciously aimed at creating policy feedback?

Extensive evidence shows that policy actors made important design decisions about the ETS in order to facilitate the initial adoption of the 2003 Directive and to complete subsequent reforms. The clearest example of this dynamic is DG Environment's proposal for and strong defense of free allocation in Phase I despite the fact that it clearly held a preference for auctioning for reasons of economic efficiency (see Chapter 5). Another example from the 2009 Directive is the opt-outs for the carbon leakage list and Article 10c free allocation.

However, there is less evidence of conscious attempts to create post-adoption policy feedback. The shift to EU-level policy making authority related to allocation, cap-setting, and auctioning had the aim of creating a more efficient, cost-effective system, *not* of creating policy feedback per se. The most important impact of the MSR on the design of the 2018 Directive – its use as a starting point for increased volume management through the 24% intake rate and allowance cancellation – was not foreseen when the Commission's proposal was originally released in July 2015. Of the four reforms covered in this thesis – the 2009 Directive, backloading, the MSR, and the 2018 Directive – only the 2009 and 2018 Directives were foreseen in advance by policy makers. One example of a failed attempt at intentionally creating feedback was the push by the UK and France for a more limited free allocation system based on tiering. This approach was explicitly tied to reducing the number of industries that were eligible for free allocation, and consequently reducing the number of member states who felt pressure to retain the free-allocation system.

In summary, the evidence for intentional creation of policy feedback is limited. However, evidence does suggest that policy actors used the unintended *results* of policy feedback in a strategic way. This can most clearly be seen in the negotiations leading up to the European Council conclusions in October 2014, when a continued carbon leakage list – and the resource flows to the energy-intensive industries that went with it – was traded for a 40% 2030 reduction target and a 43% ETS reduction target within the Commission, and then again for continued free allocation under Article 10c. While the initial policy feedback from the ETS may have been unintended, once in operation, actors as diverse as DG CLIMA and the energy-intensive industries strategically used those effects to pursue their goals in ETS policy.

9.3 Contributions to existing literatures

As noted in Chapters 1 and 2, existing literatures approach the topics covered in this thesis from very distinct angles, applying different methods and often pursuing different research questions. Chapter 5 covered the 2003 and 2009 Directives, building on a number of existing studies. One contribution made by this thesis was to offer a new synthesis of that existing political science literature, combining empirical evidence from various academic sources. Another contribution was to integrate literatures from economics, especially on the impact of the ETS on various economic sectors, such as electricity and energy-intensive industries, as well as market intermediaries. It also drew on extensive new evidence from elite interviews and documentation not previously available in the academic literature, including from freedom of information requests.

Chapter 6 covered the backloading and MSR processes, contributing to a recent yet growing literature in political science on the topic (Wettestad, 2014; Wettestad and Jevnaker, 2016; Jevnaker and Wettestad, 2017; Skovgaard, 2017). Like Chapter 5, it produced a new synthesis. It again included insights from other literatures and new empirical sources (e.g., Commission inter-service consultations), some received from freedom of information requests. Finally, Chapter 7 departed from the pattern in Chapters 5 and 6, given that it considered the 2018 Directive policy process which has received less attention in the literature. Therefore, Chapter 7 uses new sources and evidence, including interviews and primary documents.

The thesis contributed to the existing literature on the *politics of the ETS* by investigating the role of policy feedback in the policy's long-term development. It did so by introducing a new, explicitly long-term theoretical perspective, emphasizing the interconnections between each ETS policy-making process, and demonstrating the importance of sequencing in shaping long-term policy outcomes. Many existing studies have focused on a single ETS-related policy process event (e.g. the adoption of the 2003 Directive). As noted in Chapter 2, many other researchers in this literature have looked at ETS policy making over longer time periods, especially regarding the origins of the ETS and its centralization between the 2003 and 2009 Directives (e.g., Boasson and Wettestad, 2013; Dreger, 2014; Müller and Slominski, 2013; Skjærseth and Wettestad, 2009). In this thesis, the snapshots of individual policy processes have been assembled into a moving picture from 1998 to 2018.

In a number of cases, the thesis confirmed and expanded on existing claims in the literature (e.g., frustration with the NAP process leading to an EU cap in the 2009 Directive). In other cases, it has reinterpreted existing claims in the literature, for example by demonstrating the long-term split between high-carbon and low-carbon electricity generation companies throughout the history of ETS policy making. For the 2018 Directive, it provides timely analysis of a recently-completed policy process that has not yet been addressed in the literature. Stepping back from individual policy cycles, it has also added further empirical evidence on long-term, slow-moving shifts, most importantly the slowly-developing support for allowance cancellation in the context of repeated but largely ineffective attempts to raise allowance prices.

Moving one step outward, a contribution was also made to the expanding literature on the *politics of emissions trading*. The evidence gathered in this thesis questions the claim that policy feedback from emissions trading is likely to be self-reinforcing or politically beneficial in most cases (Patashnik, 2008, p. 151; Stavins, 2009). This is not to argue that trading systems have no political benefits. The idea that emissions trading would increase support for policy adoption vis a vis alternative policy instruments such as a carbon tax has been confirmed, albeit in the specific political context of the European Union. However, the subsequent political benefits of trading are by no means guaranteed; rather, they are contingent on a number of factors (including but not limited to the mechanisms noted above). Moreover, in some circumstances, they can have unintended negative impacts over the long term.

The same point should be made for research that argues that emissions trading is inherently politically harmful for climate mitigation ambition (Lohmann, 2011). Drawbacks, like benefits, are also contingent. Thus, this thesis found a link between the ETS and low support among energy-intensive industries for mitigation. But it also showed both that their position was not successful overall, and that the ETS's perceived policy failure on allowance prices drove an unexpected tightening of emission reductions that may not have been possible without that sense of crisis.

The thesis also contributed to the sub-literature on instrument constituencies (Béland and Howlett, 2015; Simons and Voss, 2018; Voss and Simons, 2014). Overall, the findings were in line with the assumptions of this literature: that resource flows from an emissions trading policy lead to the creation and expansion of instrument constituencies that in turn engage in advocacy to protect and expand the instrument; in other words, self-reinforcing policy feedback (Voss and Simons, 2014, see also Newell and Paterson, 2010; Meckling 2015). But this study adds two caveats to this assumption. First, in their study of emissions trading, Voss and Simons stated that "constituencies sustain the instrument and are themselves sustained by the instrument *as it persists and expands*" (2014, p. 735, emphasis added). However, the opposite can also be true. In the EU ETS, as allowance prices weakened, it had negative side-effects on a key part of the instrument constituency: the market intermediaries. If the instrument is less able to sustain the constituency, the constituency will be less able to sustain the instrument. Second, emissions trading may also create constituencies that protect the instrument while frustrating attempts to expand it. The energy-intensive industries and Central and Eastern European electricity generators formed a constituency which – while it at times pushed for a change of instrument to a baseline-and-credit system – benefited significantly from the ETS. This constituency fiercely resisted dismantling related to free allocation, and therefore supported the status quo. But they also consistently opposed efforts to increase emission reductions or raise allowance prices.

This thesis has also contributed to the literature on *climate policy more generally*. It modified and extended the policy feedback theoretical framework and tested it at much greater length than has been done in previous studies in this policy area (e.g., Boasson and Wettestad, 2013; Jordan and Matt, 2014; Lockwood, 2013; Skjærseth, 2018; Skogstad, 2017). It demonstrated that analyzing multiple mechanisms was necessary to discover important patterns (especially in the formation of policy coalitions by actors responding to distinct feedback mechanisms). Following Jordan and Matt (2014), and Skogstad (2017), and Skjærseth (2018) it expanded the scope of analysis to self-undermining feedback – a focus that other studies of policy feedback and climate policy did not have (e.g., Lockwood, 2013). It brought focus to both self-undermining feedback and discussion of how self-reinforcing feedback can reinforce the policy instrument to the detriment of policy goals. This is a risk not only in other emissions trading systems, but in other policy instruments which create resource flows or incentive structures that may prove counter-productive (Biber et al., 2017).

Regarding the more general literature on the *politics of climate change mitigation*, this thesis also offered new insights. It showed the fragility of some feedback mechanisms – such as the enrollment of the financial industry into climate mitigation coalitions which was dependent in part on the operation of the ETS. It has also shown the importance of the iterative nature of climate policy to how feedback affects subsequent policy developments, creating a strong risk that self-reinforcing dynamics strengthen the current iteration of policy ambition but simultaneously constrain future moves to increase that ambition. And its findings emphasized the point that while the type of policy instrument can have an important effect on durability and flexibility, the policy settings of that instruments can also have an equally important influence.

Finally, regarding the *wider policy feedback literature*, this thesis reconfirmed the usefulness of policy feedback as an analytical concept and the value of distinguishing between the various mechanisms through which it operates in practice. It also provided a novel and important distinction regarding policy feedback effects on the original policy's goals, on its instruments, and its settings. This distinction changes the overall interpretation of feedback in this case, by showing how dynamics that reinforced the policy instrument were in some cases counter-productive for policy goals. It has also underlined the value of accounting for self-reinforcing and self-undermining feedback, in a literature that generally emphasizes one direction of feedback over the other (e.g., Pierson, 2000a, Lockwood, 2013, and Russell, 2018 emphasize self-reinforcing feedback, while Weaver, 2010 as well as Jacobs and Weaver, (2014) emphasize self-undermining feedback). By looking for and accounting for both types of feedback in the same case study, it has shown the often-complex relationship between the two. Careful analysis of the three mechanisms has revealed that policy effects often cascade into one another, especially when resource mechanisms lead to interpretive changes, such as the energy-intensive industries and their increasing focus on the ETS as its distributive – i.e., resource-related – implications became clear.

The distinction between goals, instruments, and settings also points to a crucial difference between the policy feedback dynamics related to social policy and climate policy. In the welfare state literature (e.g., Campbell, 2003), self-reinforcing policy feedback often served to make welfare state retrenchment more difficult and simultaneously protected the goals of the policy. In contrast, policy feedback that reinforces a climate policy instrument could build constituencies and path dependencies that make the goal of emission reduction more, not less, difficult to achieve. This was partly the case with the ETS, where a major source of self-reinforcing feedback for the instrument was the flow of freely-allocated allowances; resources that were decreased by any increase in the ETS reduction target. The dominance of free allocation in the first two ETS phases (2005-2012) was a key concession by DG Environment in the initial ETS negotiations which allowed the policy to be successfully adopted in 2003. But it also made it more difficult to raise revenue and take advantage of the theoretical benefits of auctioning as a more efficient allocation method, creating a situation in which reducing emissions more quickly led directly to the withdraw of resources from politically-influential groups.

9.4 Critical reflections and opportunities for new research

During the design of this research a number of choices had to be made. This section reflects on those choices and identifies the scope for lessons learned from them. First of all, in order to study feedback over a 20-year period, this thesis necessarily examined the topic from a relatively broad perspective. This served to identify important new patterns in ETS-related policy feedback dynamics. Further research could take the form of in-depth studies of the impact of feedback on smaller groups of organizations, such as the electricity generation industry or the energy-intensive industries, similar to studies in the welfare state literature (e.g., Campbell, 2003). This more detailed focus could better explore how policy feedback affects these groups and look at diverging opinions within organizations such as Eurelectric or BusinessEurope by focusing interviews and document collection on a narrower range of actors.

Second, the research approach was focused squarely on the EU level and EU politics, a justified choice given the importance of that level for ETS politics. Both evidence gathered here and existing literature point to the importance of national level dynamics – e.g., the relative influence of national ministries in deciding government positions – in shaping member state responses to the ETS, making it a key arena for the operation of feedback mechanisms. Although evidence of the general dynamics shaping member state preferences have been presented in this thesis, the detailed mechanisms operating in individual member states has largely been "black boxed" by necessity. The studies by Skovgaard (2017) on backloading, and by Skjærseth (2018) on Poland in the 2020 Climate and Energy Package and 2030 Climate and Energy Framework negotiations, confirm that the institutional structure, tensions, and viewpoints within member state governments play an important role in shaping the way that they react to the ETS. Further research could more systematically study the role of policy feedback at national level over the long term, and how the consequences of that role then return to shape EU politics. This is especially pertinent when, as in the case of the ETS, various ministries hold diverging views on the policy process. A wider ranging, policy feedback study could look at a specific policy issue (e.g., backloading as Skovgaard, 2017 did) and map the feedback and institutionally-based intervening variables/factors such as the power of those ministries within member state governments. Alternatively, studies focusing on long-term feedback dynamics at the national level in one or a small number of member states could explore whether and how those dynamics changed over time (e.g., did policy feedback shift the views and preferences of individual ministries over time?).

Third, for the sake of convenience, exogenous factors were largely analyzed when they interacted with the policy design of the ETS (e.g., the interaction between the pre-ETS generation portfolio of the electricity industry (exogenous) and free allocation rules (endogenous) to create a flow of free allocation to fossil fuel electricity generation plants). Further research could more systematically analyze how the two interact. The exogenous factors that interacted with policy feedback in the ETS case can be characterized into two groups. One type directly impacted on the ETS and so their importance for ETS politics was strongly mediated through the policy feedback created by the *interaction* between the exogenous factor and the ETS. Key examples of this type are the economic crisis (and its interaction with the Phase III ETS, creating the allowance surplus) and the Paris Agreement (which, when compared to the existing ETS reduction targets, underpinned policy actors' push for e.g., cancellation). The other type of exogenous factors had less direct interaction with the ETS but nevertheless influenced the course of policy making (and so were independent of policy feedback). An example of this indirect exogenous type was the change in government in Germany after the 2013 federal elections. The resulting change in political parties in charge of ministries shifted Germany to a more supportive position on backloading (Jevnaker and Wettestad, 2017; Skovgaard, 2017).

Fourth, this thesis has only considered the EU ETS. Comparative policy feedback studies could be conducted on other emissions trading systems, such as those in California, the Northeastern United States (RGGI), and China, to compare policy feedback in each case and how different design choices affect feedback dynamics. The research by Wettestad and Gulbrandsen (2017) already takes self-reinforcing feedback and path dependency into account as possible factors in their development. An expanded approach looking at self-undermining feedback, and its interaction with other factors such as political parties and policy diffusion, could build on both approaches to this topic. For example, emissions trading systems in California, the Northeastern US, and Quebec all make use of a price floor (World Bank, 2018), an option that has not been politically viable at the EU level. It is unclear how a price floor would affect the politics of emissions trading. On one hand, a price floor could reduce the incentive for recipients of auction revenues to support volume management, because the floor would provide a backstop on revenue that could make volume management seem less necessary. On the other hand, it would also respond directly to the problems of revenue used for other climate policies, with the disengagement of market intermediaries due to low prices, and preserve the impact of emissions trading on the decisions of firms.

Fifth, studies of policy feedback in climate policy could expand outward to study policy mixes, and expand over time to look at policy sequencing in the evolution of those same policy mixes. Combined with other studies of the EU ETS (Boasson and Wettestad, 2013), policy regimes (Skjaerseth, 2018), climate framework policies (Lockwood, 2013), voluntary agreements (Jordan and Matt, 2014) and standards-based policy (Skogstad, 2017), the findings in this thesis could help form a component of wider comparative studies of differential feedback from instrument types and policy mixes related to climate change. For example, multiple policies in a policy mix – in the EU case, this could be the ETS, the renewable energy target, and the energy efficiency target – could create feedback effects that interact with each other (similar to Skocpol's 1992 concept of policy spillover effects). Possible interactions to explore include whether the ETS and the effect of the renewable and energy efficiency targets on allowance prices contributed to the potential weakening of those targets for the period 2021-2030. This dimension is increasingly relevant as climate policy expands and matures; the most revealing findings may be in the interaction between instruments and their feedback. It would build on and contribute to existing economics and political science literature on the interactions between policies (Boasson and Wettestad, 2013; Del Río, 2010). Another possible scope for studies includes how the sequencing and timing of policy adoption affects the entire process. For example, instruments adopted early in a sequence may create policy feedback which closes down the possibility of adding other instruments in the future (in line with Meckling et al., 2015).

Sixth, regarding the policy feedback literature in general, more research could be done across different policy issue areas and policy instrument types. Regulatory policies common in the environmental field are likely to impose costs rather than distribute benefits, although the case of the ETS has demonstrated that this assumption is not always borne out in practice. A systematic overview including diverse policy issues (welfare state, education, criminal policy, and environmental policy) could identify patterns and divergences across cases. In addition, research could examine how policy feedback is defined when compared to other factors that affect policy development, and how research can better distinguish between these factors. Comparative analysis could look at the variable interaction between policy feedback and other contextual factors such as the presence of a large fossil fuel industry or the approach to electricity regulation (such as whether electricity generators can pass on carbon costs to their customers). Policy feedback itself must be viewed as one possible factor out of many. The theory testing and theory building in this thesis required detailed process tracing of the case of policy feedback; that analysis can now be used as the basis for broader studies. The main empirical findings can be used as the starting point for these types of analysis. More emphasis and investigation could also be given to the intermediate political consequences of policy feedback mechanisms such as the creation and dissolution of coalitions, given that they are not explicitly used to define those mechanisms in the same manner as resource/incentive, interpretive, and institutional mechanisms.

9.5 Lessons for policy makers

This thesis has identified several lessons for policy makers and other policy actors involved in designing and redesigning existing emissions trading systems.

Lesson 1: Free allocation tends to create a powerful, self-reinforcing dynamic, even if it is introduced as a sort term, transitionary measure. As noted throughout Chapters 5, 6, and 7, both the energy-intensive industries and the Central and Eastern European electricity generation industries successfully lobbied intensively to maintain as much free allocation as possible. Powerful coalitions including a number of member states and many party groups in the European Parliament moved to support them. This dynamic was particularly marked during the adoption of the 2009 Directive (Wettestad, 2009; Skodvin et al., 2010). This study extends and expands the evidence base, showing that free-allocation constituencies are surprisingly resilient in the face of countervailing pressures to reduce these resource flows. This creates a paradox for policy design: if free-allocation recipients are politically influential enough that free allocation is necessary to adopt legislation in the first place (arguably the case for the EU ETS), it is likely that free allocation will continue in some form or may even be expanded. This was seen in the extension of free allowances out to 2030, notably to energy-intensive industries and the Central and Eastern European electricity industry. However, the ever-decreasing quantity of allowances available in a progressively reducing emissions trading system created winners and losers within free-allocation recipients, as most clearly seen between the energy-intensive/Central and Eastern European electricity generators during the 2018 Directive process.

Lesson 2: In certain circumstances, free allocation creates constituencies that are opposed to higher carbon prices and faster emission reductions. For installations that rely on free allocation, both of these options mean higher costs and/or less of a valuable resource distributed to them. In contrast, auctioning is an opportunity to shift the financial value of emission allowances to either policy makers or the public, and hence increase their incentives to support higher allowance prices. This was seen in the role that auctioning revenues played in securing support for volume management from the less enthusiastic members of coalitions. Free allocation distributes allowances disproportionately to actors who pollute the most, and in many cases to a small number of very large point sources of greenhouse gases (Bryant, 2016). These actors are often those who have high costs as well (whether in the electricity generation sector as shown in Chen et al. (2008) or the energy-intensive industries). Member state governments on the other hand are one step removed from climate mitigation, and so their interests can lean more heavily towards increased revenues.

Lesson 3: Low allowance prices in an emissions trading system can be politically self-reinforcing if they lead to the adoption of other climate policies that address the same economic sectors covered by an ETS. Because the carbon price is watched closely as an indication of a system's efficacy (Ellerman et al., 2016, p. 98), prolonged low prices can lead to the creation of other policy instruments to address the same sectors as emissions trading. By lowering the demand for allowances, these other policies can serve as an additional contributing factor to lower prices, leading to a self-reinforcing cycle. The low price of ETS allowances and the apparent inability of EU-level policy responses to raise it were a major factor in the adoption of national climate policies in the UK, France, the Netherlands and Germany (Leipprand and Flachsland, 2018). These and other policies can contribute indirectly to an increase in the allowance surplus and therefore serve as a factor pushing prices lower.

Lesson 4: Concessions made to secure policy adoption can generate path-dependent processes which lock-in transitional measures. Patashnik (2008, pp. 171–172) emphasized the importance of concessions made to actors who could potentially block policy adoption, and suggested that these concessions should be made in a manner that does not weaken the policy's future effectiveness or political durability. However, following this (sound) advice can be politically very difficult. Returning to the previous example, free allocation was originally introduced by the Commission as a transitional approach to allocation that would be phased out over time. It was included in order to secure passage of the original 2003 Directive, given the low support in the Council at the time for auctioning. The evidence that DG Environment and later DG CLIMA held to this viewpoint was clear throughout all subsequent policy processes. But after the shift to auctioning for electricity generation auctioning, all free-allocation derogations (the carbon leakage list and Article 10c) remained and became permanent parts of the ETS at least up to 2030. Therefore, without explicit agreements on phase-out, transitional design elements that provide resource flows to influential actors are likely to continue. Even an explicit agreement to phase out Article 10c free allocations was not enough to stop its conversion into a seemingly-permanent provision of the ETS.

Lesson 5: Building support among policy makers can be as important, if not more so, than building constituencies among non-governmental actors. Much of the literature on policy feedback and related topics in climate policy focuses on support among these non-governmental actors, especially industry (Downie, 2017; Kelsey and Zysman, 2013; Meckling et al., 2015). This literature conceptualizes policy makers as designers attempting to create "green constituencies" among non-governmental actors, and choosing/designing instruments in part to reach this goal (Aklin and Urpelainen, 2013; Meckling et al., 2015). However, policy feedback can also affect policy makers. In the EU case, it is clear that one of the most important constituencies for stringency built through ETS design was the member states themselves. The shift in ETS-related resource flows towards them through auctioning gave them a direct stake in a higher allowance price, expanding the possible coalition of those supporting increased volume management beyond the “true believers” on emission reductions (e.g., member states such as the Netherlands, France, Sweden, and the UK that led the push for increased stringency around the 2018 Directive). Auctioning revenues also provided an additional reason to support backloading and the Market Stability Reserve. A decision taken in large part to reduce windfall profits and increase the efficiency of the ETS had a profound and long-term impact on the development of ETS politics. In other words, governments and other policy makers are not only policy designers. They can also be heavily affected by their own design choices. And because of their significant influence in the policy making process, these impacts can be critical for the success and political durability of society’s shift towards decarbonization.

9.6 Conclusion

Chapter 1 discussed the need for climate mitigation policy that is simultaneously effective and politically durable. One of the most important lessons to emerge from this thesis is that these two goals – effectiveness and political durability – are often at odds. Policy makers wishing to “constrain their future selves” (Levin et al., 2012, p. 125) may find that those constraints have the unintended consequence of making emission reduction goals more rather than less difficult to achieve in the future. To paraphrase Jordan and Matt (2014, p. 228), creating climate policy that “sticks but is not stuck” is difficult in part because the very processes that help a policy “stick” can be difficult to reverse if it becomes “stuck”. Freely allocating allowances may increase support for the adoption of emissions trading but may also help build durable coalitions against greater auctioning and more ambitious reductions. And indeed, the distinction between an effective, durable policy and a locked-in “policy dead-end” (Biber et al., 2017, p. 639) is itself subject to political contestation that is shaped by the very policy feedback it creates. In contrast to self-reinforcing feedback, self-undermining feedback has been framed as a legitimate cause for concern. Indeed, preventing these types of dynamics is highlighted as a key goal in the climate mitigation literature (Levin et al., 2012; Lockwood, 2013). However, in the ETS case, declining support for the instrument's settings was a key driver, not of policy dismantling, but of crisis-driven policy expansion as a solution to the allowance surplus.

Unexpected policy developments in the ETS – backloading, the MSR, allowance cancellation – show that circumstances can change fundamentally and sometimes rapidly. This suggests that we should be cautious about either assuming the ETS is "fixed" after the adoption of the 2018 Directive or that it is destined for long-term irrelevance. The rise in allowance prices in late 2017 and early 2018 may be the first sign of a long-term increase or a temporary respite from stubbornly low prices, akin to the short-lived increase in 2015. The unexpected inclusion of allowance cancellation in the 2018 Directive – after years of being proposed by actors such as the UK and the Greens/EFA in the Parliament – suggests that a proposal's lack of support today may not guarantee its defeat in the future.

These are weighty issues that should be addressed by policy makers and academics. To do so, it will be important to focus not just on the theoretical efficiency and effectiveness of proposed policy solutions or reforms but also on the real-world political effects of emissions trading. This will require further sustained research as well as more effective links between researchers and policy makers. As more attention is turned to other areas of climate change – including the governance of climate adaptation and negative emissions technologies – transferrable lessons from the EU ETS and other climate mitigation policy could be brought together to inform the creation of a climate policy mix that effectively manages the tensions in building a response that is both effective and politically durable.

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Appendix 1: Interview Protocols

This appendix includes two sample protocols that were used to guide questions during the semi-structured interviews performed for this research. Protocol 1 is based on questions used in the early stages of the research, when questions were more open-ended and exploratory. Protocol 2 is based on more detailed questions asked to member state government interviewees in the final stages of the research.

Protocol 1

BACKGROUND

Could you tell me a little bit about your background and the ETS-related work you have done?

How would you describe the development of the ETS since 2005?

In an ideal world, how would you like the ETS to be designed? In other words, what would you change?

1. ORGANIZATIONAL DEVELOPMENT

Current

How is [your organization] currently organized?

How many people would you estimate work directly on the ETS?

What is the budget allocated for the ETS?

How are ETS-related responsibilities organized?

- EU GHG target
- ETS/ESD division of target (PRIMES)
- Scope
- Allocation
- Volume management

Did reforms for Phase III (harmonization) increase need for staff?

How did the transition [to Phase III] affect [your organization's] efficacy and influence in policy-making?

Early Years to 2008

How did [your organization] develop from 2000 to 2009?

Summary

Overall, we have discussed from early years to the present, how would you summarize the shifts in [your organization]? What are the key trends?

For further documentary research on this topic, is there anyone in [your organization] that you think I should talk to for advice?

2. POLICY COMMUNITY

Up to this point, I have been asking about [your organization], now I want to expand to discuss the wider ETS policy community. This includes the EU institutions and stakeholder groups such as business associations.

Over the years, how has the size of the policy community changed? Has it increased, has it decreased?

Which stakeholders would you say have had the most influence on ETS policy-making?

When it comes to the opinions of business, do you give more weight to opinions expressed by businesses whose installations are covered by the ETS?

Have there been longer-term coalitions that outlast individual legislative processes?

Regarding the policy positions of other stakeholders, has the operation of the ETS either changed or reinforced their earlier positions?

- Follow-up example: For example, has allowance allocation changed the way that some businesses seem to view the ETS or its design?

Within [your organization], has there been discussion of designing the ETS in a way so that the indirect, political effects strengthen support among stakeholders for cost-effective climate mitigation?

3. OTHER TOPICS

What do you think might be the effect of Brexit on ETS policy-making?

Given the topics we discussed today, is there anyone in other organizations you would recommend I talk to?

Are there any other topics you would like to bring up that I have not addressed in my questions?

Protocol 2

Written questions on Phase IV trilogue.

During the Phase IV negotiations, Poland was very keen to maintain/increase the 57% auction share. Do you recall them discussing their motivations for that position, or what you felt their motivations were?

Strengthening: The Council states (2017-9-29, Doc 12580/17) "Under the topic of strengthening the ETS, the positions of the co-legislators are already very close." Were the cancellation and MSR 24% provisions agreed relatively early?

Free allocation/auction split: The Presidency states on 2017-9-29 that "positions remain far apart" on the split, on 2017-9-1 had stated "In the Presidency's view, in order to make further progress it is necessary to make further moves towards the EP at this stage on the main triangle of issues." The conditional lowering went from 2% to 2.5% to 3%. Why did the EP have leverage on this issue specifically? Often it is the EP conceding points to the Council on these issues.

Article 10c: Where did the late expansion of 10c to 60% come from (29 Sept is the first time it appears)? Was it more Council or EP driven?

The Council vote in Feb. 2018 saw many of the member states that voted 'no' on the general approach vote 'yes', why do you think this changed?

Appendix 2: List of Interviewees

This appendix lists the 29 interviewees in two groups. The first group of interviewees agreed to have their names listed. The second group requested that their names be withheld, and so are referred to only in anonymized form. Named interviewees are listed by surname in alphabetical order

Name	Organization Name	Organization Type	Type of interview
Baldovin, Pietro	European Federation of Energy Traders	Market intermediary	In person
de Jong, Femke	Carbon Market Watch	Environmental NGO	In person
de Roo, Alexander	Former MEP, Greens/EFA	European Parliament	Skype
Ganev, Iva	Association of European Ferro-Alloy Producers (Euroalliages)	Energy-intensive industry	In person
Kankaanpaa, Kari	Fortum	Electricity generation industry	Skype
Kollmuss, Anja	CDM Watch; Climate Action Network Europe	Environmental NGO	Skype
Letonen, Terhi	Greens/EFA	European Parliament	In person
Long, Tony	WWF	Environmental NGO	In person
Loréa, Claude	European Cement Association (Cembureau)	Energy-intensive industry	In person

Marcu, Andrei	International Emissions Trading Association	Market intermediary	In person
Meadows, Damien	DG Climate Action	European Commission	In person
Meggelaars, Joel	WindEurope	Renewable energy industry	In person
Noyens, Koen	Eurelectric	Electricity generation industry	In person
Scowcroft, John	Eurelectric	Electricity generation industry	In person
Vis, Peter	DG Environment; DG Energy and Transport; DG Climate Action.	European Commission	In person
Wyns, Tomas	Flemish Government; Climate Action Network Europe	Member state government; Environmental NGO	In person

The table below lists anonymized interviewees, categorized according to organization type.

Type of organization	**Number of anonymized interviewees**	**Type of interview**
European Commission	2	In person
European Parliament	3	In person
Market intermediary	1	In person
Member state government (Western European)	3	In person
Member state government (Central and Eastern European)	3	In person (2); Email (1)
NGO	1	Skype