

Cases in Environmental Policy Instrument Selection: Germany, the United Kingdom, and the European Union

A senior thesis presented in partial fulfillment of the requirements for the
degree of Bachelor of Arts at Pomona College

Program in International Relations

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April 28, 2010

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Chapter 1: Introduction

The still young and dynamic field of environmental policy has driven a vast array of scholarship addressing the various advantages and disadvantages of the most commonly adopted instruments. Studies have largely focused on the economic viability and ecological effects of these policies, and there has been relatively little substantive work examining those conditions that most influence decisions about which policy instruments a given country is likely to choose. This paper seeks to add to the existing literature by addressing certain political, economic, social, and ecological variables that are likely to have a significant effect on the policy preferences of developed states. More specifically, the aim of this paper is to examine environmental policy trends in the European Union (EU) and two environmentally active European countries in order to expand upon the body of theory regarding states' environmental policy choices. Special attention will be given to the distinctions between traditional forms of direct regulation (DR) and more modern market-based instruments (MBIs).

In recent years, the argument for the use of MBIs to combat environmental issues has been met with fiercely divided debate. Many scholars have eagerly torn apart the notion that the market is the best tool for addressing the problems of the environment, while proponents offer compelling arguments from an often narrow economic perspective. The mixed response mentioned here should come as no surprise, however, as MBIs can be seen as a commoditization of the environment. So, many within the environmental movement have been understandably cautious about the motives behind proposed MBI regulation. To dismiss such instruments as industry's disguised attempt at

circumventing the environmental question is to miss out on the potential value that they have to provide effective, realistic solutions for many of the globe's most pressing issues.

The proposed advantage of MBIs is that they are much more cost-effective than traditional DR. The economics of this argument are explored in the following chapter. For now, only a basic description of the key differences between the two will be acknowledged. DR is the instrument that has been used most widely throughout the world to date. Usually, DR involves the establishment of uniform emissions limits and mandates the use of certain technologies to meet those limits. The uniform nature of most DR leaves it vulnerable to criticisms of inefficiency due to the oversimplification of regulations. MBIs are regulations that make use market principles to achieve environmental benefit. The most common MBIs are eco-taxes and tradable permit schemes, though there are a number of other instruments that qualify as MBIs. By allowing firms to choose the levels by which they want to reduce pollution, they represent a more flexible regulatory instrument that is commonly thought to be more acceptable to industry than DR. The debate over which instrument type is best suited to achieving long-term environmental benefit remains very much open. DR has been long-tested and has proven, in many cases, to successfully address classic environmental problems like water pollution. MBIs have also had their share of successes including the tradable permit system for SO₂ emissions established in the U.S. in the 1990s.

There has been a fair amount of research analyzing each side of this particular debate. The purpose of this paper is not to engage that debate directly. Rather, its purpose is to add to the sparse body of theory that currently exists regarding the causal variables that explain why countries choose particular environmental policy instruments. At this

point, Wurzel (2002) has suggested that ecological vulnerability, economic capacity, the political salience of environmental issues, and existing environmental regulatory styles are key explanatory variables for a government's stance on domestic environmental policy measures. With respect to federal states and supranational institutions, Kelemen (2004) argues that there is a positive relationship between the degree to which power is fragmented among multiple interests at the federal level and the amount of discretion that remains in the hands of lower levels of governance. This theory yields the expectation that federal states with fragmented interests are likely to have more stringent controls over how environmental policy is carried out at state and local levels. Though these contributions of these scholars to the theory of environmental policy selection have been tremendous, there remains more to be examined in this field.

This paper seeks to add to the discussion of explanatory variables for a government's stance on environmental policy instruments. Specifically, this paper will address the effects of three potential explanatory variables in particular: Green parties, EU membership, and the importance of the environmentally beneficial technology (ecotech) industry to a country's economy. Three hypotheses emerge from this approach:

1. The existence of a strong Green party that achieves consistent electoral representation at the national level leads countries to pursue DR.

Green parties only gain representation where a significant portion of the population cares deeply about the state of the environment. Thus, the electoral success of a Green party necessarily indicates the existence of at least a section of the population that is environmentally aware and is willing to act on behalf of the environment. In

situations where such populations have an elected voice at the national level, there is added pressure on the government to appear to be tough on issues of environmental concern. Because DR is a simpler, more widely recognized policy tool that is easily identifiable by the public, governments in states with strong Green parties will be more likely to adopt DR.

2. The EU, with its vast body of environmental policy, not only causes convergence among environmental policies of its member states. It also causes member states to add clarity and rigidity to their environmental policies.

The first part of this hypothesis is simply due to the fact that EU environmental policy has been rapidly expanding both in scope and strength over the last few decades. The latter part of the hypothesis is related somewhat to Kelemen's argument about federal states. The EU acts as a federal state with highly fragmented interests at the highest level. Because member states are likely to be suspicious of each other's probable commitment to implementing EU policies, they will favor very clear, definitive policy measures that lay out concrete implementation requirements and timetables for compliance. This suggests that member states will be given very minimal discretion in determining how to implement EU policies at the national level. As a result, they will have little choice but to adopt strict environmental policy measures.

3. Countries with relatively large ecotech industries prefer MBIs because of their greater potential for causing sustained incentives and markets for ecotech products.

Environmental economic theory suggests that MBIs are superior to DR in terms of dynamic efficiency. By encouraging continual emissions reductions rather than reductions to a fixed limit, MBIs create continual incentives for environmentally beneficial technology. Incentives to continually reduce emissions also create substantial and long-term markets for ecotech. Countries with domestic economic interests in ecotech will want to exploit the advantages of MBIs as a cheap tool for driving further innovation. Additionally, these countries will want to export MBIs to other states in order to continue to expand the market for ecotech.

In order to engage these hypotheses, this paper contains two case studies of EU member states with thorough yet different experiences with environmental policy. Before those cases are examined, the following chapter addresses the increasingly important role of EU environmental policy in influencing the policies of its member states. No study of the environmental policies of EU member states can be separated from the influence of the EU. In fact, the effects of the European Union are sure to influence the applicability of this study's results to non-EU states. The existence of the EU has been recognized as a factor in the viability of market-based regulation in Europe, and this paper thoroughly addresses and acknowledges this effect. The EU constitutes a particularly fitting place to adopt MBIs because they are known to perform better in bigger markets. Scholars also argue that the existence of the European Union could significantly reduce national fears over losing competitiveness due to increasing the extent of market-based mechanisms. The EU is expected to play an important role in managing the tensions between those states that wish to increase environmental standards

and those that are more concerned with maintaining competitiveness. (Barnes and Barnes, 1999: 136) Because EU member states have a unique opportunity to implement market-based instruments with reduced fears of losing competitiveness, this paper's findings at the state level will be especially applicable to EU member states. However, analysis of the EU's effect on environmental policy in some of its member states may yield interesting conclusions regarding the appropriateness and potential value of regional environmental policy coordination on an international scale.

There has been a significant amount of research on the theory of market-based environmental legislation, and there have been numerous studies that document the actual environmental effects of market-based regulation. Much less well-documented is the policy process that leads regulatory agencies to decide between direct and market-based environmental regulation. The research undergone to complete this project has been directed at gathering evidence from two Western European countries that have implemented market-based environmental legislation. The purpose of this study is to provide answers as to how political structures and regulatory histories influence current regulatory decisions regarding environmental protection.

This work is meant to contribute to the body of theory surrounding market-based environmental regulation by providing concrete evidence and intelligent analysis regarding the ways that political conditions influence environmental regulation decisions. Perhaps just as importantly, the results of this research may shed light on which types of pollution are best addressed using incentive-based regulation and which may be better handled using an alternative like direct regulation. For example, the success of the U.S. cap-and-trade system on acid rain-causing sulfur dioxide emissions in the 1990s, which

focused on a relatively small number of polluters within a key industry, says a great deal about the importance of the nature of the emissions and the structure of the polluting industry in having success with incentive-based regulation.

This paper contains an examination of the relevant legislation in each case country over the last few decades. This examination pays particular attention to the blend of NEPIs that each country uses and to the proportions of direct versus incentive-based regulations. Also, the historical development of the environmental policies of my case countries will be examined, as that will be important to developing an understanding of their current policies and governing structures. Following Chapter 2 on the EU, this paper is designed as follows.

Chapter Three contains a case study of German environmental policy. Germany has a long history of environmental legislation and has one of the most environmentally aware populations in Europe. Additionally, it boasts a successful national Green party and is a world leader in the development of ecotech. These circumstances allow for the German case study to address each of this paper's hypotheses.

Additionally, Germany has led the way with respect to the innovation and employment of 'new environmental policy instruments' (NEPIs) and voluntary agreements (Vas). Estimates made in 2001 indicate that Germany supports 130 voluntary agreements. (Wurzel et. al, 2003: 129) It will surely be interesting to see how the existence of these environmental policy factors affects the value of market-based regulation. Furthermore, Germany is a frontrunner in the surge for ecological modernization. In fact, "according to a 2007 study by the Roland Berger consulting group, German companies specializing in ecofriendly tech already have a turnover of

€150 billion a year, with growth averaging 8 percent a year.” (Theil, 2008) Clearly, Germany is doing something to encourage technological innovation in environmental quality. Whether or not the adoption of market-based instruments has been the catalyst for that innovation remains to be seen. Either way, the German case is sure to provide compelling results regarding the crucial theoretical argument that market-based regulation encourages technological innovation more effectively than direct regulations.

The Germany chapter follows a basic pattern that begins with a description of the development of German environmental policy. Special emphasis is placed on the distribution of policy instruments between DR and MBIs. Following that section is an analysis of the effect of the German Green Party on the policy instrument preferences of the German government. Next, the chapter addresses the EU effect. Finally, the effect of the ecotech industry in Germany is assessed with relation to policy instruments. Chapter Four is the U.K. case study and follows the same basic pattern.

Chapter 4 is an examination of the United Kingdom’s experience with environmental policy. Like Germany, the U.K. has a long history of environmental policy and a relatively active and aware population with respect to environmental issues. Despite this similarity, the U.K. has chosen to address environmental issues very differently from its eastern neighbor. These differences will be examined in light of further serious differences in the political and economic circumstances that make up the focus of this paper. The U.K. makes a compelling and useful case aside Germany because its Green party has never been successful in national elections, it has had very little ecotech industry to speak of, and its relationship to the EU over environmental policy has been nothing short of confrontational. Each of these circumstances represents

a stark contrast to the German case, and that contrast should prove quite valuable to this study. The layout of the U.K. chapter mirrors that of the chapter on Germany.

Chapter Five contains the appropriate generalizations of this study's findings. It attempts to predict the role of incentive-based regulation in the future of Western European environmental policy. It also points to further causal variables that may explain why countries prefer certain instruments over others. What types of European states are likely to be receptive to this type of regulation? Which industries should or should not be regulated using incentives? Additionally, this concluding chapter offers an assessment of the current debate regarding market-based environmental regulation and a summary of any additions or amendments to the existing theory that this research has suggested.

Chapter 2: The European Union and Member States'

Environmental Policies

Any study of modern European environmental politics must inevitably acknowledge the role that the European Union plays in influencing the policy decisions of its Member States. Likewise, understanding the ways that those member states attempt to influence policy at the EU level can reveal a great deal about how domestic circumstances affect states' preferred environmental policies. This chapter is intended to address the complicated impact that the EU has on the regulatory choices that its Member States make with respect to the environment. In doing so, it will be necessary to outline the process by which environmental legislation is created at the EU level. This will include analysis of the motives and actions of individual states within the policy-making process. Next, this chapter will address a concept that I call the 'modernization' of environmental policy in the EU setting. The popularity of this concept, which focuses heavily on the cost-effectiveness of environmental regulation as well as its environmental benefit, will certainly help to explain the actions of certain member states as they are addressed in future chapters.

Making EU Environmental Policy

Environmental policy has been one of the most consistently expanding policy areas in the body of EU legislation since the mid-1970s. The initiation of this growth can be largely explained by the transnational nature of environmental problems, the increasing salience of these issues with the populations of many EU leader states beginning in the 1960s and 1970s, and the awareness that emerging disparate regulatory standards could potentially create trade distortions between Member States (Bomberg, 1998: 34-35). At first, European environmental policy was legally justified by its relation to the creation and maintenance of the common market envisioned by the creators of the European Economic Community (EEC). However, the ratification of the Single European Act in 1987 provided the explicit legal basis for most EU environmental policy that exists today. The Maastricht Treaty, signed in 1992, further expanded the role of the EU by providing a basis for EU action in international discussions of the environment. These agreements significantly altered the process by which EU legislation, including environmental legislation, was to be created.

The process of creating environmental policy at the EU level is similar to those of most policy areas. The European Commission has the power of legislative initiation and is thus responsible for proposing new environmental policies. Before the passage of the SEA and the Maastricht Treaty, these proposals were sent to the Council of Ministers (formally the Council of the European Union) for approval only by unanimous majority. The European Parliament (EP) was employed only as a consulting body whose recommendations were entirely non-binding. After the passage of the above-mentioned

treaties, the role of the EP in forming and passing environmental policy was expanded significantly. The current legislative procedure requires that the EP submit an Opinion regarding each piece of legislation offered by the Commission to the Council of Ministers. The Council of Ministers can then approve or amend the legislation, at which point it is returned as a 'common position' to the EP for approval. The EP may approve the legislation, reject it outright, or propose further amendments by a unanimous majority of its members. An outright rejection can only be overturned by a unanimous majority of the Council of Ministers. Also of importance is the principle of co-decision that emerged with the passage of the Maastricht Treaty. This allows the EP to negotiate directly with the Council of Ministers over legislative issues. Previously, no such direct negotiations were provided for under EU law. Finally, the SEA also required that decisions made at the Council of Ministers level would require the support of a qualified rather than unanimous majority¹ (Bomberg, 1998: 41-42; Jordan, 2005: 3-4). It is worth noting that many environmental regulatory laggards, including the U.K., adamantly resisted these changes. By removing the stipulation that consensus be reached in the Council of Ministers for any environmental policy to be passed, the SEA essentially stripped Member States of their veto powers in the environmental policy field.

The overall effect of these changes has been a general opening of the EU legislative process. Under previous legislative processes, the bilateral activities of the Commission and the Council of Ministers were widely viewed as relatively closed negotiations between bureaucratic actors. The increased role of the EP, however, has

¹ Under the Treaty of Nice, the relevant qualified majority constitutes the combination of a simple majority of member states, 255 out of the total of 345 weighted Council votes, and a seldom-implemented population requirement which demands that at least 62% of the total EU population is represented by the supporting Member States.

opened the process to a variety of players and reduced the degree to which EU legislation is deemed bureaucratic. Furthermore, access to European-level governance increased among non-corporate actors as a direct result of the increased role of the democratically elected EP. Environmental advocates are certainly among those non-corporate beneficiaries (Bomberg, 1998: 41), and the strength of their voice at the EU level has great potential to influence the actions of Member States in the EU arena.

Another important effect of the SEA relates to the introduction of the use of a qualified rather than unanimous majority in environmental policymaking. The elimination of the unanimity requirement, and thus the Member States' veto powers, has helped to ensure that EU environmental policy can go beyond the stringency of its lowest-regulating member. This shift has obvious implications for Member States of varying degrees and styles of environmental regulation. Countries with relatively thorough and entrenched regulatory regimes generally support higher regulations at the EU level. Conversely, environmental laggards tend to prefer little EU involvement in environmental regulation. The reasons for these preferences will be explored in greater depth later in this chapter.

In the last four decades, the EU has passed hundreds of pieces of environmental legislation. The backbone of EU environmental policy is made up of the six Environmental Action Programmes (EAPs) that have been published by the Commission since 1973. The EAPs define the scope and direction of EU environmental policy and lay the foundation for most environmental legislation. Over ninety percent of the environmental legislation that the EU has produced has been issued in the form of directives (Kelemen, 2004: 38). These directives differ from EU regulations in that they

lay out specific objectives and timelines that Member States are required to meet. Once a directive has been passed, Member States are given a certain period of time to codify domestic laws that address the objectives of the directive. Regulations, on the other hand, do not need to be transposed into domestic legislation because they constitute legally binding legislation that applies directly to Member States (Kelemen, 2004: 38). Because they allow Member States a fair amount of discretion with respect to solutions and implementation, directives are said to be much more flexible than straightforward regulations.

Some scholars have questioned the supposed flexibility of EU environmental directives, suggesting instead that most directives are so detailed in specifying methods for achieving stated goals that they may as well be called direct regulations (Prechal, 1995; Rehbinder and Stewart, 1985). Some Member States have resisted the specificity of such directives on the grounds that they violate existing principles governing the EU. Article 189(3) of the Treaty of Rome, for example, mandates that the Community only fix the desired results of its directives and not the methods employed by Member States. Meanwhile, the principle of subsidiarity that was made official by the Maastricht Treaty requires that the EU not take an action unless it is more effective than action taken at national, regional, or local level. This resistance has not been acknowledged by any real attempts to scale back the detailed nature of EU directives.

While the EU has produced a significant body of progressive environmental policy in recent decades, instances of implementation deficiencies have been rampant. As the executive arm of the EU, the European Commission is responsible for ensuring the implementation of EU legislation. However, the Commission does not implement

legislation directly. Rather, the EU is responsible for producing legislation, and Member States are directly responsible for its implementation². This posed a particularly serious problem for the Commission in the early days of EU environmental policy because it simply lacked the capacity to monitor whether or not Member States were actually implementing laws once they were transposed into national law. Furthermore, when they were able to identify implementation failures, they lacked the capacity to litigate the volume of infringements they faced (Kelemen, 2004: 33-34). The Commission's Fourth EAP addressed these deficiencies by declaring its intent to increase its reliance on Article 226 of the Treaty Establishing the European Community. This provision allows for the Commission to bring cases of infringement of EU law before the European Court of Justice (ECJ). To address its lack of monitoring capacity, the Commission began to rely on the complaints procedure. This procedure allowed individuals and organizations from within Member States to submit complaints about implementation failures directly to the Commission. When this proved inadequate, the Commission moved to create the European Environment Agency (EEA) to address issues of monitoring. The agency was created in 1989 and serves to coordinate the gathering of implementation information among member states. While implementation among EU Member States was initially poor with respect to environmental legislation, there have been significant improvements in the last two decades due to the expansion of the Commission's responsibilities and the willingness of the ECJ to take an active role in European integration.

The environmental policy development and implementation process in the EU is an example of a complicated federal regulatory system. Kelemen (2004) argues that the

² This is true of EU directives and regulation. The only difference is that directives are meant to allow flexibility in implementation whereas regulation defines implementation procedures.

relatively high level of fragmentation among interests at the EU level leads to a relative inflexibility in implementation requirements placed on Member States. This theory seems to explain why EU directives and regulations each require very specific implementation practices. Majone (1995: 11-12) suggests that specific implementation requirements stem from the suspicions that Member States hold regarding the likelihood that their counterparts will fully implement agreed-upon policy. Essentially, he suggests that a lack of trust between EU states and their awareness of their own general lack of understanding of their fellow members' political structure compels them to prefer very specific requirements for the implementation of policy. This is especially true of environmental and other types of policy that affect the functioning of the European common market. So, while there is often widespread appreciation for clarity and specificity in EU regulation, there is also just as often dissent regarding the modes and extent of that regulation. The following section seeks to address the various motives that inform the ways in which EU Member States attempt to influence policy at the EU level.

Member State Motives and Actions at the EU Level

EU Member States have an inherent and significant interest in influencing environmental policy as it is adopted at the EU level. For those states with either especially high or especially low environmental standards, there is even more at stake. There are many influences that determine the actions of Member States in the developmental stages of EU environmental policy. This section aims to identify the most

important of those influences and uncover the reasons that certain states bring very different perspectives to the environmental policy negotiating table.

One of the most commonly suggested theories for explaining Member State actions in the field of environmental policy is that states have an interest in ‘exporting’ their regulatory standards to the rest of the EU (Jordan, 2005: 6). The reasons for this are simple. Essentially, states have invested a certain amount in their existing regulatory schemes and it would cost a great deal less in the short term for them to maintain or mildly modify those schemes than to have to adopt a new set of regulations as prescribed by the EU. This principle holds especially true for environmental leaders like Germany, Denmark, and the Netherlands. This theory also resonates with the institutionalist notion of political ‘path dependence’ (Jordan, et al, 2005: 322). Because the youth of the EU has essentially thus far prevented the establishment of any sort of political path to depend upon, this theory suggests that the Member States are likely to encourage the adoption of policies that fit their own existing organizational patterns.

Wurzel (2002) contends that EU environmental policy is primarily a product of the attempts of environmental policy leaders to push the adoption of policies that closely mirror their own domestic regulations while compromising to ensure that potential veto powers do not block their attempts. This was perhaps especially true before the adoption of the qualified majority voting system that was established by the SEA, but the principle remains relevant today. The underlying point is that Member States, especially those with relatively high levels of investment in their own environmental regulation regimes, fight to export their regulatory styles to the rest of the EU.

Another motivating factor for Member States is related to the potential domestic economic impact of the regulatory standards chosen at the EU level. It stands to reason that countries whose industries can expect to be seriously affected by EU environmental policy decisions will express a vested interest in the outcome of those decisions in favor of their domestic economies. Whether or not these economic motivations exceed the above-mentioned domestic regulatory motivations remains unclear. A glimpse into the EU battle over automobile emissions reduction in the 1980s highlights the most important factors that motivate the negotiating stances of Member State governments.

Beginning in the late 1970s, concerns over harmful automobile emissions swept across much of Europe. Manifestations of harm from these emissions took many forms. In the U.K., for example, poor urban air quality indicated a need for some sort of regulation on vehicle emissions. In Germany, on the other hand, vast areas of dying forests (a condition called *Waldsterben*) raised the alarm and major public concern demanded that action be taken to stop the loss of vegetation due to suffering air quality.³ Because vehicle emissions standards inevitably affect the competitiveness of European automobile industries, it was immediately clear that a solution would have to be devised at the supranational level. The differences in the approaches of the U.K. and German governments toward establishing EU-level vehicle emissions standards highlight those domestic factors which influence the ways that Member States attempt to regulate the environment at the EU level.

The U.K. representation consistently supported the required use of what they deemed at the time to be the best practicable means of emissions reduction. This

³ Interestingly, during much of the 1980s, a higher percentage of forested areas in Britain were damaged by NO_x emissions than in Germany. The issue likely attracted little attention in Britain because of its relatively small area of forested land (Wurzel, 2002: 122).

technology, the lean-burn engine, basically reduces emissions as well as fuel consumption by utilizing a relatively high air: fuel ratio. The British government found this technology particularly attractive for a few key reasons. First, the adoption of the lean-burn engine was praised by Ford of Europe (1983) as a technological advance based on design principles that didn't require the installation of additional equipment. It was also advertised as a cost-efficient means of reducing emissions. All of this fit the traditional British regulatory style quite nicely (Wurzel, 2002: 124). A second benefit of the lean-burn engine was that its broad adoption across the EU would mean significant profits for struggling British automobile manufacturers. Hoping to take advantage of the environmental swing in the EU in the early 1980s, both Ford-UK and Rover-British Leyland had invested heavily in the lean-burn engine. They lobbied the U.K. government and the European Commission heavily, hoping to turn their investment into a self-fulfilling prophecy. The British government fully supported the lean-burn engine as the best option for EU adoption. However, they encountered stiff competition from primarily Northern European proponents of the 3-way catalytic converter. (Wurzel, 2002: 124-134)

Leading up to the European debate on vehicle emissions reduction, the German environmental regulatory tradition was one of direct regulation based on the employment of best available technology (BAT). In 1983, the influential German Federal Environmental Agency and the General German Automobile Association (ADAC) determined through a series of tests that the 3-way catalytic converter was the BAT to address vehicle emissions reduction. This conclusion, coupled with the urgency caused by *Waldsterben*, motivated the German government to push for the adoption of the catalytic converter as the technological response to emissions reduction at the EU level.

As in the British example, economic interests also appear to have played a part in the German decision to push for the catalytic converter. In keeping with what would become a distinctly German tradition, the German government likely supported the catalytic converter in part because of the positive effect it would have on its domestic technology sector. A German company, Bosch, had a virtual monopoly on electronic fuel-injection devices and the lambda sensor in Continental Europe in the early 1980s (Wurzel, 2002: 130). These devices were critical to the functioning of the catalytic converter, and it was widely recognized that the adoption of the catalytic converter would translate to major profits for the German company. Furthermore, German automobile producers depended much more heavily on exports to the American market than did their European counterparts (Wurzel, 2002: 130-131) At the time, the U.S. had already adopted the catalytic converter standard, so German automakers stood to gain more from the European adoption of the technology than did the rest of the EU Member States.

In the end, it was determined that the lean-burn engine was not particularly successful at reliably achieving desired emissions reductions. The 3-way catalytic converter became the required means of reducing vehicle emissions in the EU. The fight that led to this outcome has demonstrated how a few key domestic elements can inform Member States' positions on issues of EU environmental regulation. Of primary importance are the existing regulatory traditions of those states as well as the domestic economic interests at stake. The theories of path dependence and the 'export' of domestic regulatory structures and standards that have been visited here will emerge again in future chapters to help explain domestic policy decisions among member states. This section has provided an example of how high the stakes are for multiple actors at the level of EU

environmental policy. It has also shown that individual Member States must not only influence EU environmental policy, but they must also be constantly aware of the impact that the EU has and will have on their domestic environmental policy.

The ‘Modernization’ of EU Environmental Policy

As the necessity of some form of legislative environmental protection became widely acknowledged in most of the developed world in the decades following the 1960s, most European governments chose to implement direct regulatory (DR) schemes to pursue that goal. Under general forms of such regulation, governments mandate uniform emissions standards across pollution sources whilst requiring particular pollution control technologies. (Goodstein, 2008: 305) Because of the difficulty involved in acquiring accurate information from a multitude of pollution sources, DR is often oversimplified by the government departments that are responsible for its creation. This oversimplification is what leads economists to believe that such regulations impose unnecessarily high costs to polluting firms. Under DR, all sources of a certain pollutant are essentially required to reduce emissions to a given level, regardless of the firms’ costs of achieving that reduction. Economists identify this as a problem because firms with high reduction costs have to reduce the same amount as those with low reduction costs. It is much less costly overall, however, to achieve the same reduction by requiring or otherwise encouraging the low-cost firms to reduce more than their high-cost counterparts.

Regulators are generally well aware of these principles and would likely address DR's inefficiencies if they could. The complications inherent in gathering the mass of accurate information from firms that would be necessary to devise cost-effective DR are simply too many for regulators. Thus, these regulatory frameworks are doomed to suffer inefficiencies due to the unavailability of perfect information.

In contrast to early European environmental regulation which focused primarily on environmental benefits and paid relatively little attention to cost considerations, regulators in European countries are increasingly searching for cost-effective ways to achieve environmental goals. The additional weight being lent to cost considerations constitutes a modernization of environmental policy thinking. Market-based regulation has been suggested as a cost-effective alternative to the traditional direct regulatory structures that have been used most widely to form environmental policy (Carter, 2007: 323). Pollution taxes and marketable permit systems (also called cap-and-trade or tradable permits systems) are the two most commonly discussed forms of regulation based on MBIs. The justification for these systems is based primarily on arguments of cost-effectiveness. By creating market incentives that promote pollution reduction without mandating uniform reduction levels across industries, eco-taxes and tradable permit systems theoretically promote more cost-effective environmental improvements than direct regulation in both the short and long-term.

The economic principles behind the theory surrounding incentive-based regulation are nearly universally accepted. Proponents of incentive-based instruments argue that they represent the most cost-effective means of protecting the environment. By allowing firms to pursue different levels of pollution reduction while placing market

incentives on that reduction, cost-effective solutions are encouraged. Under MBIs, firms with low marginal costs of pollution reduction will pursue more reduction than their high-marginal cost counterparts. In theory, they will reduce until their marginal costs equal those of the high-marginal cost firms. In economic language, this result is referred to as an equimarginal outcome. Because the marginal cost of reduction for low-cost firms is initially below that of high-cost firms, they will pursue more overall reduction. Finally, if the regulations have been set at appropriate levels, the marginal cost of reduction for each firm will equalize at a certain point. In the case of a tax, for example, this equilibrium will be reached when marginal costs equal the per-unit value of the tax.

By placing incentives on pollution reduction and allowing firms to choose how much they want to pollute, these instruments theoretically achieve much more environmental benefit per dollar than direct regulations. These short-run cost savings are valuable, but the ultimate worth of the MBI scheme may be the potential for cost savings from long-run technological improvements in pollution control and waste reduction. By effectively putting a price on each unit of pollution, MBI regulations continuously encourage firms to seek ways to reduce their environmental impact. This logically drives long-run technological innovation in the field of pollution reduction. In contrast, DR usually requires firms to install what regulators deem to be the BAT for the situation. While this decreases the costs of monitoring and enforcement for the regulators, it does little to drive the pursuit of technological innovation. Additionally, DR is often biased toward stricter regulations on new pollution sources and less strict or zero regulation on existing (or “old”) sources. Firms, which recognize the less stringent regulations on old

sources, focus on making old technologies last longer rather than developing new, cleaner technologies. (Goodstein, 2008: 313)

The validity of the economic theory behind MBIs is rarely contested. However, this does not mean that it is without its critics for other reasons. Critics of MBIs often cite three main flaws. First, the body of theory which supports such instruments appears to lack acknowledgement of the realistic implementation challenges that they face. For instance, because it is difficult to determine the damage caused by pollution, it is also difficult to determine the optimum rate at which to tax polluters (Barnes and Barnes, 1999: 143). If the tax rate were set too high or too low, it would be significantly less effective than it would appear in theoretical models. According to some critics, the optimal tax rate should be “the level at which the costs to the company of cleaning up the pollution equal the cost of environmental damage caused by that pollution.” (Beder, 1996: 53-4) This notion falls broadly under the umbrella of the polluter pays principle. As mentioned above, however, from an economics perspective, the optimal tax rate has more to do with firms’ marginal costs of reduction. In reality, policies which contain MBIs are likely to encounter implementation problems at the same scale as those that have hindered the implementation of DR measures. While direct measures primarily suffer from information deficiencies, MBIs encounter major difficulties not only with imperfect information, but also in monitoring and enforcement. (Goodstein, 2008: 315) Because they do not require the installation of prescribed pollution abatement technologies, MBI regulators are burdened with the responsibility of monitoring pollution more closely. Needless to say, this is not an easy task. Thus, critics argue that the case for regulation based on MBIs is oversimplified and that it relies heavily on unrealistic

assumptions about the degree to which theory will match reality. This topic remains up for debate, however, as studies have suggested that effective DR could require a great deal more monitoring than critics of MBIs usually indicate.

Additionally, tradable permit systems face certain specific economic challenges. For example, the existence of thin markets in such a system would severely inhibit its functionality. When a permit system has too few buyers and sellers, there is little incentive to trade on that market because the costs of participating in the market outweigh the potential benefits of the making a deal with one of just a few other participants. In a similar vein, tradable permit schemes are vulnerable to the existence of a market power. When a market power exists in a tradable permit system, inefficiencies can arise from the self-interested actions of that particular firm or group of firms. Especially in thin markets where emitters are directly competitive, high emitting firms of a particular pollutant can use their disproportionately high share of permits to manipulate permit prices and raise costs for their competitors. This exclusionary price manipulation is a concern because, although it actually has the potential to reduce overall inefficiencies that tend to emerge within permit market that contain a market power, it can just as easily lead to much greater inefficiencies in permit trading systems. (Misiolek and Elder, 1989) These obstacles certainly impose limits to the broad applicability of MBIs. They should not, however, be cited as justification to avoid all such regulation.

The second glaring weakness in the argument for the use of MBIs exists within the realm of politics. Specifically, implementing price-based or rights-based mechanisms is not entirely politically acceptable. Carter (2007: 344) notes that national carbon and energy taxes have been levied at too low a level to have any serious impact because

setting higher levels would be politically risky. This may be the single greatest threat to the viability of MBIs in the environmental policy field because it relies on the attitudes of the public and industry. It should be noted, however, that DR faces many of the same political challenges. This paper supposes that DR will be more politically acceptable in European states with populations that are relatively aware of and concerned about environmental issues and especially in states with strong Green party representation. Conversely, MBIs are expected to be more politically acceptable where the salience of environmental issues is relatively low and where Greens have little political clout.

The final serious vulnerability is the ethical ambiguity inherent in openly treating the environment as an economic commodity. Thus, environmentalists argue, the environment is given a price and firms and individuals are allowed to pay to carry on polluting. (Carter, 2007: 339) In a sense, the use of MBIs in regulation legalizes pollution. To potentially begin to remove the social stigma associated with pollution could be a dangerous step. It is also very politically unpopular in many areas to treat the environment as an economic commodity.

The modernization of EU environmental policy is particularly relevant to this paper's goals because the EU has, in recent years, thrown its support behind the use of MBIs. Encouraged by the publication of the Brundtland Report in 1987 and its focus on sustainable development and ecological modernization, many European countries have begun to strive to harmonize the economic and environmental goals. The course of EU environmental policy was altered by the publication of the Molitor Report in 1995. The report, which was prepared for the European Commission by a group of independent experts on legislative and administrative simplification, explicitly endorsed the use of

MBIs, noting that “where a market-based approach is feasible, any departures from it should be justified” (COM(95) 288, 1995). Reports such as these have attempted to make MBIs the norm in European environmental regulation. Though it has taken some time in many cases, the EU has begun to adopt a greater number of MBIs. The EU Emissions Trading Scheme and the Energy Taxation Directive, each passed in the early 2000s, represent the trend of adopting EU-wide MBIs. The former is a tradable permit system initiated in 2005 which limits greenhouse gas emissions and establishes a market for their trade. The latter corrects for market distortions by expanding taxation requirements on energy sources and electricity. This somewhat dramatic shift from DR-based measures to advocacy of market-based regulation must influence the actions of Member States at the EU and domestic levels of environmental policymaking. This effect will be acknowledged and accounted for in future chapters on German and British environmental policy.

Conclusions

This chapter has sought to incorporate the two-way effects that the EU has on the environmental policies of its Member States into the greater understanding of how and why those states choose their national environmental policy. First, through an examination of the changes in the EU policy process over the last half-century, it has been acknowledged that the opening of the process caused by the SEA and the Maastricht Treaty has allowed for increased participation in the creation and passage of EU environmental policy. This increase in access as well as institutional transparency has led to an increase in the influence of Member State populations and non-corporate interests

that together have helped to cause continual growth in the body of EU environmental policy, especially since the mid-1980s.

The study of German and British actions during the battle over vehicle emissions reductions stood to highlight the most important elements that influence national agendas at EU negotiations. High-regulating states have a concrete interest in seeing their regulatory schemes exported to the rest of the EU so that they need not forfeit their significant investments in regulatory structures and reinvest in new ones. Domestic economic interests can also play a major role in directing national governments to push for a certain type of regulation or technology over alternatives. Finally, low-regulatory states have an immediate interest in preventing the adoption of strict regulations at the EU level.

The final section of this chapter highlighted the addition of cost-effectiveness considerations in modern considerations of environmental policy decisions. The benefits as well as the potential drawbacks of MBIs were explored, and the recently adjusted stance of the EU in favor of MBIs was highlighted. The inclusion of each of these components has been intended to provide context for the analysis of the decisions of national actors that will be explored in the next two chapters. For reasons that should be obvious by now, national environmental policies among Member States can no longer be viewed separately from those of the EU.

Chapter 3: The Case of Germany

For decades, the Federal Republic of Germany has been considered a leader state in the field of environmental policy. Its body of environmental regulations is both thorough and fairly distinct from those of its peers. An examination of these policies and their development, therefore, can be helpful in determining the factors that most significantly influence environmental policy decisions. This chapter seeks to test the hypotheses established in Chapter One against the record and likely prospects of German environmental policy.

Germany constitutes an important and useful case for this study for a few key reasons. First, it has a relatively high level of environmental regulation about which there has been a significant amount of scholarly analysis. Second, the existence of a durable and successful Green Party, *Die Grünen*, makes for a compelling study of the effects of such parties on domestic environmental policy. Third, the German government's consistent and explicit support of the ecological technology (eco-tech) industry lends itself to analysis regarding the technological implications of direct and EI regulations. The German case addresses every hypothesis proposed by this study in a meaningful way. Additionally, the hypotheses laid out in Chapter One predict concrete findings regarding German environmental policy.

The beginning of this chapter contains a broad overview of German environmental policy. This includes descriptions of its institutional structure as well as the relevant body of policy. Special attention will be given to the balance between DR

and EI policies. Once the status of German environmental policy has been established, it will be tested against the various hypotheses that have been put forth in this study. Discussion of the relationship between these hypotheses and the results of the German case will make up the remainder of the chapter.

The existence of an electorally successful Green Party in Germany should correspond to a shift in overall environmental regulatory preference toward DR. *Die Grünen* have been a significant player in German politics at all levels since the early 1980s. This chapter will address the policy implications of the success of the German Greens. It will also acknowledge the institutional and social explanations for that success.

The German government's support of the eco-tech industry should correspond to an opposite shift toward the use of EI in environmental policy. One of the key advantages of the use of EI is that it places constant incentives on the development of environmentally beneficial technology. The German government, which has supported eco-tech development through significant subsidies in the past, should realize the potential for EI to accomplish this goal without such heavy subsidization. The importance of the eco-tech sector to the German economy suggests that German environmental policy will favor EI.

The dimensions of EU environmental policy will also certainly impact German environmental policy outcomes. Though Germany has been relatively successful at exporting components of its environmental regulatory body to the EU in the past, the surge of rhetoric in favor of EI and its cost-efficiency gains seems to have trumped German influence at more recent EU negotiations. The recent shift toward the use of EI in EU policy suggests that Germany will likely be forced to follow suit to an extent.

Thus, German policy is expected to show an increase in the use of EI that follows a parallel increase at the EU level.

Social influences on environmental policy will also be considered in this chapter. Specifically, the relative importance of environmental issues to the German populace and the relative visibility of the effects of environmental problems will be addressed as they pertain to preferred regulatory styles. The relatively high level of importance ascribed to environmental issues by the German populace should cause regulators to prefer DR. Additionally, environmental problems with immediate and visible effects should be more likely to be addressed using DR, while problems with distant, less visible effects are more likely to be addressed using EI.

German Environmental Policy

Like many European countries, Germany first began making environmental policy in the late 1960s. Demand for basic regulations on air and water quality, for example, arose in the aftermath of the rapid industrial growth that accompanied Germany's post-WWII reconstruction. Environmental competences were originally the responsibility of the Interior Ministry (BMI), and the policy tool of choice at the time was notably DR. One particularly German philosophy that influences the government's role in environmental regulation is the broad acceptance of the notion of the 'social market economy'. Developed in the 1950s, 'social market economics' recognizes the importance of government intervention in an otherwise free market economy for the purposes of promoting the general social welfare. This economic philosophy, which is widely

accepted by all major political parties in Germany (Lotspeich, 1998: 90), is compatible with the German tendency to regulate the environment directly (Wurzel, et al, 2003: 119-120). Because the government's role in setting the framework for capitalism is well established, industry has relatively little power to influence the types of instruments used to regulate environmental problems. For this reason, the cost-efficiency of environmental regulations in Germany has had relatively less impact on policy selection than in other European states where the voice of industry rings louder in the political realm. It is not surprising, then, that Germany has developed into a high-regulatory state over the last four decades.

The structure of German political institutions is actually quite similar to that of the EU in a number of ways. Germany is a federal republic composed of sixteen states, or *Länder*. The national parliament (*Bundestag*) and a chamber consisting of *Länder* representatives (*Bundesrat*) collaborate to produce national legislation. Influence at the national level is characterized by a high level of fragmentation. This is especially true because members of the *Bundesrat* represent the interests of their constituent *Länder* and are not expected to represent national interests. Most environmental policy is made at the national level, though water management and nature conservation remain the responsibilities of the individual *Länder* (Wurzel, et al, 2003: 118). Responsibility for implementation also falls to the *Länder*. Kelemen (2004) suggest that the fragmentation at the national policy-making level and the separation of legislation and implementation responsibilities has led to the adoption of a body of relatively inflexible environmental regulation in Germany.

Environmental policy in Germany has been characterized for the majority of its existence by a commitment to DR based on the principle of best available technology (BAT). This type of regulation, as stated in previous chapters, usually involves stringent emissions limits and prescribes and mandates the use of the best available technology to achieve required reductions. Scientific advice on environmental problems as well as technology has been provided by the Federal Environment Agency (UBA) since its inception in 1974. Additional actors at the national level include the Environmental Ministry (BMU), which took over environmental competences in 1986, and the Environmental Expert Council (SRU), which has been providing policy advice since the early 1970s.

For the first few decades of its existence, German environmental policy relied almost entirely on DR. Until recently, attempts to incorporate market incentives had almost always constituted additional measures laid upon existing DR. It is worth noting, however, that the measure of flexibility that these additional instruments allowed led to estimated reductions of one third of the total cost of regulatory compliance (Lotspeich, 1998: 91). The following table shows the breakdown of German environmental policy instruments as of 2003.

Type of policy instrument	Extent of usage
Eco-taxes	First used in mid-1970s. Moderate use until the introduction of the ecological tax reform in 1999
Tradable permits	Not (yet) used on the national level
Eco-labels	Very high but declining moderately: 3,500 –4,000 in the late 1990s
Voluntary agreements	Very high. About 130 by 2001.

Traditional regulations

Very high. About 800 environmental laws, 2,800 ordinances and 4,700 technical instructions. The highest estimates state up to 35,000 technical instructions

Source: Wurzel, et al, 2003: 117

Traditional regulations clearly make up the vast majority of German environmental policy measures. The role of voluntary agreements (VAs) is also highlighted by the above table. These agreements are not legally binding, though scholars suggest that their adoption is usually motivated by industry fears over formal regulation (Wurzel, et al, 2003: 130). In this sense, they constitute a NEPI, but can not be considered EI-based regulation. In fact, they more closely resemble DR. Eco-labels are also a widely used NEPI in Germany. The well-known ‘Blue Angel’ labeling scheme was adopted in 1978 and was the first such scheme to gain traction. It has attracted thousands of participating firms over the years. It does not constitute an EI because involvement is voluntary and effectiveness depends upon consumer recognition of the label (Wurzel, et al, 2003: 131). The overall picture of German environmental policy is one dominated by DR. This is especially true of older policies. The last fifteen years, however, have seen the infiltration of EI measures into the discourse of German environmental policy-making. The adoption of the ecological tax reform in 1999 provides an example of this trend.

One of the top components of the policy agenda of the Red-Green alliance between Social Democrats (SPD) and Greens when they took power in 1998 elections was the initiation of an ecological tax reform. The controversial product was a five-stage plan to increase existing taxes on petroleum product consumption and to introduce new

taxes on final electricity consumption (Kolhaas, 2000:4). True to environmental economic theory, the rationale for the reform was to both achieve environmental benefit cost-effectively and to foster technological innovation for environmentally friendly products and production processes (Kolhaas, 2000: 4). Like most eco-taxes levied in Europe today, the German eco-tax reform is designed as a revenue-neutral tax. The revenue added by the tax on energy consumption is meant to offset reductions in employment taxes (i.e. social security). This tax reform program is emblematic of Germany's recent push toward the principles of ecological modernization. Relatively recent rhetoric by multiple government ministries has promoted the notion that environmental and economic interests should be pursued in tandem. In keeping with this principle, German policymakers have been more inclined to adopt EI regulations. The reasons for this shift are many and identifying and understanding them is a critical part of understanding the lessons that the German example has to offer.

The German Greens and Direct Regulation

This paper has hypothesized that the existence of a stable Green Party that has enjoyed consistent electoral representation is likely to lead those governments to generally prefer DR. The rationale for this hypothesis is fairly straightforward. Presumably, successful Green parties exist where populations regard the environment as an important policy issue. It is logical to say that these same populations are relatively more aware of environmental problems than populations which do not see the environment as an important policy issue. Thus, they are more likely to identify and act upon issues of environmental concern. Where Green parties have attained electoral

representation, these populations have a political outlet through which they may express discontent with environmental regulation. This is especially true because Green parties in Europe usually emphasize the importance of democracy and grassroots involvement in their policy agendas. For these reasons, in states where Green parties achieve consistent representation, governments are under greater pressure to appear to be tough on polluting industry and sensitive to environmental issues. Where this pressure has been highest, governments have most often chosen to implement DR measures to address environmental problems. This tendency may be explained by the simple fact that DR had been the default instrument to begin with. The German example allows for a further exploration of this question.

The German Greens have been an established and relatively successful party at the national level since the early 1980s. They first gained national attention during the parliamentary election of 1980, in which they garnered 1.5 percent of votes. While they did not gain any parliamentary seats as a result of that showing, *Die Grünen* successfully broke onto the national political scene that year. In subsequent elections, the German greens have consistently won between five and eleven percent of the vote in national parliamentary elections.

Die Grünen have been able to establish themselves as a strong third or fourth party largely because of Germany's institutional and electoral structure. Germany's electoral system is classified as modified proportional representation (PR). Under this system, parliamentary seats are awarded in proportion to the percentage of votes that a given party receives. As a result, small parties like *Die Grünen* stand a chance to gain representation. Their chances are further improved by electoral finance policy which

stipulates that any party that receives at least 0.5 percent of the vote in an election is eligible to have its campaign expenses refunded using public funds (Frankland, 1995: 26). These tenets of national electoral policy in Germany allow for relatively small parties to gain representation at the national level. Germany's federal structure also encourages the development and success of small parties. When parties are unable to attain national representation, they have opportunities to gain representation and exposure at the *Länder* level. It is no surprise, then, that Germany boasts the world's most notable Green party. The institutions and electoral policy are designed such that such parties have the opportunity to participate in national politics.

There is more to the success of the German Greens than just institutional and electoral circumstances. Germany also boasts a particularly high level of environmental awareness. Between 1986 and 1999, environmental awareness in Germany regularly exceeded the EU average. It is also worth noting at this point that German environmental awareness also exceeded the average in Britain. The table below demonstrates these points.

	1986	1988	1992	1995	1999
EU average	72	74	85	82	69
U.K.	62	67	82	80	66
Germany	80	84	89	85	70
(Former) West Germany	80	84	88	84	70
(Former) East Germany	n/a	n/a	95	88	69

Source: Wurzel, 2002: 15.

These findings support this study's supposition that Green party representation is likely linked to high overall levels of environmental awareness. High levels of public

environmental awareness put pressure on governments to be seen as decisive actors with respect to environmental issues. Because DR is a more well-known and publicly visible policy tool than often complex EI, governments often use DR to respond to such public pressure (Wurzel, et al, 2003: 123).

The electoral success of the German Greens has signaled to the German government that environmental issues are important to a significant portion of the population. This constituency expresses constant demands that the government act to regulate environmentally harmful activities. Because this constituency and the German Greens emerged in the 1980s, the regulatory policy of choice was already DR. So, while the existence of a strong Green party in Germany corresponds to extensive use of DR, it is difficult to say that their existence caused this preference. Rather, it is more likely that their existence increased the overall level of regulation and thus reinforced the use of DR as the preferred policy instrument of Germany’s environmental policymakers. In this sense, Green parties may have a greater effect on the volume of environmental regulation than they do on the selected type. The table below tracks the electoral success of the German Greens alongside the major environmental regulatory policies that have been passed since 1970.

Share of Green Party Vote in National Parliamentary Elections	Year	Significant Environmental Regulations Passed
	1972	Waste Disposal Act
	1974	Federal Air Quality Protection Act
	1976	Waste Water Charges Act

1.50%	1980	
5.60%	1983	GFAVO (Order on large combustion plants)
	1986	Waste Avoidance Act
8.30%	1987	
5%	1990	
	1991	Environmental Impact Assessment Act, Environmental Liability Act
7.30%	1994	Waste Management Act
6.70%	1998	
	1999	Ecological Tax Reform

The above table appears to say very little about the relationship between green parties and environmental policy selection. However, a closer examination of the circumstances surrounding this legislation's creation reveals that the German Greens have had a significant influence on policy selection. Lees (2007: 351) notes that each of the first eight major federal environmental regulatory policies passed in Germany were DR measures. This is somewhat debatable, however, as the 1976 Waste Water Charge essentially constitutes an early eco-tax. Nevertheless, the trend toward DR is evident beginning in the early 1970s. While this obviously precedes the national-level success of the German Greens, it does not eliminate the possibility that green parties in Germany have influenced policy selection.

The three pieces of legislation passed before 1980 were 'a false dawn in terms of [German] environmental policy.' (Lees, 2007: 323) The term of Chancellor Schmidt and the economic recession of the mid-1970s proved to be a period of stagnation for German

environmental policy. However, during this time, public awareness and interest in the environment climbed rapidly, and proto-Green parties began to emerge at the sub-national level (Lees, 2007: 323). By 1980, public support was great enough to drive the emergence of a national Green party. An additional effect of this change in public attitude was that every major party had to address the environment in order to defend against electoral encroachment by the new Green party. One such party, the SDP, essentially adopted the environmental platform of the Greens for this very reason (Lees, 2007: 326). These changes wrought by the emergence of a significant Green challenger at the national election level led directly to the adoption of the GFAVO and the other DR measures of the 1980s and 1990s. It is in this manner that the Green party influenced the volume of environmental regulation in Germany.

The German Greens joined the SDP after the 1998 national elections to form a ruling coalition known as the Red-Green Alliance. Interestingly, this coalition's policy agenda included the introduction of an ecological tax reform. The reform passed in 1999. This development is particularly interesting because it essentially refutes the hypothesis that Green parties promote DR. In this case, the Green party was simply promoting greater environmental regulations. It is more likely that successful Green parties do more to promote the overall volume and reach of environmental policy than they do to influence policy instrument selection.

This theory is supported by more recent stances that the German Greens have taken on policy selection. As the EU has moved to more regularly incorporate EI in its environmental policy, the German Greens have also adjusted their rhetoric to match the common discourse. Recent publications by the Green coalition of *Bündnis90/Die Grünen*

speak of the expansion of the social market economy to an ecological and social market economy. As European governments continue to promote and accept the use of EI, the German Greens seem to be doing just the same thing. It appears as though the role of Green parties in influencing policy instrument selection is less important than the role played by the EU.

The EU and its Influence on German Environmental Policy

The relationship between EU environmental policies and those of its member states was introduced in the previous chapter. Germany was initially a leader in pushing for strong environmental policy at the EU level. It essentially attempted to export its environmental policy to other member states in order to ensure that it would not have to invest in new regulatory structures. As EU environmental policy continues to develop, however, it is becoming increasingly clear that it has begun to follow its own course.

As EU environmental policy has become increasingly independent of the influences of a few key leader states, all member states are becoming subject to policy decisions made at the EU level which may not represent their traditional regulatory tendencies. Germany is no exception to this rule, and the influence of EU environmental policy is expected to show up in recent German environmental policy stances. The ecological tax reform and numerous publications by the BMU demonstrate Germany's recent commitment to increasing the use of EI in its environmental policy. Whether German policy is reacting to or anticipating EU policy is a critical component of the argument regarding the effect the EU has on German environmental policy.

Evidence regarding the German stance toward EI regulation techniques suggests that Germany has begun to incorporate EI into its regulatory body in anticipation of a parallel shift at the EU level. There are three main reasons for Germany to pursue this course. The first relates to the way that traditional German environmental policy was fitting under EU legislation. The second has to do with the momentum that EI has been gaining in Europe over the last few decades. Finally, the third reason is based on the domestic economic advantages that can be obtained as a result of the use of EI in EU environmental policy.

Institutionalist theories of path dependence predict that states will not deviate from political norms unless there is a significant policy failure that encourages them to do so. In the case of German environmental policy, such policy failures with respect to compliance with EU environmental legislation might partially explain Germany's decision to adopt a greater proportion of EI regulations. The policy failures here are a result of the surprising incompatibility between the strictness of EU environmental legislation and the high levels of discretion granted to the German *Länder* in implementing environmental law. Kelemen (2004) notes that the German tendency to make environmental policy that is often informal and loosely implemented clashes with the strict, procedural regulations and directives produced at the EU level. These clashes have periodically resulted in appearances by the German national government at the ECJ. As a result of this incompatibility, the German national government has been faced with the choice to either crack down on implementation practices in the various *Länder* or rethink its stance on EU environmental policy. Though relatively small, this policy failure

can be seen as a motivating factor and an opportunity that encouraged Germany to reconsider which policies it promoted at the EU level.

The second reason for Germany to shift its stance on EU environmental policy instruments is that the cost-efficiency gains that are attributable to EI measures have been increasingly supported by examples from across the world, including Europe. It makes more sense for an EU member state to adjust its environmental policy in anticipation of EU regulation than for it to have to react once policy has been created. This way, the member state can promote the adoption of its regulatory model at EU negotiations and it can achieve the anticipated change at its own pace. Germany's experience as an environmental policy leader state put it in a position to recognize these potential benefits. Thus, anticipatory changes to its domestic environmental policy made sense. One early example is Germany's 1983 Air Pollution Control Law which served as the model for the European Directive on Large Combustion Plants (Lees, 2007: 325). Interestingly, another example involved Germany pushing for a strong directive on vehicle emissions that was eventually vetoed by the U.K. The previously explored battle between proponents of the catalytic converter and those of the lean-burn engine is yet a third in example.

The final reason for adopting EI measures is that a similar adoption at the EU level would provide a vast and constant market for German ecotech. By adopting such policies and demonstrating their value, Germany could form the basis for arguing that such policies should be adopted at the EU level. If the markets of the entire EU were suddenly subject to EI regulation, there would be a vast and constant market for ecotech. Germany is of course a world leader in the development of ecotech and would thus stand to gain tremendously from this development.

It is clear that the influence of the EU on German environmental policy has been an increase in the adoption of EI measures. It is also evident that this influence has been manifest through anticipatory rather than reactive actions of the German government. Perhaps the most important reason for this action is the potential for the development of a large and constant market for German ecotech products in the rest of the EU. This reality is emblematic of the greater role of the ecotech industry in influencing German environmental policy preferences.

Germany's Ecotech Industry

The German government has placed great emphasis on the development of ecotech in Germany. With the market volume of six key lead markets including energy efficiency and environmentally friendly electricity generation exceeding EUR 1,400, ecotech has established itself as a formidable international market. Within these markets, German firms have already carved out global market shares of between six and thirty percent. Furthermore, ecotech made up eight percent of Germany's GDP in 2007 and is expected to make up fourteen percent by 2020 (BMU, 2009a). Clearly, Germany has domestic economic interests that depend on international demand for environmentally beneficial technologies. The Environment Ministry has published recent reports acknowledging the value of EI regulation in developing a reliable market for such technologies (BMU, 2009a; BMU, 2009b; BMU, 2008). Awareness of the technological innovation advantages of EI over DR will lead countries with Germany and other countries with domestic economic interests in ecotech to pursue EI policies. Additionally,

in the EU setting, countries with such interests will seek to export EI to other member states.

An environmental technology atlas published by the BMU in 2009 acknowledges the value of far-reaching regulation in promoting the domestic ecotech industry. It states that ‘the success of German green tech companies has its roots in clear-cut environmental policies.’ It also claims that ‘environmental policy motivates companies by using a mixture of instruments... [including] market instruments such as taxation.’ (BMU, 2009a: 41) Such an acknowledgement from a traditionally pro-DR government department says a lot about the perceived value of MBIs to the German ecotech industry. This probably has something to do with the added value of capturing the EU market.

The Environmental Technologies Action Plan (ETAP) proposed by the EU Commission is designed to promote the development and adoption of ecotech across Europe. ETAP specifically points to the reliance of DR on BAT and suggests that this reliance constitutes a barrier to continuous technological innovation (CEC, 2004). The passage of this legislation has increased the potential for German ecotech firms to export their products to the rest of the EU.

Overall, the German ecotech industry encourages the national government to pursue more flexible environmental regulatory policies. As the ability of these policies to drive technological innovation continues to be explored, it will become increasingly clear to governments like that of Germany that adopting such policies is a cost-effective means of supporting domestic ecotech development.

Conclusions

The German case has engaged this study's hypotheses directly, and the results are predictably somewhat mixed. Changes in German policy have largely coincided with increased EU involvement in environmental policy, and are thus difficult to explain using the other variables addressed above. Nonetheless, the broad effects of the German Greens, the rapidly-growing ecotech industry in Germany, and the relatively environmentally aware German public on environmental policy are fairly traceable.

The German Greens have had an undeniable effect on environmental policy in Germany over the last three decades. The nature of that effect, however, is debatable. While the expectation of this study was to find that the strength of the German Greens explains part of the German preference for DR, it appears as though this preference had been fairly well established by the time *Die Grünen* gained electoral representation at the national level in 1983. Their presence in Germany seems to be more likely related to the overall high volume and relatively high goals of German environmental policy. The foundation of this relationship is of course the environmentally aware public which demands strong governmental action in defense of the environment. The Greens provide the voice for that demand at the national, state, local, and supranational political levels.

The EU has caused an increase in the number of EI measures that Germany has adopted in the last fifteen years. While there are a number of possible reasons for this trend, the conclusion remains the same. As the influence that the EU has had on the environmental policies of its member states has risen, so has the number of EI measures in place in Germany. The simplest explanation for this is that Germany basically did not have very many EI measures in place before the EU began legislating environmental

issues. In order to accommodate the requirements of EU policy, the German national government was required to expand the use of EI measures. Whether this occurred in anticipation of EU directives or as a response to them is essentially unimportant. The critical result is that EU membership has caused Germany to increase its uptake of EI measures.

The influence of the EU is tied to that of Germany's leading ecotech industry. The widespread adoption of EI measures throughout the EU constitutes major potential growth in markets for German ecotech. Thus, the German government has had an obvious interest in promoting the use of EI at the EU level. Furthermore, governmental support for ecotech is cheaper when EI measures partially replace the costly subsidies and grants on which Germany has traditionally depended. In this sense, the strength of the German ecotech industry has led the German government to pursue EI measures at the domestic and EU levels.

This chapter has failed to support the hypothesis that strongly represented Green parties will push governments toward DR. Rather, it seems that Greens in Germany influence the volume and strength of environmental policy more than its style. Examination of the role of the EU in German policy preferences reveals that the EU has caused a decided increase in the number of EI measures that Germany has adopted in recent years. Finally, the German government's recognition of the benefits of EI with respect to its important ecotech industry has coincided with the increase in EI use. The topics of EU and ecotech influence actually seem to be related. The development of EU environmental policy has allowed for the development of significant markets for environmentally beneficial technology. Working together, ecotech and EU influence

represent a large part of incentive for Germany to shift their stance on environmental policy tools toward the use of EI measures.

Chapter 4: The United Kingdom

The United Kingdom (U.K.) has perhaps had the most experience dealing with environmental problems of any European country. Because it was the leader of the Industrial Revolution, Britain has had a long track record of dealing with effluent. This experience has allowed the U.K. to develop entrenched methods of dealing with environmental problems. These established methods are in some ways a blessing and a curse for the country. On the one hand, the government has devised schemes that have largely dealt with the major effects of common pollutants like sulfur dioxide that contaminate air and water. Unfortunately, the degree to which these preferred methods have become entrenched often inhibits the U.K.'s ability to adapt to policies adopted at the EU level.

This chapter examines the U.K.'s experience with environmental policy and attempts to address the implications that arise regarding influences on environmental policy preferences. The U.K. makes for a compelling case study in large part because of the ways it differs from Germany. While German environmental policy has primarily relied on emissions limits, BAT stipulations, and strict technical requirements, the U.K. has a body of policy that is generally more flexible and less formal. Besides differences in basic policy preferences, the U.K. also differs from Germany with respect to its historical stance and actions toward EU environmental policy, the strength and success of

its Green party, and the size of its domestic ecotech industry. Essentially, the U.K. is meant to represent everything that Germany is not with respect to this paper's hypotheses. Like the previous chapter, this one is designed to first lay out the principle philosophies of U.K. environmental policy. Following that discussion will be sections on the Green party in the U.K., the influence of the EU on domestic environmental policymaking, and the effect of the relatively small ecotech industry.

U.K. Environmental Policy

The body of environmental policy in the U.K. has been influenced by the country's geography. The fact that the country is an island renders it relatively invulnerable to environmental problems arising from the types of effluent that most early environmental policy was meant to address (Wurzel, 2002: 7). By simply draining liquid effluent into the surrounding ocean and building especially high smokestacks for gaseous pollutants to be carried away by the winds, the U.K. was able to eliminate many of the problems that initially arose from those harmful substances. The British Isles' naturally endowed 'high winds, short and fast-flowing rivers, and a scouring sea' have allowed the U.K. to get away with years of a dilute-and-disperse policy for dealing with classic pollutants (Wurzel, 2002: 7). In the 1960s, an expert witness from the electricity industry suggested that the effects of harmful gases produced during electricity generation could be eliminated by building higher chimneys and increasing the gas's temperature upon

release. Thus, the harmful gases would be dispersed enough that they did not constitute a health threat to surrounding populations (citation).

In this sense, U.K. government and industry have perceived the environment as a tool for optimizing pollution. Policies originating in before the 1990s operated under the principle that the environment has inherent thresholds up to which it can contain and eliminate pollutants. This principle is responsible for much of the U.K. philosophy on environmental policy. An examination of that body of policy will further detail the instruments that the U.K. government has preferred to employ as well as the ideology behind them.

Aside from the basic waste management practices that emerged in the nineteenth century, most modern U.K. environmental policy was developed in the 1970s and 1980s. In line with tradition, the resulting body of policy has been described as flexible, informal, consensual, incremental, and devoid of long-term objectives (Wurzel, 2002: 17). The policy of choice was based on establishing various emissions quantity objectives (EQOs). Unlike uniform emissions limits which regulate effluent at its source, EQOs focus on the receiving environment. EQOs ‘specify health related and/or environmental targets which are defined as threshold levels beyond which a pollutant should not be detectable.’ (Wurzel, 2002: 21) By establishing objectives rather than prescribing emissions limits, these policies were intentionally flexible and aimed to promote low-cost attainment on behalf of industry. Notably, the government established the requirement that the best practicable means (BPM) be employed to achieve policy goals. This differs from the Germany preference for the use of BAT. Again, the underlying goal of policymakers was to encourage industry to achieve objectives at the lowest possible cost.

So, while these policies fall under the umbrella of DR, there is a distinct emphasis on flexibility and cost-efficiency in U.K. environmental policy before the 1990s.

A major explanation for this cost emphasis is the involved role that industry has traditionally played in influencing the adoption and implementation of British environmental policy. The relationship between government and industry in the U.K. has been markedly different from the same relationship in Germany. While German tradition emphasizes the importance of the 'social market economy' in which government is expected to set the framework for the functioning of the free market, industry in the U.K. does not necessarily subscribe to that philosophy. Industrial interests in the U.K. have a long history of conflict with environmental policy, and the government has often been sympathetic to industry's displeasure. Take, for example, the case of the Rivers Prevention of Pollution Act of 1876. The act required that sewage be rendered harmless before being discharged to a stream. Sanitary authorities deemed this goal too difficult to meet, and simply chose to ignore that part of the act (Sheail, 2002: 48). While this is a very early example that may seem too distant from modern policies in Britain, its relevance remains. The tradition of environmental policy that generally seeks to acknowledge industrial interests was well established by the time the policy field took off in the 1970s and 1980s.

An important characteristic of policies that emerged at this time is their reliance on scientific evidence as a precursor to policy responses. In this sense, British environmental policy was essentially reactive until the precautionary principle was gradually accepted in the 1990s. Somewhat surprisingly, Margaret Thatcher was the first major British political figure to endorse the principle (though somewhat cryptically) in a

speech given to the Royal Society in 1988. This is around the time that British environmental policy began to take on a different nature. For a variety of reasons including reaction to EU policy, NEPIs began to make up a larger portion of environmental policy in the U.K beginning in the mid-1990s.

One such example is the Landfill Tax adopted in 1996. Initially, a tax of £7 per tonne was levied on all landfill waste. The rate is designed to increase gradually until it reaches its ultimate goal of £34 per tonne. In 2001, a tax on all non-domestic energy consumption called the Climate Change Levy was introduced. The tax is designed to establish incentives for businesses to improve energy efficiency and contains notable exceptions for renewable energy use (POST, 2004: 2). Even more recently, the Boiler Scrappage Scheme was initiated in January of 2010. In England, the government issued thousands of vouchers worth £400 that could be redeemed for an equal discount on the replacement of old heaters with more energy-efficient technology (DECC, 2010). Though this relatively recent trend in policy selection differs from previously established preferences, it maintains cost-effectiveness and flexibility as key priorities of British environmental policy.

Environmental policy in the U.K. has undergone a fairly predictable transformation in light of developments at the EU level as well as the advancement of the theory on environmental regulation measures. Ultimately, the goal of policymakers in the U.K. has been to achieve necessary environmental benefit at the lowest possible cost. The reasons for the persistence of this particular goal are many. The remainder of this chapter seeks to identify the causal factors that have determined the course of environmental policy in Britain.

The Green Party in the UK

The Green Party in the U.K. emerged in 1973 and simply called itself 'People' in order to emphasize its distinctive grassroots, democratic structure (Rootes, 1995: 66). The choice of name is fitting. The party did not especially lack the general support of the British people. Rather, their struggles were derived almost entirely from their inability to translate that support into national political representation. The obvious explanation for their electoral shortcomings is that the U.K. employs a plurality (or 'first-past-the-post') electoral system for single-member constituencies under which representation is awarded to winners alone. In contrast to the system of proportional representation employed in Germany, the U.K. system allows small parties very little chance of gaining representation at the national level. The Green Party in the U.K. has fallen victim to this system. While a significant portion of the population is generally supportive of the Green Party, it is very unlikely that diffuse support will translate to electoral success. Recognizing this and equating a vote for the Green Party to a wasted vote, most citizens who identify with the Green ideology do not support the party in general elections. Thus, the British Greens have usually garnered around one percent of the national vote in national elections and have failed to break through the barrier posed by the U.K.'s electoral system. (Rootes, 1995: 66-70)

The lack of electoral success for the Green Party in the U.K. does not indicate low levels of environmental awareness or interest on behalf of the British population. In fact,

quite the opposite is true. The U.K. has a long history of public involvement in environmental issues. Membership rates of environmental NGOs have been steadily climbing for decades. For example, in 1960 there were 10,500 members of the Royal Society for the protection of birds. A decade later, that number had jumped to 56,000. Pressure groups also saw massive membership increases at the same time. Friends of the Earth saw its membership in the U.K. leap from under 1,000 in 1971 to 27,000 in the early 1980s (Sheail, 2002: 147). Between 1988 and 1989, the number of paid members of Friends of the Earth increased by a full 94,000 (Frankland, 1990: 13) While the Green Party failed to gain electoral traction, NGOs acted as an outlet for popular interest in environmental issues. Interestingly, the administrative structure of the U.K. government is relatively open to involvement on the part of environmental lobbies (Rootes, 1995: 79). This access allows these lobbies the opportunity to influence policy decisions, but that influence simply can not compare to the power that comes with electoral representation.

The failure of the Greens to achieve electoral representation in the U.K. translates directly to the diminished importance of environmental issues on the national policy agenda. Rootes (1995) points out that the major parties in Britain were especially reluctant to make the environment a major policy issue because they knew that such emphasis would only serve to improve the position of the Greens. Instead, the major parties responded to increased public awareness of environmental issues in the late 1980s by adding bits of pro-environment language to their platforms. Despite these concessions, environmental issues have never constituted a high status on the policy agenda of British Parliament (Jordan, 2002: 24). Rootes argues that these additions led directly to the Green Party's dismal performance in the subsequent national election (Rootes, 1995: 74-

75). Without concrete representation or any credible threat of pending representation at the national level, it is extremely difficult for the Green Party in the U.K. to influence policy decisions. This applies especially to decisions of policy style. The major parties that have been in power for decades have a particular tendency to maintaining the policy paths on which they have already treaded. Thus, the U.K.'s Green Party does not have a substantial effect one way or another on the types of environmental policies that the national government chooses. Without an elected voice for stringent environmental policy, the U.K. has continued along the path toward flexible, low-cost solutions to its environmental problems.

The U.K. vs. the EU

In its involvement in the development of EU environmental policy, the U.K. once again demonstrated a distinctly different position from that chosen by Germany. While the latter country successfully exported many of its domestic environmental regulations to the EU level, the U.K. pursued a confrontational strategy aimed at blocking or minimizing the effect EU environmental policy measures (Jordan, 2002: 23). The decision to follow this strategy turned out to be a huge underestimation of the momentum and eventual extent of EU environmental policy. The U.K.'s goal was to water down EU policy enough that they would maintain the flexibility to continue the domestic regulations they had already established. Instead, they became increasingly subject to a handful of very specific directives that misfit their established regulatory structure.

The 1975 Bathing Water Directive is a telling example of this greater trend. The directive, which was proposed by the French and exhibited many similarities to the French regulatory style, contained very explicit standards, monitoring procedures, and timetables of compliance. The British Department of the Environment, genuinely thinking of the directive as a vague statement of intent (Jordan, 2002: 114), adopted it without objection. The informal, flexible laws that already regulated bathing water quality in the U.K. were maintained, and very few changes were made to attempt to comply with the EU directive. Shortly thereafter, the EU demanded strict compliance with the directive. The hesitant U.K. government, under pressure from the EU Commission and from international environmental organizations, was forced to rapidly achieve compliance at great cost to industry. By 2006, these companies had spent £39 billion on new water treatment works to comply with the EU directive (Jordan, 2002: 114). This is merely one example of the U.K. underestimating the rapidity and thoroughness of EU environmental policy development. As their power to derail policy at the EU level declined because of the increasing democracy and transparency of the policymaking process, U.K. representatives were taken by surprise.

After experiencing over a decade of similar blunders, the U.K. finally began taking an active role in shaping EU environmental policy beginning in 1990. Perhaps in response to the accession of additional Southern European states to the EU just years prior, the U.K. began actively exporting its environmental policy to the EU. Even despite this role alteration, the U.K. still views the EU as a binding and often negative influence on its domestic environmental policy. As NEPIs have come to occupy an ever greater role in Britain, the government has identified EU legislation as an inhibition to the

flexibility and cost-effectiveness of these measures. Specifically, the national government has concluded that the 'Europe-wide standards and tight deadlines for compliance mean that policy has had little option but to rely heavily on 'command and control' regulation.' (POST, 2004: 4) The implication here is that the British government identifies EU environmental policy as an impediment to its pursuit of cost-effective regulation.

The overall effect of EU membership on the environmental policy of the U.K. has been predictable. Not only has EU policy essentially become U.K. policy over the last couple of decades, the EU has also provided the impetus for other member states to pressure the U.K. to reform its approach to environmental policy. When it was determined that air pollutants originating in the U.K. were responsible for acid rain and forest death in parts of Scandinavia, the EU provided the arena for member states to demand a change in Britain's policy on dealing with airborne pollutants. The overarching effect of the EU on U.K. environmental policy has been a broad tightening of regulations. This tightening relates to both the flexible DR that the U.K. preferred in the 1970s and 1980s as well as the EI measures that have become the preferred instrument in the last fifteen years.

Ecotech in the U.K.

The ecotech industry in the U.K. is relatively minor and has had little effect on environmental policy decisions. While the industry has not directly influenced these decisions, its relative absence from the domestic economy may explain differences in

policy between the U.K. and Germany. German environmental policy has, in its history, fallen under two broad policy categories. It has either been DR stipulating the use of BAT or EI or some combination of the two. In either case, Germany's policies provide a definite advantage over Britain's preferred EQO standards in terms of the level of technological innovation that is thought to be driven by the respective policies. Wurzel (2002: 23) argues that because the lack of domestic economic investment in ecotech, the U.K. does not stand to gain economically by the use of UELs and the required use of BAT. This example demonstrates how the size of a country's ecotech industry is likely to affect the policy instruments that that country chooses to employ. In cases like Germany where ecotech makes up a significant domestic industry, countries will be more likely to choose EI policies or policies that stipulate the use of BAT.

The small size of Britain's ecotech industry is also likely to diminish U.K. interest in negotiations at the EU level. Because Germany has a significant economic interest in supporting EU policies that require the use and continual advancement environmentally beneficial technologies, it is more likely to pursue its desired policies more fervently than the U.K. or other countries with no such interest. The overall lack of a significant ecotech industry can partially explain the U.K.'s attempts to remove itself from involvement in EU environmental policy. The relative lack of potential economic benefit from ecotech removes a large portion of the incentive to act strongly at the EU level.

Conclusions

The U.K. case has furthered this study's findings by emphasizing the role of Green parties in influencing domestic environmental policy, supporting the hypothesis that the EU causes a convergence of policy and an overall increase in the specificity of domestic policy and implementation, and reinforcing earlier analysis of the role of ecotech in environmental policymaking. Primarily by highlighting important differences between relevant conditions and policy outcomes in Germany and the U.K., this chapter has shed light on the validity of the hypotheses asserted at this study's outset.

The absence of a strong, electorally successful Green party in the U.K. and the resulting preference for informal, flexible, cost-conscious environmental policies support the hypothesis that strong Green parties influence the adoption of strict, usually direct regulations. While electoral ineffectiveness due to the plurality system of elections in Britain renders the prospect of a powerful Green party impossible, other environmental organizations enjoy widespread support. However, NGOs and pressure groups do not occupy the same role as an established Green party and are therefore unable to achieve the same degree of influence over policy outcomes. The U.K. example highlights the importance of achieving electoral success in order for Green parties to be effective. When the threat of electoral competition does not come from a Green party, its effect on the major parties is minimal. In fact, it may even reduce the overall level of environmental discourse by discouraging the major parties from making the environment a top policy issue for fear of increasing public support for the Greens.

The EU has had a distinct and predictable role in the development of U.K. environmental policy. Over time, the EU has caused the U.K. to clarify and formalize its body of environmental policy. Whether the U.K. has pursued DR with loosely defined

implementation requirements or EI measures such as it has in recent years, the EU repeatedly requires greater specificity in policy prescriptions and enforcement methods in order to force compliance with its many directives. Britain's general stance toward EU involvement in its domestic environmental policy has remained confrontational and suspicious despite a shift in the early 1990s toward increased involvement in EU policymaking on behalf of the U.K. The discussion of the effect of the EU on British environmental policy has supported the hypothesis that the development and strengthening of EU policy causes domestic policies to not only converge but to also become more strictly defined at the levels of transposition and implementation.

A brief analysis of the British ecotech industry has shown how the absence of such an industry of significant size reduces the incentive for government to pursue policies that are thought to drive the development and use of environmentally beneficial technology. The U.K. example alone does not solicit this argument on its own. However, when viewed in conjunction with the German example of a significant ecotech industry and a marked preference for UELs with the required use of BAT and EI measures, the relationship between ecotech and governments' preferred policy instruments gains clarity. While this relationship is probably not currently a primary influence on policy preferences, the heightened stakes caused by the potential markets of the rest of the EU is likely to increase the importance of this domestic economic factor.

Chapter 5: Conclusions

This paper has been intended to further the academic theory of environmental politics by specifically addressing three potential explanatory variables for why governments choose particular policy instruments. The framework for this goal rests upon three hypotheses laid out in Chapter One. The validity of those hypotheses in light of the case studies visited above will be assessed in full in this chapter. Overall, the results are mixed, but the findings that do arise prove to be valuable additions to the existing body of literature on this topic. That being said, developments in this paper highlight a few key areas for further research that would help to round out the theory of environmental policy selection.

The Hypotheses

The first hypothesis asserted that *'The existence of a strong Green party that achieves consistent electoral representation at the national level leads countries to pursue DR.'* This study's findings regarding this hypothesis are mixed, but they certainly yield compelling results about the importance of Greens in environmental regulatory instruments. The Germany example suggests that Green parties, when successful in elections, tend to influence the volume and aggressiveness of environmental regulations more than the type of instruments chosen. The U.K. example supports the hypothesis

more directly. The electoral irrelevance of the Green Party in the U.K. has corresponded to a marked preference for informal, consensual environmental regulations that often accommodates industrial concerns. While this does not represent a refusal to use DR, it does constitute a consistent preference for flexible and cost-effective regulation. As the theory on environmental economics has matured, environmental policy in the U.K. continues to strive to achieve flexibility and environmental benefit at the least possible cost. In more recent years, this preference has caused a definite shift toward the use of MBIs when possible.

Perhaps the most important message from the study of Green movements in each of the case studies is that Green parties matter. The ability of Green parties to achieve electoral success at the national level does affect policy outcomes. This, of course, is heavily dependent upon the electoral institutions that exist in relevant countries. This highlights the importance of electoral systems in influencing environmental policy as well. States with plurality voting in single-member constituencies are probably less likely to pursue strict environmental regulation. In these countries, the absence of the threat of electoral competition by a staunchly pro-environment party serves to keep issues of environmental concern fairly low on the policy agenda.

The second hypothesis stated that *'The EU, with its vast body of environmental policy, not only causes convergence among environmental policies of its member states. It also causes member states to add clarity and rigidity to their environmental policies.'* This hypothesis is strongly supported by each of the above case studies. To the surprise of many member states, EU environmental policy has developed into a thorough, strict set of regulations and directives that leave member states very little discretion for

compliance. The most probable reason for this stringency is Kelemen's (2004) argument that federal states with highly fragmented power interests at the top will produce legislation that allows for very little discretion on the part of lower levels of governance. At the EU level, this derives from mutual suspicions between member states regarding the degree to which they will be likely to comply with regulations. These suspicions translate to strict regulations and directives that leave member states very little discretion. The case studies analyzed above each support this theory. Both German and British environmental policies have been subjected to specific, strict EU policy requirements. In fact, both member states have been pursued by the commission and threatened with ECJ action over issues of noncompliance. Clearly, the effect of EU environmental policy has been very similar what the above hypothesis projected.

The third hypothesis claimed that '*Countries with relatively large ecotech industries prefer MBIs because of their greater potential for causing sustained incentives and markets for ecotech products.*' Again, the results are somewhat mixed and the conclusions that can be drawn differ slightly from the binary predictions of the hypothesis. While the expectation was the countries with large domestic ecotech industries would choose MBIs over DR, the picture is slightly different in reality. The differences between the case countries in this study have indicated that countries with large ecotech industries will prefer regulation that encourages emissions reduction and technological innovation. While MBIs are thought to be the best at achieving these goals because they provide continual incentives to reduce and innovate, DR that requires the use of BAT also drives some innovation and creates temporary but significant markets for ecotech. The German preference for DR with BAT requirements and later MBIs

support this theory. The lack of a strong ecotech industry in the U.K. along with its long-time preference for EQOs also supports the theory. The preference for MBIs and BAT-based DR is increased for countries with economic interests in ecotech when the potential benefits of EU markets under similar regulations are considered.

Further Explanatory Variables

This study has addressed three variables in particular that have an effect on environmental policy instrument choice. These, however, and other explanations like those offered by scholars like Wurzel and Kelemen, do not constitute the whole case. Undoubtedly, there are myriad causal variables that go into states' environmental policy decisions. The majority of those will not be approached here, but there is one in particular that deserves mention. Environmental policy responses are inevitably influenced by the particular type of environmental problem that they address. Specifically, diffuse and numerous sources are best met using MBIs, while DR is better suited to dealing with classic effluent from easily identifiable sources. This theory goes a long way in helping to explain the recent trend away from DR and towards MBIs. Traditional DR methods were most popular when environmental policy was aimed primarily at reducing levels of classic effluent. As environmental policy has begun to try to address more diffuse sources like those of CO₂ emissions, there has been a notable shift in global policy approaches that favors the use of MBIs.

Evidence of this trend can be easily found in the U.K. example. The Boiler Scrappage Scheme and the Landfill Tax each seek to reduce the emissions and trim waste from a massive number of sources by applying tools of the market. These are prime examples of the nature of an environmental problem prescribing the most appropriate response to that problem. This variable may go beyond those addressed in this paper in its capacity to explain environmental policy choices in the twenty-first century.

Applicability of the Emerging Theory

The findings from this study are particularly relevant to the politics of the EU and its member states. However, they can also be applied to national politics of non-EU states. This is especially true of the analysis of the importance of Green parties in environmental politics. It is expected that Green parties will have a similar effect wherever they can obtain electoral representation. The findings on the influence of the EU itself are slightly more difficult to generalize. The EU example, however, can be seen as a model for regional environmental governance. Because of the international nature of so many environmental problems and the extreme difficulty involved in negotiating global environmental agreements, agreements at the regional level appear to hold serious potential as a means of addressing major problems of environmental nature. The theory developed here suggests a model that predicts the dynamics of regional environmental governance.

The model that emerges from this study predicts a few key elements of regional environmental agreements. First, based on Kelemen's theory of federal states, regional agreements will have to contain very precise policies with equally precise compliance requirements. Countries will also continue to attempt to export their policies to the supranational level in order to save themselves the cost of reinvesting in new regulatory structures. The ecotech question comes into play as well. Much like those at the EU level, regional environmental agreements will be affected by the domestic economic interests of the individual countries represented. Countries with specific economic interest in ecotech will attempt to have policies implemented that best expand the regional market for ecotech products. These generalizations apply to any regional environmental agreement, but they are especially applicable to agreements and compacts that have explicit economic components. The success of EU environmental policy is due in large part to the freedom with which policymakers could justify environmental legislation on the grounds of creating and preserving the European common market.

Suggestions for Further Research

The findings in this study are based on the examples of two case studies. Thus, they are not meant to constitute a final authority on the theory of environmental policy selection. Rather, they have been intended to further the scope of the theory by introducing three explanatory variables to the discussion. More research is needed in a number of areas to better inform the topics of this study. The first and most pressing area

for further research should address the relative weakness of findings that are based almost entirely on case studies of two European countries. There needs to be more thorough research involving the environmental policies of most or all European countries in order to strengthen the understanding of the theory presented in this paper.

Another important factor that needs to be considered is the role that Southern and Eastern European states play in the development of relevant environmental policy theory. The vast majority of scholarship on the topic of European environmental policy deals with Northern and Western Europe. There is a noticeable lack of academic literature about the Southern and Eastern member states that are often identified as environmental ‘laggards’. Research on those states is likely to produce compelling findings about the environmental legislation and implementation processes in European states with relatively low political capacity. If Germany and the U.K. have struggled to comply with EU policy at times, it should be very interesting to examine the attempts of Southern European states like Spain, Greece, and Italy to satisfy EU requirements.

The final area of further research that this study suggests relates to Green parties. Currently, a great deal of literature exists that tackles the question of how Green parties *act*. Scholars have analyzed institutional structure, electoral success, and party platforms extensively. However, there is relatively little scholarship that addresses the question of how Green parties *affect* policy. This is an area that should be further explored.

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