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AICGS POLICY REPORT

FEDERALISM AND
ENVIRONMENTALISM IN
THE UNITED STATES AND
GERMANY

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Miranda A. Schreurs

AMERICAN INSTITUTE FOR CONTEMPORARY GERMAN STUDIES

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FOREWORD

In an increasingly interwoven and interdependent transatlantic community, the political decision-making process is expanding both horizontally and vertically. The actors on the policy stage are multiplying at all levels. The role of subnational units—be they cities, states, or regions—have become stronger as they impact the national governments. This is particularly pronounced in federal systems such as the United States and Germany.

This study examines one particular but increasingly important area in which the subnational units of policy-making are playing a significant role: the regulatory process for environmental policy.

Environmental concerns, whether about global climate change or water supplies, have ripple effects up and down the political and administrative levels of government. There is an increasing need to seek coherence and consistency in shaping regulatory frameworks for all of the parties involved, be they the local populations, the corporate actors, or the levels of decision-makers.

Germany and the U.S. offer laboratories of comparison to better grasp how to best manage the adaptation needed for environmental change at multiple levels. Germany's federal system of government is embedded in the European Union and therefore has an additional example of transnational coordination for reforms and coordination. In the U.S., many states are reaching out across borders to seek ways of learning to harness both technology and innovation for their environmental concerns and needs.

This policy report offers not only analysis of the environmental regulatory frameworks in Germany and the U.S., but also offers ideas to practitioners and policymakers for enhancing their opportunities to improve their effectiveness in shaping the right policy mix at all levels of government.

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CHAPTER ONE
FEDERALISM AND ENVIRONMENTALISM
IN GERMANY

FEDERALISM AND ENVIRONMENTAL REGULATION IN GERMANY AND THE EU

R. ANDREAS KRAEMER

All politics is local, as the saying goes, but all policies cannot be. Politics are driven by the dynamics and chances “on the ground,” in constituencies, or in the media serving a community in an area. Policies and law, if they are to be effective, must take account of larger and more distant interests, impacts, and consequences.

Often, they are based on universal principles, assumed to be true and valid everywhere and always. This is the case not only for environmental protection, conservation, and resource management, but also for most other policies.

Federations are an answer to the challenges of mediating between the various interests and scales of politics and policymaking. As multi-level systems of governance, they allow, at least in theory, for decisions to be taken at the most appropriate level. Federal systems allow for cooperation, harmonization, standardization, or even uniformity where that is necessary for the good of the whole, and they provide the smaller units—states—within them a degree of protection from interference from central powers.

This paper describes and assesses the structures and practice of federalism in Germany. It focuses on the environment, a dynamic area of policy that is particularly rich with tensions among scales or levels of government. It should be read in conjunction with a twin paper on federalism and environmental regulation in the United States, written by Miranda Schreurs for the American Institute for Contemporary German Studies (AICGS). Germany and the United States, in spite of their differences, have similar systems of government if compared to France or Poland, for instance.

One important difference must be highlighted at the outset, however. Germany is embedded in the European Union (EU), which is itself a kind of federal system, and the EU has an impact on environmental regulation that is far more important than the effect of the North American Free Trade Area (NAFTA) on domestic environmental regulation in the U.S. Much of the recent dynamics in the debate about the allocation of competences and changes adopted through the “Federalism Reform” in Germany can only be understood in the context of the European Union. This paper, in consequence, deals with “Germany in the EU” rather than just Germany.

This paper explores the foundations and development of federalism and “subsidiarity” in Germany and European Union. The constitutional make-up of the Federal Republic of Germany is sketched and the application of federalism in the field of environment is described in some detail. A focus is on water management, especially the transboundary cooperation between states and governments, where historical practice in the Rhine basin and institutional developments in Germany since the 1950s have laid the foundations for European structures and approaches. The paper explores the conditions for and functions of structures for inter-state or transnational coordination, cooperation, and policy learning, and makes suggestions on how to apply them across the Atlantic.

Subsidiarity: The European Concept of Federalism

ORIGINS OF THE FEDERALISM AND SUBSIDIARITY IN GERMANY AND THE EU

The subsidiarity principle entered into the constitutional order of the European Union¹ through the Maastricht Treaty in 1992. Its origin is often seen in Catholic social teaching and, in particular, the social Encyclical Letter *Quodrogesimo anno* of Pope Pius XI in 1931:

"... just as it is wrong to withdraw from the individual and commit to a group what an individual's own initiative and powers can accomplish, so too it is an injustice, a grave evil and a disturbance of the right order, for a larger and a higher association to arrogate to itself functions which can be performed efficiently by smaller and lower societies. This is a fundamental principle of social philosophy, unshaken and unchangeable. Of its very nature the true aim of all social activity should be to help members of a social body, but never to destroy or absorb them."²

The instruction, directed as a moral norm at those who have the power to do so, not to arrogate (or usurp) functions that the individual or smaller societies can perform is a pervasive socio-philosophical concept applicable to the organization of family, community, municipality, society, and state.

Applied to structures of state or government, subsidiarity is practically indistinguishable from federalism: "It is in federal organizations that the subsidiarity principle finds, in strictly political terms, its clearest expression."³

Emiliou (1994: 385-387) observes a shift "from a socio-philosophical to a legal concept of subsidiarity," especially in the Federal Republic of Germany since World War II. Here, power, attributed to the state by the people, is exercised under separate headings on a horizontal axis—legislative, executive and judicial arms of state authority—and divided on a vertical axis—local government, state, and central government'.

While this observation about the structure of German federalism is correct, it is wrong to assume that subsidiarity became a constitutional principle in Germany only after World War II. The German *Länder* were not invented after WWII, but followed a long tradition of regional government and small sovereign states (similar to Italy).

Concerning the constitutional order in Germany, the subsidiarity principle appeared in the goals and aims of the *Paulskirchen Constitution* of 1848. Perhaps more importantly, it provided the foundation of the Prussian Municipalities Reform of 1808, instigated by Baron vom Stein, the "re-founder of municipal autonomy."⁴ This reform re-established the responsibilities, competences, and rights towns and cities had enjoyed until they were arrogated by central government and provided the foundation for municipal autonomy and self-government throughout Germany to this day.

Whereas municipalities play an important role in water management, there are even older institutions in many European countries which incorporate subsidiarity as a functional principle of social and economic organization. Examples in Germany would be land management associations, which precede the modern debate about subsidiarity.

FEDERALISM, SUBSIDIARITY, AND ALLOCATION OF COMPETENCES

The subsidiarity principle is not new to the European Union, even if, formally speaking, it was not legally established until the entry into force of the Maastricht Treaty on European Union.⁵ It is a general principle of European Environmental Policy since its beginnings in 1973, when the First Environmental Action Programme listed, as one of eleven principles, the principle of the appropriate level:

"In each category of pollution, it is necessary to establish the level of action (local, regional, national, Community, international) best suited to the type of pollution and to the geographical zone to be protected.

Action most likely to be most effective at Community

level should be concentrated at that level; priorities should be determined with special care.”

In this way, the subsidiarity principle was established from the beginning as a functional principle aiming to increase the effectiveness of environmental policy measures, and not as a formal allocation of competences. This functional approach is the basis for the practical application of subsidiarity in European environmental policy first attempted in the Fifth Environmental Action Programme of the European Union, where the subsidiarity principle is placed into a wider policy context (see below).

The legal and political discussion about the subsidiarity principle at European level has been concerned mainly with the relationship between the European Union and its Member States. This narrow focus cannot provide a sound basis for a discussion of subsidiarity as it applies to environmental policy. In its broader sense, the subsidiarity principle is also meant to ‘find a protected freedom of action for local and regional authorities’ such as in the Federal Republic of Germany.⁶

Sketching the Federal Republic of Germany

A BRIEF HISTORY AND POLITICAL GEOGRAPHY

The Federal Republic of Germany today consists of sixteen states (Länder) and, except for close-to-shore islands in the North and Baltic Seas, has a contiguous territory. Three of the Länder—Berlin, Bremen and Hamburg—are “City States” (Stadtstaaten), essentially being large conurbations.⁷ The others are known as “Flächenstaaten,” states with significant surface, and the names of six—Baden-Württemberg, Mecklenburg-Vorpommern, Nordrhein-Westfalen, Rheinland-Pfalz, Sachsen-Anhalt, Schleswig-Holstein—are hyphenated, which signals that they are amalgamations of pre-existing political units. This is important for various aspects of environmental management, where the sense of belonging, the “Heimatgefühl” does not necessarily extend to the Land as a whole but only to one of the older, smaller territories. This is true also in non-hyphenated larger Länder, for instance in the region of Franken in

Bayern. The administrative boundaries of district-level state authorities or agencies in the larger Länder often follow old political delineations.

A number of Länder joined the Federal Republic not at the time of its establishment on 23 May 1949, but later. The first “latecomer” was the Saarland, which after a referendum joined as Germany’s tenth Land on 1 January 1957. After the end of the second World War, the status of Berlin—the East and the West of the city—was ambiguous. On 13 August 1961, with the building of the wall dividing the city, the western sectors of Berlin became de facto a part of the Federal Republic of Germany, while the Soviet sector was de facto integrated into the German Democratic Republic (GDR) and served as its capital.

Following the fall of the wall on 9 November 1989 and through the unification of 3 October 1990, the GDR was dissolved and the “New Länder” of eastern Germany were incorporated into the Federal Republic of Germany. In addition to the re-unified Berlin, there were Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt, and Thüringen (see map).

The federation of Germany is “symmetrical” in the sense that all the Länder have equal powers and standing in relation to the federation as a whole; i.e., there is no distinction between states and territories as one finds in other federations, or graded competences varying among states or regions as is the case in Spain, for instance. This is in part law and dogma, in part aspiration, because the capacities of the different Länder vary considerably. Some are rich, have strong administrations, and find it comparatively easy to shoulder public investment, for instance, in water infrastructure. Others, notably the new Länder, struggle more and, in consequence, sometimes need to be more innovative.

Some of the strains between the Länder with different capacities and resources is mellowed through a fiscal transfer from the rich Länder (generally in the south) towards the poorer Länder. There are other mechanisms and institutions, notably in the field of environment, that help the Länder compensate for differences in capacities and reduce the risk of disjointed development. The most important will be

described later in this paper. The overall aspiration is to provide comparable conditions throughout Germany, which includes similar levels of administrative capacities and quality of public administration.

This is important because the Länder are entrusted with the administrative implementation, monitoring, and enforcement of environmental policy and law. The German Federal Environment Agency (Umweltbundesamt)⁸ and the German Federal Agency for Nature Conservation (Bundesamt für Naturschutz)⁹ have limited powers of enforcement; there are no federal authorities or agencies with regional offices involved in the implementation and enforcement of environmental protection at state level.

SEPARATION OF POWERS AND ALLOCATION OF COMPETENCES

In Germany, legislative powers are divided among the federal parliament (Bundestag), the second federal chamber representing the Länder (Bundesrat), and the parliaments of the sixteen Länder. Executive powers are divided between the federal and the Länder levels. The federal constitution, or Basic Law, recognizes the eminent role of the Länder and guarantees their statehood and autonomy.¹⁰ The interests of the Länder are represented at the federal level by their governments through their involvement in legislation as members of the Bundesrat. The competence of the Länder is particularly strong in the field of environment, including nature conservation, land management, and water resource protection and management.

In addition to their formal involvement in decision-making at the federal level, the Länder—through the Committee of the Regions—also contribute to deliberations at the European level. For this purpose they maintain permanent representations (or “embassies”) in Brussels. Within Germany, they also cooperate and coordinate among themselves and have set up a range of working groups, conferences, and other institutions and procedures for the purpose.

IMPORTANT ROLE FOR MUNICIPALITIES IN ENVIRONMENTAL MANAGEMENT

The Basic Law guarantees local authorities (cities, towns, and rural districts), which are collectively referred to as municipalities (Kommunen), the right to self-government within the confines of the law. Municipal autonomy includes the responsibility for the local environment and providing vital services on their territory. “Environmental services” such as water supply and sanitation, waste collection and removal, the protection and management of air quality, or the management of urban green spaces are traditional functions that municipalities provide, either themselves or through contractors. Municipalities often also provide directly or indirectly other public services of relevance to the environment, including: Electricity, gas, heating, and urban transport. Overall, municipalities, within the framework of European and federal laws, and with some supervision and regulation from Länder authorities, are responsible for most of the energy and material metabolism of Germany’s urban and industrial society.

For the provision of adequate living conditions (Daseinsvorsorge), municipalities are entitled, within the framework of the state in which they are located, to choose freely from a variety of institutional and organizational arrangements, depending on their needs and circumstances. In particular, municipalities have the right to establish or join inter-municipal associations, which are often concerned with environmental services and management. They can also establish or invest in private-law joint-stock companies or partnerships operating within or outside their territory.

The vertical separation of powers, competences, and responsibilities is complemented by the horizontal separation of legislative, executive, and judiciary powers to, respectively, parliaments, governments, and the courts. Legislation has to conform to the constitutional order which can itself only be changed (with the exception noted above) by the Bundestag with a two-thirds majority of its members; governments, administration, and the courts are bound by law. Specialized courts exist in each Land with final courts of appeal established at the federal level. The

Länder are empowered to enforce federal legislation as their own responsibility and to set up the administrative and procedural arrangements required.

In addition, the Länder have conferred powers upon municipalities to enforce many aspects of federal and Land legislation, particularly where local circumstances must be considered. Therefore, much of environmental protection, planning, and management falls into the sphere of competence of the Länder and, at least in relation to specific areas or sectors, municipalities.

THE LANDER AND THEIR INVOLVEMENT IN EUROPEAN UNION AFFAIRS

Primary responsibility for all aspects of membership in the European Union is located at the federal level. However, the European Union has evolved from an international, inter-governmental institution with a specific focus towards a supra-statal body with a wide range of policies and programs. It intervenes in the affairs of the Member States in a variety of ways. The EU—or in the case of the environment more accurately the European Community—can adopt legislation and, as “Guardian of the European Treaties,” take measures to ensure compliance with EC law.

European legislation comes mainly in the form of Directives or Regulations.¹¹

Directives are binding instructions to the Member States to adopt legislation and establish procedures in pursuit of objectives agreed at the EU level. Although Directives can have direct effect and create rights and obligations for individuals or businesses, their main addressees are the governments and legislatures of the Member States. Directives need to be “transposed” into national law by a fixed deadline, and transposition then has to be notified to the European Commission, which can then verify compliance of national laws with the Directive. Practically all Directives concerning the environment also have monitoring and reporting obligations imposed on Member States and the European Commission, as well as Technical Committees consisting of officials and experts from the Member States following imple-

mentation and advising the European Commission on progress and options for improving the law and its implementation, and provisions for review procedures.¹² As far as national authorities, citizens and businesses are concerned, Directives appear to them as national legislation and many are not aware of their European origin. In the field of environment, Directives are usually the instrument of choice, because they leave the ways and means for their implementation to be decided and designed by Member States or their regions, in Germany the Länder, as long as the objectives are attained.

Regulations are binding in their entirety and directly applicable in all Member States. They need no transposition, have direct effect, and create rights and obligations. In consequence, they are effective without the delays involved in the transposition of Directives, and they provide for uniformity of the law throughout the European Union. This is of benefit whenever legislation has a direct or indirect impact on trade and commerce in Europe’s Internal Market.

The measures the European Commission can use in order to ensure compliance with European law range from “Treaty infringement procedures” designed to verify not only conformity of a Member State’s laws with a Directive, but also to ensure that administrative implementation is effective and follows the letter and the spirit of EU law. If the European Court of Justice (ECJ) finds a Member State to be in breach of a Directive or other legal obligation for the first time, the Member State is required to adapt its laws and administrative practices in accordance with European requirements. If in a separate case, a Member State is found not to have done so, the ECJ can and normally does impose fines for every day the non-compliance with EC law continues. In addition to these penalties, certain financial transfers or project funds can be withheld, creating strong economic incentives for Member States and their regions to comply with European legislation.

The nature of the EU and its mode of intervention have resulted in EU policy and law becoming “domestic” in the Member States, in Germany at the federal and the Länder levels, with effects also felt in the municipalities. In consequence, the Länder have

become much more interested and active in European affairs in the last two decades. One of the main purposes was and is to ensure that the specific circumstances of regional governments are considered sufficiently in drafting European legislation, and that European laws do not lead to an erosion of Länder competences. Another important purpose is to feed experience with the implementation of European laws from the local and regional administrations into the reviews and revisions at the European level.

Since the Maastricht Treaty establishing the European Union of 1992, procedures apply for involving the Länder at the European level. Details are laid down in the Act on the Cooperation of the Federal Republic and the Länder in the Affairs of the European Union.¹³ The Act ensures that the Länder can participate through the Bundesrat in consultations at European level whenever their interests are affected.

Environmental Policy in Federal Germany

Like in most other industrialized countries, the beginnings of environmental policy, as we conceive of it today, are placed in the 1960s or 1970s.¹⁴ This may be correct in relation to the development of coherent, modern policy, legislation, and administration for environmental protection. In relation to the management of natural resources—such as soil, water or forests—or the conservation of landscape features and nature conservation, however, there was environmental policy before even the establishment of the Federal Republic of Germany.

BEFORE 1950: PARALLEL TRACKS

The origins of water management, soil protection, and landscape development, which the Germans collectively call “Kulturbau,” reach back centuries. Kulturbau infers that “culture” involves humans shaping the natural environment to their benefit, primarily, but not exclusively, to enlarge the land surface available and to enhance soil fertility for the growing of food, feed (notably oats as “fuel” for horses as “engines” of the time) fiber, and other biological resources. The work was undertaken initially by private land-holders or owners or rulers of the lands. Rules were enforced

sometimes by those in power but often by mutual pressure organized through associative structures. These live on today as the Water and Soil Associations, of this there are perhaps fifteen thousand in Germany today.¹⁵

Uekötter (2003), in his history of air pollution in Germany and the U.S., describes how, in the nineteenth century, local authorities in Germany reacted to complaints about local pollution, smells, dust, and smoke, and intervened against polluters, even closing businesses on occasion. He also explains that the aggregate of all such interventions did not constitute or lead to a coherent policy. Administrative decisions remained local and case outcomes varied widely. The focus of this kind of environmental policy was to protect human health and property, but not the environment as such, from the effects of pollution.

During the nineteenth century, the German “home-land” (Heimat) and nature conservation movement developed and had first successes, roughly in parallel with the development in the United States. Protected areas were established, partly through land purchases on private initiative, partly through administrative action and (state) legislation. In the early twentieth century, a recognizable administration for nature conservation was established in parts of what today is the Federal Republic of Germany. The focus of this kind of conservation policy was and still is to protect the most beautiful, rare or otherwise outstanding areas of natural and cultural heritage from destruction through mining, quarrying, road building, or agricultural land development.

Water services, waste management, the protection of green spaces, and later the organization of energy supply in urban areas also developed from early beginnings with the first towns and cities. They became more important as conurbations grew significantly in the second half of the nineteenth century and the onset of industrialization and rail transport. Responsibility for these services was local or municipal, but some states actively and consciously promoted them by providing freedoms for local authorities to establish the necessary undertaking, collect charges, and so on, or by actively subsidizing the construction of critical infrastructure. The focus of

this approach is to protect humans from one another, and to enable larger numbers of people, commerce and industry to co-exist in confined spaces.

These separate strands of environmental management and regulation existed and developed slowly and largely independently of one another until after the Second World War. It was only after the establishment of the Federal Republic of Germany with its rapid industrial development and reconstruction, that systematic environmental protection policies in the modern sense developed, initially in the industrial hot-spot of the Rhenish-Westphalian coal mining and steel-making area north of the Ruhr river, the Ruhrgebiet.

FROM 1950 TO THE MID-1980S: FROM DUSSELDORF VIA BONN TO BRUSSELS

In perhaps oversimplified terms: environmental law in Germany was written in Düsseldorf, voted on in Bonn, and mailed to Brussels. Düsseldorf is the capital of North Rhine-Westphalia with its concentration of people and heavy industry, which created urgent needs to improve water management, air pollution control, waste management, noise protection, and so on. The problem pressure and the technological problem-solving capacity of the region, in combination with a well-integrated administration that is typical of mining areas, produced a number of policy and legislative initiatives. In many cases, regulatory approaches and legislative drafts were found to be necessary but unworkable at the level of a single state, or were simply useful blueprints for other states. With an eye on competitive distortions, first within Germany and later the European market, North Rhine-Westphalia had an interest in “exporting” its policies. It was also exporting its pollution, most notably by way of the “tall chimney policy” that was adopted after the call by Willy Brandt in 1961 to have “blue skies over the Ruhr” once more. In effect, industrial smokestacks were built higher so that winds would dilute and blow away the pollution.

Some initiatives originating in North Rhine-Westphalia became the basis for federal policy and law, voted on in Bonn, which was the provisional capital of the Federal Republic of Germany at the time. The same

logic that induced North Rhine-Westphalia to promote its laws and regulations beyond its territory and throughout Germany induced the federal government to promote the German laws and regulations beyond Germany throughout the European (Economic) Community and later the European Union. Other Länder were also actively promoting their policy concepts and approaches, but only Bavaria was coming close to the level of influence enjoyed by North Rhine-Westphalia. Bavaria was a pioneer in its own right; it was the first to establish a Land Ministry of Environment in 1969.

The ground-breaking work of the pioneering Länder made it easier for the other Länder to also develop environmental policies and administrative structures. The lead Länder showed that the necessary monitoring and abatement technologies were available and workable, their example could be followed with greatly reduced political risk, mistakes could be avoided, and improvements made. Through specific cooperation among the Länder (see below) but also through diffuse policy diffusion, similar levels of environmental protection were attained throughout Germany. The same logic that induced the other Länder (through the Bundesrat) and the German federal government in Bonn to adapt and adopt the policy blueprints coming out of Düsseldorf also induced the European institutions and the other Member States (through the European Council of Ministers) to develop and adopt the European Directives and Regulations.

Especially in the later 1970s and the 1980s, after the development of environmental policies accelerated in Germany and the foundations for European environmental policy had been laid, Germany had a strong influence on the policy design, regulatory approaches, and the choice of instruments in European policy. This period lasted until the second half of the 1980s when the Netherlands and, above all, the United Kingdom began to exert stronger influence and succeeded in promoting their approaches over Germany's in European policymaking.

The central approach Germany followed during that time was a consequence of its federal structure, where all laws, even federal, are implemented and

enforced by Länder authorities. The central notion was that only one law should reign in the land, that all businesses should face the same rights and obligations, and that there should be no distortions in competition. This was best done through uniform emission standards, administered with little room for administrative discretion, and based on proven technologies, best available technologies, or state of the art technologies.

Basing standards on technologies (but not normally prescribing a specific technology as such) provided incentives for inventors and innovators, and allowed environmental protection standards to be raised when new technologies became available and economical. Leaving little to discretion meant that often weak and understaffed environmental authorities did not have to negotiate with applicants for environmental permits, but could refer to established standards and technologies and be sure their permit would be safe from legal challenge. Negotiations were necessary only in the relatively few cases where uniform emission standards were not sufficient to achieve sufficient levels of environmental quality and therefore more stringency was required in permits. Uniform standards greatly reduced regulatory risk and administrative costs, and they helped build and maintain the mutual trust of environmental regulators in the Länder that the laws would be similarly enforced throughout Germany. A similar logic applied to the European Union and its Member States.

HISTORY FROM THE MID-1980S: FEDERAL AND EUROPEAN COMPLICATIONS

The mid-1980s were characterized by the tragic nuclear catastrophe in Chernobyl, which triggered the establishment of the Federal Ministry of Environment in Germany (BMU, 2006). Those years were also marked by the negotiations, leading to adoption in 1986 and entry into force in 1987, of the Single European Act, which converted the European Economic Community into the European Community (EC), established the Internal Market of the EC, and provided, at last, an explicit legal basis for European environmental policy and law.¹⁶ Previous to the establishment of the Federal Ministry for the Environment, Nature Conservation, and Nuclear

Safety (BMU), its functions (and departments) had been scattered over various other federal ministries; the Federal Environmental Agency (Umweltbundesamt—UBA) had reported to the Federal Ministry of the Interior.

A number of factors contributed to an accelerated development of German environmental policy and a shift of political attention and weight from the Länder to the federal government. Among them were the:

- new-found institutional strength at the federal level, increasing the dynamic of European environmental policy which favored the federal government over the interests of the Länder;
- drive behind the desire to find and implement workable alternatives to nuclear power, which was considered to be a national rather than regional priority;
- strength of the second Federal Minister of Environment, Klaus Töpfer; and
- developments at the international level, including the publication of the Brundtland Commission report in 1987 and the subsequent United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992.

These factors carried the momentum of environmental policy until 1992. The changed priorities after the fall of the Berlin Wall and the Stalinist regime in the Former German Democratic Republic in 1989 and German unification in 1990 marginalized environmental policy. Domestically, the focus shifted away from the environment and towards general economic, social, and political issues arising from German unification.

Great achievements were possible, however, in the establishment of effective environmental regulation and administration and the clean-up of contamination in the new Länder of eastern Germany. The promotion of energy efficiency and renewable energies as well as the phase-out of nuclear power in Germany were successes of the 1990s, just as Germany's role in the negotiation of the international climate regime, the Kyoto Protocol, was. In other fields, such as water

management or access to information, EU environmental policy and legislation helped maintain momentum also in Germany.

Nevertheless, during the 1990s, Germany lost much of its former role in shaping European environmental policy, and, in consequence, the federal and the Länder governments found themselves in the situation of having to adopt laws and regulations transposing European Directives based on legal structures and regulatory approaches that did not fit easily with pre-existing legislation. This led first to delays and then to a number of treaty infringement procedures against Germany before the European Court of Justice, and ultimately to the search for a new division of competences between the federal and the Länder levels.

REFORM OF THE GERMAN FEDERAL CONSTITUTION 2006 AND THE ENVIRONMENT

The federal structure of Germany has been for some time blamed for delaying necessary reforms in a number of areas. A re-ordering of competences, legislative roles, and procedures became a touchstone of the Grand Coalition between the Christian Conservatives (CDU/CSU) and the Social-Democrats (SPD) at the end of 2005. The outline of a Federal Reform was agreed—rather hastily and without an adequate impact assessment—between Edmund Stoiber, the Prime Minister of Bavaria (CSU), and Franz Müntefering, the then designated leader of the SPD.

The Federal Reform was voted on as the “Act Amending the Basic Law” (Gesetz zur Änderung des Grundgesetzes) in the Bundestag on 30 June 2006 and in the Bundestag and on 7 July 2006 in the Bundesrat. The amendment affects environmental policy and practically all impact assessments carried out before the vote showed great risks for environmental policy. Almost unanimously, business and environmental associations, the federal ministers for economic affairs and the environment, and the relevant advisory bodies of the federal government warned against the changes foreseen on environmental policy. In full knowledge of this, the two chambers of the federal parliament adopted the changes “for fear of having the debate”¹⁷ which had the poten-

tial to unravel the federal reform package at the heart of the Grand Coalition government.

Previous to the Federal Reform, the federal level had “framework competence” where federal and Land laws had to complement one another, “concurrent competence” (parallel competence, with connotations of competing competence) where the Länder had the right to adopt laws as long as the Federal Republic had not done so, and “exclusive competence” where the federal level alone could enact legislation. The areas of framework competence were particularly problematic, because in the affected fields, one European Directive would require at least seventeen acts of legislation within Germany, the adoption or amendment of one federal framework law, plus the adoption or amendments of sixteen Land laws. This invited delays, inconsistencies with EU requirements, and treaty infringement procedures before the European Court of Justice.

With the Federal Reform, the old principle that federal law breaks Land law¹⁸ was weakened, notably in the field of environmental policy.¹⁹ A new right for Länder to deviate from federal law was established for policy areas where the federal level previously had framework competences. “Concurrent competence with the right of deviation for the Länder” replaced the framework competence, notably in the fields of hunting, nature conservation and landscape stewardship²⁰, land use²¹ and spatial planning, water management²², and flood control. Rather than having federal framework laws, such as the Water Management Act (Wasserhaushaltsgesetz), complemented and “filled in” with Land water laws, the federal legislation is now to regulate exhaustively, and the Länder will then adopt deviations within the range allowed by applicable international or European obligations. In case of conflict between Land and federal law, the provisions of the Land law prevail. There are a number of rather unclear restrictions on the Länder right to deviate, however, which are likely to be explored by trial and error and judicial review.

For a number of areas with relevance for environmental policy, there are no explicit allocations of competence. This concerns renewable energies, climate protection, non-ionizing radiation, chemicals,

and soil protection.²³ These omissions may result in arbitrary and contestable choices of legal bases for legislation.

These changes and omissions can be expected to speed up the transposition of European Directives, but logically offer just as much room for conflicting norms as there was before. The new arrangements may work just as well or as badly as before in relation to matters that fall clearly within the scope of one area of environmental policy or other policy. However, conflicts can be expected whenever an international norm or a European Directive cuts across the policy areas used in Germany. As environmental policy progresses towards more integrated, cross-media regulation and affects spatial planning, for instance, more confusion over competences and conflicts over norms can be expected.

Cooperation and Coordination among the Länder

As in other policy fields, the Ministers of the Environment of the Länder and the federal Republic have set up a Conference of Ministers of Environment (Umweltministerkonferenz—UMK) in order to coordinate environmental policy in general.²⁴ The seventeen ministers meet twice a year and each meeting is preceded by a meeting of their chiefs of staff (Amtchefs-konferenz—ACK). The UMK sets the work program for and supervises the activities of various thematic working groups, which were originally an initiative of the Länder and set up as “Länderarbeitsgemeinschaften” (Länder working groups). Today, however, the federal government is an equal and full member in all of them. The working groups deal with the main fields of environmental policy:

- Water Management (Wasser—LAWA) since 1956
- Waste Management (Abfall—LAGA) since 1963
- Air Pollution Control (Immissionsschutz—LAI) since 1964
- Nature Conservation, Landscape and Recreation (Naturschutz, Landschaftspflege und Erholung—

LANA) since 1971

- Soil Protection (Bodenschutz—LABO) since 1991

- Genetic Technology (Gentechnik—LAG) since 1991

- Chemical Safety (Chemikaliensicherheit—BLAC) since 1996

- Sustainable Development (nachhaltige Entwicklung—BLAG NE) since 2001

They usually meet biannually and report to the ACK and the UMK, and, as appropriate, also to other conferences of ministers. Each of the Working Groups can set up permanent supporting committees as well as ad-hoc study groups or task forces in order to implement their work programs. The presidency or chair rotates every two years among the Länder, normally in alphabetic order.²⁵

The working groups play an important role not only in harmonizing approaches among the Länder and facilitating cooperation and coordination with the federal government, but they also facilitate the involvement of the Länder in EU affairs. Most of environmental legislation is agreed on at European level and all national legislation—at federal and Land level—has to conform with EU legislation. One important part of the activities of the working groups, therefore, consists of facilitating speedy and sound transposition of EC law in various Länder and ensuring as much harmony as possible in their legal approaches, structures, definitions, exemptions, procedures, etc. Another important function is to coordinate reporting on the implementation of EU laws and aggregate experience in the implementation of policy, bringing it to the attention of the Ministers and, through them, to the decision-makers at EU level.

This is explained in more detail in the following section, taking the oldest and, in many respects, pioneering working group for water management (LAWA) as an example.

HORIZONTAL AND VERTICAL COORDINATION: THE CASE OF WATER POLICY

The case of water resource protection and management is particularly useful for exploring the challenges of horizontal coordination across various scales or levels of decision-making, and of horizontal coordination among institutions at the same level. Powers and responsibilities range from international agreements, via European and federal legislation, to river basin institutions, Land legislation and authorities, and local services in municipal associations or individual municipalities. Water policy is also a useful case because it must clearly be implemented with a view to the water cycle in a river basin. Water pollution or flood control, river development for navigation, or the protection of ecosystem integrity must take the interests of people and businesses upstream and downstream into account. Water policy, therefore, requires coordination and cooperation across frontiers not in an abstract sense but precisely within each river basin or water-shed.²⁶

In order to address the coordination challenges, the German Länder institutionalized not only a network covering the territory of the Federal Republic of Germany, the Länder Working Group on Water Issues (LAWA), but also specific coordination mechanisms for each of the large river basins.

GERMAN LANDER WORKING GROUP ON WATER ISSUES (LAWA)

The Working Group on Water Issues (LAWA) was set up in 1956 by the ministries of the Länder of the Federal Republic of Germany responsible for water management and water legislation.²⁷ The aims of the LAWA are to discuss in detail questions arising in the areas of water management and water legislation, to formulate solutions, and to put forward recommendations for their implementation. In addition, topical questions in the national, supranational, and international sphere are also discussed on a broad basis and the findings submitted to the relevant organizations.

In order to fulfill these objectives, the LAWA has set up three permanent working groups and two ad-hoc

working groups to deal with different aspects of water legislation, including hydrology, inland waters and sea conservation, ecology, flood prevention, coastal protection, groundwater, water supply, municipal and industrial sewage, and handling water with polluting substances.

The results of LAWA's work contribute to the implementation of a harmonious, sufficiently standardized system for water management in the Länder, without significant conflicts or problems of compatibility. The models developed by LAWA do, however, allow sufficient freedom for taking account of specific regional characteristics within each Land.

As a result of the technical and legal requirements of the EU in the field of water management, the international cooperation between LAWA and the responsible European committees has gained in importance over the last few years. In particular, the implementation of the European Water Framework Directive (WFD) has resulted in regular and intense cooperation between the European Commission and representatives of the Member States, which in the case of Germany often means experts nominated by the LAWA.

The case of water policy also shows how institutions in Germany can shape approaches in the European Union.

RIVER BASIN INSTITUTIONS FOR COORDINATION WITHIN BIO-REGIONS: FATHER RHINE

The Rhine is the river with the oldest of the River Basin Institutions. They are not just water management institutions, but a kernel of European integration. The Rhine is a confluence of European culture, a point perhaps most eloquently put by Carl Zuckmayer through his "devil's general" to lift the morale of a young lieutenant with an inferiority complex because of his uncertain parentage:

"Just imagine your possible ancestry: There was a Roman general, a dark guy, who taught Latin to a blond girl; then came a Jewish spice trader into the family. He was a serious man, who became a Christian even before the marriage and established

the Catholic tradition in the family. Then came a Greek doctor, a Celtic legionnaire, a knight from Swiss Graubünden, a Swedish horseman and a French actor, a Bohemian musician.

All that lived on the Rhine, and fought, drunk, sang, and fathered children. And Goethe, he came from the same pot, and Beethoven and Gutenberg and Matthias Grünewald. And so on, and so on. Those were the best, my friend! Being from the Rhine, you belong to the Occident. That is natural nobility, that is breeding!"²⁸

The Rhine has inevitably become the object of conflict, and of cooperation. The history of the—still ongoing—development of international cooperation among the riparian states and federations towards a comprehensive river management regime is intertwined with that of Europe. It is linked to the rise of nation-states and the rivalries between them, their aberrations, and the process towards European unity through the European (Economic) Community and then the European Union.²⁹

Some of the Rhine's tributaries are large enough to merit water management planning and decision-making regimes in their own right. This is evident in the case of the Mosel/Moselle and Saar/Sarre, for which France, Germany, and Luxembourg established a separate international regime and governance structure. For the purpose of implementing the European Union's Water Framework Directive, the sub-basins of the rivers Main and Neckar are treated as river management districts (see Figure 3). Other important tributaries are the Aare (Switzerland), the Ill (France)—which in the local dialect gave the name to the region of Alsace/Elsaß—and Nahe and Lahn in Germany. In the context of water engineering, pollution control, and the development of water management associations for urbanized and industrialized regions, the sub-basins of the Ruhr and the Emscher are also worth mentioning.

At the end of the eighteenth and in the beginning of the nineteenth century, the necessity of freedom of navigation was recognized after a conflict between France and the Netherlands about navigation rights (van der Kleij et al., 1991). The main obstacles for

navigation in the Rhine were the numerous kingdoms and rulers and the tolls they imposed along the river (Huisman et al, 2000). Passing ships had to pay duties to the rulers of the different Rhine sections. In the framework of the Peace Treaty of Vienna in 1815, the Rhine states voted for free navigation and elimination of tolls and thereby formed an international commission which would ensure freedom of navigation on the Rhine. In 1816, the first steamboats were seen on the Rhine and the Central Commission for the Navigation of the Rhine (CCR) met for the first time. In subsequent years, regulation works facilitated navigation, first in the Upper Rhine (1817), and then the Alpine Rhine (1832), the Main tributary (1850), and the Middle and Lower Rhine (1880).

An international treaty on navigation was concluded in 1831. This treaty is still in force, as well as the Commission, which is the oldest still "alive" river commission in the world.

Nevertheless, navigation and other interests continued to dominate the development of the Rhine regime, and river pollution was not addressed until much later. Concerning navigation, the Mannheim convention was concluded in 1868. Its main objective, principle, and approach were freedom of navigation, equal treatment of all vessels, and the simplification of customs procedures, similar to the common market measures introduced by the European Community much later.

Other important developments in the Rhine regime concerned:³⁰

- Regulation works to facilitate navigation and the generation of hydropower, with agreements concluded between 1920 and 1934;
- Protection of salmon stocks against over-fishing, with an agreement signed and a commission formed in 1885 (which existed until 1950);
- River pollution affecting drinking water production in the down-stream areas, notably the Netherlands, leading to the establishment of the International Commission for the Protection of the Rhine against Pollution (ICPR) in 1950, and its upgrading through

the Berne Convention in 1963 and 1999;

- Development of a joint Rhine Action Plan (RAP) in 1987 to improve the quality of the Rhine sufficiently for the salmon to return;

- Flood control became an object of improved international cooperation after extreme floods in 1993 and 1995;

- Adoption of the EU's Water Framework Directive (WFD) in 2000, effectively establishing integrated river basin management (built on the experience of the Rhine) throughout Europe.

Overall, the international cooperation along the Rhine involved sovereign states, states within federations (the German Länder, but also, in a way, the Swiss cantons), and the European Commission. In substance, it prepared the ground for free commerce and the economic integration of Europe as well as the re-organization of an important part of environmental management from state territorial boundaries towards bio-regional river basin districts. It thus added a functional logic to inter-state cooperation which complemented the hierarchical logic.

The "Federal System" of the EU Learning from the Länder

The environmental policies and measures adopted by the European institutions over the past thirty-five or so years are highly varied, although most are based on legislative instruments, usually directives. Some European policies were developed in response to new initiatives taken by one or more Member State, others were able to build on existing policies in many or all Member States. Depending on their state of development, and on the roles of Member States and the European level, the policy and regulatory dynamics can vary widely. Some policies need discussion, harmonization, or approximation of approaches and regulatory concepts before being fully formulated; others need mechanisms for managing and resolving inconsistencies in their application and possible conflict during implementation after adoption.

The following examples illustrate a variety of institutional settings of policy learning in various fields of EC environmental policymaking.³¹ Each of them has a counterpart process within the Federal Republic of Germany, and each concerns a policy at a different stage of maturity. In sum, the examples show that policy learning mechanisms are integral parts of the institutional arrangements developed within the environment policy regime of the European Union.

EUROPEAN SOIL FORUM

The European Soil Forum (ESF) was an initially loose and informal arrangement for exchanging Member States' experience on aspects of (precautionary or preventive) soil protection policies (as opposed to dealing with contaminated sites). Driven by Member States before European policy was formulated in the field, it served to improve policies in the Member States and clarify where EC coordination or harmonization would be helpful. The ESF is an example of a policy learning activity, in part based on quantitative data, ahead or up-stream of EC policy. In this instance, policy learning can be seen as a precursor to Community policy.

The ESF was modelled, in a way, on the European Water Directors' network (see below), and prepared the ground for the development and eventual adoption of a Soil Framework Directive. The Commission Communication (COM(2006) 231) explains why further action is needed to ensure a high level of soil protection, sets the overall objective of the EU's soil strategy, and explains what kind of measures must be taken. It establishes a ten-year work program for the European Commission. The proposal for a framework Directive (COM(2006) 232) sets out common principles for protecting soils across the EU. Within this common framework, the EU Member States will be in a position to decide how best to protect soil and how use it in a sustainable way on their own territory.³²

WATER FRAMEWORK DIRECTIVE AND THE COMMON IMPLEMENTATION STRATEGY

The Water Framework Directive (WFD) had a long history of discussion (under the name "ecological quality directive"); as an ambitious attempt to reframe

a whole sector of European environmental policy, it was highly controversial. An informal network among heads of departments responsible for water management in the Member States, sub-national states, and river basin agencies emerged as a policy learning structure. Its discussions and the policy inputs derived from them, served to clear the path for the eventual adoption of the WFD.

With the adoption of the WFD, the “European Water Directors,” an informal but influential network of the highest ministerial officials responsible for water management in the Member States and the European Commission, initiated the most dynamic institutional processes for guiding the implementation of the directive, which follows innovative and untested approaches in a number of fields. The WFD, being a process-oriented framework directive, left many issues open and provided much room for adaptation to the Member States. It created a new need to coordinate policies and measures within river basins and state boundaries. A number of working groups and advisory bodies were established to cover a wide range of issues, primarily to develop specific guidelines for WFD implementation. The institutions and procedures in the Common Implementation Strategy (CIS) are an example of a policy learning arrangement for implementation after Community policy has been defined.

Together, the institution of the European Water Directors and the CIS demonstrate the flexibility of policy learning arrangements and their usefulness in various segments of the policy cycle. In essence it is a “European LAWA,” and an example of how the coordination structures found useful in federal Germany are adopted, with adaptations, at the European level.

DIRECTIVE ON INTEGRATED POLLUTION PREVENTION & CONTROL & THE SEVILLA PROCESS:

As a result of the Directive on Integrated Pollution Prevention & Control (IPPC Directive), the European IPPC Bureau was established in Seville, Spain. Its task is to review process and production technologies in industry and to establish guidance for Member

States’ authorities in issuing environmental permits. The Bureau is a formal structure, with staff and a budget, but the Sevilla Process also draws heavily on the involvement of experts from Member States’ administrations, industry, research, and (some) environmental NGOs. The output of the Sevilla Process consists mainly of reference notes on best available techniques, providing much technical detail. Not in and of themselves legally binding, these notes are increasingly regarded as “soft law” (instructing authorities in permitting, and courts in interpreting, legislation). IPPC and the Sevilla Process are an example of a policy learning mechanism for the dynamic implementation of secondary legislation. The process is formalized and institutionalized.

More generally, many environmental directives and regulations provide for the creation of “Technical Committees.” Depending on the specifics of each case, these formal bodies are to exchange experience among Member States and between Member States and the European Commission, develop guidance for administrative implementation and enforcement, and coordinate monitoring and reporting (on implementation to the European Commission). They often also have a role in reviewing and evaluating the success—or otherwise—of the implementation of European legislation, and they advise the Commission on the development of subordinate legislative measures (decisions) or the revision of the directive or regulation through and for which they were established. In many cases, we find that reviews and possible revisions (but no “sun-set clauses”) are explicitly foreseen in EC legislation.

In addition, there are a range of networks, bodies, and institutions that exist, or existed at least initially, without a formal basis in primary law or secondary legislation. Examples, involving mostly civil servants from the Member States, would be the IMPEL network of environmental enforcement agencies, the Environment Policy Review Group (EPRG), the network of EU Co-ordinators of Member States’ Ministries of Environment, or the network known as the “European Water Directors.” All of these tend to focus on information exchange, (informal) policy evaluation, and providing input into policy definition. Consequently, they are flexible in their agenda,

composition, and range of activities. Lacking significant resources, they do not, as a rule, have stable information systems or formalized reporting and assessment routines.

There are other examples of networks involving both civil servants (from ministries and enforcement authorities or agencies) as well as experts from universities and the like. The Topic Centers established by the European Environment Agency would fall into this category. So would a number of Concerted Actions or other networks and programs financed as “research activities” while serving evidently useful policy objectives, for instance, in the areas of soil protection policies and the management of contaminated sites.

It would appear from the overview that policy learning arrangements have been found necessary and useful components of EU environmental policy. European legislation and policy learning can be combined quite easily and flexibly. It should be noted however, that the policy learning arrangements exist mostly in the absence of sanctions and incentives. Their legitimacy stems from their function and their usefulness for improving the efficiency and effectiveness of environmental policy. All the examples in this section relate to issues with little or no overlap with other policy sectors and are “controlled” by the environmental policy community.

Federal States as Laboratories and Policy Learning

Germany, as was described above, is rich in institutions, networks, and processes for facilitating the exchange of experience between and among the Länder, usually involving federal institutions. The same is true for the European Union, which has adopted and adapted some of the institutions from German practice. Depending on the composition, remit, finance, legal nature, and other characteristics, such institutions provide for or facilitate—in different ways—coordination and cooperation. Some are established primarily with that purpose or function in mind.

In each case, however, the institutions also allow for

insights and lessons to be shared, and thus for policy learning. Depending on who is involved and where policy learning is institutionally located, terms such as “inter-state,” “multi-state,” “inter-governmental,” or “trans-national” are often attached to the processes. Irrespective of their place in a scientific typology of processes, they share certain characteristics, conditions, and functions. It is important to keep the specific context of each policy learning process in mind when drawing conclusions and generalizations from them, their successes or failures, and when looking at their multitude.³³

There is a lively dynamic in the evolution of new types of institutions and processes in the European Union. Many of them are open to neighboring or other countries. The EU institutions and processes mix “domestic” and “international” elements; they are hybrids. They are domestic because there is normally a common legislative basis or purpose, making them “EU domestic.” They are international because they have to deal with differences in languages, cultures, legal frameworks, institutional endowments, etc.

There are also international fora, some of which are established through the international scientific, technical, or professional organizations. These tend to be of limited direct use to policymakers and administrators. Other fora, such as the Gleneagles Dialogue established under the G8 group of countries, the Environment Program in the Organization for Economic Cooperation and Development (OECD), or the United Nations Environmental Program’s Marrakesh Process on Sustainable Consumption and Production, may be more policy-relevant, but can be rather specialized and sometimes cumbersome to operate, especially as it is often—e.g., for budgetary reasons—difficult to involve implementers of policies or administrators in international networks or processes.

There are, of course, relevant transatlantic fora and institutions, including, at the top, the regular U.S.-EU summits, with “high-level dialogues,” and the new “Transatlantic Economic Council.” They provide important links that create political space and can stimulate much useful activity by working groups and other structures. The U.S.-EU cooperation over the

Energy Star system on the energy efficiency of computer screens, for instance, is a good example of effective regulatory cooperation with a narrow focus.

The key to all these processes and institutions lies in the complex relationship between the rigid and formal aspects of federal systems, with their sometimes “immutable” allocation of powers and competences on the one hand, and the need in some policy areas to address complex issues that do not fit easily into such rigid structures. Environmental policy is an excellent example because:

Environmental policy issues have a variety of problem structures, ranging from the purely local to the clearly global, each of them determined not only by economics and available technologies but also by natural sciences, geography, etc. By their nature, the management or resolution of environmental policy challenges requires:

- Vertical linkages and cooperation, especially in federal systems but also through international or multilateral institutions;

- Horizontal linkages, between jurisdictions of similar size and standing, for addressing trans-boundary and scale effects, and facilitating problem solving for “ubiquitous” challenges that exhibit similar characteristics but appear in several places seemingly independent from one another;

- “Policy integration” linkages across established lines dividing and separating policies, such as energy, agriculture, industry, transport, foreign affairs, or security policy. These linkages present particular challenges in federal systems where some policies—typically trade and commerce, competition, foreign and security policy—are centralized, and other policies—including environment, conservation, spatial planning—are decentralized;

- Linkages to knowledge and innovation systems, many of which—especially in the natural sciences—are truly global, some of which are highly local, for instance the indigenous knowledge of plants and animal behavior necessary for the protection of some ecosystems and the productive management of

others.

Environmental policy is a relatively young policy,³⁴ still in the process of establishing itself in balance with other, preexisting and institutionally stronger, more stable policies. Environmental policy constantly needs to react to new scientific insights into causes and effects, new technologies and their changing economies, new products and services, production and consumption patterns, as well as the ongoing global environmental change. These are external influences on the policy, even if some of them may also be influenced by environmental policy measures. Environmental policy also needs to adapt to gradually improved understanding about the effectiveness of policy instruments or tools, and regulatory approaches, for instance. In consequence, environmental policy needs to be more dynamic and adaptive than other policies, and requires an almost continuous reshaping of its institutional and regulatory framework.

In practice, one can observe that federal systems that allow their constituent parts to address challenges on their own initiative and experiment with policy approaches and instruments are more efficient in finding effective solutions than political or governmental systems that do not provide that liberty and flexibility. However, it is crucial that effective solutions, once identified, can be disseminated, adapted and adopted in other parts of the federal system. There must be the right balance between “protected space” for experimentation and “competition” to allow successful policies to expand and less effective approaches to be improved or abandoned. It is here that the various structures for coordination and cooperation, and for mutual policy learning play their crucial role.

WHAT ARE THE CONDITIONS FOR SUCCESSFUL POLICY LEARNING PROCESSES?

From the experience in Germany and the European Union, as well as in the U.S., it is possible to identify a number of conditions or contextual factors or characteristics that contribute to the success (or otherwise) of policy learning processes:

■ There should be clear and significant commitment “from the top”—from higher levels in government, parliament, etc.—creating the space for administrators and practitioners to build policy learning structures and make them useful;

■ There must be dedicated and enthusiastic individuals (“natural networkers”) among those participating in order to build and maintain momentum. There must be professional time to spend on the policy learning process, financed by employing agencies or institutions;

■ Policy learning processes need “rhythm,” a commitment to meet annually, biannually, or biennially, for instance. Much of environmental policy is “low politics” and not naturally of interest to high-level decision-makers. It is therefore nigh impossible to maintain constant attention. Allowing an issue to drop on the working agenda at the top and having the means to bring it back up again at regular intervals appears to be a good second-best strategy;

■ Policy learning structures, once they move beyond the often spontaneous initiative of a few enthusiastic supporters, benefit greatly from a formal or informal “secretariat” or focal point. All those involved need to know the initiators, drivers and (financial) backers, opinion-leaders, moderators or processors of issues, and spokespersons or communicators. This is equally important to the backers or supporters of policy learning, who would want to be sure the processes continue and are fruitful;

■ Policy learning systems need a focus, a vision, a mission, a creation myth (or story), shared memories and emotions (events), a shared definition of who belongs and who does not. In political science, the term “policy community” is used to describe groups that exhibit such characteristics. However, the participants of a policy learning process are not normally a “policy community” but only a subset of it. Policy learning systems can be very useful for bridging the divides between policy communities when they involve subsets of several policy communities;

■ Policy learning systems work best when they bring together participants from a mixture of backgrounds

(administration, legislators, academics, service-providing businesses, NGOs, think tanks, etc.). Coordination may work best when participants are “similar” and perform equivalent or complementary functions in their state. Policy learning, however, thrives on ideas being contested, and this is more likely to happen when experts and decision-makers with different backgrounds are involved;

■ Policy learning benefits from involving facilitators, meaning animators, moderators, logistical supporters, network and agenda managers, ideally without their own agenda but accepting their role as “service providers” for the participants. Such facilitation can be and is often performed by participating institutions (by rotation or permanent assignment). For larger and more dynamic processes, especially those addressing urgent issues with time pressure or those involving policy communities with a history of antagonism towards one another, it is often more effective and efficient to involve professional facilitators;

■ Depending on size, levels of ambition, degree of institutional development, need for continuity, and time horizons involved, policy learning processes need sufficient financial resources, and some certainty of continued support. There is now a trend towards creating or using institutions with legal personality in order to facilitate medium-term financial management, accounting and cost-control;³⁵

■ For reasons of legitimacy and effectiveness and in order to maintain their own relevance and usefulness, policy learning processes within or across federal systems need to be reasonably open and visible. Their outcomes should to be easily observable by outsiders.

None of the above are sufficient on their own, none of them are logically “necessary,” and the lack of one specific characteristic can be compensated by the presence or strength of others. However, in each specific case, a critical mass of factors contributing to successful policy learning must be brought together.

WHAT ARE THE FUNCTIONS AND BENEFITS OF POLICY LEARNING PROCESSES?

Where they succeed, policy learning can provide significant benefits, which are usually obvious to participants but not necessarily to outside observers. Again on the basis of examples in Germany and the EU, various functions and benefits can be identified. Policy learning processes:

- Help to quickly identify policy options that are relatively easy to implement—the “low hanging fruit”—by showcasing good practice and providing case histories of successful (or unsuccessful) instrument choice and design, or management of decision-making processes, for instance. This function is practically available for everyone involved, not only once but continuously and dynamically through the establishment of networks, sharing of concerns, etc.;
- Provide a reward mechanism for dedicated professionals and successful pioneers in the development and implementation of policies. Policy learning processes are platforms or arenas for publicly recognizing individual leadership;
- Provide opportunities for training and initiation of younger professionals or professionals moving into a field, particularly by facilitating direct personal encounters with older or more experienced participants who can explain and pass on the informal background and oral history of policies, programs, legislation, etc.;
- Thus provide for collective or shared memory and “connectivity to the past,” which helps maintain continuity in the participating institutions. This connectivity can be particularly useful in avoiding or minimizing disruption after staff fluctuation or rotation;
- Provide immeasurable benefit in helping to avoid for mistakes. This may be the most under-reported benefit as no one seems to document cases. Wise counsel from a more experienced person, given informally to a junior colleague, has probably avoided more mistakes than any other practice or tool, including formal impact assessment methodologies;
- Can be particularly useful at the interface between policy areas, where examples from other states/countries can help overcome existing barriers. This is because such barriers tend to be sufficiently different

from state to state or country to country that the preconceptions that help maintain barriers are easily called into question.

In summary, policy learning processes not only allow for coordination of approaches and thus to exploit efficiencies in areas of transboundary relevance as well as those that are not transboundary but ubiquitous. They also allow for accelerated policy learning in each of the participating institutions, states, or countries, primarily through the selection of successful experiments for adaptation and adoption elsewhere, and the identification (and repeal and burial) of unsuccessful experiments. “States as laboratories” work best if there is a regular and structured evaluation of success and failure, but they work also if the competition between and among ideas, concepts, approaches, and practices is informal.

OPTIONS FOR LINKING THE FEDERAL LABORATORIES IN THE U.S., GERMANY, AND THE EU

Against the backdrop of increasing economic integration across the Atlantic, the question arises of how to link the “federal laboratories” of environmental regulation in the U.S., Germany, and the EU. The purpose here is not to expand the regulatory cooperation between the European Commission and the U.S. administration, in this case notably the EPA, but to provide links between and among the policy learning systems that exist within each of the federal structures. It would appear that there are a number of options that would be relatively easy to implement.

The existing sub-national systems—among the states in the U.S., among the Member States and regions in the EU, and among the Länder in Germany—could be opened to participation across the Atlantic. There may be resistance to involving foreign nationals in critical debates on the implementation of domestic policy in the U.S., or reluctance to involve “non-members” at times when many new Member States have to be accommodated. Perhaps a beginning can be made in areas where technical or planning issues are being discussed, or good and best practice is being presented. More challenging issues, such as harmonizing practice in issuing environmental permits, for instance, may have to wait. As most of the sub-national actors do not have sufficient budgets for international travel, a mechanism to provide financial support would have to be established;

Similarly, one could open the existing transatlantic exchange fora—from the U.S.-EU Summits and the (new) Transatlantic Economic Council to the structures for regulatory cooperation—for participation by Member States and the U.S. states. One might expect objections to the “diluting” of high-level encounters between the European Commission and the U.S. administration by adding “lower level” representatives. In the absence of such participation by elected or unelected officials that are closer to the political conflicts and issues that arise in the implementation of policy, the output of high-level exchanges risks being irrelevant or even counterproductive.

There are a number of bilateral partnerships between sub-national units, such as between Wisconsin and Bayern, usually addressing issues of local or regional concern where the practical experience in one jurisdiction is useful to the other. Such partnerships currently exist mostly in isolation, and can easily be forgotten, for example, after changes in government. Such partnerships would be strengthened and provide more benefits if they were linked to one another, could have access to and make common use of lessons learned in each of them, and could operate using a common platform. The idea would be to increase awareness, disseminate results, and improve performance by using common (logistical) resources, but not to impose a common structure on the partnerships.

Many of the international fora and for exchanging experience about environmental policy (and other public policies)—such as OECD, CSD, UNECE, World Bank, etc—tend to produce results that are often not useful to the “domestic” actors in the U.S., Germany, or the EU, or in third countries striving to develop effective environmental policies and administrations. On the whole, they would benefit from the participation of more practitioners from sub-national entities bringing their experience to the attention of peers from other countries.³⁶ Even if matters have improved in recent years, most of these institutions remain dominated by officials from or appointed by central governments, which narrows their agenda and limits their usefulness.

Conclusions and Outlook

Environmental regulation tends to be complex, and not only in federal systems. The complexity is due to

the wide variety of problem structures in the fields of environmental protection, nature conservation, resources management, or in important segments of environmental policy, such as chemicals regulation. In addition to the need for “coordination within environmental policy,” across specific areas or fields, we also find the need to coordinate environmental protection with other policies, such as agriculture, spatial planning and urban development, energy, transport, tourism, technology, trade, and development, as well as international affairs and security policy. This need for inter-policy coordination or policy integration will increase as the focus shifts further from protecting humans from the pollutants in the environment towards environmentally sustainable development, taking account also of social, economic, institutional, and cultural aspects.

The history of environmental policy in Germany has shown the complexity that is inherent from the nature of environmental policy. Even before the European Economic Community, as it was named at the time, had a discernible influence on environmental policy in Germany, the emerging complexity could be foreseen. The growing role of the EU added complexity on the one hand, but also reduced complexity by providing substantive and procedural standards that have resulted in much more similarity among Länder laws (as well as approximation or harmonization among the EU Member States) than would otherwise have been the case.

Some see the complexity in Germany as an avoidable consequence of inappropriate allocations of competences to the federal or Länder level, and postulate accordingly, that a well-designed reform of the federal constitution of Germany would cure all the ills. Because of the increasing role of the EU, this argument normally leads to calls for shifting competence wholesale to the federal level. The 2006 reform, which was not inspired by or particularly concerned with environmental policy, certainly provided no solution; it was not a “well-designed reform” as far as the environment is concerned.

It is, therefore, fairly safe to predict that environmental policy, legislation, and regulation, will not become simpler, and that legal uncertainty and conflicts—all the way up to the German Federal Constitutional Court and the European Court of Justice—will persist; and because the problem will persist, so will the remedy. The administrative system in federal Germany

has, as was seen above, developed many institutions, fora, and procedures to cope with and compensate for the complexity of environmental policy challenges. Most of these fora are not “political” but “technocratic,” mainly because much of environmental policy is “low politics” and not normally of interest to elected politicians,³⁷ and because environmental policy is rich in challenges in the implementation, such as issuing authorizations to build and operate industrial installations.

The various institutions for coordination and cooperation, and for policy learning, do enable this unavoidable complexity to be managed. They promote coherence within environmental policy, coherence between environment and other policy fields, harmonization across territorial boundaries, and cooperation within bio-regional units. What has emerged not only out of necessity but also spontaneously in Germany has also been adopted at the European level, where institutions have been tailored to address the needs of a multi-centered multi-lingual polity with quite divergent national laws, structures, and traditions. Some of them are open to non-members of the EU and help stabilize and accelerate policy development in other countries.

Not only in Germany but everywhere, complexity and the speed of change are likely to keep increasing: environmental change and technological developments are accelerating, while scientific understanding of complex systems is improving, economic globalization and political reforms are changing the context for environmental policy faster than ever before. In response, more mechanisms for coordination, cooperation, and policy learning will be needed.

In fact, we already see new forms of what might be called “adaptive policy management” emerging. It has been a good practice for some time in the EU to include in Directives and other legislation reporting obligations and review clauses, and to set up technical committees to observe implementation, judge the effectiveness and efficiency of the law, and to advise—from a technical but not political perspective—on possible changes in EU legislation. In addition to the benefits described above, these

committees accelerate the turning of the policy cycle and thus increase the adaptive capacity of policies.

In some cases, such as the Water Framework Directive, legislators, knowing that what they could adopt would not be sufficient for the various and changing circumstances in all the Member States, provided for sometimes elaborate systems of institutions and committees in charge of managing the policy. In the case of the Sevilla Process for the implementation of the Directive on Integrated Pollution Prevention and Control, this allowed for the development and adoption of detailed technical guidance for permitting authorities, that would in simpler circumstances remained a prerogative of the legislator. In the case of the German Renewable Energy Sources Act (Erneuerbare Energien-Gesetz – EEG³⁸), a clearing house (Clearingstelle) has been established in the hope that legal conflicts can be resolved through one mediation body producing timely and coherent results, rather than having different courts decide issues on a case by case basis, often after much delay.

We can expect more such initiatives and institutions as adaptive policy management takes hold. The challenge is in ensuring that this becomes a transatlantic process, and that environmental concerns are fully integrated into all the other transatlantic processes and institutions for managing policies of mutual interest to the U.S., Germany, and the EU.



Figure 1: Political Map of Germany



Figure 2: Hydrographic Map of Germany



Figure 3: Hydrographic Map of the Rhine Basin and its Management Districts

NOTES

1 Strictly speaking, the original institution with relevance to environment and most other policy areas was the European Economic Community (EEC) established in 1957, which became the European Community (EC) and, as such, is one "pillar" of the European Union (EU). The EU also comprises the pillars of Cooperation in Justice and Internal Affairs (JHI) and the Common Foreign and Security Policy (CFSP). Today, it is mostly the EC that adopts policies and legislation in the field of environment, which have an effect also in Germany. However, the term "European Union" or just "Europe" is used most commonly in general discussions, and "European Union" or "EU" is used in this text.

2 Translation adapted from Emiliou (1992: 384-385); for a more detailed discussion of the translation see Kraemer (1998: 387-388).

3 'C'est dans l'organisation fédérale que le principe de subsidiarité trouve, sur le plan strictement politique, sa plus significative expression', Millon-Delsol (1993: 38).

4 Rommel (1984).

5 For detail on subsidiarity in the Maastricht Treaty see Kraemer (1998: 391-394).

6 Jacques Delors according to Elliott (1994: 16).

7 The territory of the Land Bremen is not contiguous; it consists of the city of Bremen and the separate areas of the port of Bremerhaven.

8 The German Federal Environment Agency has enforcement powers in the fields of trans-boundary movements of waste, in chemicals regulation, environmental impact assessments of projects sponsored by federal institutions, and in the protection of Antarctica. The German Emissions Trading Authority (Deutsche Emissionshandelsstelle – DEHSt), established as a unit of the Federal Environment Agency, is the national authority responsible for the implementation of the market-based instruments for climate protection under the Kyoto Protocol, namely the EU Emission Trading Scheme, and the project-based mechanisms Joint Implementation and Clean Development Mechanism.

9 The German Federal Agency for Nature Conservation has enforcement power, for instance, in the implementation of the "Washington" Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) or the German Law on Genetic Engineering (Gentechnikgesetz).

10 This constitutional guarantee is absolute in the sense that the articles in the constitution providing that guarantee cannot themselves be amended in any way. The guarantee is to remain in force forever and is understood to be an indispensable characteristic of the Federal Republic of Germany.

11 Decisions are also legally binding, but are specific measures of lower political salience and need not be considered here.

12 "Sunset clauses" setting dates by which laws expire if not renewed, are not used. The provisions for reporting, assessment of effectiveness, and review are usually sufficient to trigger revisions and improvements in European Directives, and their periodical adaptation to technical progress and new scientific findings.

13 "Gesetz über die Zusammenarbeit von Bund und Ländern in Angelegenheiten der Europäischen Union", of 12 March 1993.

14 For example see <http://de.wikipedia.org/wiki/Umweltpolitik>

15 In relation to water management see Kraemer & Jäger, 1998: 214ff.

16 Previously, Directives, Regulations, and Decisions were adopted as measures against (threatening) barriers to trade or competitive distortions, or on a catch-all but politically controversial clause allowing measures to be adopted outside of established areas of European competence.

17 "Angst vor der Debatte, einfach Angst", Marie-Luise Dött, chair of the CDU/CSU group on the environment, according to Vorholz (2006).

18 "Bundesrecht bricht Landesrecht".

19 Educational policy is also affected. Environment and education are considered to be fields for experimentation with the new constitutional arrangements, which may lead to an increase in legal challenges, reducing legal certainty for the foreseeable future.

20 Except for the competence for establishing general principles for nature conservation, the laws for the protection of species, and marine conservation.

21 "Bodenverteilung", the important matter of soil protection ("Bodenschutz") is left open.

22 Except for the competence for the regulation of substances (chemicals) that are hazardous for the aquatic environment, and the laws regulating polluting installations.

23 Ziehm (2006).

24 <http://www.umweltministerkonferenz.de/>

25 As an exception to the rule, not only a Land but also the Federal Ministry of Environment, Nature Protection, and Nuclear Safety may assume the chair of the working group on soil protection.

26 Such bio-regional coordination and cooperation is also required in other fields of environmental policy; e.g., coastal zone management, the protection of mountain ranges, water quality management in enclosed seas, and biodiversity corridors.

27 See www.lawa.de

28 From: Carl Zuckmayer, *Des Teufels General* (film version); authors' translation.

29 Similar institutional frameworks exist also for the other rivers with large basins, notably the Weser (the only large river entirely within Germany), Danube (the largest and most diverse river basin in Europe and a main vector of developing stronger cooperation with the new Member States and other countries in the region), Elbe (once a symbol of German division and now the symbol of cooperation and renewal), and the Oder (with the Neisse a symbol of the East-West conflict and its management during the Cold War, and now a driver for cooperation across an EU-internal frontier).

30 A detailed description can be found in Kraemer and Kampa (2003).

31 See Kraemer et al. (2003).

32 Further developments will be recorded on the thematic web site on soil protection policy maintained by the the Directorate-General for

Environment of the European Commission, see <http://ec.europa.eu/environment/soil/index.htm>

33 Not only in Germany or Europe, but also in the U.S., where one may count among the most prominent: The Environmental Council of States, the Multi-State Working Group on Environment, the environmental chapters of the regional and national Governors' Associations, as well as the various scientific, technical, or professional organizations that provide platforms for exchange.

34 Some components, for instance such as land, water, fishing, or hunting rights in the management of natural resources are several hundreds of years old, and there are some early examples of industrial pollution control. The beginning of "modern" environmental policy, however, is usually placed in the period between 1955 and 1975.

35 Examples are the European Sustainable Development Network (ESDN – <http://www.sd-network.eu/>), which uses a university-based secretariat and facilitators, or the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL), which may soon become a legal entity in order to ensure continued financial support from the European Commission, see <http://ec.europa.eu/environment/impel/index.htm>.

36 With a view to the 2007 G8 Summit in Heiligendamm in Germany, Timothy Egan asks in the International Herald Tribune: "Where's EuroArnold?" and discusses the role of California in the politics and policies of the United States. It is easy to dismiss the suggestion of Arnold Schwarzenegger's presence at a G8 Summit as a stunt idea, but by the size of its economy, California would have the right to be there. <http://www.iht.com/articles/2007/06/07/opinion/edegan.php>

37 Climate protection and selected energy policy issues currently enjoy political attention at the highest level. However, this reduces attention to other areas of environmental policy, such as noise abatement, soil protection, waste management, etc.

38 See in English: <http://www.bmu.de/files/pdfs/allgemein/application/pdf/res-act.pdf>

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CHAPTER TWO
FEDERALISM AND ENVIRONMENTALISM
IN THE UNITED STATES

ENVIRONMENTAL FEDERALISM IN THE UNITED STATES AND THE SWING OF THE PENDULUM FROM THE FEDERAL TO THE STATE LEVEL

MIRANDA A. SCHREURS WITH MAX W. EPSTEIN

This paper explores the changing nature of environmental federalism in the United States. It focuses in particular on the devolution of responsibility from the federal to the state and municipal levels in the cases of renewable energy and climate change politics. These cases are particularly interesting to examine at this moment in time because of the political tensions that are emerging as a result of the different approaches of the federal and numerous states governments to these issues as well as their importance in international politics. With climate change and renewable energy policies high on the international agenda, understanding the role that federalism is playing in the development of U.S. policy responses to these issues is of utmost significance. In many ways, there is more policy activity at the sub-national than at the national level in these two policy areas.

The Swing of the Pendulum: From the State to the Federal and Back Again

Prior to the 1960s environmental protection in the United States was largely seen as the responsibility of local communities and the states. While dozens of urban communities had introduced some form of urban air pollution control programs by the 1950s, for example, and these had some impact on particulate and other pollutant levels, the local and state initiatives proved insufficient to address the many environmental problems facing the country. The need for a federal role in environmental protection became increasingly clear and led to the establishment of the Environmental Protection Agency in 1970 and the passage of major legislation, including the 1969 National Environmental Policy Act, the 1970 Clean Air Act, the 1972 Clean Water Act, the Endangered Species Act (1973), the Safe Drinking Water Act (1974), the Resource Conservation and Recovery

Act (1976), the Toxic Substances Control Act (1976), the Comprehensive Environmental Response, Compensation, and Liability Act (1980), the Emergency Planning and Right to Know Act (1986), and in the wake of the Exxon Valdez Oil Spill, the Pollution Prevention Act (1990) and the Oil Pollution Act (1990).

During this period, the United States came to be recognized as a leader not only in the development of domestic regulations, but also in promoting international environmental agreements. The U.S. was a strong force behind the Antarctic Treaty, the Convention on Wetlands of International Importance, the International Convention for the Prevention of Pollution from Ships, the International Whaling Commission's Moratorium on Whaling, the Convention on International Trade in Endangered Species, and the Montreal Protocol on Substances that Deplete the Ozone Layer, among others. U.S. leadership was premised on the existence of strong

scientific and environmental communities and a Congress that was amenable to regulatory changes.

In the 1980s, however, the relative strength of the environmental community began to decline. This was not due to a decline in their numbers, but rather due both to the enhanced lobbying capacity of the business community and a shift in the political culture in Washington in a more neoconservative economic direction. The transition began with the election of Ronald Reagan to the presidency in 1980. It took firmer root with the 1994 Republican-sweep of Congress. The result has been a gradual devolution in power towards the states; this has had major implications for environmental protection both domestically and at the international level.

Five broad trends can be identified since the early 1990s. First, Congress became increasingly incapable of building the bipartisan consensus necessary to pass major new environmental legislation. This reflects the growing partisan divide that has come to characterize the U.S. Congress. In this more conservative and polarized political environment, the establishment of new environmental regulations at the domestic level became increasingly difficult. Instead, the goal of Congress has been to downsize government, especially in the areas of environment, welfare, and transportation.

Second, in those areas where the federal government is still involved, in place of new environmental regulations premised on command and control strategies, there has been a shift toward new governance modes. These have included a greater emphasis on voluntary programs, market-based mechanisms, public-private partnerships, and community-based environmental protection. This trend is in part a reaction to the costs of the traditional command and control programs and the resistance to them that was growing in various quarters. The new governance modes are intended to provide more flexibility for industry and other actors in the implementation of policies and programs.¹ It was also a reaction to the growing frustration of the states that they were being left to deal with the costs of unfunded federal environmental mandates. The end result has been a

gradual devolution of environmental protection responsibility to the states.² As we will see, this has had mixed results.

Third, there has been a growing resistance by the U.S. federal government to ratifying multilateral environmental agreements, even ones that it originally proposed. Some suggest that this is largely due to a concern about loss of sovereignty. Thus, whereas in the 1970s and into the 1980s, it was largely the United States that was the major driver behind the development of international environmental agreements, this role has been taken over increasingly by the European Union with support from Japan. Since the 1990s, the European Union and Japan have been pushing through various international environmental agreements that the United States has not ratified. These include the Basel Convention on the International Transport of Hazardous Waste, four of the eight protocols to the Convention on Long Range Transboundary Air Pollution (LRTAP), the Kyoto Protocol, the Convention on Biological Diversity, and the Cartagena Protocol on Biosafety, among others. These trends have led to a divided northern community that has failed to find common ground on global environmental protection.³

Fourth, as Robert V. Percival wrote in 1995, "the landscape of federalism appears to be shifting toward the states after decades of moving in the opposite direction. This could have profound implications for national environmental policy."⁴ States and local governments have started to step into the void left by the federal government's retreat. This can be seen both in relation to domestic environmental issues and international ones.

Fifth, the shifting relations between the federal government, the states, and localities have opened a series of legal questions that has resulted in some of the most important legal decisions to be made in the environmental realm in over a decade. The case that will be considered below is *Massachusetts et al. v. Environmental Protection Agency* that went before the Supreme Court in the fall of 2006 and was decided upon in April 2007.

A Brief Historical Overview: The Growing Role of the Federal Government in Environmental Protection: the 1970s

A growing sense that the country was in the midst of an environmental crisis played a major role in shaping the development of a federal presence in environmental law. The growing number of serious air pollution incidents that were causing sickness and death were a major catalyst behind the regulatory changes that occurred in an effort to improve air quality (Table 1).

The role of the federal government expanded with the passage of the Clean Air Act (1963) providing \$95 million for study and cleanup efforts at the local, state, and federal levels; the Air Quality Act (1967), which provided planning grants to state air pollution control agencies; the Clean Air Act (1970) authorizing Congress to establish National Ambient Air Quality Standards (NAAQS); and the Clean Air Act amendments of 1977 and 1990 (Table 2). The 1977 amendments led to a review of National Ambient Air Quality Standards because states were having difficulty meeting the earlier requirements. At this time, the Congress also passed additional protection for Class I National Park and Wilderness Air Quality. The 1990 amendments tightened controls on sulfur oxides (SO_x) and nitrogen oxides (NO_x) emissions and introduced the nation's first large scale pollution emissions trading system.

A Shift Toward New Modes of Governance and a Devolution of Power to the States

While the federal laws of the 1970s and 1980s had a substantial impact on the quality of the environment and led to major improvements in environmental quality in a number of areas, opposition to the federal imposition of command and control regulations began to grow. There were several reasons for this. Although the federal regulations led to substantial environmental improvements in some areas (especially in the control of pollutants from large point sources), they proved less effective in limiting pollution associated with individual and small emitters and non-point sources of pollution. Regulatory command and

control measures, furthermore, in some instances proved unnecessarily costly, difficult to implement, and to invite stakeholder resistance. Thus, the government began to experiment with governance strategies that might invite greater stakeholder involvement and acceptance, including a wider use of market-based mechanisms and voluntary agreements. The new emphasis on public-private partnerships and voluntary programs is evident across a range of issue areas. One example is the 1990 Clean Air Act amendments, which initiated a cap and trade system for sulfur dioxide permits. This combined elements of a traditional command and control approach to dealing with pollution (imposition of a regulatory cap) with a market-based one (emissions trading). Another is the trend toward public private partnerships in the development of hydrogen fuel and other technologies.

The growth in federal environmental regulations also proved a major stress on federal and state budgets. Quite often, the federal regulations mandated changes in behavior of the states and required them to implement costly pollution control programs. This was often done but with little, if any federal budgetary support. The result was that states, straining under the budgetary demands of an ever increasing number of federally imposed environmental mandates, began to resist. A movement against unfunded federal mandates grew in strength leading ultimately to the passage of legislation restricting the power of the federal government to impose unfunded mandates on the states. In its place, there is a growing trend toward the provision of grants to the states and local communities to implement programs they develop. A recent example of this is New York City Mayor Michael Bloomberg's announcement of a plan to deal with the city's congestion plans by restricting automobile access to the center of the city, much in the way London has done in recent years. The city is competing for a multi-million dollar grant from the federal government to implement its idea.

1948 October 30-31. Donora, Pennsylvania smog incident. Twenty people died, six hundred hospitalized and thousands stricken in this nationally publicized environmental disaster. (17 April 1951—American Steel and Wire Co. settles the Donora, Pennsylvania smog disaster suits for a reported \$235,000 in Pittsburgh 17 April. Some 130 suits seeking \$4,643,000 were filed as a result of the 1948 disaster in which twenty persons died and 5,190 were made ill.)

1948 Six hundred deaths in London in a “killer fog.”

1950 Nov. 24. Poza Rica killer smog incident leaves twenty-two dead, hundreds hospitalized in Mexico. The killer smog was caused by gas fumes from an oil refinery

1952 Dec. 4-8. Four thousand people die in the worst of the London “killer fogs.” Vehicles use lamps in broad daylight, but smog is so thick that busses run only with a guide walking ahead. By 8 December all transportation except the subway had come to a halt.

1953 New York smog incident kills between 170 and 260 in November

1954 Heavy smog conditions shut down industry and schools in Los Angeles for most of October.

1962 Another London smog; approximately 750 die.

1965 Weather inversion creates four day air pollution incident in New York City; eighty die.

Table 1 Air Pollution: A Building Sense of Crisis

Source: Derived from environmental history timeline available at <http://www.radford.edu/~wkovarik/envhist/7forties.html>

1955 Congress passes Air Pollution Control Act, a forerunner of the Clean Air Act of 1963 and subsequent legislation.

1955 International Air Pollution Congress held in New York City.

1959 California becomes first to impose automotive emissions standards, requiring “blow-by” valve to recycle crankcase emissions back through the carburetor. Automakers combine to fight mandatory use of the \$7 device, a fight which leads to an anti-trust suit by the U.S. Justice Dept. that is not settled until 1969.

1960 U.S. Congress funds two-year Public Health Service study on air pollution from cars.

1961 International Clean Air Congress held in London.

1963 Senate Subcommittee on Air and Water Pollution created. U.S. Congress passes Clean Air Act with \$95 million for study and cleanup efforts at local, state, and federal level.

1967 Congress passes Air Quality Act / Clean Air Act which authorizes planning grants to state air pollution control agencies.

1970 Clean Air Act is passed, authorizing Congress to establish National Ambient Air Quality Standards (NAAQS). The goal was to establish NAAQS in every state by 1975. The states were directed to develop state implementation plans applicable to appropriate industrial sources in the state.

1970 December 2. Environmental Protection Agency signed into law. The EPA brings together key federal programs including the Health Education and Welfare National Air Pollution Control Administration (NAPCA) and the Department of Interior’s Water Quality Administration (FWQA).

1977 Federal Clean Air Act Amendments require review of National Ambient Air Quality Standards by 1980. Congress passes additional protection for Class I National Park and Wilderness Air Quality.

1990 Clean Air Act Amendments introduce a cap and trade system in an effort to reduce SOx and NOx emissions.

Table 2 Regulatory Responses to Air Pollution Crisis

Source: Derived from historical timeline available at <http://www.radford.edu/~wkovarik/envhist/timeline.text.html>

Implications of Devolution for Environmental Decision Making

The devolution of environmental decision making power to the states can be viewed from multiple perspectives. On the one hand, it can be seen as leading to a more efficient, cooperative form of federalism. The federal government continues to establish broad policy goals, but then through the provision of grants allows the states and municipalities to develop and implement specific programs and policies, usually with some continued federal oversight role. Since municipalities and states are closest to the problems at hand, they are the ones that are best suited to develop policy programs. On the other, it can be viewed as an abrogation of federal responsibility and a shifting of the policy burden to the sub-national level. Another down side to this approach can be the development of a patchwork of state and local level policies and programs. The resulting lack of harmonization in environmental policies can make it difficult for industry, which must operate under different rules in different jurisdictions. Two examples of this can be found in the area climate change politics and the related area of renewable energy politics.

The Federal Response to Climate Change:

VOLUNTARY MEASURES AND TECHNOLOGY R&D

The case of climate change is a particularly constructive one for comparing the role of subfederal actors in environmental policy making. The Kyoto Protocol was negotiated in an intense and heated conference that took place over the course of twelve days in Kyoto in December 1997. At the conference, the EU agreed to an 8 percent reduction, the United States to 7 percent, and Japan to 6 percent of in their greenhouse gas emissions relative to 1990 levels by 2008-12. Just before the Kyoto Conference, however, the U.S. Senate voted 95-0 in a Sense of the Senate Resolution sponsored by Robert Byrd and Chuck Hagel to prevent the administration from committing the United States to any agreement that did not include meaningful commitments from developing countries or that would hurt the U.S. economy.

Domestic opponents to the agreement—the fossil fuel, automobile, and manufacturing industries and conservative groups like the Heritage Foundation and the American Enterprise Institute were successful at winning the ear of the newly elected George W. Bush as well. In a 13 March 2001 letter to four Republican senators, Bush stated that he did not think “that the government should impose on power plants mandatory emissions reductions for carbon dioxide, which is not a ‘pollutant’ under the Clean Air Act.”⁵ He also reconfirmed his opposition to the Kyoto Protocol “because it exempts 80 percent of the world, including major population centers such as China and India, from compliance, and would cause serious harm to the U.S. economy.”⁶ On 28 March President Bush announced that the U.S. would withdraw from the Kyoto Protocol.

The differences among Brussels, Washington, and Tokyo in their reactions to the Kyoto Protocol have been stark.⁷ Washington has disavowed itself of the mandatory emissions cuts that were required by the Kyoto Protocol. The federal government has instead pursued programs that encourage voluntary measures and technology research and development. In February 2002, at a speech at the National Oceanographic and Atmospheric Administration Bush announced the Clear Skies and Global Climate Change Initiatives. The Clear Skies Initiative is a plan to use a cap and trade system to cut emissions of sulfur dioxides by 73 percent, nitrogen oxides by 67 percent, and mercury by 69 percent relative to 2002 levels by 2018. The Global Climate Change Initiative is a plan to cut U.S. greenhouse gas intensity, the ratio of greenhouse gas emissions to economic output, by 18 percent of 2002 levels by 2012. This is different from an emissions cut; it is instead a plan to slow the growth in emissions through improvements in energy efficiency and technological breakthroughs. This was to be done through voluntary agreements with industry, research and development into renewable energy technologies and energy conservation technologies, and support for nuclear energy and clean coal technology.⁸

Environmentalists were quick to point out that the Clear Skies Initiative, while a positive step forward, did

not include carbon dioxide, a primary greenhouse gas. They criticized the Global Climate Change Initiative for simply slowing the growth in greenhouse gas emissions rather than reversing trends, placing too much trust in the power of voluntary agreements, and not providing strong enough budgetary or tax support for energy conservation or renewable energies.

Several other initiatives were proposed as well. In his January 2003 State of the Union address, President Bush announced he would appropriate \$1.3 billion for research into hydrogen-powered automobiles.⁹ The administration targeted \$1.7 billion to be distributed over a five-year period for the Freedom CAR and Fuel initiatives, public-private cooperative endeavors for the development of hydrogen fuel cells, hydrogen fuel cell powered cars, and hydrogen infrastructure. The administration's stated goal was to have hydrogen powered vehicles and a fuel distribution network in place by 2020. And, in the beginning of 2006, the president announced his Advanced Energy Initiative intended to promote the development of alternative fuels (biofuels), clean coal technologies, advanced nuclear energy, and renewables.

In 2005, Washington also initiated the Asia-Pacific Partnership on Clean Development and Climate in July 2005; it brings together the United States, Australia, China, India, Japan, and South Korea. The Asia-Pacific Partnership favors voluntary approaches and technology development as the solution to addressing climate change. The Bush administration has also placed much emphasis on the development of alternative automobile technologies.

Building on these ideas, on 31 May 2007 in the days leading up to the G8 Summit in Heiligendamm, Germany, President Bush proposed that a post-2012 framework for dealing with climate change be drawn up by 2008 by the fifteen largest greenhouse gas emitters. As described by the White House, the United States will continue to play "a leadership role in supporting global adoption of clean coal technology by promoting low cost capital sources to finance investment in development and deployment of transformational clean energy technologies."¹⁰

In the case of climate change at the federal level, we see a government that is claiming to provide a leadership role, but it is being done primarily through the use of new modes of governance and without the imposition of mandatory emission cuts. The focus has been on technology development and voluntary policy responses.

State and Municipal Climate Change Initiatives

The lack of a strong federal presence in climate change politics has had the interesting result of spurring policy innovation at the state and municipal levels. It has not only been in Europe that there have been disagreements with the Bush administration's rejection of the Kyoto Protocol and its predominantly voluntary approach to climate change mitigation. There have been similar objections within the United States at the state and local government levels. In a real symbol of just how far the pendulum has swung towards the states, there are now dozens of states and hundreds of U.S. municipalities that have started to establish their own plans and regulations addressing greenhouse gas emissions.

Local and State Climate Change Mitigation Initiatives

While Washington, D.C. has failed to take on a leadership role in addressing climate change or developing renewable energy standards (with the noteworthy exception of a renewable fuel standard), many local governments and states have started to take initiatives of their own.¹¹

CONFERENCE OF NEW ENGLAND GOVERNORS AND EASTERN CANADIAN PREMIERS

The Conference of New England Governors and Eastern Canadian Premiers (NEG/ECP) was established in 1973. It brings together six New England states (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) and five Eastern Canadian provinces (New Brunswick, Newfoundland & Labrador, Nova Scotia, Prince Edward Islands, and Quebec). It has had as its

primary objectives the fostering of economic ties, the promotion of energy exchanges, the advocacy of environmental issues and sustainable development, and the coordination of policies and programs in areas such as transportation, forest management, tourism, agriculture, and fisheries.¹² To date, the Conference has established three regional actions plans governing mercury (1998), acid rain (1998), and climate change (2001).

In July 2000, the NEG/ECP adopted a resolution recognizing climate change as a joint concern. This led to the formation in August 2001 of a Climate Change Action Plan, the first of its kind in North America. It pledges them to each work to reduce the region's greenhouse gas emissions to 1990 levels by 2010 and 10 percent below 1990 levels by 2020. The long-term goal is to reduce emissions by 75 to 85 percent below current levels.¹³

REGIONAL GREENHOUSE GAS INITIATIVE

The Regional Greenhouse Gas Initiative (RGGI) was started in 2003.¹⁴ It aims to create a cap-and-trade scheme covering CO₂ emissions from the major power plants in the participating states. RGGI includes Maine, Maryland, Vermont, New Hampshire, Connecticut, New York, New Jersey, and Delaware. The District of Columbia, Massachusetts, Pennsylvania, Rhode Island, the Eastern Canadian Provinces, and New Brunswick are observers and may join the pact in the future. RGGI is designed to stabilize CO₂ emissions from the region's power sector between 2009 and 2015, followed by annual cuts in CO₂ emissions by 2.5 percent per year, achieving a total 10 percent reduction by 2019 in each state.

THE WEST COAST GOVERNOR'S GLOBAL WARMING INITIATIVE

Launched in 2003, the West Coast Governor's Global Warming Initiative was developed by California, Oregon, and Washington. The initiative recognizes that "global warming will have serious adverse consequences on the economy, health, and environment of the West Coast states." A list of policy

recommendations has been drafted by the governors' staffs in the three states. The list calls for setting new targets for improvements in average annual state fleet greenhouse gas emissions, collaboration on the purchase of hybrid vehicles, establishing a plan for the deployment of electrification at truck stops along the I-5 corridor (a north-south highway running the length of the West Coast), setting goals, strategies, and incentives for the expansion of retail sales of renewable energy by one percent or more per year in each state through 2015, adopting energy efficiency standards for products for which such standards do not yet exist at the federal level, and improving energy efficiency standards for update of state building codes, with a goal of at least 15 percent cumulative savings in each state by 2015.¹⁵

STATE-LEVEL RENEWABLE ENERGY PORTFOLIO STANDARDS

In the absence of federal renewable energy portfolio standard, many states have introduced their own renewable energy portfolio standards (see Table 3). As of May 2007, there were twenty-three states plus the District of Columbia with some form of renewable energy portfolio standard. In addition, some cities in states that did not have renewable energy portfolio standards had introduced them at the municipal level, an example being Columbia, Missouri with a goal of producing or purchasing renewable energies (2% by 2007; 5% by 2012; 10% by 2017; and 15% by 2020).¹⁶

In 2002, California introduced the most aggressive renewable energy portfolio standard in the country, with a plan to require retail sellers of electricity to purchase 20 percent of their electricity from renewable sources by 2010 and 33 percent by 2020 (excludes large hydro defined as larger than 30MW).¹⁷ Other related efforts are on-going as well. In 2006, California introduced a new Solar Initiative, a \$2.8 billion program to promote solar energy over the next eleven years. California's initiatives have helped to spur action in other parts of the country as well.

In addition to the Renewable Energy Portfolio

Arizona	0.2 % in 2001 increasing to 1.1% in 2007-12
California	20% by 2010; 33% by 2020
Colorado	3% by 2007; 6% by 2011; 10% by 2015
Connecticut	4% by January 1, 2004; 10% by January 1, 2010
Delaware	10% by 2019
Florida	(for municipal utilities) 4% by 2007; 7.5% by 2015
Hawaii	7% by end of 2003; 8% by end of 2005; 10% by end of 2010; 15% by end of 2015; and 20% by end of 2020
Illinois	8% in 2013
Iowa	105MW
Maine	30%
Maryland	7.5% 2019
Massachusetts	1% renewable in 2003; 4% in 2009; plus 1% each year after 2009
Minnesota	*non-mandated. 1% in 2005; increasing by 1% each year to at least 10% in Mandated: wind power generation 1,125 MW by end of 2010; 125 MW biomass by 2002
Montana	5% in 2008; 10% in 2010; 15% in 2015
Nevada	6% in 2005; 20% by 2015
New Jersey	6.5% by 2008
New Mexico	5% in 2006; 10% in 2011
New York	25% by 2013
Pennsylvania	18% by 2020
Rhode Island	16% by 2020
Texas	2,280 MW by January 1, 2007; 5,880 by January 1, 2015
Vermont	total incremental energy growth between 2005-12 to be met with renewables (10% cap)
Virginia	12% of base year (2007) sales by 2011
Wisconsin	2.2% by December 31, 2011
District of Columbia	11% by 2022

Table 3. States with Renewable Energy Portfolio Standards

Source: North Carolina Solar Center, Database of State Incentives for Renewable Energies, <http://www.dsireusa.org/summarytables/reg1.cfm?&CurrentPageID=7&EE=0&RE=1>.

Standards, as of mid-2007 there were thirty-seven states with net metering, allowing a business or home that produces energy from renewable energy sources to essentially use any excess electricity produced to offset electricity used at other times (production of excess electricity spins the electricity meter backwards). Moreover, beyond these state level initiatives, there are numerous local and utility level net metering programs.

Other incentive programs include green power purchasing. Connecticut, Illinois, Iowa, Indiana, Maine, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, and Wisconsin require a certain percentage of government purchasing to be of

renewable electricity. Thus, Pennsylvania, for example, requires that 10 percent of state-government electricity use be purchased from renewable energy sources (35 percent of this is to be from wind power, 10 percent from burning waste coal in circulating fluidized bed facilities, and the remainder from low-impact hydropower from the Susquehanna River).¹⁸ New York requires the state to purchase 20 percent of its electricity from renewables by 2010 (and had a 10 percent goal for 2005).¹⁹

Consistent with the observation that the federal government has chosen to devolve power to the states, we now find a growing number of states playing an agenda setting role within the U.S. federal

system in the area of energy policy. Much like a number of states have moved forward on greenhouse gas emissions reduction targets in the absence of strong federal leadership, a growing number of states are finding it in their own best interest to address energy security and clean energy concerns.

U.S. MAYOR'S CLIMATE PROTECTION AGREEMENT

Action is also visible at the municipal level. Recognizing that cities are responsible for the bulk of greenhouse gas emissions, a movement has begun among U.S. and international cities to take steps to reduce their contributions to climate change. As of 23 May 2007, there are 522 mayors of U.S. cities that have signed the U.S. Mayor's Climate Protection Agreement, representing over 65 million Americans. They have agreed to strive to meet or exceed the Kyoto Protocol targets, urge their state governments and the federal government to enact policies to meet the target agreed to by the U.S. federal government at the Kyoto Conference in 1997 (a minus 7 percent reduction in greenhouse gas emissions relative to 1990 levels by 2012), plus urge the U.S. Congress to pass greenhouse gas reduction legislation that would establish a national emission trading system.²⁰ To facilitate the exchange of ideas among cities about innovative programs, policies, and goals, the United States Conference of Mayors has produced a best practice guide. The guide covers municipal buildings, facilities and operations, air quality, climate change, energy sources, fuels, vehicles, transit, housing, and other areas where cities have formulated programs that others might wish to emulate.²¹

The United States Clean Air Act and the California Exemption

In the area of environmental policy in the United States, not all states are created equal. California has often played the role of environmental agenda-setter. In the absence of federal leadership in environmental governance, in numerous cases—ranging from tailpipe emissions to seatbelts in automobiles—California has often led Washington in policy development. In recent years, the California legislature has led in mandating the establishment of carbon dioxide

emission standards for automobiles and in the promotion of renewable energies.

With a population of 36 million in 2006, California represents approximately 12.5 percent of the total U.S. population.²² Given that California's economy is one of the largest in the world, what California does influences the rest of the country significantly.²³

What is important to understand is that while California arguably has a "greener" minded public than many other states, there is a legal basis behind California's environmental leadership. In 1963 the California New Motor Vehicle Pollution Control Board adopted the country's first motor vehicle emissions standards. Because California introduced tailpipe emissions controls before the federal government did, in the formulation of the Clean Air Act, a special provision was introduced to recognize the pioneering role played by California.

The Clean Air Act gave the federal government the authority to establish new motor vehicle and engine standards. Sec. 209 of the Clean Air Act specifically articulates that no state may enact "any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines." It makes an explicit exception, however, for any state that had already adopted such standards prior to 30 March 1966, essentially an acknowledgement of the leadership role played by California in the establishment of air pollution controls. This has meant that California is in a position to apply to the Environmental Protection Agency Administrator for a waiver allowing it to establish motor vehicle standards "if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards." In fact, California is the only state that meets the eligibility requirements to obtain a waiver. However, when California wins such an exemption, other states may choose to either adopt the federal standards or the more stringent standards established by the state of California.

Once another state adopts California's standards, over time as California's standards strengthen, the state must continue to raise standards to maintain

consistency with California's standards or revert back to federal standards. Thus, for example, Washington House Bill 1397 to adopt California emissions standards states in "(2)(1) The department of ecology shall adopt rules to implement the emission standards of the state of California for passenger cars, light duty trucks, and medium duty passenger vehicles, and shall amend the rules from time to time, to maintain consistency with the California motor vehicle emission standards and 42 U.S.C. Sec. 7507."

Section 209 (b) of the Clean Air Act gives the EPA Administrator the right to withhold such waiver if the Administrator finds "(A) the determination of the State is arbitrary and capricious" or "(B) such State does not need such State standards to meet compelling and extraordinary conditions."²⁴

Under the Clean Air Act, a pollutant is defined in section 302 (g) as "any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term 'air pollutant' is used."

Section 302 (h) defines criteria for effects on public welfare as including, but not limited to "effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutant."

California's Regulatory Challenges to the Federal Government's Lack of Environmental Leadership

ASSEMBLY BILL 1493

After the 1973 Organization for Petroleum Exporting

Countries' oil embargo sent world oil prices soaring, in 1975, the U.S. Congress passed the Energy Policy and Conservation Act, which among other things established Corporate Average Fuel Economy (CAFE) standards for automobiles. The goal set by the act was to double 1974 passenger fuel economy average by 1985 to 27.5 miles per gallon (mpg). This standard was achieved in 1985. The Reagan administration rolled the standard back to 26 mpg. In 1989, the George H. W. Bush administration raised it back to 27.5 mpg and it has stayed there ever since. Despite considerable pressure from environmental groups, automobile manufacturers have been successful at keeping Congress from increasing the CAFE standards for automobiles. The Department of Transportation did raise the CAFE standards twice for SUVs and light trucks covering model years 2005-11 based on a vehicle's "footprint," the product of multiplying a vehicle's wheel base by its track width. The changes will bring the fuel economy of light trucks from 20.7 mpg prior to 2005 to 24 mpg by 2011. No change, however, was made to standards for passenger cars.²⁵

Although prohibited by law from establishing its own CAFE standards, California has found another route to influence the emissions coming out of automobile tailpipes. In July 2002, the California State Assembly passed the California Climate Bill (AB 1493 or the Pavley law, named after its sponsor Fran Pavley), which was signed into law by Governor Gray Davis in August. This regulation mandated the California Air Resources Board (CARB) to establish a plan for achieving "maximal feasible reduction" of carbon dioxide emissions from vehicles. In explaining his decision to sign the bill, Governor Davis stated: "The federal government and Congress by failing to ratify the Kyoto Treaty on global warming have missed the opportunity to do the right thing... We can now join the long-standing and successful effort of European nations against global warming, learn from their experience and build upon it."²⁶ In September 2004 CARB established regulations giving automobile manufacturers until 2009 to meet the new standards. If the law goes into effect, manufacturers will be collectively required to cut emissions by 22 percent by 2012 and 30 percent by 2016 relative to the 2002

fleet average.²⁷ In 2005, California petitioned the Environmental Protection Agency Administrator for a waiver so that it can put the law into effect. As is discussed more below, this waiver is still pending as of June 2007.

At least eleven other states have passed regulations adopting California's Low Emission Vehicle standards. They are: Washington, Oregon, Maine, New York, New Jersey, Pennsylvania, Maine, Massachusetts, Vermont, Rhode Island, and Maryland. Six others are considering doing the same.²⁸ Their ability to implement their own laws will depend upon California receiving the necessary waiver under the Clean Air Act. Six others are considering doing so: Illinois, Arizona, North Carolina, Colorado, New Mexico, and New Hampshire.

In another intriguing twist, in May 2006, ten states (California, Connecticut, Maine, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont) plus the District of Columbia and the Attorney General of New York City sued the Bush administration for its lenient automobile fuel efficiency standards, which they argue have contributed to the high costs consumers must pay at the gasoline pump and contributed to rising greenhouse gas emissions.²⁹

EXECUTIVE ORDER S-3-05 AND ASSEMBLY BILL 32

In 2005, Governor Schwarzenegger signed Executive Order S-3-05, establishing climate change emission reduction targets for the state and requesting a report that specifically addresses the impacts of climate change on the state and possible adaptation measures.³⁰

According to a 2006 survey conducted by the Public Policy Institute of California, most Californians found that the federal government was not doing enough to address global warming. Interestingly, close to two-thirds of respondents support state initiatives on climate change and the introduction of vehicle emissions standards, even if they raise the price of automobiles. Following this public sentiment, in September 2006 Governor Schwarzenegger signed

AB 32, California's global warming legislation. It mandates industry to reduce its greenhouse gas emissions by 25 percent over the next thirteen years.³¹

Federal-State Relations and the Role of the Courts

While California's status is unique within the federal system, other states are also finding innovative ways to respond to what they see as a leadership void in Washington. The courts have provided an important tool for states seeking greater federal leadership to demand policy changes in Washington. A particularly important case in this regard is the Commonwealth of Massachusetts et al. versus Environmental Protection Agency et al.

COMMONWEALTH OF MASSACHUSETTS ET AL. VERSUS ENVIRONMENTAL PROTECTION AGENCY ET AL.³²

In 1999 the International Center for Technology Assessments and others petitioned the Environmental Protection Agency to begin regulating the emissions of four greenhouse gases, including carbon dioxide, under §202(a)(1) of the Clean Air Act. The petition noted that in 1998 EPA General Counsel Jonathan Cannon had written a legal opinion concluding CO₂ was within the scope of EPA authority to regulate, but had chosen not to do so. Two weeks before the petition was filed, Cannon's successor, Gary Guzy, reiterated that position to a congressional committee. Nevertheless, the EPA ultimately denied the petition on 8 September 2003 arguing that the Clean Air Act does not authorize it to issue mandatory greenhouse gas regulations, and even if it had established such authority, it would not have been wise to do so due to uncertain science on global warming. The EPA also argued that any EPA regulation of motor vehicle emissions would be a piecemeal approach to climate change mitigation that would conflict with the president's comprehensive approach, focused on technological innovation, the establishment of non-regulatory programs to encourage voluntary private-sector reductions in greenhouse gas emissions, and additional research on climate change. Moreover, it might

limit the President's ability to persuade key developing nations to reduce emissions. Four years later the EPA denied the petition and the District of Columbia Circuit Court upheld the EPA's decision.

Massachusetts, eleven other states, and several other local governments and non-governmental organizations decided to appeal to the Supreme Court.³³ They had two main tasks. First, they had to convince the Supreme Court that they had legal standing to sue the EPA in this case. Second, they had to convince the Supreme Court that the EPA had neglected its duties under the Clean Air Act for failing to control carbon dioxide emissions. It is interesting to consider the arguments that were made.

Massachusetts was able to show it had standing by showing "that it has suffered a concrete and particularized injury that is either actual or imminent, that the injury is fairly traceable to the defendant, and that a favorable decision will likely redress that injury." Massachusetts argued that "global sea levels rose between 10 and 20 centimeters over the twentieth century as a result of global warming and have already begun to swallow Massachusetts' coastal land." This was an indication of actual damage. Massachusetts also argued that sea level rise would continue due to anthropogenic green house gas (GHG) emissions, and that this would have catastrophic effects for the state. This would constitute imminent injury.

The EPA argued that even if this was true, which they disputed, it would be irrelevant because the proposed action by the EPA to regulate GHG emissions from motor vehicles could not be expected to redress that injury. The reason given was that the continued economic expansion of foreign nations, especially China and India, would override any cuts made in the United States. Thus, the harm done to Massachusetts was due to a global phenomenon, not the U.S. transportation sector, which represents only 6 percent of global GHG emissions. Furthermore, the 40 percent reduction in transportation emissions Massachusetts insisted was possible would only represent 2.5 percent of the global emissions.

Massachusetts's attorney countered that "if we're able

to save only a small fraction of the hundreds of millions of dollars that Massachusetts park agencies are projected to lose, that reduction is itself significant." He also said "while reducing U.S. emissions will not eliminate all the harm we face, it can reduce the harm that these emissions are causing. So it will necessarily reduce our harm and satisfy redressibility."

On 2 April 2007 the United States Supreme Court ruled 5-4 in favor of the petitioners. This was a powerful reprimand of the Environmental Protection Administration for not regulating carbon dioxide and other greenhouse gas emissions under the Clean Air Act.

Congressional Initiatives to Block State Regulatory Action on Greenhouse Gas Emissions

Interestingly, the growing trend at the state level towards regulatory action related to climate change has caused some unease within some quarters at the federal level. Subcommittee on Energy and Air Quality Chair Rick Boucher, a Democrat from the southwest of Virginia, a coal-producing region, has drafted legislation that would prohibit the Environmental Protection Agency Administrator from issuing the waiver to the Clean Air Act that is required from them to impose automobile pollution standards if the new requirements are "designed to reduce greenhouse gas emissions." California and seven other states have protested in a letter to Boucher against the bill arguing that it would amount to an "about-face reversal of the Supreme Court decision identifying CO₂ as a pollutant within the scope of the Clean Air Act."³⁴

Conclusion

Research into comparative environmental governance has tended to focus on the politics and policies of national/supranational governments to the exclusion of sub-national ones. Recent developments suggest that scholars and practitioners need to pay more attention to issues of federalism and how sub-national politics can influence policy outcome and in the long

run even change the direction of national policies. In the United States, since the 2006 mid-term elections when the Democrats won a majority in government, the political environment for policy change on climate issues has improved. State and local level initiatives are influencing national policymaking.

U.S. state and local level initiatives were influenced, moreover, by developments overseas, and especially in Europe. This could mean that in the future, the differences between Europe and the United States in their approaches to climate change mitigation could diminish.

The movement toward devolution of environmental policy making and the shift towards the use of new modes of environmental governance has certainly opened up new possibilities for addressing environmental problems, and appears to have added a degree of flexibility and efficiency to the system. But this may be more true in some environmental policy areas than others. As the case studies in this report suggest, while states have the potential to be innovative, lack of federal leadership can slow progress towards meeting some policy goals. It can also lead to a patchwork of policy responses that may prove troubling to businesses.

The question remains to be seen if in the coming years, the pendulum will once again swing back in the direction of a greater federal leadership role in environmental agenda setting. This may be necessary in order to effectively respond to major global challenges like climate change.

NOTES

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