

A Handbook of Globalisation and Environmental Policy

National Government Interventions in a
Global Arena

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9. Environmental Federalism in the European Union and the United States

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SUMMARY

The United States (US) and the European Union (EU) are federal systems in which the responsibility for environmental policy-making is divided or shared between the central government and the (member) states. The attribution of decision-making power has important policy implications. This chapter compares the role of central and local authorities in the US and the EU in formulating environmental regulations in three areas: automotive emissions, packaging waste, and global climate change. Automotive emissions are relatively centralised in both political systems. In the cases of packaging waste and global climate change, regulatory policy-making is shared in the EU, but is primarily the responsibility of local governments in the US. Thus, in some important areas, regulatory policy-making is relatively centralised in the EU. The most important role local governments play in the regulatory process is to help diffuse stringent local standards through centralised regulations, a dynamic which has become more common in the EU than in the US.

INTRODUCTION

In the EU and the US, responsibility for the making of environmental policy is divided between EU and federal institutions, on the one hand, and local institutions, on the other. The former is comprised of the EU and the US federal government, while the latter consist of state and local governments in

the US, and member states and subnational authorities in the EU.¹ Historically, environmental rules and regulations were primarily made at the state or local level on both sides of the Atlantic. However, the emergence of the contemporary environmental movement during the late 1960s and early 1970s led to greater centralisation of environmental policy-making in both the US and Europe.

In the US, this change occurred relatively rapidly. By the mid 1970s, federal standards had been established for virtually all forms of air and water pollution. By the end of the decade, federal regulations governed the protection of endangered species, drinking water quality, pesticide approval, the disposal of hazardous wastes, surface mining, and forest management, among other policy areas. The federalisation of US environmental policy was strongly supported by pressure from environmental activists, who believed that federal regulation was more likely to be effective than regulation at the state level.

In Europe, this change occurred more gradually, largely because the Treaty of Rome contained no provision providing for environmental regulation by the European Community (EC). Nonetheless, more than 70 environmental directives were adopted between 1973 and 1983. Following the enactment of the Single European Act in 1987, which provided a clear legal basis for EC environmental policy and eased the procedures for the approval of Community environmental directives, EC environmental policy-making accelerated. Originally primarily motivated by the need to prevent divergent national standards from undermining the single market, it became an increasingly important focus of EC/EU policy in its own right. Each successive treaty has strengthened the EU's commitment to and responsibility for improving environmental quality and promoting sustainable development throughout Europe. Thus, notwithstanding their different constitutional systems, in both the EU and the US, the locus of environmental policy-making has become increasingly centralised over the last three decades.

Nevertheless, state governments continue to play a critical role in environmental regulation on both sides of the Atlantic. Most importantly, states remain an important locus of policy innovation and agenda setting. In many cases, new areas of environmental policy are first addressed at the state level and subsequently adopted by the central authority. Many state regulations remain more stringent or comprehensive than those of the central authority; in some policy areas, states retain primary responsibility. In other cases, responsibility for environmental policy-making is shared by both levels of government. Not surprisingly, in both federal systems, there are

¹ For ease of presentation, we refer at times to both of the former as central authorities and both of the latter as states.

ongoing disputes about the relative competence of central and state authorities to regulate various dimensions of environmental policy.

We explored the dynamics of federal environmental policy-making in both the US and the EU. At what level of government are new standards initiated? Under what circumstances are state regulations diffused to other states and/or adopted by the central authority? Under what circumstances can or do states maintain regulations that are more stringent than those of other states? We conducted a comparative study of the development of US and EU regulatory policies in three areas: automobile emissions, packaging waste, and global climate change. Each policy area reflects a different stage in the evolution of environmental policy. These cases also demonstrate the differences and the similarities in the patterns of environmental policy-making in the US and the EU.

Automobile emissions typify the first generation of environmental regulation. A major source of air pollution, particularly in urban areas, automobiles were among the first targets of environmental regulation during the 1960s and 1970s and they remain an important component of environmental policy in every industrialized country. Packaging typifies the next generation of environmental regulation. Its emergence on the policy agenda during the 1980s reflected the increased public concern about the scarcity of landfills and the need to conserve natural resources. Unlike automobile regulation, which primarily affects only two industries, albeit critical ones (automotive manufacturers and the refiners of gasoline), packaging waste regulations affect virtually all manufacturers of consumer goods. The increased priority of reducing packaging waste and promoting re-use and recycling symbolises a shift in the focus of environmental regulation from reducing pollution to promoting eco-efficiency. Global climate change represents a relatively new dimension of environmental policy. It first surfaced during the mid-1980s, but it has become much more salient over the last decade. This policy area exemplifies the increasingly important international dimension of environmental regulation: global climate change both affects and is affected by the regulatory policies of virtually all countries. It also illustrates the growing economic scope of environmental regulation: few economic activities are likely to be unaffected by policies aimed at reducing the emission of carbon dioxide and other greenhouse gases.

These three policy areas provide a useful window on the changing dynamics of the relationship between state and central regulation in the US and the EU. Since the mid-1980s, automobile emissions standards have been more centralised in the EU than in the US. The US permits states to adopt more stringent standards, while the EU does not. However, both the EU and the US

have progressively strengthened their regulations governing automotive emissions and fuel composition, though most US federal standards remain more stringent than EU ones. For its part, California, which is permitted its own emissions standards, has become a world leader in the effort to encourage the development and marketing of low- and zero-emission vehicles.

The dynamics of the regulation of packaging waste differs considerably. In the US, the federal government plays little or no role in setting standards for packaging waste: packaging, recycling, and waste disposal are all the responsibility of state or local governments. However, the lack of federal standards has neither prevented nor discouraged many state governments from adopting their own regulations. There has been considerable innovation at the state level: a number of local governments have developed ambitious programmes to reduce packaging waste and promote recycling. There has been little pressure for federal standards and the federal government has not attempted to limit state regulations with one important exception: federal courts have repeatedly found state restrictions on 'imports' of garbage to violate the interstate commerce clause of the US constitution.²

In the EU, the situation is more complex. Member states began to regulate packaging waste during the 1980s, while the EU became formally involved in this policy area in 1994. However, in contrast to automotive emissions, the responsibility for packaging regulation remains shared between central and state authorities. There is considerable diversity among state regulations, and member states continue to play an important role in policy innovation, often adopting regulations that are more stringent than those of the EU. State packaging waste regulations have been an ongoing source of conflict between central and local authorities, with the European Commission periodically challenging particular state regulations on the grounds of their incompatibility with the single market. In addition, the central government has imposed maximum as well as minimum standards for waste recovery, though this is likely to change soon. On balance, EU packaging standards are more stringent and comprehensive than those prevailing in the US. Europe's 'greener' member states have made more ambitious efforts to reduce packaging waste than have their American state counterparts, while the EU's Packaging Waste Directive provides a centralised floor on state standards which does not exist in the US. Nevertheless, there have been a number of important US state standards.

In the case of climate policy, important initiatives and commitments to reduce emissions of greenhouse gases have been undertaken in the EU at both the central and state levels with one often complementing and

² Berland, 1992.

reinforcing the other. In the US, by contrast, there are no federal climate change regulations. As in the case of packaging waste policies, there have been a number of state initiatives. But in contrast to the regulation of packaging waste, the lack of central regulation of climate policy has become politically salient; the nation's 'greener' states have strongly pressured for centralised standards, though their efforts to date have been unsuccessful. In addition, there has been conflict over the legal authority of states to establish policies in this area. The gap between US and EU regulatory policies regarding climate change is more substantial than the gaps in the other two policy areas. The EU and each member state have formally ratified the Kyoto Protocol, while the US has not. Since American states cannot enter into international environmental agreements, this means that no US regulatory authority is under any international obligation to regulate carbon dioxide emissions. While all EU member states have adopted climate change policies, many states in the US have not. Moreover, US state regulations tend to be weaker than those adopted or being adopted by the member states of the EU. The EU has established a regulatory regime based on emissions trading and shared targets to facilitate member states' carbon dioxide reduction programmes, while in the critical area of vehicle emissions, the US central government has become an obstacle to more stringent state regulations.

AUTOMOBILE EMISSIONS

United States

The regulation of automobile emissions in the US began in 1960 when the state of California enacted the Motor Vehicle Pollution Control Act. This statute established a state board to develop criteria to approve, test, and certify emission control devices.³ Within two years, the board had certified seven devices that were bolt-on pollution controls, such as air pumps that improve combustion efficiency⁴ and required their installation by 1965.⁵ After opposing emissions standards in the mid-1960s, 'the automobile industry began to advocate federal emissions standards for automobiles [after] California had adopted state standards, and a number of other states were considering similar legislation.'⁶ In 1965, Congress enacted the federal Motor Vehicle Air Pollution Control Act, which authorised the establishment

³ Percival et al., 1992.

⁴ California EPA, 2001.

⁵ Percival et al., 1992.

⁶ Revesz, 2001: 573.

of auto emissions standards. The first federal standards were imposed for 1968 model year vehicles for carbon monoxide and hydrocarbons.

Two years later, in 1967, Congress responded to the automobile industry's concerns about the difficulty of complying with different state standards by declaring that federal emission controls would preempt all state emission regulations. However, an exception was made for California, provided that the state afforded adequate lead time to permit development of the necessary technology, given the cost of compliance within that time.⁷ The exemption was granted 'in recognition of the acute automobile pollution problems in California and the political power of the California delegation in the House of Representatives'.⁸ One legal scholar noted, 'The legislative history of the 1967 waiver provision suggests two distinct rationales for its enactment: (1) providing California with the authority to address the pressing problem of smog within the state; and (2) the broader intention of enabling California to use its developing expertise in vehicle pollution to develop innovative regulatory programs.'⁹

In 1970, President Nixon asked Congress to pass more stringent standards based on the lowest pollution levels attainable using developing technology.¹⁰ Congress responded by enacting the technology-forcing Clean Air Act Amendments of 1970, which required automakers to reduce their emissions of carbon monoxide and hydrocarbons by 90 per cent within five years and their emissions of nitrogen oxides by 90 per cent within six years.¹¹ These drastic reductions were intended to close the large gap between ambient urban air pollution concentrations and the federal health-based Nationally Uniform Ambient Air Quality Standards (NAAQS) established pursuant to the US Clean Air Act.¹² Once again, California was permitted to retain and/or enact more stringent standards, though these were specified in federal law.¹³

The 1977 amendments to the Clean Air Act established more stringent emissions standards for both automobiles and trucks and once again permitted California to adopt more stringent standards. In 1990, the Clean Air Act was again amended: 'the California Air Resources Board old tailpipe emissions standards for new cars and light duty trucks sold in that state were adopted by Congress . . . as the standard to be met by all new vehicles.'¹⁴ In

⁷ US EPA, 1999.

⁸ Reh binder and Stewart, 1985: 114.

⁹ Chanin, 2003: 699.

¹⁰ Percival et al., 1992.

¹¹ Reh binder and Stewart, 1985.

¹² Congress based its 90 per cent reduction on 'the simple notion that since air pollution levels in major cities were approximately five times the expected levels of the NAAQSs, emissions would need to be reduced by at least 80 per cent, with an additional 10 per cent necessary to provide for growing vehicle use' (Percival et al., 1992: 834).

¹³ California EPA, 2001.

¹⁴ Bryner, 1993: 150.

addition to again waiving federal preemption for California, the 1990 legislation for the first time authorised any state that was not meeting NAAQS for automotive pollutants to adopt California's standards.¹⁵ To date, Massachusetts, New York, Vermont, and Maine have chosen to do so. Thus, since 1990, the US has had a nationwide two-tiered system of automotive emission regulation: one based on federal standards and the other on California's. This regulatory policy 'reflects a compromise between two interests: the desire to protect the economies of scale in automobile production and the desire to accelerate the process for attainment of the NAAQS'.¹⁶ Thus, while automotive emission standards are primarily shaped by federal legislation, the federal government provides states with the opportunity to choose between two sets of standards.

California continues to play a pioneering role in shaping automotive emissions policy. In 1990, California adopted a programme to encourage Low-Emission Vehicles (LEV). This included a Zero-Emission Vehicle (ZEV) programme meant to jump-start the market for these vehicles. The ZEV programme required that such vehicles comprise at least 2 per cent of new car sales by 1998, 5 per cent by 2001, and 10 per cent by 2003. When this requirement was approved, the only feasible technology that met ZEV standards were electric vehicles, whose emissions were over 90 per cent lower than those of the cleanest gasoline vehicles, even when including the emissions from the power plants generating the electricity required to recharge them.¹⁷ Massachusetts and New York subsequently adopted the California LEV plan. However, in 1992, New York's decision was challenged in the courts by the automobile manufacturers on the grounds that it was sufficiently different from California's to constitute a third automotive emission requirement, which the Clean Air Act explicitly prohibits. Shortly afterwards, the manufacturers filed another suit against both states arguing that, since their standards were not identical with those of California, they were preempted by the Clean Air Act. As a result, both states were forced to modify their standards.

In 1998, California's Air Resources Board (California ARB) identified diesel particulate matter as a toxic air contaminant¹⁸ and subsequently launched a Diesel Risk Reduction Plan in 2000 to reduce diesel particulate emissions by 75 per cent by 2010. It also established new requirements for low-sulphur diesel fuel and particulate standards for new diesel engines and vehicles, and required new filters to be put on existing engines.¹⁹ More

¹⁵ Chanin, 2003; Revesz, 2001.

¹⁶ Revesz, 2001: 586.

¹⁷ California Air Resources Board, 2001.

¹⁸ California EPA, 2001.

¹⁹ California Air Resources Board, 2001.

recently, California's automotive emissions standards have become a source of conflict with the federal government, which has not enacted new automotive emissions standards since 1990. Two novel California regulations, which the state claims are designed to reduce automobile emissions, have been challenged by both the automotive industry and the federal government on the grounds that they indirectly regulate fuel efficiency, an area of regulation which Congress has assigned exclusively to the Federal government.²⁰

The first case involves a modification California made to its ZEV programme in 2001 that allowed automakers to earn ZEV credits for manufacturing compressed natural gas, gasoline-electric hybrid, and methanol fuel cell vehicles.^{21, 22} General Motors and DaimlerChrysler sued California's ARB over a provision that allowed manufacturers to earn ZEV credits by using technology such as that included in gasoline-electric hybrid vehicles, which were already being sold by their rivals Honda and Toyota. Because hybrids still use gasoline, General Motors and DaimlerChrysler argued that California's efforts were effectively regulating fuel economy.²³ The US Justice Department supported the auto manufacturers' claim on the grounds that the Energy Policy and Conservation Act provides that when a federal fuel-economy standard is in effect, a state or a political subdivision of a state may not adopt or enforce a regulation related to fuel-economy standards.²⁴ California responded by claiming that it was acting pursuant to its exemption under the US Clean Air Act to regulate auto emissions. In June 2002, a Federal District Court issued a preliminary injunction prohibiting the Air Resources Board from enforcing its regulation.²⁵ In response, the ARB modified the ZEV programme to provide two alternative routes for automakers to meet ZEV targets.²⁶ At the same time, California imposed new

²⁰ In the Energy Policy and Conservation Act of 1975, Congress established exclusive Federal authority to regulate automotive fuel Corporate Average Fuel Economy (CAFE) standards.

²¹ At the same time, California extended ZEV market share requirements to range from 10 per cent in 2003 up to 16 per cent in 2018 (California Air Resources Board, 2001).

²² The second dispute concerns climate change and is discussed below.

²³ Parker, 2003.

²⁴ Yost, 2002.

²⁵ California Air Resources Board, 2003.

²⁶ According to the California Air Resources Board (2003), 'Auto manufacturers can meet their ZEV obligations by meeting standards that are similar to the ZEV rule as it existed in 2001. This means using a formula allowing a vehicle mix of 2 per cent pure ZEVs, 2 per cent AT-PZEVs (vehicles earning advanced technology partial ZEV credits) and 6 per cent PZEVs (extremely clean conventional vehicles). Or manufacturers may choose a new alternative ZEV compliance strategy, meeting part of their ZEV requirement by producing their sales-weighted market share of approximately 250 fuel cell vehicles by 2008. The remainder of their ZEV requirements could be achieved by producing 4 per cent AT-PZEVs and 6 per cent PZEVs. The required number of fuel cell vehicles will increase to 2,500 from 2009-11, 25,000 from 2012-14 and 50,000 from 2015 through 2017. Automakers can substitute battery electric vehicles for up to 50 per cent of their fuel cell vehicle requirements'.

regulations which required that the auto industry sell increasing numbers of fuel-cell vehicles in the state over the next decade.²⁷ However, in the summer of 2003, both automobile firms dropped their suits against California after its regulatory authorities agreed to expand their credit system for hybrids to encompass a broader range of vehicles.²⁸ This will increase the availability of advanced-technology vehicles in states such as New York and Massachusetts, which have adopted regulations similar to California's. However, as there is no indication that federal standards will be similarly strengthened, tensions between federal and state requirements are likely to persist.

European Union

As in the US, in Europe, the regulations of state governments have been an important driver for centralised automotive emissions standards, with Germany typically playing the role in Europe that California has played in the US. The EU has progressively strengthened its automotive emissions standards, both to improve environmental quality and to maintain a single market for vehicles. However, European standards were strengthened at a much slower rate than were those in the US, and they were harmonised much later. Thus, in 1989, the EU imposed standards to be implemented in 1992 that were based on US standards implementing legislation enacted in 1970 and 1977, while the EU did not establish uniform automotive emissions requirements until 1987, although some fuel content standards were harmonised earlier. However, unlike in the US, which has continued to maintain a two-tiered system – and indeed extended it in 1977 by giving states the option of adopting either federal or California standards, in Europe, centralised standards for automobile emissions have existed since 1987. During the 1970s and 1980s, there was considerably more tension between central and state regulations in the EU than in the US. Recently, the opposite has been the case.

During the 1960s, France and Germany imposed limits on emissions of carbon monoxide and hydrocarbons for a wide range of vehicles, thus forcing the EC to issue its first automotive emissions standards in 1970 in order to prevent these limits from serving as obstacles to internal trade. Shortly afterwards, there was substantial public pressure to reduce levels of airborne lead, a significant portion of which came from motor vehicles. The most severe restrictions were imposed by Germany, which in 1972 announced a two-stage reduction: the maximum lead content for gasoline was defined at 0.4 grams per litre in 1972, and 0.15 in 1976. The United Kingdom (UK)

²⁷ Hakim, 2003a.

²⁸ Hakim, 2003b.

enacted less severe restrictions. No restrictions were imposed by any other member state. The resulting disparity in national rules and regulations represented an obstacle to the free movement of both fuel and motor vehicles within the EC. For not only did these divergent national product regulations limit intra-EC trade in gasoline, but since different car engines were designed to run on fuels containing different amounts of lead, they created a barrier to intra-Community trade in motor vehicles themselves. Accordingly, the EC had to move towards harmonised standards. After prolonged negotiations, the Community approved a Directive establishing both minimum and maximum lead standards (the latter being identical with Germany's standards). The EU subsequently enacted legislation urging all member states to reach the most stringent level as quickly as possible and to make at least some unleaded gasoline available for sale.

Unlike the lead standard, in the establishment of which the German regulations played an important role, the EC's standards for sulphur in fuel did not reflect the policy preferences of any member state. The sulphur standard adopted in 1975 required all countries, including France, Germany, and the UK, to reduce their sulphur emissions.²⁹ France, for instance, had already adopted standards for sulphur in diesel fuel in 1966, but the more stringent levels in the European-wide standard forced the French standards lower as well. Germany's standard was adopted at the same time and was similar to that of the EC.

In contrast to the fuel standards, the auto emissions standards adopted during the 1970s were not mandatory. In fact, until 1987, member states were permitted to have standards less stringent than the European-wide standards, although they could not refuse to register or sell a vehicle on their territory if it met EC maximum standards. In effect, these early standards were maximum or ceiling requirements. Indeed, they were not developed by the EC, but were based heavily on emissions standards of the United Nations Economic Council for Europe.

In 1985, the German minister responsible for environmental affairs announced, on his own initiative, that as of 1989 all cars marketed in Germany would be required to meet US automotive emissions standards, commonly referred to as 'US '83.' The adoption of these standards required the installation of catalytic converters, which could only use unleaded gasoline. This created two problems within Europe. Most importantly, it meant that automobiles produced in France and Italy, whose producers lacked the technology to incorporate the converters into their smaller vehicles, would be denied access to the German market. In addition, it meant that German tourists who drove their cars to southern Europe would be

²⁹ Bennett, 1991.

stranded, owing to the unavailability of unleaded gasoline in Greece and Italy. Germany's insistence on requiring stringent standards for vehicles registered in its country forced the EU to adopt uniform automobile emissions standards. This in turn led to a bitter debate over the content of these standards, pitting the EU's greener member states (Germany, Denmark, and the Netherlands) against the EU's (other) major automobile producers (the UK, France, and Italy), who favoured more flexible standards. The resulting Luxembourg Compromise of 1987 established different emissions standards for different sizes of vehicles with different timetables for compliance. It thus represented the first uniform set of automotive emissions standards within Europe. These standards have been subsequently strengthened several times, and some of the EU's most recent standards are more stringent than those of the US, which has not tightened its standards for more than a decade. In 1999, the EU adopted a labelling plan requiring that all new cars sold within the EU show their fuel efficiency and carbon dioxide emissions in a sticker on the product.

During the 1990s, the politics of automobile emissions standards became much less affected by member state differences or tensions between central and state standards. The most important initiative of this period, the Auto-Oil Programme, first adopted in 1996, was aimed at bringing together the Commission and the auto and oil industries to work on comprehensive ways to reduce pollution. After a series of negotiations, the programme ultimately tightened vehicle emission limits and fuel quality standards for sulphur and diesel, and introduced a complete phase-out of leaded gasoline.³⁰ In 2003, the EU approved a Directive requiring that all road vehicle fuels be sulphur-free by 2009. With the finalisation of Auto-Oil I and II, as the programmes are known, the shift from state to centralised automotive emission requirements appears to be complete. The debates and negotiations over proposals to regulate pollution from vehicles now take place between the auto and oil producers on the one hand, and the Commission and European Parliament (EP) on the other hand.

PACKAGING WASTE

United States

The regulation of packaging wastes is highly decentralised in the US. The role of the federal government remains modest and virtually all policy initiatives have taken place at the local level. While the 1976 Resource

³⁰ McCormick, 2001.

Conservation and Recovery Act (RCRA) established stringent requirements for the management of hazardous wastes, the RCRA also declared that the regulation of landfills accepting municipal solid waste (MSW) was to remain primarily the domain of state and local governments.³¹ As a result, there is considerable disparity in the handling of packaging wastes throughout the US.

On balance, US standards tend to be considerably laxer than those in the EU. While many state legislatures have established recycling goals, few have prescribed mandatory targets.³² The US generates more MSW per capita than any other industrialised country, and 50 per cent more than most European countries.³³ From 1995 to 1998, the percentage of the MSW generated that has been recovered for recycling remained steady at 44 in the US, while it rose from 55 to 69 in Germany, owing in part to Germany's Packaging Ordinance.³⁴

State and local governments have implemented several policy mechanisms to reduce MSW, including packaging waste. Deposit-refund schemes, minimum recycling content requirements, community recycling programmes, and disposal bans are among the most common policy mechanisms designed to divert materials to recycling from waste streams destined for landfills or incinerators. Eleven states have developed deposit-refund schemes to encourage the recycling of beverage containers.³⁵ When Oregon passed the first bottle bill requiring refundable deposits on all beer and soft-drink containers in 1971, its objective was to control litter rather than to spur recycling. When the city of Columbia, Missouri, passed a bottle bill in 1977, it became the first local container-deposit ordinance in the US and remained the only local initiative until it was repealed in 2002.³⁶ In general, deposit-refund laws require consumers of soft drinks and beer packaged in glass, metal, and plastic containers to pay a deposit that is refundable when the container is returned.³⁷ These schemes typically do not require, however, that these containers be recycled or reused.³⁸ California recently expanded its

³¹ US EPA, 2003a, 2003b, 2003c.

³² American Forest & Paper Association, 2003.

³³ The latest OECD figures report that Americans generate 760 kg per capita, the French 510, the British 560, and Germans 540 (OECD, 2004).

³⁴ OECD, 2002.

³⁵ The eleven states with deposit-refund schemes on soft-drink containers are California, Connecticut, Delaware, Hawaii, Iowa, Maine, Massachusetts, Michigan, New York, Oregon, and Vermont. Hawaii's law takes effect in 2005 (Container Recycling Institute, 2003).

³⁶ Container Recycling Institute, 2003.

³⁷ Some deposit refunds are being expanded to include office products, while Maine and Rhode Island have created deposit-refund schemes for lead-acid/automobile batteries (US EPA, 1999).

³⁸ McCarthy, 1993.

programme to include non-carbonated beverages, which added roughly 2 billion containers, nearly 40 per cent of which are plastic.³⁹

To reduce the burden on landfills and incinerators, whose construction and expansion are increasingly politically infeasible owing to community objections, many states and local governments have developed recycling programmes that enable or require the recycling of various materials. Such programmes remain exclusively the purview of state and local government because national laws do not allow EPA to establish federal regulations on recycling.⁴⁰ Virtually all New Yorkers, 80 per cent of the Massachusetts population, and 70 per cent of Californians have access to curbside recycling.⁴¹ Recycling programmes typically include paper as well as metal and glass containers, while some programmes also include containers of particular plastic resins. In Oregon, container glass comprises nearly 4 per cent of that state's total solid waste stream, and its deposit-refund and collection schemes resulted in 55 per cent of this glass being collected and recycled.⁴² Sixty per cent of Oregon's recycled container glass comes from its deposit-refund scheme, 25 per cent is collected from residential curbside programmes, and the remainder comes from commercial solid-waste hauler programmes, disposal sites, and other private recycling activities.

A few states have sought to facilitate recycling by banning packaging that is particularly difficult to recycle, such as aseptic drink boxes, which are made of paper, foil, and plastic layers that are difficult to separate. Connecticut banned plastic cans in anticipation of obstacles this product would pose to materials recovery. In 1989, Maine banned aseptic drink boxes because of a concern about their ability to be recycled, though this restriction was subsequently repealed. The Wisconsin Legislature considered imposing a ban on the sale of aseptic drink boxes and bimetal cans (drink cans with aluminium sides and bottom and a steel top). Instead, the state enacted an advisory process permitting it to review a new packaging design if the packaging proved difficult to recycle. In addition, a few states, including Wisconsin and South Dakota, have banned the disposal of some recyclable materials to bolster their recycling rates.⁴³

Some states require certain types of packaging to contain some minimum amount of recycled material. Oregon's 1991 Recycling Act required that by 1995, 25 per cent of the rigid plastic packaging containers (containing eight ounces to five gallons) sold in that state must contain at least 25 per cent recycled content, be made of a plastic material that is recycled in Oregon at a

³⁹ US EPA, 2003a, 2003b, 2003c.

⁴⁰ Cotsworth, 2002.

⁴¹ Dietly, 2001.

⁴² Oregon Department of Environmental Quality, 2003.

⁴³ Thorman et al., 1996.

rate of at least 25 per cent, or be a reusable container made to be reused at least five times.⁴⁴ This law also requires glass containers to contain 35 per cent recycled content by 1995 and 50 per cent by 2000.⁴⁵ California requires manufacturers of newsprint, plastic bags, and rigid plastic containers to include minimum levels of recycled content in their products or to achieve minimum recycling rates. Manufacturers of plastic trash bags are required to include minimum percentages of recycled plastic post-consumer material in trash bags they sell in California. California's 1991 Rigid Plastic Packaging Container (RPPC) Act sought to reduce the amount of plastic being landfilled by requiring that containers offered for sale in the state meet criteria akin to those laid down in the Oregon law. These criteria 'were designed to encourage reuse and recycling of RPPCs, the use of more postconsumer resin in RPPCs and a reduction in the amount of virgin resin employed RPPCs'.⁴⁶ Wisconsin's Act on Recycling & Management of Solid Waste requires that products sold in the state must use a package made from at least 10 per cent recycled or remanufactured material by weight.⁴⁷ Industrial scrap, as well as pre- and post-consumer materials, count towards the 10 per cent requirement. Exemptions are provided for packaging for food, beverages, drugs, cosmetics, and medical devices that lack FDA approval. However, according to the President of the Environmental Packaging International, Wisconsin has done little enforcement of its 10 per cent recycled content law.⁴⁸

Governments at the federal, state, county, and local levels have also promulgated policies prescribing government procurement of environmentally preferable products.⁴⁹ In 1976, Congress included in RCRA requirements that federal agencies, as well as state and local agencies that use appropriated federal funds, that spend over a threshold amount on particular items to purchase products with recycled content when their cost, availability, and quality are comparable to those of virgin products, though the RCRA does not authorise any federal agency to enforce this provision.⁵⁰ States requiring government agencies to purchase environmentally preferable products include California, Georgia, Oregon, and Texas. California's State Assistance for Recycling Markets Act of 1989 and Assembly Bill 11 of 1993 required government agencies to give purchasing preference to recycled

⁴⁴ All rigid plastic container manufacturers have been in compliance with the law since it entered into force a decade ago, because the aggregate recycling rate for rigid plastic containers has remained between 27-30 per cent since the law took effect (Oregon Department of Environmental Quality, 2003).

⁴⁵ Thorman et al., 1996.

⁴⁶ California Integrated Waste Management Board, 2003.

⁴⁷ Plastic Shipping Container Institute, 2003.

⁴⁸ Bell, 1998.

⁴⁹ California Integrated Waste Management Board, 2003; Center for Responsive Law, 2003.

⁵⁰ US EPA, 2003a, 2003b, 2003c.

products and mandated that increasing proportions of procurement budgets be spent on products with minimum levels of recycled content. Accordingly, the California Integrated Waste Management Board (CIWMB) developed the State Agency Buy Recycled Campaign, requiring that every State department, board, commission, office, agency-level office, and cabinet-level office purchase products that contain recycled materials whenever they are otherwise similar to virgin products.

Procurement represents one of the few areas in which there have been federal initiatives. A series of Presidential Executive Orders issued throughout the 1990s sought to stimulate markets for environmentally preferable products and to reduce the burden on landfills.⁵¹ In 1991, President George Bush issued an Executive Order to increase the level of recycling and procurement of recycled-content products. In 1993, President Bill Clinton issued an Executive Order that required federal agencies to purchase paper products with at least 20 per cent post-consumer fibre and directed the US EPA to list environmentally preferable products, such as those with less cumbersome packaging. Clinton raised this recycled-content threshold to 30 per cent in a subsequent Executive Order in 1998.⁵²

At the national level, several Congressional attempts to pass a National Bottle Bill between 1989 and 1994 were defeated, owing in part to successful industry lobbying. According to the non-profit Container Recycling Institute, a key reason why bottle bills have not spread to more states or become national law is 'the tremendous influence the well-funded, politically powerful beverage industry lobby wields'.⁵³ Thus, packaging waste policies remain primarily the responsibility of state and local governments.

European Union

The EU's efforts to control packaging waste contrast sharply with those of the US in two ways. First, with the enactment of the 1994 EU Directive on Packaging and Packaging Waste, central authorities have come to play a critical role in shaping politics to reduce packaging waste within Europe. Thus, in Europe, in marked contrast to the US, this area of environmental policy is shared between central and state governments. Second, unlike in the US, where federal authorities have generally been indifferent to state policies to promote the reduction of packaging waste, in Europe, such policies have frequently been challenged by Brussels (the Commission) on the grounds that they interfere with the single market. In addition, the EU's 1994 Packaging Directive established maximum as well as minimum recycling targets, while

⁵¹ Lee, 1993.

⁵² Barr, 1998.

⁵³ Container Recycling Institute, 2003.

maximums have never existed in the US. As a result, some member states have been forced by Brussels to limit the scope and severity of their regulations.

Historically, recycling policies were made exclusively by the member states. In 1981, Denmark enacted legislation requiring that manufacturers market all beer and soft drinks in reusable containers. Furthermore, all beverage retailers were required to take back all containers, regardless of where they had been purchased. To facilitate this recycling programme, only goods in containers that were approved in advance by the Danish environmental protection agency could be sold. Thus, a number of beverage containers produced in other member states could not be sold in Denmark. Foreign beverage producers complained to the European Commission that the Danish requirement constituted a 'qualitative restriction on trade', prohibited by the Treaty of Rome. The Commission agreed. When Denmark's modified regulation in 1984 failed to satisfy the Commission, the EC brought a complaint against Denmark to the European Court of Justice (ECJ). In its decision, the ECJ upheld most of the provisions of the Danish statute, noting that the Commission itself had no recycling programme. The Court held that since protecting the environment was 'one of the Community's central objectives', environmental protection constituted 'a mandatory requirement capable of limiting the application of Article 30 of the Treaty of Rome'.⁵⁴ This was the first time the Court had sanctioned an environmental regulation that clearly restricted trade.

The result of the ECJ's ruling was to give a green light to other national recycling initiatives. Irish authorities proceeded with a ban on non-refillable containers for beer and soft drinks, while a number of Southern member states promptly restricted the sale of beverages in plastic bottles in order to protect the environment, and, not coincidentally, domestic glass producers. The Netherlands, Denmark, France, and Italy promptly introduced their own comprehensive recycling plans. The most far-reaching initiative to reduce recycling waste, however, was undertaken by Germany.

The 1991 German packaging law was a bold move towards a 'closed loop' economy in which products are reused instead of thrown away. It established very high mandatory targets, requiring that 90 per cent of all glass and metals, as well as 80 per cent of paper, board, and plastics be recycled. In addition, only 28 per cent of beer and soft drinks could be sold in disposable containers. The law also established 'take-back' requirements on manufacturers, making them responsible for the ultimate disposal of the packaging in which their products were sold and shipped. A quasi-public system was established to collect and recycle packaging, with the costs

⁵⁴ Vogel, 1995: 87.

shared by participating firms. In addition to making it more difficult for foreign producers to sell their products in Germany, the so-called Töpfer Law distorted the single market in another way. The plan's unexpected success in collecting packaging material strained the capacity of Germany's recycling system, thus forcing Germany to 'dump' its excess recycled materials throughout the rest of Europe. This had the effect of driving down prices for recycled materials in Europe, and led to the improper disposal of waste in landfills in other countries.⁵⁵ Yet, the ECJ's decision in the Danish Bottle Case, combined with its fear of being labelled 'anti-green', made it difficult for the Commission to file a legal challenge to the German regulation.

Accordingly, the promulgation of waste management policy now moved to the EU level. In 1994, following nearly three years of intense negotiations, a Directive on Packaging Waste was adopted by a qualified majority of member states with opposition from Germany, the Netherlands, Denmark, and Belgium. It required member states to recover at least half of their packaging waste and recycle at least one-quarter of it, within five years. Ireland, Greece, and Portugal were given slightly lower targets. More controversially, the Directive also established maximum standards: nations wishing to recycle more than 65 per cent of their packing waste could do so, but only if they had the facilities to use their recycled products. It was this provision which provoked opposition. The Packaging Waste Directive has played a critical role in strengthening packaging waste regulations and programmes throughout much of Europe, particularly in Great Britain and the South of Europe. As in the case of automobile emissions standards, it illustrates the role of the EU in diffusing the relatively stringent standards of some member states throughout Europe. Moreover, the decrease in some state standards as a result of the 1994 Directive was modest.⁵⁶

Member states continue to innovate in this policy area and these innovations have on occasion sparked controversy within the EU. For example, in 1994, the European Commission began legal proceedings against Germany, claiming that a German requirement that 72 per cent of drink containers be refillable was interfering with efforts to integrate the internal market. Germany has proposed to do away with the requirement owing to pressure from the Commission, but it remains a pending legal issue. This packaging waste dispute tops the list of key single market disputes identified by the Commission in 2003, and the outcomes of numerous other cases hinge on its resolution.⁵⁷

In 2001, Germany adopted a policy requiring deposits on non-refillable (one-way) glass and plastic bottles and metal cans in order to encourage the

⁵⁵ Comer, 1995.

⁵⁶ Haverland, 1999.

⁵⁷ Environment Daily, 2001a, 2003d.

use of refillable containers. This law, which went into effect in 2003, aroused considerable opposition from the German drinks industry, which held it responsible for a dramatic decline in sales of beer and soft drinks and the loss of thousands of jobs. In addition, the European Commission, acting in response to complaints from non-German beverage producers, questioned the legality of the German scheme. The Commission agreed that the refusal of major German retailers to sell one-way drink containers had disproportionately affected bottlers of imported drinks, a position which was also voiced by France, Italy, and Austria. However, after the German government promised to revise its plan in order to make it compliant with EU law, the Commission decided not to take legal action.

As occurred during the previous decade, the extent to which new packaging waste initiatives by member states threaten or are perceived to threaten the single market has put pressure on the EU to adopt harmonised standards. As the European Environmental Bureau noted in response to the Commission's decision to sue Germany over national rules protecting the market share of refillable drinks containers, 'national reuse systems will come under pressure if the Commission continues to legally attack them at the same time it fails to act at the European level'.⁵⁸

In 2003, the Commission and the EP revised the 1994 Packaging Waste Directive by establishing new recycling targets. The EP attempted to extend the reach of the Directive to include, for example, a requirement that all packages contain an environmental indicator to show how 'green' they are, and to encourage packaging incineration and packaging reuse systems when they are preferable to recycling. But these negotiations dropped those proposals and the new Directive is focused on establishing new targets. While a key difference between the Council of Ministers and the EP concerns the date by which higher packaging recycling and recovery targets should be met, there is a broad consensus both that packaging recycling and recovery targets should be strengthened and that no limits should be placed on national waste recovery. Thus, the result of this Directive will further strengthen European standards.

CLIMATE CHANGE

United States

In the US, greenhouse gas (GHG) emissions remain largely unregulated by the federal government. In the 1990s, the Clinton administration participated

⁵⁸ *Environment Daily*, 2001b.

in the United Nations effort to establish a treaty governing GHG emissions. While the US signed the Kyoto Protocol, it was never submitted to the Senate for ratification. Soon after the Bush administration took office, it declared it would not support the Kyoto Protocol. Also refusing to propose any regulations for carbon dioxide emissions, it instead chose to encourage industry to adopt voluntary targets, through its Global Climate Change Initiative. Legislation to amend the Clean Air Act to encompass carbon dioxide emissions has been submitted in Congress, but has yet to be voted upon. The Congress has also persistently voted down proposals to strengthen fuel-economy standards.

The lack of federal regulation has created a policy vacuum which a number of states have filled. While 'some significant legislation to reduce greenhouse gases was enacted during the late 1990s, such as Oregon's pioneering 1997 law that established CO₂ standards for new electrical power plants . . . [state] efforts to contain involvement on climate change have been supplanted in more recent years with an unprecedented period of activity and innovation'. The US EPA has catalogued over 700 state policies to reduce GHG emissions.⁵⁹ Two reports describe various state-level initiatives that address climate change, either directly or indirectly.⁶⁰ 'New legislation and executive orders expressly intended to reduce greenhouse gases have been approved in approximately one-third of the states since January 2000, and many new legislative proposals are moving ahead in a large number of states'.⁶¹

New Jersey and California are undertaking measures that directly target climate change. In 1998, the Commissioner of New Jersey's Department of Environmental Protection (DEP) issued an Administrative Order that established a goal for the state to reduce GHG emissions to 3.5 per cent below the 1990 level by 2005, making New Jersey the first state to establish a GHG reduction target.⁶² The DEP has received signed covenants from corporations, universities, and government agencies across the state pledging to reduce their GHG emissions, though nearly all are unenforceable. In an unusual move, the state's largest utility signed a covenant that includes a commitment to monetary penalties if it fails to attain its pledged reductions. Other states have employed air pollution control regulation and legislation to cap carbon dioxide emissions from large source emitters such as power plants. Massachusetts became the first state to impose a carbon dioxide emission cap on power plants when Governor Jane Swift established a multi-pollutant cap for six major facilities in 2001 that requires 'each plant to

⁵⁹ US EPA, 2003c.

⁶⁰ Bramley, 2002; Rabe, 2002.

⁶¹ Rabe, 2002: 7.

⁶² New Jersey Department of Environmental Protection, 1999.

achieve specified reduction levels for each of the pollutants, including a ten per cent reduction from 1997-1999 CO₂ levels by the middle-to-latter stages of the current decade'.⁶³ The New Hampshire Clean Power Act of 2002 requires the state's three fossil-fuel power plants to reduce their carbon dioxide emissions to 1990 levels by the end of 2006.⁶⁴ Oregon created the first formal standard in the US for carbon dioxide releases from new electricity generating facilities by requiring new or expanded power plants to emit no more than 0.675 pounds of carbon dioxide per kilowatt-hour, a rate 17 per cent below the most efficient natural-gas-fired plant currently in operation in the US.⁶⁵ In 2001, all six New England states pledged to reduce their emissions to 10 per cent below 1990 levels by 2020.⁶⁶

Several states are pursuing indirect means to reduce GHG emissions.⁶⁷ For example, 16 states have enacted legislation that requires utilities to provide a certain percentage of electricity from renewable energy sources. Wisconsin is seeking to mimic the US EPA Toxic Release Inventory Program's success in spurring voluntary emission reductions by requiring public reporting of toxic releases by power plants. In 1993, the Wisconsin Air Contaminant Emission Inventory Reporting regulation began requiring any facility that emits more than 100,000 tons of carbon dioxide to report its emission levels. In 2002, 11 state Attorneys General wrote an open letter to President George W. Bush calling for expanded national efforts to reduce GHG emissions⁶⁸ and indicated their commitment to intensify state efforts if the federal government failed to act. In 2002, California passed legislation requiring its California Air Resources Board to develop and adopt GHG emission-reduction regulations by 2005 for passenger vehicles and light duty trucks, starting with vehicles manufactured in the 2009 model year. This made California the first and only legislative body in the US to enact legislation aimed at curbing global warming emissions from vehicles. As *The New York Times* pointed out, 'Though the law applies only to cars sold in California, it will force the manufacturers to develop fuel-efficient technologies that all cars can use. This ripple effect will be even greater if other states follow California's lead, as the Clean Air Act allows them to do.'⁶⁹ Indeed, a bill was introduced in April 2003 to the New York legislature calling for the adoption of California's automotive greenhouse gas standard.

⁶³ Rabe, 2002: 16.

⁶⁴ New Hampshire Department of Environmental Services, 2002.

⁶⁵ Rabe, 2002.

⁶⁶ New England Governors/Eastern Canadian Premiers, 2001.

⁶⁷ Rabe, 2002.

⁶⁸ The states are Alaska, New Jersey, New York, California, Maryland, and all six New England states (Sterngold, 2002).

⁶⁹ *The New York Times*, 2002.

The marked divergence between state and federal policies in this area has led to two lawsuits, one by automotive manufactures against a state and the other filed by states against the federal government. Stating its intention to challenge California's GHG standard in federal court, the president of the Alliance of Automobile Manufacturers argued that '[F]ederal law and common sense prohibit each state from developing its own fuel-economy standards'.⁷⁰ For its part, the EPA announced that it lacked the authority to regulate carbon dioxide emissions under the Clean Air Act. This cast an additional legal cloud over California's global warming initiative, which was taken pursuant to the state's authority under the Clean Air Act to adopt more stringent standards to control air pollution. In June 2003, Attorneys General from Connecticut, Maine, and Massachusetts filed a lawsuit against the federal government claiming that the EPA is required by the Clean Air Act to regulate carbon dioxide emissions as an air pollutant because these emissions contribute to global warming.⁷¹ If this suit is successful, the EPA will be required to classify carbon dioxide as a pollutant and establish standards for permissible atmospheric levels. In October 2003, California announced that it planned to sue the EPA over the agency's decision that it lacks the authority to regulate GHG emissions from tailpipe and other sources. This lawsuit represents, in part, an effort to protect its 2002 statute from a challenge by the federal government. Nine other states, along with environmental groups, are expected to join this suit.

Thus, in contrast to developments in the area of packaging waste, the lack of federal regulations for GHG emissions has become a political issue in the US. Clearly, the issue of climate change is much more politically salient in the US than is the issue of packaging waste. Thus, proposals to address the former but not the latter frequently come before Congress. Finally, while packaging waste can be seen as a problem which can be effectively addressed at the local or state level, global climate change clearly cannot. Even the regulatory efforts of the most ambitious states will have little impact on global climate change in the absence of federal regulations that impose limits on carbon dioxide emissions throughout the US.

European Union

By contrast, both the EU and individual EU member states have been active in developing policies to mitigate climate change. In the early 1990s, several countries (including Finland, the Netherlands, Sweden, Denmark, and Germany) had adopted or were about to adopt taxes on either carbon dioxide specifically or energy more generally. Concerned that such taxes would

⁷⁰ Keating, 2002.

⁷¹ Johnson, 2003.

undermine the single market, the EU attempted to establish a European energy tax.⁷² The EU's 1992 proposal was for a combined tax on both carbon dioxide emissions and energy, with the goal of reducing overall EU emissions by the year 2000 to their 1990 levels. However, this proposal was vehemently opposed by the UK, which was against European-wide tax policies, and to a lesser extent by France, which wanted a tax on carbon dioxide only rather than the combined tax. By the end of 1994, the European Council abandoned its efforts and agreed to establish voluntary guidelines for countries that were interested in energy taxes.⁷³ In 1997, the Commission again proposed a directive to harmonise and, over time, increase taxes on energy within the EU; that proposal was finally approved in March 2003. It contained numerous loopholes for energy-intensive industry and transition periods for particular countries and economic sectors.⁷⁴ Thus, while the EU has had to retreat from its efforts to impose a carbon/energy tax, it has succeeded in establishing the political and legal basis to harmonise such taxes throughout the EU. Efforts to establish European energy-efficiency standards have also been largely stillborn, with the Commission relegated to setting general principles on which member states can base their own programmes.⁷⁵ There are no centralised targets or timescales.

In March 2002, the Council of Ministers unanimously adopted a legal instrument obliging each state to ratify the Kyoto Protocol, which they have subsequently done. Under the terms of this treaty, overall EU emissions must be reduced by at least 8 per cent of their 1990 levels by 2008-2012. The so-called 'EU bubble' in Article 4 of the Kyoto Protocol allows countries to band together in voluntary associations to have their emissions considered collectively. However, even before Kyoto was formally ratified, the EU had begun efforts to implement its provisions. In June 1998, a Burden Sharing Agreement gave each member state an emissions target which collectively was intended to reach the 8 per cent reduction target. In the spring of 2000, the EU officially launched the European Climate Change Program, which identified more than 40 emission-reduction measures. In 2001, the EU proposed a Directive for a system of emissions trading and harmonising domestic arrangements within the EU.⁷⁶ The Directive, approved by the EP in July 2003, calls on member states to prepare plans for allocating emissions by 2004. Under the Directive, governments are given the freedom to allocate permits as they see fit; the European Commission will not place limits on allowances, although governments are asked to keep the number of

⁷² Zito, 2000.

⁷³ Collier, 1996.

⁷⁴ *Environment Daily*, 1997, 2003b.

⁷⁵ Collier, 1996.

⁷⁶ Smith and Chaumeil, 2002.

allowances low.⁷⁷ This trading scheme will initially cover 4,000 to 5,000 large factories, power stations, and similar installations, which are estimated to emit nearly all of Europe's carbon dioxide emissions. The first trade, between Shell Oil and Nuon, a power firm, has already been planned for when the Directive goes into effect.⁷⁸ There are plans to subsequently extend emissions trading to include additional GHG emissions and economic sectors.

The efforts at the European level have been paralleled by a number of member-state policy initiatives. Among the earliest efforts was an initiative by Germany in which a government commission established the goal of reducing carbon dioxide emissions by 25 per cent by 2005 and 80 per cent by 2050, though these targets were subsequently relaxed owing to concerns about costs. Germany subsequently enacted taxes on energy, electricity, building standards, and emissions. The German federal government has negotiated voluntary agreements to reduce carbon dioxide emissions with virtually every industrial sector. In 2001, the UK launched a comprehensive and pioneering gas-emissions trading scheme, involving nearly fifty industrial sectors. Participation is voluntary and the government has offered financial incentives to encourage industry participation. However, the British government has also levied a tax on energy use with rebates for firms and sectors that have met their emission-reduction targets. Like its German counterpart, the British government has officially endorsed very ambitious targets for the reduction of carbon dioxide emissions. This will require, among other policy changes, that a growing share of electricity be produced using renewable sources. While both Germany and the UK have reduced carbon dioxide emissions in the short run, their ability to meet the Kyoto targets to which they are now legally committed remains problematic. Other countries, such as France, Belgium, and the Netherlands, have established a complex range of policies, including financial incentives to purchase more fuel-efficient vehicles, investments in alternative energy, changes in transportation policies, voluntary agreements with industry, and the limited use of energy taxes. In 2002, Denmark approved legislation phasing out three industrial GHGs controlled by Kyoto.

ANALYSIS

The dynamics of the relationship between central and state authorities varies considerably across these six case studies. In three cases (automobile emissions in the EU and the US, and packaging waste policies in the EU),

⁷⁷ *Environment Daily*, 2003c, 2003e.

⁷⁸ *Environment Daily*, 2003a.

state governments have been an important source of policy innovation and diffusion. In these cases, state authorities were the first to regulate, and their regulations resulted in the adoption of more stringent regulatory standards by the central government. In the case of climate change policies, both EU and member state regulations have proceeded in tandem, with one reinforcing the other.

In the two remaining cases (packaging waste and climate change in the US), American states have been a source of policy innovation, but not of significant policy diffusion. To date, state initiatives in these policy areas have not prompted an expansion of federal regulation, though some state regulations have diffused to other states. The earlier US pattern of automotive emissions standards, in which California and other states helped ratchet up federal standards, has not applied to either of these policy areas. Nor has it recently applied to automobile emissions: federal standards have not been changed since 1990; California's more stringent standards have been adopted by few states. In short, in these cases, the 'California effect' (i.e., the diffusion of stringent environmental standards from more stringent to less stringent jurisdictions), has not occurred. Indeed, in the critical area of global climate change, state and central regulations appear to be moving in opposite directions rather than complementing or reinforcing one another. In contrast to its historic role of strengthening overall state standards, the federal government is trying to weaken some of them.

By contrast, in Europe, relatively stringent state environmental standards continue to drive or parallel the adoption of more stringent central standards. Thus, in the EU, the dynamics of the interaction between state and central authorities has become much more significant than in the US. Why has this occurred? Three factors are critical: two are structural and one is political. First, in the EU, states play a direct role in the policy-making process through their representation in the Council of Ministers, the EU's primary legislative body. This provides state governments with an important vehicle to shape EU policies. In fact, many European environmental standards originate at the national level; they reflect the successful effort of a member state to convert its national standards into European ones. In the US, by contrast, state governments are not formally represented in the federal government. While representatives and senators may reflect the policy preferences of the states from which they are elected, the states themselves enjoy no formal representation. Equally importantly, the separation-of-powers constitutional system in the US divides law-making authority between the legislative and executive branches. This means that the Congress has less power to shape central legislation than does the Council of Ministers. Consequently, for example, the senators and representatives from California enjoy less

influence over US national environmental legislation than does Germany's representative in the Council of Ministers.

Second, the single market is more recent and more politically fragile in the EU than in the US. The federal government's legal supremacy over interstate commerce dates from the adoption of the US constitution, while the EU's constitutional authority and political commitment to create and maintain a single market is less than two decades old. Accordingly, the European central government appears more sensitive to the impact of divergent standards on its internal market than does the US central government. For example, the US federal government explicitly permits two different standards for automotive emissions, while the EU insists on a uniform one. Likewise, the US federal government appears relatively indifferent to the wide divergence in state packaging waste regulations; only state regulations restricting imports of hazardous wastes and garbage have been challenged by federal authorities.⁷⁹ By contrast, distinctive state packaging waste standards have been an important source of legal and political tension within the EU, prompting efforts to harmonise standards at the European level, as well as legal challenges to various state regulations by the Commission. There are numerous state standards for packaging waste in the US that would probably prompt a legal challenge by the Commission were they adopted by an EU member state. Significantly, the EU has established maximum state recovery and recycling goals, while the US central government has not. This means that when faced with divergent state standards, particularly with respect to products, the EU is likely to find itself under more pressure than the US central government to prevent them from interfering with the single market. Accordingly, they must be either challenged or harmonised. In principle, harmonisation need not result in more stringent standards. In fact, the EU's Packaging Directive imposes both a ceiling and a floor. But for the most part, coalitions of the EU's greener member states have been successful in pressuring the EU to adopt directives that generally strengthen European environmental standards. The political influence of these states has been further strengthened by the role of the European Commission, which has made an institutional and political commitment to improving European environmental quality; consequently, the Commission prefers to use its authority to force states to raise their standards rather than lower them. In addition, the increasingly influential role of the EP, in which green constituencies have been relatively strongly represented, has also contributed to strengthening EU environmental standards.

⁷⁹ Stone, 1990.

The third factor is a political one. During the 1960s and 1970s, there was a strong political push in the US for federal environmental standards. According to environmentalists and their supporters, federal regulation was essential if the US was to make effective progress in improving environmental quality. And environmentalists were influential enough to secure the enactment of numerous federal standards, which were generally more stringent than those at the state level. Thus, the centre of gravity of US environmental regulation shifted to Washington. But over the last decade, the national political strength of environmentalists and their supporters has diminished in the US, owing in part to the Republican Party's capture of both houses of Congress in 1994 and the election of a Republican president who was relatively indifferent to environmental concerns in 2000. As a result, the federal government has become less responsive to pressures for more stringent environmental standards, most notably in the critical area of global climate change.

Nevertheless, environmentalists and their supporters continue to be relatively influential in a number of American states. In part, this outburst of state activity is a response to their declining influence in Washington. Thus, in the US, a major discontinuity has emerged between the environmental policy preferences of many states and those of the federal government. This has meant that, unlike in the 1960s and 1970s, more stringent state standards are much less likely to ratchet up federal standards. Indeed, in marked contrast to two decades ago, when the automobile emissions standards of California and other states led to the progressive strengthening of federal standards in this critical area of environmental policy, California's recent policy efforts to regulate automobiles as part of a broader effort to reduce GHGs have produced the opposite effect: they have been legally challenged on the grounds that they violate federal fuel-economy standards, an area of regulatory policy in which the federal government has exclusive authority but which it has refused to strengthen in any meaningful way for more than two decades.

In the EU, the political dynamics of environmental regulation differ markedly. The 1990s witnessed both the increased political influence of pro-environmental constituencies within the EU – by the end of this decade, green parties had entered the governments of five Western European nations – and a decline in the influence of green pressure groups in the US federal government. During this period, a number of EU environmental policies became more centralised and stringent than those of the US.⁸⁰ Paradoxically, while the US federal government exercises far more extensive authority than

the EU, in each of three cases we examined, EU environmental policy is now more centralised than that in the US.

CONCLUSION

The focal cases are summarised in Table 9.1. We conclude with general observations about the dynamics of environmental policy in the federal systems of the US and the EU. On one hand, the continued efforts of states in the US and member states of the EU to strengthen a broad range of environmental regulations suggest that fears of a regulatory race to the bottom may be misplaced. Clearly, concerns that strong regulations will make domestic producers vulnerable to competition from producers in political jurisdictions with less stringent standards have not prevented many states on both sides of the Atlantic from enacting many relatively stringent and ambitious environmental standards. On the other hand, the impact of such state policies remains limited, in part because not all states choose to adopt or vigorously enforce relatively stringent standards. Thus, in the long run, there is no substitute for centralised standards; they represent the most important mechanism of policy diffusion.

Accordingly, the most important role played by state standards is to prompt more stringent central ones. But unless this dynamic comes into play, the effectiveness of state environmental regulations will remain limited. In the areas of both global climate change and packaging waste, even the most stringent state regulations of the US are weaker than those of the EU. It is not coincidental that the case we examined in which EU and US standards are the most comparable – and relatively stringent – is automobile emissions, in which the US central government plays a critical role. By contrast, the lack of central regulations for both packaging waste and climate change clearly reflects and reinforces the relative laxity of US regulations in these policy

Table 9.1 Comparison of environmental regulations

Policy area	EU chronology	Status	US chronology	Status
Auto emissions	State to central	Centralised	State to central	Shared
Packaging waste	State to shared	Contested	State	Uncontested
Climate change	Shared	Uncontested	State	Contested

⁸⁰ Vogel, 2003.

areas. The EU's more centralised policies in both areas reflect the greater vigour of its recent environmental efforts.

REFERENCES

- American Forest & Paper Association (2003), 'State recycling goals and mandates', http://www.afandpa.org/content/navigationmenu/environment_and_recycling/recycling/state_recycling_goals/state_recycling_goals.htm.
- Barr, S. (1998), 'Clinton orders more recycling; Government agencies face tougher requirements on paper', *The Washington Post*, September 16, A14.
- Bell, V. (1998), 'President, Environmental Packaging International, environmental packaging compliance tips', <http://www.enviro-pac.com/pr02.htm>, August.
- Bennett, G. (ed.) (1991), *Air Pollution Control in the European Community: Implementation of the EC Directives in the Twelve Member States*, London: Graham and Trotman.
- Berland, R. (1992), 'State and local attempts to restrict the importation of solid and hazardous waste: Overcoming the dormant commerce clause', *University of Kansas Law Review*, 40(2), 465-497.
- Bramley, M. (2002), 'A comparison of current government action on climate change in the U.S. and Canada', Pembina Institute for Appropriate Development, http://www.pembina.org/publications_item.asp?id=129.
- Bryner, G. (1993), 'Blue skies, green politics', *Washington, DC: Congressional Quarterly Press*.
- California Air Resources Board (2000), 'California's diesel risk reduction program: Frequently asked questions (FAQ)', <http://www.arb.ca.gov/diesel/faq.htm>.
- California Air Resources Board (2001), 'Fact sheet: California's Zero Emission Vehicle Program', <http://www.arb.ca.gov/msprog/zevprog/factsheets/evfacts.pdf>.
- California Air Resources Board (2003), 'Staff report: Initial statement of reasons, 2003; Proposed amendments to the California Zero Emission Vehicle Program regulations', <http://www.arb.ca.gov/regact/zev2003/isor.pdf>.
- California Environmental Protection Agency (EPA) (2001), 'History of the California Environmental Protection Agency', <http://www.calepa.ca.gov/about/history01/arb.htm>.
- California Integrated Waste Management Board (2003), 'Buy recycled: Web resources', <http://www.ciwm.ca.gov/buyrecycled/links.htm>.
- Center for Responsive Law (2003), 'Government purchasing project "State government environmentally preferable purchasing policies"', http://www.gpp.org/epp_states.html.
- Chanin, R. (2003), 'California's authority to regulate mobile source greenhouse gas emissions', *New York University Annual Survey of American Law*, 58, 699-754.
- Collier, U. (1996), 'The European Union's climate change policy: Limiting emissions or limiting powers?', *Journal of European Public Policy*, 3(March), 122-138.
- Comer, C. (1995), 'Federalism and environmental quality: A case study of packaging waste rules in the European Union', *Fordham Environmental Law Journal*, 7, 163-211.
- Container Recycling Institute (2003), 'The Bottle Bill Resource Guide', <http://www.bottlebill.org>.
- Cotsworth, E. (2002), 'Letter to Anna K. Maddela', yosemite.epa.gov/osw/rcra.nsf/ea6e50dc6214725285256bf00063269d/290692727b7ebefb85256c6700700d50?opendocument.
- Dietly, K. (2001), *Research on Container Deposits and Competing Recycling Programs*, presentation to the Columbia, Missouri Beverage Container Deposit Ordinance Law Study Committee Meeting, 1 November.
- Environment Daily* (1997), March 13.
- Environment Daily* (2001a), March 29.
- Environment Daily* (2001b), October 4.
- Environment Daily* (2003a), February 28.
- Environment Daily* (2003b), March 21.
- Environment Daily* (2003c), April 2.
- Environment Daily* (2003d), May 5.
- Environment Daily* (2003e), July 2.
- Hakim, D. (2003a), 'California regulators modify Auto Emissions Mandate', *The New York Times*, April 25, A24.
- Hakim, D. (2003b), 'Automakers drop suits on air rules', *The New York Times*, August 12, A1, C3.
- Haverland, M. (1999), *Regulation and Markets: National Autonomy, European Integration and the Politics of Packaging Waste*, Amsterdam: Thela Thesis.
- Johnson, K. (2003), '3 States sue E.P.A. to regulate emissions of carbon dioxide', *The New York Times*, June 5.
- Keating, G. (2002), 'Californian governor signs landmark Auto Emissions Law', *Reuters*, July 23, http://www.enn.com/news/wire-stories/2002/07/07232002/s_47915.asp.
- Lee, G. (1993), 'Government purchasers told to seek recycled products; Clinton Executive Order revises standards for paper', *The Washington Post*, October 21, A29.
- McCarthy, J. (1993), 'Bottle Bills and curbside recycling: Are they compatible?', Congressional Research Service (Report 93-114 ENR), <http://www.ncseonline.org/nle/crsreports/pollution>.
- McCormick, J. (2001), *Environmental Policy in the European Union*, New York: Palgrave.
- New England Governors/Eastern Canadian Premiers (2001), 'Climate Change Action Plan 2001', <http://www.massclimateaction.org/pdf/necanadaclimateplan.pdf>.
- New Hampshire Department of Environmental Services (2002), 'Overview of HB 284: The New Hampshire Clean Power Act, ground-breaking legislation to reduce multiple harmful pollutant from New Hampshire's electric power plants', <http://www.des.state.nh.us/ard/cleanpoweract.htm>.
- New Jersey Department of Environmental Protection (1999), 'Sustainability Greenhouse Action Plan', <http://www.state.nj.us/dep/dsr/gcc/gcc.htm>.
- New York Times*, *The* (2002), 'California's message to George Pataki (Editorial)', July 24, A18.
- OECD (2002), *Sustainable Development: Indicators to Measure Decoupling of Environmental Pressure from Economic Growth*, SG/SD(2002)1/FINAL, May, Paris: OECD.
- OECD (2004), *Environmental Data Compendium: Selected Environmental Data*, OECD EPR/Second Cycle, February 9, Paris: OECD.
- Oregon Department of Environmental Quality (2003), 'Oregon Container Glass Recycling Profile', <http://www.deq.state.or.us/wmc/solwaste/glass.html>.

- Parker, J. (2003), 'California board's boundaries debated: Automakers say it oversees emissions, not fuel economy', *Detroit Free Press*, May 7.
- Percival, R., A. Miller, C. Schroeder, and J. Leape (1992), *Environmental Regulation: Law, Science and Policy*. Boston: Little, Brown & Co.
- Plastic Shipping Container Institute (2003), 'Wisconsin solid waste legislative update', <http://www.pscionline.org>.
- Rabe, B. (2002), 'Greenhouse and statehouse: The evolving state government role in climate change', Pew Center on Global Climate Change, http://www.pewclimate.org/projects/states_greenhouse.cfm.
- Rehbinder, E. and R. Stewart (1985), *Integration Through Law: Europe and American Federal Experience*, vol. 2: *Environmental Protection Policy*, New York: Walter de Gruyter.
- Revesz, R. (2001), 'Federalism and environmental regulation: A public choice analysis', *Harvard Law Review*, 115, 553-641.
- Smith, M. and T. Chaumeil (2002), 'Greenhouse gas emissions trading within the European Union: An overview of the proposed European Directive', *Fordham Environmental Law Journal*, 13(Spring), 207-225.
- Sterngold, J. (2002), 'State officials ask Bush to act on global warming', *The New York Times*, July 17, A12.
- Stone, J. (1990), 'Supremacy and commerce clause: Issues regarding state hazardous waste import bans', *Columbia Journal of Environmental Law*, 15(1), 1-30.
- Thorman, J., L. Nelson, D. Starkey, and D. Lovell (1996), 'Packaging and waste management; National Conference of state legislators', <http://www.ncsl.org/programs/esnr/rp-pack.htm>.
- US EPA (1999), 'California State Motor Vehicle Pollution Control Standards; Waiver of federal preemption', <http://www.epa.gov/otaq/regs/ld-hwy/evap/waivevap.pdf>.
- US EPA (2003a), 'Federal and California Exhaust and Evaporative Emission Standards for Light-Duty Vehicles and Light-Duty Trucks', Report EPA420-B-00-001, <http://www.epa.gov/otaq/stds-ld.htm>.
- US EPA (2003b), 'Municipal Solid Waste (MSW): Basic facts', <http://www.epa.gov/apeoswer/non-hw/muncpl/facts.htm>.
- US EPA (2003c), 'Global warming: State actions list', yosemite.epa.gov/oar/globalwarming.nsf/content/actionsstate.html.
- Vogel, D. (1995), *Trading Up: Consumer and Environmental Regulation in a Global Economy*, Cambridge: Harvard University Press.
- Vogel, D. (2003), 'The hare and the tortoise revisited: The new politics of consumer and environmental regulation in Europe', *British Journal of Political Science*, 33(4), 557-580.
- Yost, P. (2002), 'Bush administration is against California's Zero Emissions Requirement for Cars', *Environmental News Network*, http://www.enn.com/news/wire-stories/2002/10/10102002/ap_48664.asp.
- Zito, A. (2000), *Creating Environmental Policy in the European Union*, New York: St. Martin's Press.