



**Environmental Policy Integration:
A New Approach for the Environment?**

John Hoornbeek, Ph.D.
April, 2006

Center for Public Administration & Public Policy
Research & Occasional Paper Series



The Ohio Urban University Program

April 16, 2006

Environmental Policy Integration: A New Approach for the Environment?

John A. Hoornbeek

Center for Public Administration and Public Policy

Kent State University

**Prepared for Presentation at the Midwest Political Science Association Conference
Chicago, Illinois, in April, 2006**

Acknowledgement

The research underlying this paper was conducted in coordination with a larger comparative study of Environmental Policy Integration in Europe and the United States. The full study is now being prepared for release, and is being coordinated by Dr. Andrew Jordan of the University of East Anglia and Dr. Andrea Lenschow of the University of Osnabrueck. The author would like to acknowledge the valuable comments made by Dr. Jordan, Dr. Lenschow, and other participants in the study at a workshop held in Cambridge, United Kingdom in October of 2005.

**Comments on this paper are welcome,
and subsequent iterations based on this work are expected.**

Copyright Reserved
To Author

In recent years, the literature on American environmental policy has focused on environmental governance (Kettl, 2002), federal-state relationships (Scheberle, 2004), and state innovation (Rabe, 2004). It has not focused extensively on ways in which federal policymaking and implementation foster the incorporation of environmental concerns into other policy sectors such as agriculture, energy, and transportation (but see Mazmanian & Kraft, 1999). This paper addresses this gap in our knowledge by drawing from the literature on Environmental Policy Integration (EPI) that is currently developing in Europe, and applying concepts found therein to American environmental policy. It argues that the United States (U.S.) has sought to integrate environmental concerns into other policy sectors, and also finds that these EPI efforts are becoming more important elements of American environmental policy. It also identifies factors that may affect the rate and manner in which EPI occurs, and suggests that EPI efforts in the U.S. need to be accelerated and improved if they are to meet the environmental challenges of the 21st century.

In more specific terms, the paper identifies policy instruments that are used to integrate environmental concerns into three major policy sectors --- agriculture, energy, and transportation. It draws on a literature review to identify important federal EPI efforts in these policy sectors, and also benefits from interviews conducted with practitioners and scholars of environmental policy. The interviews were conducted with experts in environmental, agriculture, energy, and transportation policy during the summer and fall of 2005. They -- along with the research effort as a whole -- were designed to assess current federal EPI activities, ascertain historical trajectories associated with them, and provide initial estimates of both their relative strength across policy sectors and their adequacy for addressing current environmental problems. The analyses presented also raise questions about the influence of institutional arrangements (March & Olsen, 1984; Peters, 1999), group characteristics (Walker, 1991), and belief systems (Sabatier

& Jenkins-Smith, 1993) in fostering EPI. Hopefully, these questions will provide fertile ground for further research.

The paper begins with a brief outline of several key EPI concepts drawn from the European literature, and this outline is followed by a brief history of American efforts to integrate environmental concerns into policymaking and implementation in other policy sectors. The paper then overviews current EPI practices, and describes ways in which integrative policy instruments are used in the federal agriculture, energy, and transportation sectors. It also provides a brief overview of state and local EPI practices. The closing discussions suggest that existing EPI efforts appear to reflect fragmented U.S. policymaking structures, and the structure and beliefs of affected interest groups. They also argue that existing American EPI efforts are not likely to provide either a holistic EPI approach or sufficiently high levels of environmental performance.

EPI: SOME KEY CONCEPTS FROM EUROPE

The challenge of EPI “consists of integrating one type of concern (environmental) into already existing sets of sector concerns and related policy processes, organizational arrangements, and power structures” (Persson, 2004, pp. 20-21). In Europe, this challenge has been accepted explicitly, as policymakers have made it an integral part of European environmental policy through provisions placed in the European Union treaties. One result has been a growing EPI literature in Europe (see Lenschow, 2002, for example), and this literature has been a subject of inquiry by both scholars and environmental policy practitioners. One conceptual distinction drawn from this literature that is helpful in assessing EPI relates to whether policies are integrated horizontally, vertically, or both (Lafferty & Hovden, 2003). Horizontal integration relates to whether central authorities have developed comprehensive cross-sector EPI strategies. These kinds of strategies are broad-based and apply across multiple policy sectors. Vertical integration, by contrast, addresses the extent to which environmental concerns are factored into policy “up and down” agency hierarchies in particular sectors.

European scholars have also identified policy instruments that can be used to foster EPI (Jordan & Lenschow, forthcoming), and have specified evaluative criteria as well (Lafferty & Hovden, 2003). The instruments identified include administrative tools, green budgeting, sustainable development strategies, policy appraisal systems, and environmental assessments made for particular projects or activities. The analyses that follow assess the use of these kinds of instruments – as well as traditional regulatory instruments -- to foster EPI in the United States. They also assess the extent of EPI in the U.S. using criteria found in the European environmental policy literature. Lafferty and Hovden (2003), for example, argue that EPI requires not only a balancing of environmental and sector based objectives during decision-making processes, but also yielding “principled priority” to environmental objectives. The implication here is that assessing the extent of EPI – both in the U.S. and elsewhere – requires looking at substantive criteria relating to environmental policy outputs, impacts, and outcomes, as well as procedures for decision-making.

EPI IN THE UNITED STATES: A BRIEF HISTORY

While “EPI” has received less explicit attention in the U.S. than in Europe, efforts to integrate environmental concerns into American sector-based policies have been undertaken. Broadly speaking, EPI efforts in the U.S. have developed in four major stages, and current practices can be understood as outgrowths of those stages. The discussion below provides brief descriptions of these stages in an effort to provide a foundation for the analyses of current practices that follow.

The Early Years: Relying on the States

Prior to the (mid-to-late) 1960’s, environmental and public health issues were considered the province of state and local governments. However, national policies to support the states were implemented in the 1950s. Early clean air and water legislation took a deferential approach

to state prerogatives, and focused on providing funding and technical assistance to build state and local capacities. These federal policies envisioned state and local governments as being primarily responsible for environmental protection and EPI. In general, state policies were to set ambient air and water quality standards, and work backwards toward the establishment of strategies to reduce harmful pollution – from whatever economic sectors gave rise to it. In this sense, state responsibility for EPI was implicit in the structure of federal and state roles in environmental policy during this time period.

The National Onslaught: Integration by Regulation and Federal Influence

In 1969, Congress passed the National Environmental Policy Act (NEPA), a landmark piece of federal legislation which sought to establish a comprehensive and coordinated federal environmental policy. The Act was motivated in part by Senator Henry Jackson's observation that existing federal agencies were not doing a good job of coordinating environmentally related activities (Oldham, 2003). NEPA envisioned the integration of environmental concerns with other policies through Environmental Impact Statements (EIS) that were to be required for major federal actions. NEPA also envisioned ongoing coordination across federal government agencies through the Council on Environmental Quality (CEQ) which was established in the White House.

The EIS processes created by NEPA and the major changes to media-based laws enacted in the 1970s (Clean Water Act, Clean Air Act, etc.) fostered regulatory approaches to protecting the environment, and they were accompanied by major investments of federal funds to build state and local capacities to implement and comply with these regulations. However, while these regulatory and public investment strategies have been fundamental building blocks for environmental progress, they have not been particularly effective in fostering holistic consideration of environmental concerns in the decision-making processes of other policy sectors.

In the late 1970s, increasing concern came to be focused on energy and the economy, and these concerns gave rise to new kinds of EPI efforts. The oil embargoes of the 1970's raised the

price of oil and the American economy became increasingly anemic. One result was a perceived need to develop new and expanded energy sources to reduce reliance on foreign oil and meet the country's energy needs. The Carter administration's approach at the time was to create centralized responsibility for energy policy in a new cabinet level Department of Energy, while investing in renewable energy sources and encouraging conservation – approaches that effectively sought to integrate environmental concerns into the nation's energy policies.

Targeting Federal Policies: Cost-Consciousness and EPI

The election of Ronald Reagan to the Presidency in 1980 signaled a reversal of the Carter administration's approaches, and eventually led to a new era of American environmental policy – one that sought to limit the costs of environmental programs and to encourage consideration of environmental and health concerns in policy sectors where risks were greatest. After entering office, the Reagan administration discontinued the renewable energy investments of the Carter era (Smith, 2000), cut the Environmental Protection Agency's (EPA) budget, attempted policy reversals at both EPA and the Department of the Interior, and instituted regulatory impact analysis processes to ensure that new regulations were cost-effective. These changes engendered controversy in Congress and in the public at large, and an eventual result was the removal of an EPA Administrator and the discrediting of the Reagan administration's environmental policies.

In an effort to repair the damage, President Reagan appointed William Ruckelshaus to lead the EPA, and he and his successors -- Lee Thomas and William Reilly -- sought to re-energize American environmental policies based on comparative risk analyses and a search for new, less expensive, and more targeted policy approaches. These efforts culminated in major reports that highlighted disconnections between EPA budgetary expenditures and expert evaluations of environmental and public health risks (USEPA, 1987; USEPA, 1990). These reports forced a re-conceptualization of existing policies, and re-oriented attention toward problems that had not been addressed adequately by the policies of the 1970s – “unfinished

business”, to borrow the terminology used in the first report. A number of these sources of risk grew from particular industry sectors (e.g. agriculture and transportation), and this contributed to increasing concerns about how to integrate environmental considerations into these policy areas.

The Congress acted on these concerns and integrated environmental considerations into major agriculture, transportation, and the energy laws passed between the mid 1980s and mid 1990s. The 1985 Food Security Act (FSA) encouraged farmers working on highly erodible land to use protective farming practices, and also authorized significant funds for a new conservation reserve program and expanded environmental technical assistance. These environmental efforts were expanded in subsequent legislation in 1996, and then again in 2002. The Inter-modal Surface Transportation Efficiency Act (ISTEA) of 1991 funded mass transit, required transportation planning that recognized the value of the environment, and provided monies for projects that sought to alleviate the polluting effects of automobile congestion. It was then re-authorized in 1998. And the Comprehensive National Energy Policy Act (CNEPA) of 1992 sought – among other things – to encourage energy conservation and efficiency, while also promoting renewable energy.

None of these laws was enacted primarily to protect the environment, but all included new programs and provisions that sought to integrate environmental concerns into the practices of key industry sectors. They sought to foster environmentally friendly behavior among producers in the agriculture, energy, and transportation industries, without relying solely on command and control statutes implemented by the EPA.

A New Era: Backing Toward Sustainability?

In 1993, the Clinton administration went a step further and acted upon the sustainable development ideas associated with the 1987 Brundtland report and the 1992 Earth Summit by establishing a President’s Council on Sustainable Development (Baker & McCormack, 2004). This Council released a major report in 1999, and sponsored a large national “town meeting” on

sustainable development in Detroit, Michigan. These efforts helped galvanize further thinking about “smart” growth and other concepts that sought to guide economic behavior in ways that were consistent with concerns about sustainable development. They even led some scholars to suggest that the U.S. had entered the formative stages of a new environmental epoch that focused on sustainable communities (Mazmanian & Kraft, 1999, pg. 30).

The concept of “sustainable development” caught on in some states and communities, even as it failed to have significant influence in others. At the national level, however, changes have been modest, as the sustainable development movement has (as yet) resulted in relatively few changes in institutional and policy arrangements. The EPA’s strategic focus did begin to turn toward “sustainable communities” around the turn of the century, but the effectiveness of its efforts have been limited by the policy instruments available to it. Furthermore, over the last several years, even the term “sustainable” has taken on a more economic flavor, as the Bush administration’s EPA has focused on the need for local governments to build and maintain water infrastructure that is economically “sustainable” (USEPA, 2006) with diminished funding support from the federal government. Still, the concept of “sustainability” has become an element of the national policy dialogue, even if it has been a less pervasive element than has been the case in Europe.

EPI IN PRACTICE

To assess American EPI practices, it is useful to overview: (1) the policy instruments used to foster integration; (2) policy instrument mixes in key federal policy sectors, and; (3) state and local EPI efforts. The discussion below represents an initial effort to assess EPI practices from these three vantage points. In so doing, it provides a starting point for new research in an area that has not been dealt with in detail in the American environmental policy literature to date. However, the analyses below also find sufficient evidence to suggest the existence of a move

toward sector-specific policies that collectively represent a significant change in the direction of American environmental policy.

Policy Instruments: An Overview

Across the landscape of American government, one can find instances in which a wide range of policy instruments analyzed by European scholars have been used to foster EPI. Administrative tools, green budgeting, sustainable development strategies, policy appraisal systems, and strategic environmental assessment (SEA) have all been used in the U.S., alongside mandatory requirements that have anchored American environmental policy for the last thirty-five years. However, specific practices vary across federal agencies, between federal and state levels of government, and among the states.

Horizontally oriented policy instruments such as sustainable development strategies and systems for appraising environmental impacts of new regulations have not been particularly influential at the federal level in the U.S. President Clinton's Council on Sustainable Development and the documents it produced do not appear to have had substantial influence on day to day governance. And, while the U.S. was an early innovator in analyzing the impacts of regulations through Regulatory Impact Analyses (RIA), this kind of standardized policy appraisal process has not been broadly applied based on environmental criteria as it has in parts of Europe. In addition, the Program Assessment Review Tool (PART) process used by the current Bush administration does not appear to focus extensively on environmental concerns. Broad efforts to appraise environmental progress have also been problematic, in part because the CEQ has been less active in this area in recent years.

The U.S. was an early innovator in what some scholars have referred to as "strategic environmental assessment", as NEPA's EIS requirements have been applied to hundreds of major federal actions over the past thirty-five years. Notably, however, NEPA's requirements are process-based, and do not require environmentally favorable outcomes. As a result, they could be criticized as relatively weak, and the trend in the U.S. in recent years has been toward loosening

them further through “streamlining” efforts which have been sanctioned under both Democratic and Republican administrations. Still, NEPA has had significant impacts, as environmental groups and others have used the court system to delay environmentally questionable projects on procedural grounds.

The use of administrative tools to foster EPI in the U.S. can claim lineage to the CEQ. However, one could question the CEQ’s overall effectiveness in fostering EPI --- particularly when one looks beyond the EIS process for which it was granted regulatory authorities. What is more, since 1994, when it was merged with a new Office of Environmental Policy in the White House, the CEQ’s role has appeared to diminish. Still, administrative efforts to encourage EPI are ongoing at both the federal and state levels. Over time, numerous federal interagency committees and task forces focusing on specific EPI issues have been established and operate in and among various policy sectors, as is described in greater detail in the sector-specific analyses that follow.

The federal government has also used “green budgets” -- interpreted here as monetary subsidies and financial incentives designed to foster environmentally friendly behavior. For many years, the federal government has developed and administered various grant programs to further environmental objectives both in the EPA and in other policy sectors. Increasingly, in recent years, specific funding subsidies in the agriculture and transportation sectors have been conditioned on successful compliance with environmental requirements.

While EPI is often thought of as an alternative to regulation, these two environmental policy approaches are inextricably tied in the U.S. Mandatory requirements underlie the EIS processes under NEPA, as well as a number of the “green budgeting” approaches used in the agriculture and transportation sectors. Mandatory requirements also apply to various industry sectors under both major environmental laws established in the 1970s and sector-specific policies created in the 1980s and 1990s. Notably, during this latter period, regulatory requirements have been increasingly supplemented (but generally not replaced) by voluntary firm and sector specific

policy instruments. While these voluntary instruments are relevant to EPI, they are not discussed here in detail due to space limitations (but see de Brujn & Norberg, 2005).

State governments have used forms of all of the policy instruments mentioned above, including regulatory requirements. Some state and local governments have made greater use than the federal government of tools for horizontal EPI such as state of the environment reports and sustainable development strategies. In some cases, states have also enacted state environmental policy acts (SEPAs) to supplement the federal NEPA (Oldham, 2003). In general, state and local governments have made greater use of tools with foundations in the idea of sustainable development than has the federal government, but practices in this area do vary.

The following sections supplement this brief overview with more detailed discussions of EPI-related policy instruments used in the agriculture, energy, and transportation sectors. For each sector, the discussion describes key policy instruments used, and provides brief overviews of procedural and substantive progress to date. In each case, attention is also focused on recently enacted federal legislation and its relationship to EPI.

Agriculture Policy

Policy instruments used to foster EPI in agriculture include green budgeting subsidies, cross-cutting requirements and regulations, and administrative efforts. While these instruments appear to be leading to some significant successes, important challenges remain.

Green budgeting programs which voluntarily subsidize and assist farmers are probably most central to current EPI efforts in the agriculture sector. In 2004, funding made available for conservation purposes through the U.S. Department of Agriculture (USDA) totaled over \$5 billion (Womach, 2005). This figure represents an increase of over 65% in comparison to the \$2.96 billion funding level for 1990 (Womach, 2005). And, without Congressional action to restrain spending, these funding levels could increase further next year (FY 2007) consistent with

funding authorization levels for agricultural conservation programs enacted in the 2002 Farm Security and Rural Investment Act (FSRI).

The USDA's voluntary environmental subsidy programs come in three major forms. The first and largest of these forms encourages agricultural producers to retire land that had previously been used for farming, and therefore seeks to reduce the polluting impacts of farming practices. The largest of these programs is the Conservation Reserve Program (CRP) for croplands, although similar programs exist for wetlands reserves and environmentally sensitive agricultural lands. Second, the USDA supports technical assistance to improve awareness of environmental concerns and efforts to address them through state soil and water conservation programs. And the third form of USDA subsidy seeks to foster environmentally friendly farming practices. The Environmental Quality Incentives Program (EQIP) enacted in the 1996 Farm Bill is one of the largest of these programs, and it – along with a new Conservation Security Program (CSP) enacted in the 2002 FSRI – provides incentives and cost-sharing to foster environmentally friendly land management practices (Bernstein, et. al., 2004, p. 69).

Accompanying these voluntary green budgeting programs are subsidies associated with cross-cutting requirements that were enacted as part of the 1985 FSA. These requirements ask farmers to use conservation systems on previously cropped and highly-erodible land (HEL) if they are to maintain eligibility for benefits from certain federal programs. Farmers who do not implement required conservation practices may lose financial support from federal programs on which they rely, such as farm price and income support (Bernstein, et. al., 2004, p. 69).

Farmers are also subject to regulatory requirements imposed by the EPA and the Department of Interior (DOI). Agricultural operations are subject to basic Clean Water Act (CWA) requirements aimed at ensuring the quality of ambient waters, although only Concentrated Animal Feeding Operations (CAFO's) are subject to the federal regulatory permitting requirements that apply to "point sources". Agricultural operations are also subject to regulatory requirements associated with the Federal Insecticide, Fungicide, and Rodenticide Act

(FIFRA) and the Endangered Species Act (ESA). The FIFRA restricts the use and application of pesticides of various kinds. The ESA, administered by the DOI, identifies and lists protected species, and farmers are prohibited from “taking a member” (e.g. killing) of a listed species. All of these regulatory restrictions can affect the ways in which farmers are allowed to use their lands, and have the effect of integrating environmental considerations into agricultural practices.

Administrative tools are also used to foster EPI in the agricultural sector. In the late 1990s, the Clinton administration ordered the EPA and the USDA to develop a unified, government-wide, Clean Water Action Plan (CWAP) in cooperation with other federal agencies. The plan identified 111 water quality related actions to be taken through 2008 (U.S. Federal Government, 1999, p. 18). During the final years of the 20th century, the CWAP appeared to foster improved coordination of federal water quality protection efforts. Watershed assessments and indicators were established, conservation buffers were created, and expanded funding was made available for efforts to combat polluted runoff through the USDA’s Conservation Reserve Enhancement Program (CREP) and the EPA’s Shared Revolving Fund Program (U.S. Federal Government, 1999). With clear support and direction from the White House, the CWAP appeared to give focus to water quality efforts that had been hampered by years of delay in Congressional reauthorization of the federal CWA.

At least portions of this interagency cooperation appear to have continued since the turn of the century, although a growing agri-environmental budget -- rather than White House interest -- appears to provide the foundation for continuing cooperation. Senior political officials from EPA and USDA now meet regularly to coordinate on cross-cutting issues, and environmental concerns are mentioned prominently in the USDA’s current strategic plan (USDA Strategic Plan, 2002). The EPA Administrator also now has a full time advisor on agriculture issues (U.S. Government Official, 2005). EPA and USDA officials are also asked to comment and provide input on key policies emanating from one another’s agencies. And finally, state-specific

technical assistance committees, which include both agricultural and environmental interests, now broker distribution of agri-environmental grant funds (U.S. Government Official, 2005).

Clearly, there has been progress in expanding EPI in the agricultural sector over the past twenty years. A growing number of environmentally oriented programs are being administered by the USDA, along side the farming assistance and forest management activities that have long defined its mission and primary constituencies. Environmental concerns are also playing at least some role in processes for coordinating policies across agencies.

But how would one assess this situation if substantive criteria for EPI are considered? Agri-environmental policies appear to have had beneficial effects on the environment and natural resources. Since the mid 1980's, about thirty-five million acres have been taken out of agricultural use (Bernstein, et. al., 2004, pg. 68), and the Conservation Reserve Enhancement Program (CREP) enacted in 1996 has targeted some of those land retirement efforts toward highly sensitive lands. At the same time, a recent USDA analysis found that soil erosion has been reduced in the U.S. in recent years, and at least 25% of the reduction is attributed to the cross-cutting compliance programs described above (Claassen, et. al., 2004).

Conversely, however, a recent OECD study reports that pesticide usage in the U.S. increased slightly between the early 1990's and the turn of the century (OECD, 2004), and there appears to be little evidence at this point to suggest that agriculture is receding as a source of water quality impairment. Interviews conducted during the course of this work also suggested that USDA's programs were not always targeted effectively to achieve environmental results. The FSRI enacted by Congress in 2002, for example, removed requirements that targeted EQIP assistance toward priority water quality problems. Clientele interests, it appears, may have as much to do with how agricultural subsidies are used as environmental goals and objectives.

Energy Policy

The major policy instruments used at the federal level to foster EPI in the energy sector – green budgeting subsidies, regulations, and administrative tools – follow a pattern that is (only) broadly similar to the EPI policy instrument mix used in agriculture.

While some of the more controversial green budgeting subsidies provide access to raw energy sources on public lands, subsidies often come in the form of “tax expenditures” which use the federal tax code to entice energy production, efficiency, and conservation. Tax expenditure policies for these purposes began during World War II and were applied to oil (Smith, 2000, p. 140), but tax-based efforts to foster EPI through greater use of renewable fuels have developed -- albeit sporadically -- over the last several decades.

The regulations and standards that play a role in encouraging EPI in the energy sector have come not only from NEPA’s EIS requirements for major federal projects, but also in the form of purchasing requirements under the Public Utilities Regulatory Policies Act (PURPA), energy efficiency standards set by the Department of Energy, and regulatory requirements established by the EPA. Passed in 1978, PURPA required utilities to purchase electricity from “qualifying facilities” which tended to produce power from cogeneration and renewable energy sources (Smith, 2000). Federal energy efficiency standards have been in place since the passage of CNEPA in 1992, and have been established for a number of products such as lights, small motors, and commercial heaters and air conditioners, as well as for federal buildings. EPA environmental regulations also apply to energy facilities and require treatment of air, water, and waste releases to the environment.

Federal energy legislation enacted in the summer of 2005 continues to focus on subsidies and regulatory provisions to foster EPI. It includes incentives to produce energy from wind and other renewable sources, tax breaks for energy conservation improvements in homes and office buildings, and tax credits for the purchase of fuel conserving hybrid vehicles (Babbington & Blum, 2005, pg. A-8; Kiely, 2005, pg. 1). However, of the \$14.5 billion in tax expenditures contained in the legislation, 58 percent of the benefit over a ten year period will accrue to

“traditional energy industries including oil, natural gas, electric utilities and nuclear power. About 36 percent of the total would go for renewable sources of energy, energy efficiency, and cleaner burning vehicles” (Blum, 2005, pg. A-4). The nuclear power industry was also a big winner, as it received “billions of dollars in subsidies and tax breaks covering almost every facet of operations” (Babbington & Blum, 2005, pg. A-8).

The 2005 energy legislation also altered regulatory policies. It established new energy efficiency standards for commercial appliances such as refrigerators and air conditioners, thus updating standards originally established as a result of the passage of CNEPA in 1992. While this policy change suggests greater environmental sensitivity in American energy policies, other policy judgments made in the Act appear to have the opposite effect. The enacted legislation included new exemptions for oil and gas industries from Safe Drinking Water and Clean Water Act requirements, and it also failed to include any increase in the Corporate Average Fuel Economy (CAFE) standards that regulate the fuel efficiency of American automobiles.

The Department of Energy (DOE) has also used administrative tools to foster consideration of environmental concerns. Two of the four goals in the DOE’s 2003 Strategic Plan have environmental implications. One goal focuses specifically on the environment, but its scope is limited to managing the Cold War nuclear legacy and disposing of high level radioactive waste. Another goal focuses on protecting America’s national and economic security by “promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy” (USDOE Strategic Plan, 2003, p. 3).

This latter DOE strategic goal envisions supporting private-sector development of new energy sources and more energy efficient technologies as means to meeting America’s energy needs in environmentally friendly ways. The areas of emphasis appear to be expanding the use of nuclear power, cleaner coal technologies, and more energy efficient vehicles and buildings. Over the long term, the DOE strategy also points to the need for investments in hydrogen and nuclear fusion as energy sources that can be developed to help reduce greenhouse gas emissions and other

negative impacts of fossil fuels. Notably, while the strategy does focus on energy efficiency, it does not include major federal efforts to alter energy consumption choices made by American citizens.

In spite of these strategic efforts, American energy policy has been viewed by outside observers as lacking in policy coordination (Smith, 2000, p. 143). Efforts to coordinate energy policies started in the late 1970s during the Carter administration, but were not often sustained and successful. The coordinated research efforts to foster renewable energy at that time gave way to budget cuts. Administrative coordinating processes such as those between EPA and DOE on research priorities and radioactive waste disposal occur, but are typically of limited scope. Even Vice President Cheney's efforts to establish a coordinated energy policy in 2001 became enveloped in criticism because of a perceived bias toward energy producers.

The picture of current EPI practices that emerges from these efforts is mixed at best. From a procedural viewpoint, one can certainly identify instances where DOE, EPA, and/or other federal agencies attempt to coordinate their actions. However, these interactions appear to be sporadic and/or of limited scope. And, when high level coordination efforts are undertaken, they often appear to succumb to fragmentation, controversy, and distributive politics.

One can also arrive at both positive and negative assessments of progress with respect to substantive conceptions of EPI. It is clear that the U.S. has made major gains in energy efficiency over the last several decades through the production of more fuel efficient vehicles and through energy efficient building practices (Smith, 2000, pages 149-166). At the same time, however, fossil fuels continue to account for over 80% of American energy consumption (U.S. DOE, 2004, Table 1-1, p. 5), and reliance on imported oil has also increased (U.S. DOE Strategic Plan, 2003, p. 15). In addition, Americans continue to increase their use of automobiles (U.S. DOE, 2004, Table 2-8, p. 57). Thus, while the technology improvement strategies underlying existing policies are helping in energy efficiency, they do not appear to be ensuring a reliable and environmentally friendly energy future.

Transportation Policy

As is the case with agriculture and energy, American EPI efforts in the transportation sector tend to rely on subsidies consistent with green budgeting strategies, regulatory requirements, and administrative tools.

The U.S. Department of Transportation (DOT) administers green budgeting subsidy programs to improve air quality. The law creating the Congestion Mitigation Air Quality (CMAQ) program, for example, authorizes over \$1.6 billion annually for Metropolitan Planning Organizations (MPOs) and others to support transportation-related projects that yield air quality benefits (Beardon, 2004, p. 6). It is supplemented by other subsidies, including environmental expenditures from a 10% set aside in the DOT's Surface Transportation Program for "enhancements" relating to multi-modal, cultural, historic, and environmental aspects of the nation's surface transportation (Beardon, 2004, p. 14).

These subsidies are complemented by regulatory programs that address environmental concerns in the transportation sector, including emissions standards for mobile air pollution sources, requirements that state transportation plans "conform" to State Implementation Plans (SIPs) for clean air, requirements for Corporate Average Fuel Economy (CAFE), and NEPA EIS requirements which are particularly important in the transportation sector. The EPA establishes regulatory requirements for mobile sources of air pollution under the Clean Air Act (CAA); these sources include automobiles, motorized watercraft, trucks, and the like. Significant reductions in air pollution impacts appear to have resulted from these efforts (U.S. EPA, 2005).

The CAA also forces consideration of environmental concerns in transportation planning and management by requiring states and MPO's to "demonstrate that their transportation plans 'conform' to their air quality plans" (Beardon, CRS, 2004, p. 4), or face the potential loss of

federal highway funds until the plan meets conformity requirements. These conformity requirements are important because they provide leverage for environmental oversight of transportation projects by environmental agencies and interests. Their importance also appears to be growing, as new and more stringent air quality standards are promulgated, drivers increase the miles they drive, and the public continues to make use of Sport Utility Vehicles (SUV's) that emit significant amounts of pollutants into the air.

While the requirements of NEPA apply to all major federal actions, they are arguably of greater importance in transportation than in any other sector. The DOT has tended to file more Environmental Impact Statements (EIS's) than other federal agencies (Horan, 1999, p. 222), and it is also named frequently as a defendant in NEPA-related litigation (Horan, 1999, p. 222). The importance of NEPA has not been lost on either transportation authorities or environmental groups. The Congressional Research Service (CRS) reports that planning and construction of major highway projects typically takes between nine and nineteen years, and that the preliminary design and environmental review process can account for up to one-fourth of this time period (Beardon, 2004, p. 17). This has led to calls for "streamlining" NEPA review processes for transportation projects, which have been heeded by Congress both in the 1998 reauthorization of the 1991 ISTEA legislation and then again in the 2005 highway bill.

The federal highway and energy bills enacted during the summer of 2005 authorized additional subsidies to support EPI efforts, while also relaxing environmental requirements to some degree. The highway bill devoted approximately 18 percent of its \$286 billion in costs toward addressing mass transit needs (Blum, 2005, p. A8), and increased authorizations for CMAQ funding by 27% (EDF, August 5, 2005, p. 1). It also provided additional funds for Pedestrian and Bicycle programs, with the authorized funding exceeding \$600 million for a five year period. The 2005 energy legislation supplemented these expenditures with a new tax credit for the purchase of fuel efficient hybrid vehicles (Kiely, 2005, p. 1). The 2005 highway bill also weakened the conformity provisions of the CAA slightly by reducing the frequency of accounting

for air quality impacts of transportation projects (EDF, 2005, p. 1), and set new and more stringent time limits on NEPA-related challenges to highway project approvals (EDF, 2005, p. 2).

The DOT has also used administrative tools to integrate environmental considerations into its policies and practices. Its most recent Strategic Plan (2003-2008) includes a specific “Environmental Stewardship” objective (U.S. DOT, 2003). However, the agency’s primary focus appears to be implementation of NEPA streamlining provisions as directed by an executive order signed by President Bush (13274), a focus that environmental groups may view with skepticism. The DOT also established a multi-agency Task Force consisting of six federal agencies to help it implement its stewardship agenda and streamlining provisions (U.S. Government Official, 2005). This high level inter-agency group seeks to bring an integrated perspective to conflicts over major transportation projects. Its activities are supplemented by numerous ad hoc coordination efforts among transportation and environmental agencies at the state and federal levels.

If one assesses EPI in the transportation sector according to procedural and substantive criteria, a mixed picture emerges. On a procedural level, inter-agency coordination efforts are evident, but appear to be developed on an ad-hoc basis and are often limited in scope. And, despite a somewhat conflicted policy atmosphere, communities are benefiting from funding for environmental programs associated with the transportation sector and environmental groups and agencies continue to exercise influence through both conformity requirements and EIS reviews.

However, even with these points of leverage for environmental interests, the evidence remains mixed when substantive criteria are applied. One federal official with many years of EIS experience commented positively about the improvements that s/he had seen in the environmental sensitivity of state transportation projects over the last several decades. Still, a 2002 National Academy of Sciences (NAS) review encountered difficulty in demonstrating substantial air quality improvements after ten years of CMAQ program implementation, and this result may raise questions about the cost-effectiveness of the strategy used in the current CMAQ program (TRB, 2002). While the NAS panel expressed clear support for the CMAQ program, it also

indicated that the weight of the (limited) evidence available suggested that the CMAQ subsidies are not as cost-effective as emissions controls in reducing air emissions (TRB, 2002). At the same time, mobile sources of air pollution continue to be important factors contributing to localized air pollution problems and greenhouse gas emissions, and the number of vehicle miles traveled in the United States continues to increase (U.S. DOE, 2004, Table 2-8, p. 57). Indeed, even total fuel efficiency (all vehicles) – which has increased substantially since the middle of the twentieth century – now appears to have leveled off somewhat, as it has not increased significantly over the last twelve or thirteen years (U.S. DOE, 2004, Table 2-8, p. 57).

This situation has not changed appreciably as a result of recent legislation, although debate about the need for increased fuel efficiency has intensified recently as prices for gasoline have risen. Relationships between transportation and environmental interests continue to be characterized as much by conflict as by cooperation. As U.S. Senator Jeff Bingaman said after enactment of the 2005 Energy Bill, there is a clear need to “build a consensus around effective steps to use less oil in our transportation sector” (AP, 2005) – a problem that does not appear to have been addressed in the 2005 legislation. Roughly 80 percent of the \$286 billion included in the recent transportation bill was devoted to highways, and the legislation took only limited steps to encourage fuel efficiency and energy conservation.

EPI at the State and Local Levels

While state authorities are limited by their geographic boundaries, their authorities extend to land use practices that are often beyond the accepted reach of the federal government. This ability to regulate land uses has helped some state and local governments pursue both sustainable development and EPI more comprehensively than has the federal government.

A number of states have made greater use of horizontal EPI efforts than has the federal government, although the extent of effort among states and localities varies considerably.

According to the Renewable Resource Institute (RRI), at least 31 states have developed some

form of State of the Environment Report, and these reports can help guide the development of strategies for sustainability and environmental protection (Siy, et. al., August, 2001). However, only three states – Minnesota, New Jersey, and Oregon – have also developed the kinds of documents and strategies that are needed to implement sustainability directives within their jurisdictions (Siy et. al., 2001). Indeed, only about a dozen states have the kind of state-wide planning authorities that would even enable implementation of sustainable development strategies if they were developed (Siy et. al., 2001).

Still, a number of states and localities are implementing “smart” growth efforts to integrate environmental and quality of life considerations into economic growth strategies. Massachusetts, for example, has linked the state’s transportation, environmental, and housing agencies together within a new Office for Commonwealth Development (Greenblatt, pp. 15-16). It also devotes a \$5 billion capital budget and \$500 million in annual grants to support projects that follow “smart” growth principles such as fostering more compact development around transit lines and downtown commercial centers. A number of local governments in the U.S., such as Portland, Oregon and Grand Rapids, Michigan, are implementing similar principles (Greenblatt, pp. 15-16).

While these kinds of EPI-related initiatives are becoming more common – particularly in faster growing and relatively progressive regions of the country, they are by no means uniform. Urban and suburban sprawl and their negative environmental effects are still apparent in many areas of the U.S. As a federal polity that is characterized by differing kinds of leadership and politics at the state and local levels, the U.S. continues to experience variable levels of commitment to EPI in jurisdictions across the country.

DISCUSSION

While the language of sustainability has become apparent in American policy discourse, there is still no clear, explicit, and continuing nationwide commitment to sustainable

development. Even the formal national commitment to EPI is not comprehensive, as some would argue that it is effectively limited to major federal actions as outlined in NEPA. However, there are growing numbers of EPI efforts in federal agencies, and these efforts may surprise some who focus on the visible criticisms of American environmental policies that are prevalent in current day discussions. The American case therefore presents an interesting contrast to the European Union, where the rhetoric of sustainability and EPI may overstate its implementation. Still, at the federal level, the U.S. appears to favor policy instruments that “add to” existing policies, as opposed to horizontally oriented policy instruments that help foster altered frames of reference.

How does one explain these patterns of policy instrument use in the U.S., and what does it mean for the future? The lack of a strong and explicit national commitment to sustainable development, and the minimal use of horizontal EPI strategies associated with it, appears to be at least partially traceable to the widely recognized fragmentation in American policymaking structures. America’s system of separated powers at the national level and divided powers between national and state governments is not particularly conducive to building nationwide consensus. However, these same structural characteristics have enabled significant levels of EPI activism in some states and localities, and are allowing the targeting of administrative and green budgeting efforts in the federal agriculture, energy, and transportation sectors. Still, further research seeking to ascertain the nature and strength of the relationship between fragmented policymaking structures and horizontal EPI would be beneficial. It might also yield additional clues as to how problems associated with structural fragmentation might be overcome.

The research here also suggests a potential relationship between EPI practices and interest group structures and belief systems. The use of subsidy strategies involving key clientele interests in the agriculture, energy, and transportation sectors appears to reflect the strength of these groups in vertically oriented policy processes, even as it also recognizes a need for EPI. While none of the sectors analyzed in this chapter has accomplished EPI in a complete and enduring way, the weight of evidence appears to suggest that EPI has progressed further in

agriculture than it has in energy or transportation. At least two factors relating to interest group characteristics might help explain this situation: (1) the relative cohesiveness of stake-holding interests within each policy sector and; (2) the relative congruence between the values and interests of key stakeholders and environmental concerns. Farmers tend to be more unified in their broad interests than are stakeholders in the energy and transportation industries, and this similarity of interests may facilitate the search for workable ways to achieve EPI. Farmers also rely directly on environmental resources for their livelihood, and therefore have a long-term interest in the continued presence of a healthy environment. No similar set of shared interests consistent with EPI is apparent for the energy or transportation sectors. Additional research that compares EPI progress across policy sectors, and relates this progress to characteristics and beliefs of key interests and actors in those sectors would be useful for both assessing the validity of these explanations and determining whether they can be generalized to other settings.

What do these findings mean for the future? America's apparently growing reliance on subsidy programs to foster EPI highlights the value of future efforts to assess the target efficiency and effectiveness of its current mix of EPI policy instruments. The relevance of these issues is evidenced by the apparent move away from targeted approaches in the EQIP program in agriculture, the continued tendency to spread tax benefits across a range of industry sub-sectors in the energy sector, and the apparent difficulties associated with demonstrating significant ties between CMAQ program and air quality benefits in the transportation sector. Further research into the relationships among all of the key variables mentioned above -- levels of fragmentation in the policymaking process, prevalent interest structures and beliefs in various policy sectors, the mix of EPI related policy instruments used, and target efficiency and policy effectiveness -- would therefore be beneficial for understanding how best to structure American EPI efforts in the future.

CONCLUSION

The U.S. has been backing toward more active EPI in incremental fashion for a number of years. This process has reached the point where it is signaling a major change in American environmental policy. Budgets are being cut at EPA, while environmental budgets are growing in other federal agencies. This situation adds incentives for EPA to work with other agencies. At the same time, the environmental challenges facing the U.S. and the world seem daunting. The threat of climate change stemming from mobile and stationary air pollution sources threatens coastlines, habitats, and human beings, and recent events have highlighted the risks associated with America's continuing reliance on fossil fuels. Water pollution remains a problem in waters throughout the U.S., and shortages of clean water appear to loom in the future. These and other challenges emphasize the importance of EPI for a healthy future.

Against this backdrop of environmental challenges, the progress flowing from current EPI efforts appears insufficient. At the end of the twentieth century, scholars and practitioners alike were declaring that the U.S. was moving into a new era of sustainable development. While this was at least partially true in some states and communities, it has not yet proven true of the nation as a whole. There remains no shared vision of a sustainable America to guide federal EPI efforts, and state EPI efforts – while substantial in a number of cases – remain inconsistent across jurisdictions. At the same time, widely accepted criteria for progress in EPI are not yet apparent. If America is to again exercise leadership in addressing environmental concerns, it must begin actively assessing and accelerating its EPI efforts to address the challenges that are now confronting the U.S. and the rest of the world.

REFERENCES

Associated Press (AP). 2005, 'Bush Signs Energy Bill Into Law', *USA Today* Worldwide Web site, www.usatoday.com/news/washington/2005-08-08, retrieved on August 9.

Babington, C. & Blum, J. 2005, 'On Capitol Hill, A Flurry of GOP Victories', *Washington Post*, July 30, pg. A-1.

Beardon, D. 2004, *Highway and Transit Program Reauthorization: An Analysis of Environmental Protection Issues*, Congressional Research Service, Library of Congress, June, 21.

Baker, S. & McCormick, J. 2004, 'Sustainable Development: Comparative Understandings and Responses', in *Green Giants?: Environmental Policies of the United States and the European Union*, ed. Norman Vig & Michael Faure, MIT Press, Cambridge, Mass.

Bernstein, J., Cooper, J., & Claassen, R. 2004, 'Agriculture and the Environment in the United States and the EU', in *US-EU Food & Agriculture Comparisons/WRS-04-04*, Economic Research Service, USDA, retrieved from www.ers.usda.gov/publications/WRS0404/WRS0404g.pdf, August 6, 2005.

Blum, J. 2005, 'Energy Tax Breaks Total \$14.5 Billion', *Washington Post*, July 28, pg. A-4.

Claassen, R., Breneman, V., Bucholtz, S., Cattaneo, A., Johansson, R., & Morehart, M. 2004, *Environmental Compliance in U.S. Agriculture Policy: Past Performance and Future Potential: A Report from the Economic Research Service*, retrieved from www.ers.usda.gov, August, 6, 2005.

de Bruijn, T. & Norberg-Bohm, V. (eds) 2005, *Industrial Transformation: Environmental Policy Innovation in the United States and Europe*, MIT Press, Cambridge, Mass.

Environmental Defense Fund (EDF). 2005, *Transportation Reauthorization: Environmental Scorecard*, August, 5.

Greenblatt, A. 2005, 'Observer -- Getting Smarter: The Smart-Growth Movement Isn't Making Much Noise These Days, But It's Learning How to Win', in *Governing*, August, pages. 15-16.

Horan, T., Dittmar, H., & Jordan D. 1999. 'ISTEA and the New Era in Transportation Policy: Sustainable Communities from a Federal Initiative'. in *Toward Sustainable Communities: Transition and Transformations in Environmental Policy*, MIT Press, Cambridge, Mass.

Jordan, A. & Lenschow, A. Forthcoming. *Innovation in Environmental Policy: Integrating the Environment for Sustainability*.

Kettl, D., editor. 2002. *Environmental Governance: A Report on the Next Generation of Environmental Policy*. Brookings Institution Press. Washington D.C.

Kiely, K. 2005, 'Energy Policy Overhaul On Way', *USA Today*, July 29-31, pg. 1.

Lafferty, W. & Hovden E. 2003, 'Environmental Policy Integration: Towards an Analytical Framework', *Environmental Politics*, Vol. 12, No. 3, pp. 1-22.

Lenschow, Andrea. 2002. *Environmental Policy Integration. Greening Sectoral Policies in Europe*, London, Earthscan.

March, J. and Olsen, J. 1984. The New Institutionalism: Organizational Factors in Political Life, *American Political Science Review*. Vol. 78, pp. 738-749.

Mazmanian, D. & Kraft, M. 1999, *Toward Sustainable Communities: Transition and Transformations in Environmental Policy*, MIT Press, Cambridge, Mass.

- Oldham, K. 2003, 'President Richard Nixon Signs Senator Henry Jackson's National Environmental Policy Act Into Law on January 1, 1970', retrieved from www.historylink.org/essays/, August 7, 2005.
- Organization for Economic Cooperation and Development (OECD). 2004, *Agriculture and the Environment: Lessons Learned from a Decade of OECD Work*, retrieved from www.oecd.org/dataoecd/15/28/33913449.pdf/, on August 20, 2005.
- Persson, A. 2004, *Environmental Policy Integration: An Introduction*, Policy Integration for Sustainability Background Paper, Stockholm Environment Institute, June.
- Peters, B. G. 1999. *Institutional Theory in Political Science: The New Institutionalism*. Pinter Books, London, UK.
- Rabe, Barry. 2004. *Statehouse and Greenhouse: The Emerging Politics of American Climate Change Policy*. Brookings Institution Press. Washington, D.C.
- Sabatier, P., & Jenkins-Smith, H. 1993. *Policy Change and Learning: An Advocacy Coalition Approach*. Westview Press, Boulder, CO.
- Scheberle, D. 2004. *Federalism and Environmental Policy: Trust and the Politics of Implementation*. Georgetown University Press. Washington D.C.
- Siy E., Koziol, L., & Rollins D. 2001, *The State of the States*, A Report of the Renewable Resource Institute, San Francisco, CA, August.
- Smith, Z. 2000, *The Environmental Policy Paradox*, Third Edition, Prentice Hall, Upper Saddle River, New Jersey.
- Transportation Research Board (TRB). 2002, *TRB Report Summary: The Congestion Mitigation and Air Quality Improvement Program – Assessing 10 Years of Experience*. TRB Special Report 264. Transportation Research Board: The National Academies. Number 22, April.
- U.S. Department of Agriculture (USDA). 2002, *Strategic Plan for 2002 – 2007*. USDA, Washington D.C.
- U.S. Department of Energy (DOE). 2003, *The Department of Energy Strategic Plan*, Office of Program Analysis and Evaluation, Washington D.C., September 30.
- U.S. Department of Energy (DOE). 2004, 'Energy Overview', *Energy Information Administration Annual Energy Review*, DOE, Washington D.C. Retrieved from DOE Worldwide Web site, www.doe.gov, September 5, 2005.
- U.S. Department of Transportation (DOT). 2003, *Department of Transportation Strategic Plan: 2003-2008*. U.S. Department of Transportation, Washington D.C.
- U.S. Environmental Protection Agency. 1987, *Unfinished Business: A Comparative Assessment of Environmental Problems – Overview Report*. Office of Policy, Planning, and Evaluation, Washington D.C.

U.S. Environmental Protection Agency (EPA). 1990, *Reducing Risk*. EPA Science Advisory Board, Washington D.C., September.

U.S. Environmental Protection Agency (EPA). 2005. *Toward a Cleaner Future*. Office of Transportation and Air Quality Progress Report 2005, Washington D.C. EPA-420-R-05-011, November.

U.S. Environmental Protection Agency. *Water Infrastructure: Sustainable Infrastructure for the 21st Century*. Retrieved from the EPA Worldwide Website, www.epa.gov/water/infrastructure/, January 8.

U.S. Federal Government. 1999, *Clean Water Action Plan: The First Year. The Future*. Washington D.C.

Walker, J. 1991. *Mobilizing Interest Groups in America: Patrons, Professions, and Social Movements*. University of Michigan Press.

Womach, J. 2005. *Previewing a 2007 Farm Bill*. Congressional Research Service: Received through CRS Web. August, 18.