Energy Policies for the New Century: 
A U.S. Perspective on Protecting the 
Environment 
and Cooperating Globally 

by Karla S. Smith 

The Energy-Environment Nexus 

In the 1960s and 1970s, environmental issues moved from the periphery to the mainstream of domestic politics in the United States. In the 1980s and 1990s a similar movement took place in the context of its foreign policy. But the United States is neither unique nor isolated. The spotlight on environmental issues shines worldwide, and nowhere does this light reveal more challenges, contention, and urgency than where energy and environmental exigencies meet. 

Energy drives economies, but it does so at a significant cost to environmental and human health. The global rise in the use of fossil fuels—the primary energy sources for the U.S. and economies around the world—results in millions of tons of pollutants emitted into the air: suspended particulates, lead, carbon monoxide, sulfur dioxide, nitrogen oxides, ozone, carbon dioxide, methane, and other so-called greenhouse gases. Easily inhaled into the lungs, suspended particulates contribute to respiratory and cardiovascular diseases and cancer and can aggravate chronic illnesses such as asthma and bronchitis. Particulates are also linked with increases in premature mortality. Excessive levels of lead cause brain damage. Carbon monoxide is a poisonous gas. Sulfur dioxide is linked to the same health effects as suspended particulates. Sulfur dioxide and nitrogen oxides are also the precursors to acid rain, which contributes to the acidification of lakes and streams, to the degradation of agricultural lands and forests, and to the deterioration of buildings, cultural objects, and automobiles. Ground-level ozone is created by nitrogen oxides and volatile organic compounds. It can cause breathing problems and permanent lung damage, and it affects crop yields and timber harvests. Carbon dioxide and methane are greenhouse gases associated with climate change. Rising sea levels, damage to ecosystems, severe and
extreme storms and droughts, and increases in respiratory and infectious diseases are predicted consequences of climate change.

The effects of these pollutants are felt throughout the world. Air pollution generated by coal and oil power plants in the United States is responsible for 30,000 premature deaths and 603,000 asthma attacks annually. In China, coal burning alone is estimated to contribute to 180,000 to 270,000 deaths a year. (Editor’s note: see the essay by Zhou Fengqi in this issue.) In areas of Mexico City, more than 50 percent of children under five are afflicted by pollution-related respiratory diseases. In parts of the Czech Republic, air pollution has been linked to a 25 percent increase in infant mortality. In Volgograd, Russia, a city of one million, 960 to 2,667 deaths a year are attributed to emissions of particulates from stationary sources. Acid rain causes damage to vegetable crops in Japan. More than a quarter of the world’s coral reefs are being destroyed by pollution and the effects of climate change; scientists warn that the coral of the Great Barrier Reef could be dead in 50 years if seawater temperature continues to rise as a result of global warming.

Governments recognize the link between energy and environment and are struggling with the need to balance energy, economic growth, and national security priorities with environmental and public health demands. More significantly, many governments are attempting to do so cooperatively and in an international context, with varying degrees of success. Because of its economic, technological, and environmental effects on the world—accounting for 27 percent of world GDP and responsible for 23 percent of the world’s greenhouse gas emissions—how successfully the U.S. responds to domestic and international energy-environment demands could determine the world’s future energy policies and the state of the world’s environment.

THE U.S. IN THE WORLD

The U.S. State Department identifies the environment as an important and increasing area of American foreign policy: “For more and more U.S. diplomats, implementing foreign policy means working on environmental issues.” The State Department is attempting to integrate global, regional, and bilateral environmental issues into diplomacy. Critical among these issues is air quality and energy.

As a diplomatic tool, the U.S. has chosen to establish regional “environmental hubs” in U.S. embassies in selected countries. These hubs are dedicated to addressing transboundary environmental issues, especially those where pollution or the scarcity and mismanagement of natural resources, including energy resources, may contribute to or spark conflict. Environmental issues have also climbed the list of priorities in bilateral agendas, including the U.S.-Canada Joint Commission, the U.S.-Japan Common Agenda, the U.S.-Russia Commission, the New Transatlantic Agenda with the European Union, and the U.S.-China Forum.

The speed of China’s industrialization and urbanization combined with the size of its population presents an unprecedented environmental protection challenge for China and the world. China’s demand for energy may triple by 2010; it could surpass the U.S. as the largest consumer of energy by 2020. An increased use of coal and consequent sulfur dioxide, nitrogen oxides, and carbon dioxide emissions will be especially intense in China, which already leads the world in sulfur emissions. By the middle of the century it is very likely also to become the world’s leading emitter of carbon dioxide, a title now held by the United States.

U.S. response to the environmental challenge presented by China has been slow. Although U.S. environmental hubs cover nearly all of Asia—Southeast, South, and Central—Northeast Asia remains a notable exception. This gap in the regional environmental hub map of U.S. foreign policy is particularly marked, given the global scope of China’s environmental problems and the presence in Northeast Asia of Japan, a natural partner for the United States in this endeavor. Political obstacles within the region and between the
U.S. and countries of the region do not entirely preclude the implementation of U.S. environmental diplomacy, but they have delayed it in a region of vital interest to the United States. Since 1997, however, the U.S. has tried to make up for lost time. In 2000, cooperation between the U.S. and China was enhanced by the establishment of the U.S.-China Forum on Environment and Development. In the Forum’s Joint Statement for the year 2000, the two countries agreed that energy and environment “constitutes one of the most important areas of cooperation.” Agreements reached through this Forum aim to increase exports of U.S. environmental technology to China and, of great importance, U.S. investment in the Chinese energy sector. As a result of greater cooperation with China, the environment, science, and technology (EST) section of the U.S. Embassy in Beijing is now the second largest section of its kind. Energy efficiency, air quality, cleaner energy technologies, promotion of natural gas, and cooperation to combat climate change figure prominently in the work of the EST section and in Forum statements and agreements.

Climate change has become the focus of many U.S. diplomatic efforts and a recurring theme in foreign policy. The topic is not restricted to meetings of the United Nations Framework Convention on Climate Change (UNFCC), but is raised also at the highest level of multilateral economic and political dialogue—G-8 and APEC included. The G-8 Communiqué of 2000 states a G-8 commitment to work together in mitigating the problems of climate change and air pollution. In this connection, the Communiqué calls for a Task Force to prepare recommendations to encourage the supply of renewable energy in developing countries. The Communiqué also states support for the UNFCC and its Kyoto Protocol and a commitment to “strong domestic action and supplemental flexible mechanisms” for achieving greenhouse gas emission targets.

Driven by a mutual desire to promote energy security, diversification of energy sources, and environmental benefits in the form of reduced air pollution and greenhouse gases in Asia-Pacific, the U.S. and Japan sponsored the APEC Natural Gas Initiative endorsed by APEC Energy Ministers in 1998. Natural gas combustion produces fewer emissions of sulfur dioxide, nitrogen oxides, and carbon dioxide than coal and oil combustion do; it is the cleanest burning fossil fuel. The APEC Natural Gas Initiative aims to promote investment in natural gas supplies, infrastructure, and trading networks. In 2000 the APEC Energy Ministers reaffirmed a commitment to the Initiative and issued a Joint Statement on Clean Energy and Sustainable Development that recognizes a need to reduce or limit greenhouse gas emissions and to use energy in an environmentally sustainable way. APEC Energy Ministers also support a clean energy agenda that includes programs to improve energy efficiency and conservation, renewable energy use, and alternative transport fuels. All APEC energy-environment commitments, however, are voluntary.

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States also proposed a $100 million International Clean Energy Initiative. This is a public-private initiative to accelerate the development and deployment of clean energy technologies. At this writing, it is uncertain whether the U.S. will follow through with this initiative under the new administration.

In Northeast Asia, the U.S. could be more proactive in promoting natural gas. The share of natural gas in total primary consumption in this region lags behind the rest of the world: 13 percent in Japan, 12 percent in Eastern Russia, 8 percent in South Korea, and 3 percent in China, compared with 24 percent for the world, nearly 25 percent in the United States, and more than 20 percent in Western Europe. Natural gas is a promising area for U.S.-Japan cooperation. The U.S. should become more actively involved in inchoate and largely informal regional discussions that bring together government officials and experts to discuss the potential for development and use of natural gas and financing options for regional infrastructure. The United States and Japan could develop a Northeast Asia Natural Gas Initiative that supports and complements APEC’s.

In 1999 the U.S. proposed that the International Energy Agency study successful cross-border natural gas projects to identify policies that stimulate investment and development. Here, too, the U.S. and Japan could work together in determining how the results of this study can best be applied to Northeast Asia and how to facilitate their application. Natural gas development in Northeast Asia is in the economic, political, environmental, and energy security interest of the United States. The U.S. can do more to encourage and facilitate regional cooperation in Northeast Asia that will reduce dependence on oil, diversify energy supplies, improve fuel economy, and stabilize greenhouse gas emissions.

**The U.S. in The Hague**

The road to The Hague was long and tortuous, plagued by such obstacles as skepticism and lingering questions over the causes and effect of climate change. But by the November 2000 Sixth Conference of Parties (COP6) of the United Nations Framework Convention on Climate Change (UNFCC) in The Hague, participating governments acknowledged that climate change is indeed occurring, that human-made greenhouse gases are contributing to this, that we are already witnessing serious negative effects from climate change, and that international cooperation is vital to curb greenhouses gases. Yet negotiations at The Hague ended without agreement. Climate change is perhaps the most contentious environmental issue. It is inextricably linked with energy and thus with the economy of every nation. Carbon dioxide (CO₂) is the primary greenhouse gas associated with climate change. Increasing CO₂ emissions are attributed to deforestation, the rising number of motor vehicles, and to greater energy consumption. Concerns that cuts in greenhouse gas emissions will jeopardize economic growth persist in industrialized and developing countries. Stabilizing and reducing greenhouse gas emissions require difficult and often innovative policy choices aimed at increasing energy efficiency and conservation and fuel switching away from coal and oil policy choices that meet resistance from powerful...
economic and political interests.

Not surprisingly and until recently, the United States, the world’s largest economy, largest energy consumer, and largest emitter of carbon dioxide, was not an enthusiastic participant in the process of creating an international regime to combat climate change. In early negotiations for a convention on climate change, the U.S. resisted the inclusion of binding quantitative commitments on emissions and a timetable to achieve them. The Framework Convention on Climate Change was signed in 1992 without such commitments. During negotiations for the 1997 Kyoto Protocol (COP3), the European Union argued for a 15 percent cut in greenhouse gases below 1990 levels; the U.S. counter-proposal called for a return to 1990 levels. A compromise was reached. The Kyoto Protocol includes a binding limit of 5 percent below 1990 levels, to be achieved collectively by industrialized nations. The targets for the U.S., Japan, and the EU are 7 percent, 6 percent, and 8 percent, respectively. Also included in the Kyoto Protocol are “flexible mechanisms” for achieving target reductions. These include an emissions trading system, joint implementation, and the clean development mechanism. At the closing of the Kyoto meeting, emissions reduction credits from carbon sinks (forests and agricultural land) remained an option. The detailed rules on mechanisms for Kyoto Protocol implementation would be negotiated in subsequent meetings in Buenos Aires (COP4), Bonn (COP5), and The Hague (COP6).

Despite the failure of negotiations in The Hague, it is this author’s view that U.S. negotiators were willing to compromise and earnestly wished to reach an agreement on Kyoto Protocol mechanisms and carbon sinks—the most controversial topics of COP6. At The Hague, U.S. negotiators acknowledged the “indisputable evidence that the earth is warming.” They also proposed an “airtight” emissions accounting system and legally binding penalties for failure to meet emissions targets. They abandoned demands that developed countries be included in the treaty, and they made concessions on carbon sinks.

That the Kyoto Protocol is the most challenging, complex, and ambitious international environmental agreement ever negotiated is evident not only in the inability of the United States and the EU to reach an acceptable compromise, but also in the split in positions that emerged among EU nations during the final hours of the conference. Several environmental groups charge that some of the rules of operation and implementation sought by the U.S. in The Hague represent loopholes. They claim these loopholes will allow the U.S. to meet Kyoto Protocol obligations without making real domestic cuts in emissions. They question the proposed emissions-trading system and reject nuclear power strategies to achieve emissions targets, including industrial country aid for building nuclear power plants in developing countries. Environmental groups are also critical of the inclusion of carbon sinks. Compelling evidence was presented that shows how carbon sink provisions may accelerate the destruction of old-growth and native forests—a Greenpeace and Worldwide Fund for Nature commissioned report accuses Tokyo Electric Power Company of destroying native forests in Tasmania, Australia, to plant...
fast-growing eucalyptus trees to receive carbon credits. The position on carbon sinks of these environmental groups (and that of the EU) was also strengthened by studies published in *Nature* in November 2000 showing that instead of storing carbon as temperatures rise, carbon sinks may in fact emit more carbon dioxide and further accelerate climate change.

U.S. negotiators were willing to compromise on carbon sinks, but they found themselves in a difficult position. In the words of David Sandalow, U.S. negotiator at The Hague, their goal was “to shape a treaty that can be ratified.” Every concession made weakened the State Department’s ability to persuade a hostile U.S. Congress to ratify the treaty. It is uncertain how a new administration will handle future talks. A compromise between the EU and the United States may prove more difficult under a Republican president. George W. Bush has called the Kyoto Protocol “ineffective, inadequate, and... a bad deal for Americans.” But the U.S. must remain engaged in this process of creating an international regime, and domestic movements to protect the environment and human health, to promote scientific and technological advances, and to foster innovation will ensure that it does. In Part II, COP6 may yet prove successful.

**AT HOME: ENERGY POLICIES FOR THE NEW CENTURY**

In 1999, U.S. growth domestic product grew by more than 4 percent, but greenhouse gas emissions increased less than one percent. Progress is being made in decoupling economic growth and emissions, but U.S. energy policy cannot yet be called progressive. Progressive energy policies for the new century would aim to further reduce a dependence on coal and oil, end subsidies to fossil fuels, redirect investments to renewables, improve fuel efficiency for automobiles and energy efficiency for appliances and buildings, foster scientific and technological innovation in cleaner energy and products, and promote energy conservation and public awareness.

Changes in corporate culture and attitudes may facilitate the adoption of new energy policies. Before Kyoto Protocol negotiations, a group of powerful corporations, united under the Global Climate Coalition, lobbied against the Protocol and organized a campaign to prevent the U.S. government from endorsing the treaty. By 2000, however, most major corporations had withdrawn from the Coalition. DuPont and BP Amoco were among the first to pull out. They were followed by Royal Dutch Shell, Ford, DaimlerChrysler, Texaco, and General Motors. The Coalition has all but been replaced by a newer grouping called the Business Environmental Leadership Council, which acknowledges a need to take action to address the consequences of climate change.

In some instances, corporations are moving ahead of government policy. DuPont plans to cut its greenhouse gas emissions by 65 percent below 1990 levels by 2010. By that same year, BP Amoco plans to lower its carbon emissions to 10 percent below 1990 levels. The Polaroid Corporation has pledged to reduce its carbon emissions by 25 percent below 1994 levels by 2010. Toyota Motor Company has announced plans to reduce energy consumption and production of volatile organic compounds at its U.S. and Canada plants. Both BP Amoco and Royal Dutch Shell are changing their traditional image. BP Amoco has renamed itself “Beyond Petroleum,” has become a leading manufacturer of solar cells, and has begun selling reduced sulfur premium gasoline ahead of U.S. government standards for 2004. Royal Dutch Shell now calls itself an “energy” company and is investing in wind-, solar-, and hydrogen-based energy. Shell predicts that by 2060 renewables will account for 60 percent of the world’s energy. ARCO has pronounced a need to move to a hydrogen-based energy economy, from a carbon-based one.

Public opinion is also in favor of more progressive energy policy. A poll by the Sustainable Energy Coalition shows that 57 percent of survey respondents believe climate change is already affecting weather patterns, 55 percent believe immediate action is necessary, and 99 percent favor increased use
of renewable energy, energy-efficient technologies, and the use of natural gas as means to mitigate pollution and greenhouse gas emissions. Americans may not be willing to kick the car habit or tolerate European-style fuel taxes, but attitudes are changing and policies aimed at raising public awareness are essential to curbing air pollution and greenhouse gases.

Energy policies for the new century are energy-environment policies. The United States is rich in renewable resources and energy-efficient technologies; it is rich in scientific and technological capacity, and rich in the spirit of entrepreneurship and innovation. The U.S. is a leading manufacturer of renewable energy systems, and great technological advances are still to come in the areas of biomass-derived fuels and chemicals, hydrogen fuel, carbon sequestration and recycling, advanced vehicles, and energy-efficient buildings and products. In partnership with business and nongovernmental organizations, U.S. government policies for the new century can make these technologies viable. In partnership with industrialized and developing countries, the U.S. can help usher in an era of cleaner energy, greater efficiency, and concomitant social, economic, and environmental benefits that will be felt around the world.

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Suggested readings


