

Overview of the Role of Renewable Energy in Legal Efforts to Address Climate Change

(Presented at the 30th anniversary celebration of Pace Law School's Environmental Law Program)

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If the United States' decision not to ratify the Kyoto Protocol was intended to prevent or slow the development of climate change regulation in the country, the result has been the opposite. While the Kyoto Protocol and related international efforts are changing the way business is conducted abroad, U.S. states and localities are vigorously developing proposals to address climate change. The private sector is keeping up. Because the energy sector contributes at least forty percent of U.S. greenhouse gas emissions, the development of cleaner and renewable sources of energy is a critical component of these efforts. This article provides a brief overview of legal efforts to address climate change and the role renewable energy is playing.

I. International Efforts

Most nations, including the United States, are parties to the 1992 United Nations Framework Convention on Climate Change, which initiated the formal international negotiations for a binding treaty to reduce greenhouse gas emissions.¹ The Kyoto Protocol (Kyoto) emerged out of those negotiations in 1997 and is a binding treaty to regulate and reduce greenhouse gas

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¹ Greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Although CO₂ is not the most potent greenhouse gas, it is the most prevalent. Information on the United Nations Framework Convention on Climate Change Secretariat, the U.N. body that governs efforts to address climate change, is available at <http://unfccc.int>.

emissions during an initial commitment period of 2008 to 2012. Parties to the United Nations Framework Convention on Climate Change are currently beginning to discuss a successor to Kyoto, which is almost certain to require steeper cuts in emissions. In fact, in 2007 the European Union Parliament stated its willingness to pursue cuts of twenty to thirty percent by 2020 (as compared to 1990 levels).

Kyoto contributes to the development of cleaner sources of energy in at least two ways. First, nations that fall within Annex I of Kyoto, which essentially consists of thirty-six nations with more highly developed economies, are required to cut greenhouse gas emissions by five percent from 1990 levels during the initial commitment period. The need to make these cuts, and the likelihood of steeper cuts in the future, is leading to innovations in renewable energy and carbon sequestration. The use of renewable energy in Europe varies considerably among nations, with Austria relying on renewables for over half its energy and the United Kingdom for less than five percent.² But the European Commission, as part of its efforts to address member states' obligations under Kyoto, has set a target of increasing the use of renewables for electricity production from six to twelve percent, on average, by 2010.³

Notably excluded from Kyoto's mandatory emissions reductions are developing nations like India and China, which are rapidly industrializing and fueling that growth with coal and other fossil fuels. The exclusion of these developing economies from Kyoto's mandatory emissions reductions was a primary reason that the United States refused to ratify Kyoto.

² Information on the use of renewable energy sources in Europe is available at http://ec.europa.eu/energy/res/publications/doc/2004_brochure_green_en.pdf.

³ These European figures do not include nuclear power. The European Commission's energy website is www.ec.europa.eu/energy.

But developing nations do have a role under Kyoto. With the clean development mechanism (CDM), a second way in which Kyoto may foster development of renewable energy, Annex I nations may implement “green” projects in non-Annex I nations to reduce emissions. Annex I nations thereby earn credits (certified emission reductions or CERs) to help meet their own targets and help non-Annex I parties achieve the goals of Kyoto. Some Annex I nations are earning CERs in developing nations through non-renewable energy projects like landfill methane gas capture and switching power plants to cleaner fossil fuels like natural gas. But others are also earning a substantial number of credits from renewable energy projects such as a wind energy and hydroelectric plants, many in Latin American countries.

II. United States Congress

In 1997, Congress passed a resolution stating its opposition to any climate change treaty that would harm the U.S. economy or omit developing nations.⁴ Nevertheless, by the 2006-2007 Congressional session, a number of bills were pending that would impose mandatory reductions in greenhouse gas emissions and advance the development of renewable energy. Although none were passed, there is a growing bipartisan consensus that cuts in emissions are necessary.⁵ A growing number of corporations agree, including Alcoa, BP America, Caterpillar, Duke Energy,

⁴ S. Res. 98, 105th Cong. (1997).

⁵ The U.S. Supreme Court acknowledged this growing consensus in a April 2, 2007, decision, *Massachusetts v. Environmental Protection Agency*, in which the Court held that the U.S. Environmental Protection Agency was empowered under the Clean Air Act to regulate greenhouse gas emissions from automobiles and that the agency’s reasons for not doing so were arbitrary and capricious. In assessing the threat posed by climate change, the Court stated: “A well-documented rise in global temperatures has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere. Respected scientists believe the two trends are related.” 127 S. Ct. 1438, 1446, 167 L. Ed. 2d 248, 260 (2007).

General Electric, Florida Power & Light, PG&E and others.⁶ U.S. corporations are not just concerned about climate change, they are concerned about losing a competitive edge to foreign corporations that are developing renewable energy projects to meet Kyoto's requirements in both developed and developing nations.

As of April 24, 2007, there were at least four climate change bills introduced in the Senate and two in the House of Representatives, each proposing mandatory caps on greenhouse gas emissions along with trading programs for regulated entities to trade credits.⁷ Although the cap and trade programs, all of which would ratchet down emission allowances over time, would be a strong incentive to develop viable renewable energy sources, the bills contain other incentives for renewables as well. At least five bills include some provision for using revenues generated by trading credits to promote energy conservation and cleaner technology. At least three would allow use of credits from renewable energy projects and other conservation measures in developing nations. Finally, two bills, S. 309, sponsored by Vermont Senator Bernie Sanders, and S. 485, sponsored by Massachusetts Senator John Kerry, feature renewable portfolio standards, which are explained below.

At the same time that Congress is considering climate change legislation, it is preparing a successor to the Energy Policy Act of 2005. That act included substantial tax incentives and funding for development of clean and renewable sources of energy.

⁶ Congressional Research Service Report for Congress, Clean Air Issues in the 110th Congress: Climate Change, Air Quality Standards, and Oversight, April 4, 2007, at CRS-2; see also Congressional Research Service Report for Congress, Climate Change: Greenhouse Gas Reduction Bills in the 110th Congress, April 24, 2007.

⁷ This survey of Congressional bills is based on the Congressional Research Service's reports dated April 4 and April 24, 2007.

The House of Representatives' energy bill includes a renewable portfolio standard, which would require energy producers to obtain fifteen percent of their energy from renewable sources. It also contains a host of important financial incentives for developing clean energy, increasing energy efficiency and advancing research on climate change and carbon sequestration.

The Senate's energy bill does not include such a measure but does contain a notable increase in fuel efficiency standards for vehicles, which the House version did not. Congress will work out the differences in the two bills in Fall 2007. While it is not clear that the Senate will embrace renewable portfolio standards, they are key fixtures of states' efforts to address climate change.

III. States

In the absence of action at the federal level, states are increasingly moving to address climate change.

Renewable Portfolio Standards

States' renewable portfolio standards are helping to incentivize the development of renewable energy sources more directly. A renewable portfolio standard is a state policy that requires electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date.⁸ Approximately twenty-five states have mandatory

⁸ U.S. Department of Energy, *Energy Efficiency and Renewable Energy*, at http://www.eere.energy.gov/states/maps/renewable_portfolio_states.cfm#map (last visited June 4, 2007).

renewable portfolio standards.⁹ Although the nuclear power industry has lobbied hard to be included as a renewable energy source, states have generally excluded it.

California, for example, requires the state's largest utilities to use renewable energy sources for twenty percent of electricity by 2010. New York's Public Service Commission issued an order in 2004 requiring regulated utilities to use renewable energy for twenty-five percent of electricity production by 2013.¹⁰ For many states, however, these commitments are modest. New York already derives over nineteen percent of its electricity from renewable energy sources like hydroelectric facilities.

For all states, the renewable portfolio standards do not just serve to address climate change. Instead, states are seeking to prepare their economies for the likelihood of mandatory emissions limitations in the near future, whether imposed through Kyoto's successor, federal law, or state law. States are also seeking to remain competitive in attracting and developing renewable energy-related businesses. States without vigorous efforts to promote renewable energy and other clean industries are increasingly at a disadvantage.¹¹

⁹ The Pew Center maintains a concise summary of state efforts to address climate change. A summary of renewable portfolio standards is available at http://www.pewclimate.org/what_s_being_done/in_the_states/rps.cfm.

¹⁰ New York State Public Service Commission, *Retail Renewable Portfolio Standard Case 03-E-0188*, <http://www.dps.state.ny.us/03e0188.htm> (last visited September 16, 2007).

¹¹ On February 16, 2005, the same day that the Kyoto Protocol became law, Seattle Mayor Greg Nickels launched the U.S. Mayors Climate Protection Agreement, through which participating cities pledge to meet or beat Kyoto targets in their own communities and to urge state and federal governments to enact emissions reduction policies. Currently, more than 600 mayors, representing cities in all fifty states and Puerto Rico, have signed on to the agreement. Although not mandatory, this local effort to address climate change underscores the widening support for mandatory emissions reductions in the United States. More information is available from U.S. Conference of Mayors, Climate Protection Center, available at <http://www.usmayors.org/climateprotection>.

RGGI

The *Regional Greenhouse Gas Initiative* (RGGI) is a mandatory carbon dioxide emission reduction program created by the Northeastern and Mid-Atlantic states. RGGI requires each member to enact cap and trade regulations addressing power plants that produce twenty-five megawatts or more of electricity (daily average). Emissions will be reduced approximately ten percent below current levels in 2018.¹² RGGI, however, is limited. It only covers carbon dioxide emissions, except with regard to offset allowances described below.¹³ It also only covers electricity producers of twenty-five megawatts or more. It does not contain provisions to directly foster renewable energy, although the development of cleaner sources of energy is an inherent component of efforts to cut carbon dioxide emissions.

While member states have some flexibility in RGGI's implementation, a memorandum of understanding ("RGGI MOU") among the members will guide the process, provide some uniformity and ensure that offsets can be traded among the states. Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont signed the original RGGI MOU on December 20, 2005; however, it has since been amended and Massachusetts, Maryland, and Rhode Island have also agreed to join the program.¹⁴

The RGGI MOU creates a carbon dioxide allowance for each member state for the first reporting period of 2009 to 2014; New York's limit is 64,310,805 short tons. Each state will

¹² The website of the Regional Greenhouse Gas Initiative is <http://www.rggi.org>.

¹³ New York's pre-proposal for rules to implement RGGI is available at <http://www.dec.ny.gov/chemical/rggi.html> ("Pre-Proposal"). See Pre-Proposal § 242-1.4(a).

¹⁴ The RGGI MOU, its amendments, and the model rule are available at www.rggi.org. An amendment from August 8, 2006, substantially modified the original RGGI MOU ("RGGI MOU Amendment").

distribute its allowance to in-state sources of carbon dioxide according to its own implementation plans. State allowances will further decline by 2.5 percent each year from 2015 to 2018.

The use of “offset allowances” will add much-needed flexibility to this regime, but renewable energy projects play a limited role in them.¹⁵ Power producers will be able to obtain offset allowances to cover as much as 3.3 percent of their emissions limitations from the following five types of projects:

- landfill methane capture and destruction
- reduction in emissions of sulfur hexafluoride
- sequestration of carbon due to afforestation
- reduction or avoidance of carbon dioxide emissions from natural gas, oil, or propane end-use combustion due to increased end-use efficiency (such as increasing building energy efficiency)
- avoided methane emissions from agricultural manure management operations (which may include some other non-manure organic wastes as well)

Offset projects may be located in any RGGI state or another state that has entered into a memorandum of understanding with a RGGI state relating to the monitoring of offset projects.

RGGI also contains a “safety valve” if credits become too expensive. If the price of each carbon dioxide allowance reaches \$7 per ton, regulated entities may use offset allowances to cover up to five percent of their permitted emissions.¹⁶ If the price of each carbon dioxide allowance reaches \$10 per ton, regulated entities may use offset allowances to cover up to ten

¹⁵ The offsets are described in section 242-10.3 of the Pre-Proposal.

¹⁶ RGGI MOU Amendment section 4.

percent of their permitted emissions.¹⁷ Additionally, if the price reaches \$10 per ton, regulated entities may obtain offset allowances by “retiring” allowances or obtaining credits from an international climate change program, principally the Kyoto Protocol.¹⁸

RGGI could already be having an impact because credits earned from offset projects initiated after December 20, 2005, can be recognized by RGGI members. The first tracking begins in 2009 and ends on March 1, 2012. Each regulated source must have sufficient allowances (plus offset allowances) to cover its emissions at that time.

Each state will soon be promulgating regulations to implement RGGI based on the members’ model rule. New York may release draft rules in early 2008. This timeline is compatible with RGGI, which requires members to launch their respective programs on January 1, 2009.

California

California’s Global Warming Solutions Act, which became law on January 1, 2007, will reduce greenhouse gas emissions in the state to 1990 levels by 2020, reportedly a twenty-five percent reduction.¹⁹ California’s legislation is internationally significant since the state is the eleventh largest emitter of greenhouse gases in the world.²⁰ It is also broader than RGGI, potentially applying to all greenhouse gases and multiple sources.

¹⁷ RGGI MOU Amendment section 5.

¹⁸ RGGI MOU Amendment section 5.

¹⁹ The California Environmental Protection Agency’s website is <http://www.calepa.ca.gov/>. California’s Global Warming Solutions Act is available at <http://www.arb.ca.gov/cc/docs/ab32text.pdf>.

²⁰ Natural Resources Defense Council, *A Golden Opportunity, California’s Solutions for Global Warming*, June 2007, available at <http://www.nrdc.org/globalwarming/ca/ca.pdf>.

The statute provides the California Air Resources Board (“ARB”) with discretion in rulemaking to implement the law over the next five years (by 2012). It is unclear how market-based mechanisms will be used to implement the Global Warming Solutions Act and whether companies sponsoring renewable energy projects will be able to market credits in California. In fact, at this time it is unclear if the ARB will propose a market-based system. Moreover, a high percentage of California’s greenhouse gas emissions come from burning fossil fuels by vehicles and power production; the ARB will need to directly address reductions by these sources if California is going to meet its goals.

But past experience in California indicates that renewable energy will play a strong role in achieving California’s 2020 goals. For example, California already has a mandatory renewable portfolio standard in place for all utilities, requiring twenty percent of their power to come from renewable sources by 2010, a figure that Governor Schwarzenegger has proposed to raise to thirty-three percent by 2020.²¹

Other States and Canadian Provinces

Although California and the RGGI states have moved the furthest in developing climate change regulation, other states are moving in that direction as well. On February 26, 2007, the governors of Arizona, California, New Mexico, Oregon and Washington established the Western Regional Climate Action Initiative.²² By agreement, the members pledged to reduce greenhouse

²¹ CAL. HEALTH & SAFETY CODE §§ 38500 *et seq.* (Deering 2007).

²² The Western Regional Climate Action Initiative memorandum of agreement is available at www.westernclimateinitiative.org.

gas emissions to fifteen percent below 2005 levels by 2020. Utah, British Columbia, and Manitoba subsequently joined the initiative.

IV. Conclusion

A link between rising global temperatures and increasing levels of greenhouse gases in the atmosphere is now recognized by most climate experts. Because a growing coalition of politicians, CEOs, and environmental advocates now favor federal legislation to require reductions in greenhouse gas emissions, it is likely to become a reality in the United States in the near future.

The challenge will become achieving these reductions without harming the U.S. economy. A multi-faceted approach will be necessary, incorporating higher fuel efficiency standards for vehicles, technology to sequester carbon dioxide from fossil fuel power plants, energy conservation, and smarter land-use planning. But one of the surest ways to reduce greenhouse gas emissions is to develop cleaner and renewable energy sources to reduce dependence on fossil fuels and meet expanding global energy demands. Developing and growing these technologies is a matter of tremendous environmental and economic importance to the United States.