Chapter 5: State and Local Action: Governmental Efforts and Transnational Collaboration

Sub-national states and localities have been key actors in climate change law and policy. This is particularly true in countries such as the United States where the national government has been slow to act. Also, some of the most noteworthy climate change governance to date has occurred through coordinated action by states and localities in different national jurisdictions. This chapter examines such sub-national action and its transnational component.

A. The Puzzle of Sub-National Action

State and local governments in the United States have adopted a wide variety of legal and policy measures to address climate change. As described below, many of these measures are oriented toward reducing the greenhouse gas emissions, such as regulating greenhouse gas emitters, incentivizing renewable energy, and rewriting transportation plans. To the extent that such measures may be costly, a puzzle emerges: why would localities incur these costs when the emissions reductions they achieve are not likely to significantly reduce the impact of climate change on their communities? In other words, what are the benefits of these measures that justify the costs? And if the benefits are primarily other than the emissions reductions that the measures achieve, what are they? This section explores these questions by examining the reasons for sub-national action and its importance.

1. Defying the Tragedy of the Commons

As elaborated by Garrett Hardin in his classic work, environmental degradation can be conceptualized as a tragedy of the commons. Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968). Hardin asks his readers to imagine herdsmen with free access to grazing

land. Each herdsman will have the incentive to maximize his own animals' use of the land because the herdsman reaps the full benefit of selling the animal. In contrast, the negative effects of overgrazing are shared by all herdsmen. The freedom of each herdsman to do the same on the commons leads to the tragedy. "Each man is locked in a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all…" *Id.* at 1244. Hardin observes that the tragedy of the commons also appears in problems of pollution. Here, polluters reap the full benefit of manufacturing and selling a product while the cost of the pollution is shared by all.

Climate change can easily be viewed as an example. As Professors J.R. Deshazo and Jody Freeman explain:

> Global warming is a classic public bad; it poses a global collective action problem. Neither a single state, nor a small handful of states, should be willing to invest in emissions regulation—both because a few jurisdictions acting alone cannot hope to make meaningful progress on the problem, and because the nature of global warming means that proactive states cannot fully internalize the benefits of their regulatory efforts, and must instead share those benefits. Thus, although state regulation in response to climate change may create negative externalities under some circumstances (e.g., if it burdens out-of-state interests), it necessarily creates positive externalities. States that generate these benefits for others (and for the world, really) may bear significant in-state costs. Generally, such conditions—significant costs and an inability to fully capture benefits—are the conditions under which we would expect to see either state inaction or a race to the bottom. J.R. DeShazo and Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1516-1519 (2006-2007).

And therein lies the puzzle of subnational climate change: instead of doing nothing, states and localities have become leaders in climate change policy. Why and how have they defied the logic of the tragedy of the commons?

One key to answering this question lies in recognizing that the benefits that may accrue to states and localities by acting on climate change are broad and varied. The tragedy of the commons paradigm focuses on just one kind of benefit: reducing local environmental harm. In the case of climate change policy, however, there are many types of benefits that states and localities may derive from acting alone and together. Consider again the analysis of Professors DeShazo and Freeman:

> On closer examination, however, the emergence of state initiatives is not so puzzling. There are a variety of alternative explanations for why states are acting, the most plausible of which is that governors and state legislators are simply responding to the preferences of their electorates. This explains why some states are pushing forward even though they face strong industry opposition and the benefits of their efforts may be minimal—or, if not minimal, not able to be internalized. Bolstering this account are national and state-level polling data indicating strong public support for state action to address climate change. For example, data from California, New York, and the cluster of states that signed the

> Regional Greenhouse Gas Initiative (RGGI) —the "leader" states on climate regulation—show strong public support for state regulatory efforts.
> *Id.* at 1519-1520.

As the authors suggest, state and local leaders may stand to gain by satisfying their electorate's concerns about climate change and showing political leadership. Mayors and governors of leader jurisdictions around the United States have gained headlines and other favorable publicity for their proactive stances on climate change. *See e.g.*, Kirsten H. Engel, *Whither Subnational Climate Change Initiatives in the Wake of Federal Climate Legislation?* 39 PUBLIUS: THE JOURNAL OF FEDERALISM 432 (2009).

Many other benefits may also motivate state and local governments. Some state and regional action aims to compel or induce emissions reduction at larger scales. State-led litigation such as *Massachusetts v. EPA* (see *supra* Chapter 3) and *Connecticut v. American Electric Power Co.* (see *supra* Chapter 3 and *infra*) seeks to compel national emissions reductions. Regional and state cap-and-trade programs may help induce national emissions reductions by designing and testing a model for national climate policy. Moreover, the businesses and industries of states that regulate first may gain a competitive advantage if similar federal regulations are later adopted. State and local climate policy may, for example, expand economic opportunities for new high-growth industries pertaining to energy efficiency and renewable energy. And finally, states and localities may be attracted by possible "co-benefits" of limiting greenhouse gas emissions such as reducing energy costs, traffic congestion, air pollution, and solid wastes. *Id* at 439-443; *see also* Kirsten H. Engel, *Mitigating Global Climate Change in the United States: A Regional Approach*, 14 N.Y.U. ENVTL. L.J. 54, 60-65 (2005).

NOTES AND QUESTIONS

1. Professors DeShazo and Freeman find that the most plausible of the alternative explanations for why states are acting is that state leaders are simply responding to the preferences of their electorates. Do you agree? Which of the reasons suggested above do you find most convincing? In what situations would early-action states gain a competitive advantage, and in what situations might they instead be disadvantaged? For further exploration of these issues, Professors Katherine Trisolini and Jonathan Zasloff draw from international relations theory to try to understand this behavior. Katherine Trisolini & Jonathan Zasloff, *Cities, Land Use, and the Global Commons:* Genesis *and the Urban Politics of Climate Change, in* ADJUDICATING CLIMATE CHANGE: SUB-NATIONAL, NATIONAL, AND SUPRA-NATIONAL APPROACHES (William C.G. Burns & Hari M. Osofsky, eds., Cambridge Univ. Press 2009).

2. State and local initiatives in the U.S. have in many ways been shaped by the absence of federal leadership in climate policy. Professor Jonathan Adler usefully identifies both "vices" and "virtues" of having states and localities take action on climate change in the absence of federal action. Jonathan H. Adler, *Hothouse Flowers: The Vices and Virtues of Climate Federalism,* 17 TEMP. POL. & CIV. RTS. L. REV. 443 (2007-2008). In his view, the main problem is that such action does not match the scale of the problem and is thus likely to be inefficient: "A local cap-and-trade system, for example, will cover a more limited set of sources, and fewer savings opportunities, than a national system with a broader base.

Subjecting businesses to a variety of state standards may also be less efficient than a standardized federal regulatory regime." *Id.* at 449. However, he also points to virtues: "Among other things, state initiatives may serve as useful experiments on the efficacy of various climate policy measures and do a better job addressing local preferences and information about sources of climate emissions and the relative costs and benefits of mitigation strategies. In addition, insofar as the threat of climate change calls for greater consideration of adaptation, state and local governments may be particularly well-situated to develop such measures." *Id.* at 450. How has the absence of federal leadership enabled state and local initiatives? As the federal government becomes more active in climate policy, how do you expect states and localities to respond?

2. The Multiscalar Nature of Climate Change

Based on the notion that climate change is a global problem, there have been many calls for a global solution. But is climate change only a global problem? Is it not also a local, state, regional, and national problem? Climate change is inherently multiscalar: it is the result of actions taken by actors at all scales and it will have effects at all scales. Moreover, the opportunities and capacities that different localities in the world have to reduce their emissions vary widely, as will the impacts that climate change will have on local environments and livelihoods. As such, appropriate policies for mitigation and adaptation will likewise vary.

In the following excerpt, Professor Elinor Ostrom explains the need for a multiscalar approach to this multiscalar problem.

Elinor Ostrom, *Polycentric Systems for Coping with Collective Action and Global Environmental Change*, Global Environmental Change 20(4) (October 2010): 550–57.

GHG emissions are the result of an extraordinarily large number of actions taken at multiple scales. Decisions within a family as to what forms of transportation to use, what car to purchase, and what investments to make regarding power consumption within their home affect not only the family budget but also the amount of GHGs released into the atmosphere. Similarly, decisions within business firms affect their budget as well as emissions.

Communities that have established power networks that enable households to invest in solar power to be used for household energy needs and, when not needed, contributed to a larger power network can reduce local energy costs and GHG emissions. Investments in better waste disposal facilities also generate local benefits as well as help decrease global emissions. Efforts to reduce pollution levels in large metropolitan areas focus on both total energy use and emissions of particulates and thus generate benefits at a metropolitan level as well as globally. Given that many of the actions generating GHG emissions are taken at multiple scales, activities that are organized at multiple scales generate benefits to those who act, ranging from households, farms, and cities at a local scale to regions within a state, states, regional units that cross state boundaries, and the globe.

A polycentric approach

… Given that multiple benefits at diverse scales are generated from efforts taken to reduce GHG emissions as discussed above, polycentricity is a useful analytical approach for understanding and improving efforts to reduce the threat of climate change.

During the 1950s, massive criticism was leveled at the existing governance arrangements in metropolitan areas across the United States and Europe because of the large number of small-, medium-, and large-scale government units operating in the same metropolitan area. Many scholars thought that the high number of governments serving an area was evidence of a chaotic system. Ostrom et al. introduced the concept of polycentricity in their effort to understand whether the activities of a diverse array of public and private agencies engaged in providing public services in a metropolitan area were chaotic or potentially a productive arrangement:

> ‘‘Polycentric’’ connotes many centers of decision making that are formally independent of each other.. . . To the extent that they take each other into account in competitive relationships, enter into various contractual and cooperative undertakings or have recourse to central mechanisms to resolve conflicts, the various political jurisdictions in a metropolitan area may function in a coherent manner with consistent and predictable patterns of interacting behavior. To the extent that this is so, they may be said to function as a ‘‘system’’.

Some readers will ask, What is the relevance of the polycentric approach for the analysis of global public goods? The initial relevance of the polycentric approach is the parallel between the earlier theoretical presumption that only the largest scale was relevant for the provision and production of public goods for metropolitan areas, and the contemporary presumption by some scholars that only the global scale is relevant for policies related to global public goods. Extensive empirical research found, however, that while large-scale units were part of effective governance of metropolitan areas, small- and medium-scale units were also necessary components. An important lesson is that simply recommending a single governance unit to solve global collective-action problems—because of global impacts—needs to be seriously rethought.

As discussed above, instead of the benefits derived from reducing GHGs existing only at the global level, multiple benefits are created by diverse actions at multiple scales. Potential benefits are even generated at a household level. Better health is enhanced by members of a household who bike to work rather than drive. Family expenditures allocated to heating and electricity may be reduced when investments have been made in better construction of a building, reconstruction of existing buildings, installation of solar panels, and many other investments that families as well as private firms can make that pay off in the long run. As more information is provided about these small-scale, but cumulatively additive, benefits, one can expect further efforts to be undertaken that cumulatively and significantly reduce GHG emissions.

…

Given the complexity and changing nature of the problems involved in coping with climate change, ‘‘optimal’’ solutions for making substantial reductions in the level of GHGs emitted into the atmosphere are only a dream. A major reduction in emissions is, however, needed. The advantage of a polycentric approach is that it encourages experimentation by multiple actors, as well as the development of methods for assessing the benefits and costs of particular strategies adopted in one setting and comparing these with results obtained in other settings. A strong commitment to finding ways of reducing individual emissions is an important element for coping with climate change. Building such a commitment, and trusting that others are also taking responsibility, can be more effectively undertaken in small- to medium-scale units that are linked together through diverse information networks.

We need to recognize that doing nothing until a global treaty is negotiated maximizes the risk involved for everyone. Rather than only a global effort, it would be better to self-consciously adopt a polycentric approach to the problem of climate change in order to gain benefits at multiple scales as well as to encourage experimentation and learning from diverse policies adopted at multiple scales.

NOTES AND QUESTIONS

1. Professor Ostrom calls for a polycentric governance approach to climate change. In her view, international and national action on climate change will not be sufficient, and lower levels of governance at many scales will have key roles to play. Proceeding from this premise, difficult questions arise as to what actions should occur at each scale and how they should be coordinated. To what extent should the responsibilities of different jurisdictional scales be overlapping and to what extent should they be mutually exclusive? To what extent should they be firmly set and to what extent should they be flexible and dynamic? See generally Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L. J. 130 (2005); Kirsten Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159 (2006-2007).

2. At the COP-15 meeting in Copenhagen in 2009, local and regional leaders from many national jurisdictions met outside the formal negotiations and made agreements among themselves about how they would collaborate and coordinate. What importance could agreements such as these have to international lawmaking? Professor Hari Osofsky argues that while such agreements have no formal status in international law, they have practical import for the capacity of the international community to meet its emissions reductions goals and they suggest the need for a rethinking of the narrow conception of international law that includes only agreements among national units. Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen,* 25 MARYLAND J. INT'L L. 64 (2010).

B. States and Coalitions of States

State governments in the United States have primary authority in several policy areas that are central to climate change mitigation and adaptation. Examples include land use, transportation policy, water policy and economic development. Also, in the key area of energy policy, regional and state interests have historically predominated over national interests.

In the early 2000s, many states moved forward in the climate policy arena. California led with its passage of the Global Warming Solutions Act of 2006, which determined that the state's 2020 emissions shall be no greater than its 1990 emissions. California has also participated in the Western Climate Initiative, which like the Regional Greenhouse Gas Initiative in the Northeast, aims to regulate greenhouse gas emissions in a significant region of the country. Moreover, according to the Pew Center on Global Climate Change, about three-quarters of U.S. states have written state Climate Action Plans; about half have adopted Renewable Portfolio Standards requiring their electric utilities to generate energy from renewable sources; and about one-third

have established "public benefit funds" to support energy efficiency and renewable energy projects. *See* U.S. Climate Policy Maps, http://www.pewclimate.org/what_s_being_done/in_the_states/state_action_maps.cfm.

As discussed in Chapter Three, a primary question in the design of any potential future federal climate law in the U.S. will be how to balance and coordinate any newly-created federal powers with these traditional state powers and innovative state programs. In the state and local context that is the focus of this chapter, questions arise as well: What are some reasons that states should continue to have significant authority under future national climate legislation? In what situations should federal authority replace state authority? After discussion of the most relevant state initiatives, this section concludes with an exploration of these federalism questions.

1. California and the Western Climate Initiative

Among U.S. states, California emits more greenhouse gases than any other state except for Texas. In fact, California's emissions place it among the top ten or twenty emitters in the world, including all countries. Matching its importance as an emitter, California has been on the forefront of climate change policy in the United States, and indeed in the world. This section first discusses California's landmark climate change law, Assembly Bill 32 (AB32). It then examines California's collaboration with other U.S. states and Canadian provinces in the Western Climate Initiative.

Assembly Bill No. 32, CHAPTER 488, An act to add Division 25.5 (commencing with Section 38500) to the Health and Safety Code, relating to air pollution. [Approved by Governor September 27, 2006. Filed with Secretary of State September 27, 2006.]

…

The people of the State of California do enact as follows:

…

38500. This division shall be known, and may be cited, as the California Global Warming Solutions Act of 2006.

…

38501. The Legislature finds and declares all of the following:

(a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

(b) Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.

(c) California has long been a national and international leader on energy conservation and environmental stewardship efforts, including the areas of air quality protections, energy efficiency requirements, renewable energy standards, natural resource conservation, and

greenhouse gas emission standards for passenger vehicles. The program established by this division will continue this tradition of environmental leadership by placing California at the forefront of national and international efforts to reduce emissions of greenhouse gases.

(d) National and international actions are necessary to fully address the issue of global warming. However, action taken by California to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.

(e) By exercising a global leadership role, California will also position its economy, technology centers, financial institutions, and businesses to benefit from national and international efforts to reduce emissions of greenhouse gases. More importantly, investing in the development of innovative and pioneering technologies will assist California in achieving the 2020 statewide limit on emissions of greenhouse gases established by this division and will provide an opportunity for the state to take a global economic and technological leadership role in reducing emissions of greenhouse gases.

(f) It is the intent of the Legislature that the State Air Resources Board coordinate with state agencies, as well as consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing this division.

(g) It is the intent of the Legislature that the State Air Resources Board consult with the Public Utilities Commission in the development of emissions reduction measures, including limits on emissions of greenhouse gases applied to electricity and natural gas providers regulated by the Public Utilities Commission in order to ensure that electricity and natural gas providers are not required to meet duplicative or inconsistent regulatory requirements.

(h) It is the intent of the Legislature that the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases established pursuant to this division in a manner that minimizes costs and maximizes benefits for California's economy, improves and modernizes California's energy infrastructure and maintains electric system reliability, maximizes additional environmental and economic co-benefits for California, and complements the state's efforts to improve air quality.

(i) It is the intent of the Legislature that the Climate Action Team established by the Governor to coordinate the efforts set forth under Executive Order S-3-05 continue its role in coordinating overall climate policy.

…

38599. (a) In the event of extraordinary circumstances, catastrophic events, or threat of significant economic harm, the Governor may adjust the applicable deadlines for individual regulations, or for the state in the aggregate, to the earliest feasible date after that deadline. (b) The adjustment period may not exceed one year unless the Governor makes an additional adjustment pursuant to subdivision (a).

California also led in the development of the Western Climate Initiative (WCI), a regional emissions reduction pact formed in 2007. Seven U.S. states (Arizona, California, Montana, New Mexico, Oregon, Utah and Washington) and four Canadian provinces (British Columbia, Manitoba, Ontario, and Quebec) became WCI partners. In 2010, the WCI released a design document—excerpted below—that laid the groundwork for a regional cap-and-trade program

and other strategies to meet a regional goal of reducing emissions to fifteen percent below 2005 levels by 2020.

Western Climate Initiative, Design for the WCI Regional Program (July 2010), http://westernclimateinitiative.org/the-wci-cap-and-trade-program/program-design

The WCI Partner jurisdictions have developed a comprehensive strategy to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. This goal is based on the individual GHG emission reduction goals of the Partner jurisdictions. Our strategy will also spur investment in and development of clean-energy technologies, create green jobs, and protect public health. The WCI Partner jurisdictions' plan includes the following elements:

- **Using the power of the market.** A market-based approach that caps GHG emissions and uses tradable permits will provide incentives for companies and inventors to create new technologies that increase efficiency, promote greater use of renewable or lower-polluting fuels, and foster process improvements that reduce dependence on fossil fuels.

- **Encouraging reductions throughout the economy.** To reduce compliance costs and encourage emissions reductions, offset certificates will reward emissions reductions in sectors such as forestry and agriculture that are not covered by emissions caps.

- **Advancing core policies and programs to speed the transition to a clean energy economy** by targeting cost-effective emissions reductions, including:

    - Expanding energy efficiency programs that reduce customer utility bills;

    - Encouraging additional renewable energy sources that diversify supply resources and reduce air and water pollution;

    - Tackling transportation emissions through vehicle emissions standards, fuel standards, and incentives for improved community and transportation planning;

    - Establishing performance benchmarks and standards for high-emitting industries to spur innovation and improve competitiveness; and

    - Identifying best practices in workforce and community programs to help individuals transition to new jobs in the clean energy economy.

The WCI Partner jurisdictions' comprehensive strategy is good for the environment and good for the economy. It encourages the lowest cost reductions in GHG emissions and improved energy efficiency. Economic modeling conducted by the Partner jurisdictions indicates that the program will result in modest cost savings between 2012 and 2020. The strategy balances the principles adopted by the WCI Partner jurisdictions to maximize total benefits throughout the region, including reducing air pollutants, diversifying energy sources, and advancing economic, environmental, and public health objectives, while also avoiding localized or disproportionate environmental or economic impacts.

From the beginning, the Partner jurisdictions' strategy for addressing climate change has recognized the need for broad collaborative action to reduce GHG emissions. All of the WCI Partner jurisdictions have adopted climate action plans, and are taking steps to reduce emissions. We also are in discussions with other regional greenhouse gas initiatives—the Regional Greenhouse Gas Initiative (RGGI) and the Midwestern Greenhouse Gas Reduction Accord—to further broaden the collaboration on mitigation activities. In addition, WCI Partner jurisdictions are working closely with our federal governments to promote national and international action, and to ensure coordination among state, provincial, regional, and national programs.

The WCI Partner jurisdictions understand that even if it were possible to substantially reduce or even eliminate GHG emissions today, our jurisdictions would still feel the impacts of climate change due to emissions that have already occurred. Scientific research continues to confirm that our water resources, natural ecosystems, air quality, and environment-dependent industries like agriculture and tourism will be significantly impacted by changes in climate. Consequently, in addition to limiting GHG emissions, efforts are needed to address the impacts of climate change. The WCI Partner jurisdictions are therefore also committed to undertaking preparation and adaptation efforts.

Expanding Collaborative Action on Climate Change

GHG emissions are emitted from a broad range of activities worldwide. Unlike other air pollutants, GHG emissions contribute equally to climate change regardless of source or location. Efforts to mitigate climate change must ultimately address emissions from all major sources on a global basis.

As the WCI Partner jurisdictions move forward in the months and years ahead, the Partners will continue collaborating to develop a portfolio of core policies and programs to reduce GHG emissions. The governors and premiers of the Partner jurisdictions invite their colleagues across North America, including leaders of Native American tribes and Canada's First Nations, to join us to expand our effort to reduce GHG emissions and limit the impacts of a changing climate.
…

2. The WCI Cap-and-Trade Program

As part of a comprehensive strategy to reduce GHG emissions, the WCI Partner jurisdictions have recommended a market-based program that provides an incentive to limit emissions and promotes technological innovation. Cap-and-trade has proven to be a successful means of reducing air pollution. It also is considered one of the most cost-effective and reliable strategies for pricing carbon emissions and providing emitters of GHG emissions with an incentive to limit pollution. With the trading component, cap-and-trade allows emitters to be flexible and creative in how to make needed reductions …

The WCI program design includes a broad scope, encompassing nearly 90 percent of economy-wide emissions in the WCI Partner jurisdictions. The merits of pricing emissions broadly throughout the economy have been recognized in most of the recent federal proposals in the U.S. A forthcoming study by the National Research Council also recommends a broad scope, stating:

"An economy-wide carbon pricing policy would provide the most cost-effective reduction opportunities, would lower the likelihood of significant emissions leakage, and could be designed with a capacity to adapt in response to new knowledge." Similarly, in 2009 the National Round Table on the Environment and the Economy published a report on carbon pricing in Canada, including: "To achieve stated reduction targets at the least possible cost, all emissions must be covered as fully as possible. This requires a unified pricing policy that consciously takes into account all emissions across all sectors and all jurisdictions."

The WCI Partner jurisdictions understand that in addition to covering most sectors of the economy, a broad geographic scope will also reduce overall compliance costs and can help mitigate leakage risks. A larger carbon market across a diverse set of emission sources provides a wider range of reduction opportunities. There are multiple paths for achieving the broad geographic and economy-wide coverage that is preferred for a cap-and-trade program. The WCI Partner jurisdictions also recognize alternative schedules for implementation can be accommodated and will continue to encourage additional jurisdictions to join the program after the expected start date of January 1, 2012.

NOTES AND QUESTIONS

1. AB 32 established explicit implementation deadlines for the California Air Resources Board (CARB). In 2007, CARB was required to adopt "early action" measures to reduce greenhouse gas emissions. Adopted measures included regulations to reduce emissions from fuels and mobile air-conditioning units and capture methane from landfills. By January 1, 2008, CARB was required to adopt mandatory emission reporting regulations for sources and a greenhouse gas emissions cap for 2020 based on 1990 emissions levels. By January 1, 2009, CARB was required to adopt a "scoping plan" detailing how CARB intended to meet the 2020 cap. By January 1, 2011, CARB was required to adopt the emissions reductions rules that would become effective on January 1, 2012 to meet the 2020 cap.

2. The scoping plan adopted in 2008 was challenged in state court for failing to comply with the California Environmental Quality Act (CEQA). *Association of Irritated Residents v. California Air Resources Board,* Superior Court of California, Case No. CPF-09-509562. Plaintiff environmental justice organizations argued that the scoping plan had selected a cap-and-trade approach without adequately analyzing alternatives that might be more environmentally effective. More specifically, plaintiffs expressed concern that a cap-and-trade approach would allow power plants and other large facilities to continue polluting poor communities as long as they purchase allowances or offsets. If you were the leader of an environmental organization that supported California's passage and implementation of AB32, what criticism might you have of the lawsuit? If you were the leader of an environmental justice organization, how would you respond to these criticisms?

   The California court decided in favor of plaintiffs, and CARB completed additional studies to comply with CEQA. CARB then proposed and adopted a similar final regulation that included a cap-and-trade program beginning in 2013.

3. California has a long history of being a leader in environmental law, particularly in the area of air pollution regulation. Because California had already established emissions standards for motor vehicles before the Clean Air Act gave authority to the federal government to do so in 1970, Congress granted California an authority unique among states to retain its stricter standards and develop new vehicle standards in the future. Other states may choose to adopt either the California standards or the default federal standards. In the early 2000s, California relied on this special authority to set greenhouse gas emissions standards for vehicles, and about 15 other states also adopted the California standards. Do you think it was wise of Congress to give this special authority to California? Consider the arguments that would be made from the perspectives of both air quality advocates and the auto industry.

4. WCI sought to create a comprehensive cap-and-trade system in the region, encompassing nearly 90 percent of economy-wide emissions. Pollutants covered by the program would include carbon dioxide, methane, nitrous oxide, hydroflourocarbons, perflourocarbons and sulfur hexafluoride. Covered facilities were in the electricity, industry, transportation and commercial sectors. What are the advantages and disadvantages of such a broad regional cap-and-trade program? Consider not just environmental and economic aspects, but also political and administrative aspects.

   WCI is broad not only in its coverage, but also in its geographic scope, representing a view of "region" that cross-cuts national borders. What constitutional issues are raised by the fact that the WCI includes not just U.S. states but also Canadian provinces? Based on recent Supreme Court decisions, it is possible that a court would find that the pact is preempted because of the federal prerogative in foreign affairs. In *Crosby v. National Foreign Trade Council*, 530 U.S. 360 (2000), the Court struck down a Massachusetts law that prohibited its state or local governments from contracting with companies doing business in Burma. In *American Insurance Ass'n v. Garamendi*, 539 U.S. 396 (2003), the Court struck down a California law that mandated that insurers disclose information relating to whether they had compensated victims of the Holocaust under insurance policies sold before and during World War II. For more discussion, see Daniel A. Farber, *Climate Change, Federalism and the Constitution*, 50 ARIZ. L. R. 879 (2008).

5. Given that WCI is merely a regional pact, states are free to withdraw. In 2011, six of the 7 participating U.S. states withdrew from the WCI, leaving only California and four Canadian provinces as WCI partners. See Gordon Hamilton, S*ix U.S. states abandon carbon-trade partnership*, THE VANCOUVER SUN (November 18, 2011). In several states, the governor who had agreed to the pact was no longer in office, and the new governor decided that remaining in the WCI was not in the state's interest. See, e.g., State of Arizona Executive Order 2010-06 (February 2, 2010) available at http://www.azgovernor.gov/dms/upload/EO_2010_06.pdf. How do you think the reality that states can withdraw anytime affected the work of the WCI and the design of its cap-and-trade program?

2. The Regional Greenhouse Gas Initiative

The Regional Greenhouse Gas Initiative (RGGI) is a cap-and-trade program to regulate carbon dioxide emissions in ten Northeastern and Mid-Atlantic states. Seven states—

Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont—signed the original Memorandum of Understanding that established RGGI in 2005. The program became operational in 2009 with the participation of these states and three others, Maryland, Massachusetts, and Rhode Island.

RGGI capped the emission of carbon dioxide from power plants within these states at projected 2009 levels through 2014, and then the cap declines by 2.5 percent per year through 2018. The RGGI cap-and-trade program is thus substantially narrower than the cap-and-trade programs envisioned by California and the Western Climate Initiative. While the latter programs seek to include six major greenhouse gases from a wide variety of sectors, RGGI caps only the emissions of one greenhouse gas from one sector.

While more limited in scope, RGGI has been an early and valuable experiment in using cap-and-trade to regulate greenhouse gas emissions in the United States. To understand its importance, study the Memorandum of Understanding (MOU) below and consider the notes and questions that follow.

Regional Greenhouse Gas Initiative, Memorandum of Understanding, December 20, 2005, available at http://www.rggi.org/docs/mou_12_20_05.pdf.

WHEREAS, the States of Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont (the "Signatory States") each individually have a policy to conserve, improve, and protect their natural resources and environment in order to enhance the health, safety, and welfare of their residents consistent with continued overall economic growth and to maintain a safe and reliable electric power supply system; and

WHEREAS, there is a growing scientific consensus that the increase in anthropogenic emissions of greenhouse gases is enhancing the natural greenhouse effect resulting in changes in the Earth's climate; and

WHEREAS, climate change poses serious potential risks to human health and terrestrial and aquatic ecosystems globally and in the Signatory States including: more severe droughts and floods; atmospheric warming resulting in increased concentrations of ground-level ozone (smog) and associated adverse health effects; changes in forest composition as dominant plant species change; increases in habitat for disease-carrying insects like mosquitos and other vectors; increases in algal blooms that damage shellfish nurseries and can be toxic to humans; sea level rise that threatens coastal communities and infrastructure, saltwater contamination of drinking water and the destruction of coastal wetlands; increased incidence of storm surges and flooding of low-lying coastal areas which would lead to the erosion of beaches; and

WHEREAS, a carbon constraint on fossil fuel-fired electricity generation and the development of a CO2 allowance trading mechanism will create a strong incentive for the creation, development, and deployment of more efficient fuel burning technologies and processes, as well as renewable energy supplies, demand-side management practices and actions to increase energy efficiency, and will lead to less dependence on the import of fossil fuels; and

WHEREAS, reducing our dependence on imported fossil fuels will enhance the region's economy by augmenting the region's energy security and by retaining energy spending and investments in the region; and

WHEREAS, the Signatory States wish to establish themselves and their industries as world leaders in the creation, development, and deployment of carbon emission control technologies, renewable energy supplies, and energy-efficient technologies, demand-side management practices and increase the share of energy used within the Signatory States that is derived from secure and reliable supplies of energy; and

WHEREAS, climate change is occurring now, and continued delay in taking action to address the emissions that cause climate change will make any later necessary investments in mitigation and adaptive infrastructure much more difficult and costly; and

WHEREAS, to address global climate change and in order to do their fair share in addressing their contribution to this collective problem while preserving and enhancing the economic welfare of their residents, the Signatory States find it imperative to act together to control emissions of greenhouse gases, particularly carbon dioxide, into the Earth's atmosphere from within their region.

NOW THEREFORE, the Signatory States express their mutual understandings and commitments as follows:

1. OVERALL ENVIRONMENTAL GOAL

The Signatory States commit to propose for legislative and/or regulatory approval a CO2 Budget Trading Program (the "Program") aimed at stabilizing and then reducing CO2 emissions within the Signatory States, and implementing a regional CO2 emissions budget and allowance trading program that will regulate CO2 emissions from fossil fuel-fired electricity generating units having a rated capacity equal to or greater than 25 megawatts.

2. CO2 BUDGET TRADING PROGRAM

A. Program Adoption. Each of the Signatory States commits to propose, for legislative and/or regulatory approval, the Program substantially as reflected in a Model Rule that will reflect the understandings and commitments of the states contained herein. The Program launch date will be January 1, 2009 as provided in 3.C. below.

B. Regional Emissions Cap. The regional base annual CO2 emissions budget will be equal to 121,253,550 short tons.

C. State Emissions Caps. The regional base annual CO2 emissions budget will be apportioned to the States so that each state's initial base annual CO2 emissions budget is as follows:

Connecticut: 10,695,036 short tons
Delaware: 7,559,787 short tons

Maine: 5,948,902 short tons
New Hampshire: 8,620,460 short tons
New Jersey: 22,892,730 short tons
New York: 64,310,805 short tons
Vermont: 1,225,830 short tons

For the years 2009 through 2014, each state's base annual CO2 emissions budget shall remain unchanged.

D. Scheduled Reductions. Beginning with the annual allocations for the year 2015, each state's base annual CO2 emissions budget will decline by 2.5% per year so that each state's base annual emissions budget for 2018 will be 10% below its initial base annual CO2 emissions budget.

E. Compliance Period and Safety Valve.
(1) Compliance Period. The compliance period shall be a minimum of three (3) years, unless extended after a Safety Valve Trigger Event (described below). A subject facility must have a sufficient number of allowances at the end of each compliance period to cover its emissions during that period.
(2) Safety Valve Trigger.
(a) Safety Valve Trigger. If, after the Market Settling Period (as defined below), the average regional spot price for CO2 allowances equals or exceeds the Safety Valve Threshold (defined below) for a period of twelve months on a rolling average (a "Safety Valve Trigger Event"), then the compliance period may be extended by up to 3 one-year periods.
(b) Safety Valve Threshold. The Safety Valve Threshold shall be equal to $10.00 (2005$), as adjusted by the Consumer Price Index (CPI) plus 2% per year beginning January 1, 2006.
(c) Market Settling Period. The Market Settling Period is the first 14 months of each compliance period.

…

G. Allocations of Allowances. Each Signatory State may allocate allowances from its CO2 emissions budget as determined appropriate by each Signatory State, provided:
(1) each Signatory State agrees that 25% of the allowances will be allocated for a consumer benefit or strategic energy purpose. Consumer benefit or strategic energy purposes include the use of the allowances to promote energy efficiency, to directly mitigate electricity ratepayer impacts, to promote renewable or non-carbon-emitting energy technologies, to stimulate or reward investment in the development of innovative carbon emissions abatement technologies with significant carbon reduction potential, and/or to fund administration of this Program; and
(2) the Signatory States recognize that, in order to provide regulatory certainty to covered sources, state-specific rules for allocations should be completed as far in advance of the launch of the Program as practicable.

H. Early Reduction Credits. Each Signatory State may grant early reduction credits for projects undertaken after the date this Memorandum is signed and prior to the launch of the Program as defined in 3.C. at facilities subject to the Program, which projects have the effect of reducing

emissions from the facility by (a) an absolute reduction of emissions through emission rate improvements; or (b) permanently reducing utilization of one or more units at the facility.

I. Banking. The banking of allowances, offset allowances and early reduction credits will be allowed without limitation.

3. MODEL RULE FOR ESTABLISHMENT OF THE CO2 BUDGET TRADING PROGRAM

A. Model Rule. The Signatory States are collectively developing a draft Model Rule to serve as the framework for the creation of necessary statutory and/or regulatory authority to establish the Program. The Signatory States will use their best efforts to collectively release this draft Model Rule within 90 days after the execution of this MOU for a 60-day public review and comment period. Comments received during this comment period shall be reviewed by the Signatory States, and revisions to the draft Model Rule will be considered. A revised Model Rule will be developed and released within 45 days of the close of the public comment period after consultation among the Signatory States.

B. Legislation and/or Rulemaking. Each Signatory State commits to seek to establish in statute and/or regulation the Program and have that State's component of the regional Program effective as soon as practicable but no later than December 31, 2008.

C. Launch of Program. The Signatory States intend that the first compliance period of the Program will commence January 1, 2009.
…

6. PROGRAM MONITORING AND REVIEW
The Signatory States agree to monitor the progress of the Program on an ongoing basis.
…

D. Comprehensive 2012 Review. In 2012, the Signatory States will commence a comprehensive review of all components of the Program, including but not limited to:
(1) Program Success. The Signatory States will review whether the Program has been successful in meeting its goals.
(2) Program Impacts. The Signatory States will review the impacts of the Program as to price and system reliability.
(3) Additional Reductions. The Signatory States will consider whether additional reductions after 2018 should be implemented.
…

8. AMENDMENT
This MOU may be amended in writing upon the collective agreement of the authorized representatives of the Signatory States.

NOTES AND QUESTIONS

1. The Model Rule referred to in Section 3 was published in 2006. See http://www.rggi.org/design/history/model_rule. The Model Rule set forth the basic administrative functioning of the program, including detailed provisions regarding allowance distribution, monitoring and reporting, and other elements that are key to the establishment of a cap-and-trade program. The states then adopted their own versions of the Model Rule, legally enabling their participation in the program. In this way, the ultimate legal authority for the program comes from each state individually rather than from the states as a collective. This structure arguably helped RGGI avoid conflict with the Constitution's Compact Clause which prohibits any interstate "agreement or compact" without congressional consent. U.S. CONST. art. I, § 10, cl. 3. Why would the Framers have wanted to prohibit interstate agreements? Do you think they would have wanted to prohibit an agreement like RGGI? For further discussion, see *The Compact Clause and the Regional Greenhouse Gas Initiative*, 120 HARV. L. R. 1958 (2007).

2. Although RGGI is "not in any way supported or encouraged by federal law," Professor Ann Carlson argues that it would be a mistake "to view RGGI as regulatory action adopted independent of the federal government." Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009). She shows that RGGI was built using the ideas and organizational architecture of prior cap-and-trade programs implemented under the federal Clean Air Act, including the Acid Rain Program (Title IV) and the NOx Budget Trading Program. What does the recognition that levels of government often share and borrow regulatory ideas suggest about the importance of initiatives such as AB32, WCI and RGGI?

3. Overallocation of allowances is a problem that has plagued cap-and-trade programs, and it appears to be present in RGGI. A cap-and-trade program is overallocated if its emissions caps are higher than business-as-usual emissions. In an overallocated program, the price of emissions allowances is likely to be low, and regulated entities will need to make few, if any, emissions reductions to comply. See Lesley K. McAllister, *The Overallocation Problem in Cap-and-Trade: Moving Toward Stringency*, 34 COLUMBIA JOURNAL OF ENVIRONMENTAL LAW 396 (2009). The RGGI cap was set at 188 million tons CO_2 for the years 2009 through 2014, followed by incremental annual reductions to reach about 169 million tons CO_2 by 2018. However, the region's emissions declined in the late 2000s due to energy supply and demand factors unrelated to the program, and actual emissions in 2009 amounted to only 123 million tons CO_2, far below not just the 2009 cap but also the 2018 cap. See New York State Energy Research and Development Authority, *Relative Effects of Various Factors on RGGI Electricity Sector CO2 Emissions: 2009 Compared to 2005*, Draft White Paper (11/2/10). RGGI did not incorporate a mechanism to adjust the cap downward, so such an adjustment would require additional legal action in each state. Why might the RGGI states be motivated to make such an adjustment? What barriers or problems could arise?

4. Another joint state effort, the Midwestern Greenhouse Gas Reduction Accord (MGGRA) was signed in November 2007. Founding members included the states of Illinois, Iowa, Kansas, Michigan, Minnesota, Wisconsin, and the Canadian province of Manitoba. Midwestern Governors Association, Midwestern Greenhouse Gas Accord 2007, at 4 (Nov. 15, 2007), available at

http://www.midwesterngovernors.org/Publications/Greenhouse%20gas%20accord_Layout%201.pdf. The members agreed to work jointly to establish greenhouse gas reduction targets and develop a multi-sector cap-and-trade program by November 2008, but the MGGRA Advisory Group's final recommendations and a model rule were not released until May 2010. In early 2011, the website of the MGGRA stated that "[t]he recommendations are from the advisory group only, and have not been endorsed or approved by any state." What do you think happened? Why didn't the MGGRA move forward to implementation? Is it possible that some Midwestern states might have participated in the MGGRA not to advance the prospects for meaningful state or federal greenhouse gas regulation but to restrain them? How could participating in the pact serve anti-regulatory interests?

5. The phenomenon of states coordinating in this way to reduce greenhouse gas emissions regionally is in many ways surprising. Such collaboration runs contrary to prevalent theories of competition in state environmental policy, namely that states are likely to engage in a "race to the bottom" or a "race to the top." States engage in a "race to the bottom" when they compete to lower their environmental standards to attract new businesses or otherwise provide economic advantages. States engage in a "race to the top" when they compete to raise their environmental standards for such an advantage. Why have states been motivated to collaborate instead of compete in the area of climate law? *See* Lesley K. McAllister, *Regional Climate Regulation: From State Competition to State Collaboration*, 1 SAN DIEGO JOURNAL OF CLIMATE & ENERGY LAW 81 (2009) (suggesting they collaborate to facilitate policy diffusion; to achieve efficiencies in emissions trading; and to engage in a regional race to national influence.)

3. State Efforts to Promote Renewable Energy

Although California is the only U.S. state that has set a legally binding cap on its future greenhouse gas emissions, many states have adopted policies on renewable energy and energy efficiency that have the effect of reducing emissions. These policies often take the form of Renewable Portfolio Standards (RPS), Public Benefit Funds, and legislatively-established property rights. A Renewable Portfolio Standard is a regulation that requires electricity supply companies such as electric utilities to produce or acquire a certain percentage of their electricity from renewable energy sources. A Public Benefit Fund generally involves the use of a surcharge on consumer electric bills to establish a fund dedicated to supporting energy efficiency and renewable energy development. Property rights approaches protect people's investment in renewable energy projects and provide an overall scheme to order them.

The following excerpt by attorneys Ivan Gold and Nidhi Thakar provides an overview of state renewable portfolio standards and their impact on climate change mitigation. It also explains the way in which states create regional tracking systems for renewable energy, which complement but are separate from the regional greenhouse gas emissions reduction accords described above.

Ivan Gold & Nidhi Thakar, *A Survey of State Renewable Portfolio Standards: Square Pegs for Round Climate Change Holes?*, 35 WM. & MARY ENVTL. L. & POL'Y REV. 183 (2010)

Since 1978, the federal and state governments have provided various incentives such as tax credits, loan guarantees, and favorable accounting treatments to subsidize electricity produced from renewable energy. Recently, these incentives have been augmented by statutory renewable portfolio standards or renewable energy standards (collectively, "RPS") that require utilities to include more renewable energy in their generation portfolios. Initially, RPS statutes were not a response to the threat of climate change. However, state RPS programs are now one of the most effective programs available domestically to minimize CO_2 emissions and address climate change.

….

I. Background

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By 2002, twelve states had mandatory RPS programs. Two years later, an additional six states followed. By 2010, a total of thirty states had mandatory RPS programs. Before 2002, state RPS programs generally relied on legislative findings that RPS programs were needed to subsidize renewable energy resources, reduce utility reliance on fossil fuels, diversify energy supply, promote energy independence, create jobs, protect the environment, and achieve similar goals. Starting in 2002, control of climate change began to be cited as another express legislative purpose underlying state RPS statutes.

As of 2010, thirty state RPS programs are in effect. Many of these programs have compliance targets already in place or mandate compliance beginning in 2010, 2011, or 2012. These state programs constitute the major effort to control GHG emissions and climate change in the United States.

II. Survey of State RPS Programs

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B. State RPS Programs and How They Work

State RPS programs vary widely in terms of their specific provisions. One review of differences in state RPS programs concluded that "[e]very state renewable portfolio standard. . . is unique because each state has its own policy objectives, political context and constituencies. As a result, RPS policies vary in many ways, including such elements as eligibility, compliance mechanisms, resource categories and program administration."

Although the specifics vary, most state RPS programs share a similar basic structure. Each defines which energy resources are "renewable" and lists which utilities must comply with RPS requirements. A utility subject to an RPS must meet its load during a specified period (the "compliance period") from sources (the "portfolio") that include a certain percentage of renewably generated electric power (the "minimum percentage"). After each compliance period, each utility must report the total amount of electric power supplied during the period and present evidence that at least the minimum percentage of that power came from RPS-eligible renewable sources.

…[A]ll state RPS programs include photovoltaic, biomass, hydro, landfill gas, and wind energy as renewable resources. Some of the thirty-six RPS programs include additional resources as renewable. These sources are often related to more traditional renewable technologies recognized in all states. For example, municipal waste is a subcategory of biomass, and solar thermal energy taps the same resource as photovoltaics.

….

Each state sets it own compliance periods and minimum percentages. Some states also require that all or part of the renewable generation come from in-state generators. In some states, existing renewable capacity may qualify to meet RPS obligations. In other states, only new renewable generation qualifies to meet the first years of RPS obligations. Some also include energy saved by utility efficiency programs as renewable energy. Some permit utilities to "bank" excess renewable generation against future compliance obligations, while others permit utilities to defer current compliance to later years with increased future obligations to compensate for the deferral.

A utility typically has various ways to meet its obligation to add renewable generation. For example, it can:

· Generate electric power from a renewable resource it owns or controls;

· Purchase renewable electric power and its associated renewable energy credits ("REC") from another utility's renewable resource;

· Generate electric power using a non-renewable resource, such as coal, that does not produce RECs, but purchase an equivalent number of "unbundled" RECs from another utility's renewable resources;

· Apply excess "banked" renewable energy acquired or generated in previous compliance periods;

· "Borrow" (defer) compliance obligations to future compliance periods; and

· Make a monetary compliance payment to the state's RPS regulator in lieu of acquiring the minimum percentage of renewable generation.

Most utilities meet their RPS goals. If a utility fails to meet its RPS compliance obligations, most states provide penalties, frequently priced as a multiple of the then-current REC market price. However, in recent practice, penalties are often waived or deferred by regulators. To date, state RPS enforcement actions have been unusual, and some states simply have excused failures to comply.

RPS states also have different percentage requirements for renewable energy and impose different compliance deadlines…. Five states required mandatory compliance before 2010. Nine states will require first compliance in 2010. The rest require initial compliance to start in 2011, 2012, or later.

….

Some differences in state RPS programs are noteworthy. As noted above, some states require renewable generation to be located in-state; however, most permit compliance using out-of-state resources. Some states require renewable energy to include some minimum percentage of specific technologies, usually wind or solar. Some states permit utilities to meet all or part of their RPS requirements with activities that increase efficient energy usage. Most RPS states have adapted their programs to permit regional RPS tracking systems to track and integrate their utilities' compliance.

The majority of states allow renewable generation to be purchased separate ("unbundled") from its associated RECs. Unbundled RECs provide utilities greater flexibility to meet requirements, as physical delivery of energy among utilities is often difficult for reasons such as transmission congestion, or the lack of a physical interconnection between the generator and the purchasing utility. Some utilities have fossil fuel generation sufficient to meet their total load and cannot accept additional renewable energy in their service territory without shutting down some fossil-fueled generation. Unbundled RECs "provide buyers flexibility: [i]n procuring green

power across a diverse geographical area [and] [i]n applying the renewable attributes" to electric power produced at another source.

….

Since their enactment, almost all state RPS programs have been revised, usually to increase minimum compliance levels….

As a consequence of the 2007-09 recession, some states recently delayed or weakened their commitment to reduced GHG emissions….However, despite the relaxation of some states' GHG programs, none of the states reduced or waived their RPS goals. The state RPS statutes remain intact and effective.

C. State RPS Programs and Climate Change

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RPS programs regulate renewable energy but do not directly regulate GHG emissions. However, such "limitations" are relatively unimportant. For example:

· Although RPS programs apply to only one emissions sector, electric generation, the electric power sector in the United States produced forty percent of 2007 national CO_2 emissions (thirty-two percent of total U.S. GHG emissions). On a global basis, the energy sector produces twenty-six percent of worldwide GHG emissions.

· Although RPS programs apply only in some states, RPS states currently cover forty-six percent of all U.S. electric generation. By 2025, the thirty-six states with voluntary and mandatory RPS programs will produce more than fifty-six percent of all electric power consumed in the United States and will emit more than sixty percent of electric power-related U.S. CO_2 (twenty percent of total U.S. CO_2 emissions).

· Although some RPS programs exempt selected utilities, or cover only a portion of a state's electric generation, this trend is reversing, and a number of states have amended their RPS programs to include utilities previously exempted. Today, sixteen of the thirty state RPS programs cover 90-100% of state generation and twenty-four of the thirty mandatory programs cover more than seventy-five percent of their state utilities.

· Although RPS programs primarily affect CO_2 emissions, rather than all GHG emissions, CO_2 is the primary GHG released when fossil fuels make electricity. In 2007, CO_2 represented approximately eighty-two percent of all U.S. GHG emissions….

· Although RPS programs only control GHGs indirectly, renewable electric generators generally emit far less CO_2 than coal, oil, or natural gas generators. Generators using coal can emit as much as 2000 lbs of CO_2 for each kWh generated, and natural gas generators emit approximately one-half that amount or less. Renewables like wind, hydro, and solar energy actually produce almost no GHGs. Renewable biomass generators can produce 1500 lbs of CO2e (lbs/CO2e) per megawatt hour of energy. The carbon content of natural gas is half that of coal, and natural gas-fired combined-cycle gas turbines, the most efficient fossil fueled generators, use fewer BTUs to produce a kWh of electricity than coal plants.

· Most RPS programs typically exclude zero-GHG resources such as nuclear power and hydroelectric dams, which are generally disfavored by the public. However, from 1999 to 2008, more than ninety percent of RPS-driven projects were zero-GHG wind projects, and the future for state RPS projects includes increasing amounts of other zero-GHG generation such as solar energy.

· Finally, some RPS permit technologies emit GHGs, such as biomass. However, these sources still emit significantly less GHGs than fossil-fueled generators because their fuel is recycled and are therefore still an attractive alternative to fossil fuels.

….

D. Regional REC Tracking Systems and Regional GHG Accords

Regional tracking systems support individual state RPS programs. They track, record, and certify electric power produced from eligible renewable resources. Their primary and standard medium of exchange is an REC, which represents 1000 kWh of renewably produced electric power. In contrast, regional GHG accords are multi-state, multi-sector cap-and-trade programs that manage GHG emissions within each accord member state. Regional accords focus on GHG emissions rather than on renewable energy, although some make special provisions to favor renewable energy generation. Their medium of exchange is a GHG allowance or offset, which represents one ton of CO2e emissions.

REC and GHG programs are both variants of cap-and-trade systems. An authority sets a maximum permitted level for GHG emissions or non-renewable energy during a compliance period, and this is the "cap." The cap is generally less than historic levels, and it reduces over time. Each regulated entity is required to meet its assigned share of the cap; to meet its cap, a regulated entity must report its actual GHG emissions, or the nonrenewable energy it used to meet its actual load. Typically, a GHG program requires the emitter to surrender one GHG offset for each ton of CO_2 emitted. The RPS program requires surrender of one REC to prove use of each MWh of renewable energy. Regulated entities with less than the required evidence of compliance must acquire the necessary certificates from regulated entities with excess certificates or pay a penalty. These exchanges and all their variations are the "trade" portion of "cap-and-trade."

Regional GHG programs and regional RPS tracking systems are creatures of state law, developed in the absence of federal controls on GHG and renewable generation. These programs are not explicitly or clearly integrated. Nor are RECs easily exchanged for tons of CO_2. Regional GHG accords and trading systems may overlap with state RPSs, but they do not replace them.

….

E. Regional REC Tracking Systems

RPS programs require subject utilities to show that they acquired at least the minimum percentage amount of renewable energy during each compliance period. Regional REC tracking systems substantiate utility RPS compliance and facilitate regional RPS transactions between states. Individual RPS tracking systems usually cover the regional interconnected transmission operating or control systems to which their member states belong. RECs from each regional tracking system trade in the growing local, regional and national markets for renewable electricity.

….

There are five major U.S. regional REC tracking systems: (i) Western Renewable Energy Generation Information System ("WREGIS"); (ii) Midwest Renewable Energy Tracking System ("MRETS"); (iii) Electric Reliability Council of Texas ("ERCOT"); (iv) PJM Generation Attribute Tracking System ("PJM GATS"); and (v) New England Power Pool Generation Information System ("NEPOOL GIS").

….

Although RPS programs create requirements for renewable energy and thus incentivize it, they do not address property rights issues that renewable energy projects raise. Specifically, those investing in projects need to be able to protect their access to the renewable resource and prevent encroachment on it by neighbors. The following excerpt by Professor Alexandra Klass discusses the ways in which states have provided such protection for solar and wind access.

Alexandra B. Klass, *Property Rights on the New Frontier: Climate Change, Natural Resource Development, and Renewable Energy*, 38 ECOLOGY L.Q. 63 (2011).

III. Property Rights on the New Frontier

A. Property Rights in Solar and Wind Access and Related State Permitting Frameworks

This subpart explores the extent to which state and local governments have created, defined, and protected property rights in access to solar and wind as well as the extent to which they have removed local impediments to solar and wind development and created permitting, siting, and land use frameworks for such development. Regulatory activity in regards to solar and wind projects on private land has thus far occurred almost exclusively at the state and local levels, with the federal government limiting its involvement to financial assistance and permitting of solar and wind development on federal public lands. Many states have created similar property structures and regulatory frameworks for solar and wind. There is also significant diversity among the states, however, revealing that productive state experimentation is taking place, and that these initiatives can serve not only as potential models for other states but, ultimately, for the federal government.

1. Solar

Although the amount of solar energy generated in the United States currently represents less than one percent of annual U.S. electricity sales, many state and local governments are attempting to facilitate the development of solar energy. Thus far, both the federal government and state governments have created incentive programs, grants, and loans to promote its use. Many state and local governments, however, drawing on historical natural resources law, have also created property rights in solar access.

Solar energy is harnessed commercially primarily through the use of two main technologies: concentrating solar power (CSP) and photovoltaic (PV). As of 2009, the total CSP and PV electric power capacity installed in the United States was just over 2000 megawatts (MW). CSP converts solar power into thermal energy by using mirrors or lenses to concentrate radiation onto a receiver. Because the most cost-efficient CSP plants are large, they are typically associated with energy suppliers to utilities or with utilities themselves. By contrast, a PV system, the most common method of using solar power, converts sunlight into energy when solar radiation hits a semiconductor, releasing electrons. PV systems, which allow for solar energy production on a smaller level, are generally made up of ground mounted or roof mounted panels containing several individual solar cells or a single thin layer. Because PV solar systems are most closely associated with commercial and residential development on private lands (as opposed to the CSP

plants more often located on public lands), the remainder of this section focuses primarily on the use of PV technology in the residential and commercial setting.

Some argue that a major barrier to the widespread use of PV systems in the United States is the failure of states to recognize "solar rights" or otherwise engage in land use planning in a manner that provides some assurance to installers of PV and other systems that neighboring property owners will not engage in development that will block access to the sun. At one time, American courts recognized the English doctrine of "ancient lights," which granted a property owner the right to prevent a neighbor from blocking light that reached the interior of a building and that had been enjoyed continuously for twenty years. This cause of action was eliminated in all U.S. jurisdictions by the late nineteenth century. As a result of the energy crisis of the 1970s, however, states began to focus on solar power and enacted some of the first laws to encourage solar energy. With the renewed focus on solar power today, some states are revising their statutes from this earlier period while others are enacting solar legislation for the first time.

State legislation to regulate and encourage solar development has taken many forms. For instance, some states have enacted laws that void any property conveyances, agreements, or deed transfers between parties that specifically prohibit the use of solar collectors. Other state laws invalidate covenants in common interest communities or local zoning ordinances that prohibit solar collectors, although those same laws allow for reasonable regulation of such collectors. Another form of state regulation is aimed at encouraging local governments to implement zoning or permitting ordinances to protect solar rights.

Some states have focused specifically on recognizing property rights in solar access. Many states now officially recognize "solar easements" as a type of property agreement that can be voluntarily entered into by two parties and will run with the land to subsequent property owners. In states that recognize such easements, the easement agreement serves to protect the landowner from a neighbor who may interfere with solar access once the system is installed. These easement statutes often outline the specific information that must be included in the creation of such an easement, and some go so far as to provide a sample easement agreement. The availability of solar easements may be limited, however, because they are voluntary in nature and servient owners may overcharge because of bilateral monopoly problems. To address this issue, Iowa has enacted a statute that allows local regulatory boards to create easements without the servient owner's consent; the statute requires that the servient landowners receive payment of just compensation based on the difference in the fair market value of the servient property before and after granting the solar access easement.

Other states and local governments have created permit systems and zoning ordinances to address solar access. New Mexico and Wyoming use a prior appropriation approach modeled after water law where the owner of a solar collector obtains rights to solar access if the owner used the collector before other uses that may block sunlight and if the use is considered to be beneficial…..

Wisconsin uses the reasonable use rule from private nuisance law by allowing municipal agencies to grant a permit to a solar user if doing so would not unreasonably interfere with development plans, and if the benefits of the solar system to the applicant and the public outweigh the burdens….

Although it does not have a permit system, California has one of the most extensive statutory frameworks relating to solar energy rights, and it includes multiple elements of the different statutory schemes found nationwide. California provides protection for residents on the installation end of the process and protects their rights to continued solar access from

neighboring properties. The statutory scheme includes the Solar Rights Act and the Solar Shade Control Act. The Solar Rights Act prohibits property conveyances and common interest community regulations that unreasonably limit the installation of solar systems, allows for the creation of solar easements, and limits the ability of local governments to restrict solar access. The Solar Rights Act also requires certain subdivisions to provide for future passive easements and authorizes local governments to enact regulations requiring solar easements in certain subdivisions.

The Solar Shade Control Act seeks to promote the use of vegetation for temperature control while limiting the effect of that vegetation on solar collection energy systems….

At the local level, Boulder, Colorado has the most elaborate solar zoning ordinances through which it has created a system of "solar envelopes" and "solar fences" for different neighborhoods that creates space where no construction or vegetation can occur that interferes with the solar rights of neighbors. In this way, Boulder has integrated solar access issues into land use planning and zoning to provide expectations and certainty regarding solar access. Ashland, Oregon provides another example of a city that has implemented solar access laws at the local level. Its solar access ordinance includes formulas for lot classification that correspond to solar setback requirements, and provides protection from shade created by vegetation in the form of solar access permits. These solar access permits place limits on neighbors by requiring vegetation not to exceed a certain height. Additionally, Ashland has established a hearing process to resolve disputes when informal discussions fail, and the City also requires the Staff Advisor to file the solar access permit with the County Clerk so that it is registered. Similar to the Boulder ordinance, Ashland is attempting to provide its residents with some certainty regarding solar energy rights, with the stated purpose of the ordinance being "to provide protection of a reasonable amount of sunlight from shade from structures and vegetation whenever feasible to all parcels in the City to preserve the economic value of solar radiation falling on structures, investments in solar energy systems, and the options for future uses of solar energy."

….

2. Wind

Unlike the situation with solar energy, where numerous states have statutes recognizing solar easements, only a few states have recognized wind easements or otherwise attempted to address property rights in wind specifically. Instead, most states are still at the stage of creating a range of incentives for wind development…. The creation of property rights in wind is becoming increasingly important as quality wind resources and the land on which to install turbines becomes scarcer. Wind turbines placed too close together can have significant negative impacts on energy production. Indeed, some state setback requirements are insufficient to avoid wind access conflicts between neighboring turbines under separate ownership. Thus, this section discusses in more detail how states with significant wind capacity have used a variety of incentives, sometimes coupled with explicit provisions relating to property rights in wind access, to increase wind energy capacity and avoid conflicts between wind energy systems and between wind energy systems and neighbors.

….

As with solar property rights, the wind easement is the most commonly recognized wind energy property right, but whereas thirty states have recognized some form of solar easement, only six states have enacted similar laws for wind. Further, many statutes that have explicit descriptions of what must be contained in a solar easement have no such description for wind

easements. North Dakota, South Dakota, and Nebraska have addressed other property rights considerations by enacting laws that prevent the severing of wind rights from the surface estate. The stated reason for the severance ban is to prevent large companies wishing to install turbines from taking advantage of land owners.

Beyond recognizing individual easements and other property rights agreements, some states have embraced a statewide permitting and planning system for wind energy. As noted, some of the states with the highest wind capacity, such as Minnesota and Oregon, along with other states, like Washington, have replaced or supplemented local approvals with a statewide permitting process for some wind projects. Michigan has avoided a traditional property rights approach to wind development and instead has adopted a broader land-use approach at the state level. The Clean, Renewable, and Efficient Energy Act directed the Michigan Public Service Commission to create a Wind Energy Resource Zone Board to explore the potential for wind energy use in the state. The Board consulted with local governments in order to carry out its task and issued a report detailing its findings in order to identify a wind energy resource zone as the most productive portion of the state to begin large scale wind development. Finally, the Michigan legislature has created an expedited process for obtaining siting certificates for wind projects.

Overall, the states that have been most active in creating substantive legislation on wind energy systems, as opposed to creating financial or tax incentives for wind energy, tend to fall into two main camps. The first camp consists of those states that have focused their legislation on creating or defining property rights in wind resources--wind easements--in order to facilitate private transactions and investment in wind energy systems. Those states include Montana, Nebraska, North Dakota, and South Dakota. The second camp consists of those states that have supported increased wind development by creating statewide siting and permitting systems for wind energy systems above a certain size, some of which also preempt local zoning regulation for those systems. These states include Connecticut, Minnesota, New Hampshire, Ohio, Rhode Island, and Vermont. In states like Iowa, Texas, New York, Utah, and Illinois, the state legislatures have not officially recognized wind easements and any siting and permitting of wind energy systems takes place at the local level.

For those states with no statewide siting and permitting process, there is a wide range of local regulation of wind energy systems of various sizes.

….

NOTES AND QUESTIONS

1. What public policy goals other than greenhouse gas emissions reductions are likely to be served by state policies structured to promote renewable energy and energy efficiency? In particular, to what extent could such policies be connected to economic development and job creation?

2. To what extent would a national RPS standard provide an even more effective approach to supporting a transition to renewable energy forming a greater share of the energy market? Gold and Thakar argue for such a standard elsewhere in the excerpted article. *See also* Lincoln L. Davies, *Power Forward: The Argument for a National RPS*, 42 CONN. L. REV. 1339, 1343-44 (2010); Joshua P. Fershee, *Changing Resources, Changing Market: The Impact of a National Renewable Energy Portfolio Standard on the U.S. Energy Industry*, 29

ENERGY L.J. 49, 55-56 (2008). For additional commentary appearing in this Issue, see generally Joshua P. Fershee, *Moving Power Forward: Creating a Forward-Looking Energy Policy Based on a National RPS*, 42 CONN. L. REV. 1405 (2010). However, others, like Professor Jim Rossi, have cautioned that such a law would pose distributional, economic, and operational concerns that would need to be addressed. *See* Jim Rossi, *The Limits of a National Renewable Portfolio Standard*, 42 CONN. L. REV. 1425 (2010).

3. As discussed in more depth in Chapter Three, significant property rights issues also arise with respect to siting both renewable energy projects and the transmission lines associated with them. Professor Ashira Ostrow has argued that Congress should enact what she terms a process preemption approach to address siting problems modeled on the U.S. approach to telecommunications siting, in which local regulators serve as the primary regulators but operate under federal constraints. In particular, she suggests that such process constraints on renewable energy include requirements that siting decisions be made within a reasonable period of time, supported by substantial evidence contained in a written record; and subject to expedited federal judicial review. *See* Ashira Pelman Ostrow, *Process Preemption in Federal Siting Regimes*, 48 HARV. J. ON LEGIS. 289 (2011). What would be the benefits and limitations of such an approach?

4. State-Led Litigation

States have also had a major effect on climate change law through multi-state litigation. A key example of such litigation is the case of *Massachusetts v. EPA*, filed by 12 state attorneys general along with several environmental groups and local governmental entities. In this lawsuit, as described at length in Chapter Three, the Supreme Court made the significant determination that greenhouse gases could be pollutants for the purpose of regulation under the Clean Air Act and that EPA had not properly carried out its statutory mandate with respect to determining whether to regulate greenhouse gases from motor vehicles.

State attorneys general also joined forces in filing a common law tort lawsuit alleging that the five largest emitters of carbon dioxide in the country are contributing to a public nuisance. In the case of *Connecticut v. American Electric Power Co.*, also discussed in depth in Chapter Three, eight states and other plaintiffs sued five major electric power generators that operate coal-fired power plants in the Midwest. Plaintiffs sought a court order to reduce their carbon dioxide emissions by "a specified percentage each year for at least a decade." 406 F.Supp.2d 270 (S.D.N.Y. 2005). The federal district court dismissed the case with the argument that the case presented a non-justiciable political question. *Id.* The Second Circuit reversed, 582 F.3d 309 (2d Cir. 2009), holding that the political question doctrine did not bar the suit; that plaintiffs had constitutional standing to bring the case; and that plaintiffs had successfully alleged a public nuisance claim under federal common law. The Supreme Court granted certiorari and ultimately decided that plaintiffs' federal common law claim was displaced by the Clean Air Act, 564 U.S. __ (2011).

Such state-led litigation is controversial. For some state representatives and other commentators, it is an appropriate mechanism through which states can influence federal policy and seek compensation or injunctive relief for alleged harms. For others, it represents activism and overreaching on the part of state attorneys general. The two statements that follow were made by the state attorneys general of Connecticut and the Colorado at academic conferences. Both address the justifications for and propriety of state-led litigation to address climate change.

Statement of Richard Blumenthal, Attorney General of Connecticut, in *The Symposium: The Role of State Attorneys General in National Environmental Policy: Welcome & (and) Global Warming Panel, Part I,* 30 COLUM. J. ENVTL. L. 335, 340-42 (2005)

…
Our reason for going to court is supported now more than ever before by indisputable scientific evidence. Clearly, from the standpoint of my constituents, Connecticut citizens, much of the Northeast, the rest of the country, there is evidence that climate change is resulting from C02, greenhouse gas emissions, that there are clear effects of that in estuaries disappearing, changes in forests, eroding shorelines, and all kinds of effects that we believe are directly attributable to changes that result in carbon dioxide. Our lawsuit spells out in detail why we think that is so. But it's a problem of immediate concern and immediate economic costs to the people we represent.

We had a theory in this lawsuit, which we have researched extensively: CO2 emissions from power plants around the country are a direct cause of those climate changes, and we have sued the 5 major emitters of CO2. These companies annually produce 650 tons of CO2 at plants in 20 states. Together they account for 10% of all the CO2 emissions in the country, about ¼ of the emissions from the US power sector, which accounts for 10% of the world's carbon dioxide emission. We have not sued all of the sources of CO2, but they are major sources. This is based on federal and state nuisance law. We can sue any tortfeasor or joint tortfeasor for the kind of relief that we're seeking here. The principles on which we're suing are well established, I don't need to go through all the cases on public nuisance common law, beginning with *State of Georgia v. Tennessee Copper*, from 1907. Sulfur dioxide pollution from those smelters was polluting Georgia, and it sued a plant in a neighboring state and won. Other states since then have reaffirmed those principles, which are generally strict liability; we are prepared to establish negligence or intent, but we can prevail on a [strict liability] theory.

One of the key points is that we are seeking relief that includes no money damages. If you contemplate this lawsuit, you need to think tobacco without the money - we're trying to change the way the industry does business. We're not seeking millions of dollars. The relief we're seeking is about as different as could be in the sense that we want not a penny from these defendants. We want them to do the things necessary to reduce their emissions by about 3% a year, whether it's by new equipment or by operating more efficiently. We believe that goal is doable, realistic, affordable, and required by the law.

So your question may be that even if the federal government isn't acting, shouldn't federal law preempt the states? What right do you have as AG to deal with a national, and maybe global problem. States often fill a gap where the federal government refuses to act. The federal government has said it has no authority to act and that Congress has rejected efforts to cover this, given that C02 is not an ambient air problem and thus not covered by the Clean Air Act. For a variety of reasons, the federal government has taken a position that there's no federal law to deal with the problem. The preemption issue is far less troubling here than it was in tobacco. Many of the other defenses that were raised in the tobacco suit will be raised here, but I think they will be overcome - I think that we're on very solid ground, no[t] just in federal law but also in our state

nuisance theory. Even if there were preemption, our state nuisance claims would be upheld, and for a variety of other reasons, I think the legal issues will be fairly straightforward for the court and the factual issues eventually will be resolved in our favor. There will undoubtedly be a battle of the experts on some issues, but many of the most important factual issues are no longer subject to legitimate scientific dispute. I think that we will be prepared to show the causal links between the plants, C02 emissions, global warming, and the harm done to our states. Let me just close by saying that this problem is not going to go away - the litigation is not going to go away. We're committed for the long term – we know we're in for a fight. We knew we were in for a fight against the tobacco companies, and they had vowed never to lose and they had never lost. When we began the suit against the tobacco companies, nobody gave us a prayer. The reason why the tobacco companies finally came to the table is because we went to trial.

John W. Suthers [Attorney General of Colorado], The State Attorney General's Role in Global Climate Change, 85 Denv. U. L. Rev. 757-762 (2007-2008)

What should be the proper role of *state* attorneys general in regard to global climate change? I will first give you my answer to that question, and then elaborate on my response. I believe the proper role of state attorneys general in combating global warming is to enforce the civil and criminal laws passed by their respective state legislatures to protect environmental quality, to cooperate in the enforcement of federal laws designed to combat the problem, to contest federal positions that are contrary to states' rights and principles of federalism, and to properly represent the state health and environment agencies that are clients of the state attorney general.

Now as self-evident as that may sound, I would suggest to you that my view of the proper role of state AGs in this effort would be regarded with some disdain by a few of my AG colleagues, and certainly so among many environmental groups in this country who believe that state AGs have the very broad authority and responsibility to act in whatever the AGs believe is the broader public interest, whether or not they are statutorily vested with the authority to do so. You see, as to the state attorneys general, the global warming debate is a microcosm of a much larger debate about the proper role of state attorneys general. Let me frame the debate for you by alluding to my own experience.

When I was sworn in as attorney general of Colorado in January of 2005, I understood my role would be significantly different than my work as a district attorney or as United States Attorney. Those public offices did virtually nothing but litigation. The district attorney's office prosecuted criminal cases and had limited civil jurisdiction in consumer protection and public health areas. As U.S. Attorney, my office did all the criminal and civil litigation for the United States in the District of Colorado. As attorney general, I understood I would be legal advisor to all departments, agencies, boards, and commissions in Colorado State government. My office would issue legal opinions, both formal and informal, on a wide variety of subjects pertinent to the operation of the State. I also understood I would be involved in a broad range of civil litigation on behalf of the State of Colorado, both as plaintiff and defendant, in addition to the criminal prosecution responsibilities I had had.

But as to my role as the protector of the broad public interest, primarily in regard to Colorado's civil and criminal statutes relating to consumer protection and environmental protection, I still saw myself as assuming the familiar role of a law enforcer. In fact, I would

be the chief law enforcement officer in Colorado. It would be my job to enforce criminal and civil laws passed by the state legislature to protect consumers from fraud and deception and to enforce a variety of statutes enacted to protect the public from air and water pollution and other health hazards.

And I do not believe I was naive. I was well aware that state attorneys general had been involved in some controversial litigation, including the massive civil suit against tobacco companies that had culminated in a settlement agreement in 1999 involving *as* much as $240 billion, and that many free market conservatives questioned whether that was a proper exercise of the State police power. I knew that several attorneys general, like Eliot Spitzer of New York, had made quite a name for themselves taking on corporate America, and that many on Wall Street and elsewhere thought they were overreaching …

Now what exactly is attorney general activism? Is it capable of definition or is it simply a case of "you know it when you see it"? Let me give you a few "I knew it when I saw it" examples and then try to define it.

In the aftermath of Hurricane Katrina in 2005, gas prices rose sharply. The public was angry, perceiving that the rise in price was more the result of corporate opportunism than market forces. The state AGs, all wanting to be perceived as diligent problem solvers, weighed in with their concerns. The Federal Trade Commission (FTC) and several AGs initiated investigations. Colorado had initiated gas pricing investigations in approximately eight out of the previous dozen years. I distinctly recall a nationwide phone conference in which the FTC gave the AGs a preview of the report they were issuing the next day. Essentially, the FTC found no systematic wrongdoing. It concluded that the rise in prices was attributable to market forces, including the highly volatile spot and futures markets. Various AG investigations reported similar conclusions. I thought that would be the end of the matter and expected the phone call to wrap up quickly. But a veteran attorney general from the Midwest interjected and made what I considered an amazing assertion, In fact, I had to write it down. "Just because we haven't found anything illegal, doesn't make it right and doesn't mean we shouldn't do anything about it," he said. "We need to do something about these obscene profits."

Folks, that is the mindset of an activist AG. Luckily, market forces shifted a short time later and attorney general interest in the issue declined at the same rate as gas prices.

As to AG activism on the issue of global warming, let me cite you to two cases. In 2006, shortly before he left office, California Attorney General Bill Lockyer filed suit against the world's six largest car makers. In this suit California sought to recover damages for all environmental damage caused by automobiles since their invention. In *California v. General Motors Corp.,* it was California's contention that cars are a "public nuisance" the manufacturers inflicted upon it. The suit ignored the fact that the California legislature long ago passed the nation's strictest auto emission standards and that the companies had specially equipped a significant portion of their fleet in order to comply with those standards. The suit also did not deal with the reality that California constructed an enormous highway system to accommodate this alleged public nuisance. The suit was eventually dismissed by the federal district court in the fall of 2007 on the grounds it raised political questions outside the jurisdiction of the courts. Folks, I believe this was a case of AG activism.

Several Eastern attorneys general, including Eliot Spitzer and his successor Andrew Cuomo, do not like coal fired power plants. So Spitzer, Richard Blumenthal in Connecticut, and several fellow state AGs sued the nation's five largest coal burning utilities, even though none of the utilities were located in their states. In *Connecticut v. American Electric Power*

Co., Inc. the AGs sought a reduction in carbon dioxide emissions. The AGs viewed these emissions as a public nuisance and claimed they needed to bring the case because the federal government and coal burning utility companies had failed to implement any meaningful measures to address this matter of national and worldwide significance. The U.S. District Court in the Southern District of New York dismissed the action as raising non-justiciable political questions.

Ladies and gentlemen, therein lies the rub. Unlike some of my colleagues, I do not believe that state AGs have the authority to act in whatever they believe is the broader national or international interest and to usurp the jurisdictional authority of Congress and federal regulatory agencies in the process. I believe many of these are in fact political or policy questions to be resolved by legislative bodies.

I also believe basic principles of federalism are being undermined. Over the last year, Andrew Cuomo, Eliot Spitzer's successor as Attorney General of New York, has taken creative legal steps in an attempt to deter new coal fired utility plants in Kansas and Colorado. To me, the notion that the attorney general of New York has the jurisdictional authority to attempt to block utility plants in Kansas and Colorado is an affront to the most basic tenets of federalism. If the attorneys general of a few Eastern states want to control carbon emissions in Colorado and Kansas, they need to lobby the legislators and regulators in those states and/or fight and win battles in Congress that will result in national air quality standards applicable to every state. Otherwise, they should leave it to the people of Colorado to regulate their own utilities. And incidentally, the new coal fired utility unit in Colorado had been approved as part of an agreement between industry and environmentalists because two older coal units would also be retrofitted as part of the deal and the three of them together would have less total emissions than the two currently operational units.

My definition of AG activism is this: It is when a state attorney general attempts to remedy a real or perceived problem through means other than that intended by those elected to make public policy. My test in determining whether to exercise state power to sue someone is simply this: Has a law been violated and is there sufficient evidence to prove it in court? I will not bring a legal action to stop conduct if a legislature has not provided me a means to do so either by express statutory authority or by statutory recognition that I retain certain common law powers…

The aggressive litigation posture taken by some of my fellow state attorneys general has led critics to question whether they are engaged in a violation of the separation of powers. By using perceived common law powers to achieve public policy objectives they deem desirable, they are, in essence, legislating and regulating by litigation. They are shaping public policy, traditionally the legislative function…

NOTES AND QUESTIONS

1. What do you think is the proper role of a state attorney general in regard to controversial issues like climate change? Do you agree more with the attorney general from Connecticut or Colorado?

2. A public nuisance is defined as an unreasonable interference with rights held by the public in general. Restatement (Second) of Torts, § 821B(1). Typical public nuisance suits in the

environmental arena are filed by state or local governments and seek to enjoin widely spread harms such as those from noise, dust, odors, or water pollution. How are the harms that climate change causes similar to and different from these more typically litigated harms? For discussion, see Thomas Merrill, *Global Warming as a Public Nuisance*, 30 COLUM. J. ENVTL. L. 293 (2005); Ken Alex, *A Period of Consequences: Global Warming as Public Nuisance*, 26A STAN. ENVTL. L. J. 77 (2007); David A. Dana, *The Mismatch Between Public Nuisance Law and Global Warming*, 18 SUP. CT. ECON. REV. 9 (2010).

3. In California, the state attorney general has also aimed inward in pursuing climate change litigation. In 2007, the attorney general filed suit under the California Environmental Quality Act (CEQA) against the County of San Bernardino. The suit alleged that the county had failed to comply with CEQA by not adequately considering climate change in an update to its General Plan. As adopted, the update to the General Plan prescribed the goals and policies that would direct the future of land use, growth, and transportation through 2030 without estimating the increases in greenhouse gas emissions that the execution of the plan would cause. *See* Complaint at http://ag.ca.gov/globalwarming/pdf/SanBernardino_complaint.pdf; *see also* Hari M. Osofsky, *Is Climate Change "International"? Litigation's Diagonal Regulatory Role*, 49 VA. J. INT'L L. 585, 610-13 (2009). In the settlement that was negotiated, the county agreed to amend its General Plan to include the goal of "reducing those greenhouse gas emissions reasonably attributable to the County's discretionary land use decisions and the County's internal government operations" and to adopt a Greenhouse Gas Emissions Reduction Plan that would inventory present and projected greenhouse gas emissions in the county. See Settlement at http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf. What effects do you expect that this litigation and settlement agreement would have on other localities in California?

5. Adaptation Planning

In addition to the activities that states have undertaken to mitigate greenhouse gas emissions, many states have become active in adaptation planning. According to the Pew Center on Global Climate Change, about one-quarter of states have completed or are in the process of completing a state adaptation plan.

California was the first state to a complete a state adaptation plan. Its 2009 Climate Adaptation Strategy was a response to a 2008 Executive Order requiring the California Resources Agency to "summarize the best known science on climate change impacts to California, assess California's vulnerability to the identified impacts and then outline solutions that can be implemented within and across state agencies to promote resiliency." State of California Executive Order S-13-08, available at http://gov.ca.gov/news.php?id=11036. An excerpt of the strategy follows.

Executive Summary, 2009 California Climate Adaptation Strategy, available at http://www.climatechange.ca.gov/adaptation/index.html

The Golden State at Risk

Climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. The state has also seen increased average

temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year.

These climate driven changes affect resources critical to the health and prosperity of California. For example, forest wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later. The state's water supply, already stressed under current demands and expected population growth, will shrink under even the most conservative climate change scenario. Almost half a million Californians, many without the means to adjust to expected impacts, will be at risk from sea level rise along bay and coastal areas. California's infrastructure is already stressed and will face additional burdens from climate risks. And as the Central Valley becomes more urbanized, more people will be at risk from intense heat waves.

If the state were to take no action to reduce or minimize expected impacts from future climate change, the costs could be severe. A 2008 report by the University of California, Berkeley and the non-profit organization Next 10 estimates that if no such action is taken in California, damages across sectors would result in "tens of billions of dollars per year in direct costs" and "expose *trillions* of dollars of assets to collateral risk." More specifically, the report suggests that of the state's $4 trillion in real estate assets "$2.5 trillion is at risk from extreme weather events, sea level rise, and wildfires" with a projected annual price tag of up to $3.9 billion over this century depending on climate scenarios. . . .

California understands the importance of addressing climate impacts today. The state strengthened its commitment to managing the impacts from sea level rise, increased temperatures, shifting precipitation and extreme weather events when Governor Arnold Schwarzenegger signed Executive Order (EO) S-13-08 on November 14, 2008. The order called on state agencies to develop California's first strategy to identify and prepare for these expected climate impacts.

The *2009 California Climate Adaptation Strategy* (CAS) report summarizes the best known science on climate change impacts in the state to assess vulnerability and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. This is the first step in an ongoing, evolving process to reduce California's vulnerability to climate impacts.

The California Natural Resources Agency (CNRA) has taken the lead in developing this adaptation strategy, working through the Climate Action Team (CAT). Seven sector-specific working groups led by 12 state agencies, boards and commissions, and numerous stakeholders were convened for this effort. The strategy proposes a comprehensive set of recommendations designed to inform and guide California decision makers as they begin to develop policies that will protect the state, its residents and its resources from a range of climate change impacts.
. . .

California's Climate Adaptation Strategy

As the climate changes, so must California. To effectively address the challenges that a changing climate will bring, climate adaptation and mitigation (i.e., reducing state greenhouse gas (GHG)

emissions) policies must complement each other, and efforts within and across sectors must be coordinated. For years, the two approaches have been viewed as alternatives, rather than as complementary and equally necessary approaches.

Adaptation is a relatively new concept in California policy. The term generally refers to efforts that respond to the *impacts* of climate change – adjustments in natural or human systems to actual or expected climate changes to minimize harm or take advantage of beneficial opportunities.

California's ability to manage its climate risks through adaptation depends on a number of critical factors including its baseline and projected economic resources, technologies, infrastructure, institutional support and effective governance, public awareness, access to the best available scientific information, sustainably-managed natural resources, and equity in access to these resources.

As the *2009 California Climate Adaptation Strategy* illustrates, the state has the ability to strengthen its capacity in all of these areas. In December 2008, the California Air Resources Board released the state's *Climate Change Scoping Plan*, which outlines a range of strategies necessary for the state to reduce its GHG emissions to 1990 levels by 2020. Many climate mitigation strategies, like promoting water and energy efficiency, are also climate adaptation strategies. By building an adaptation strategy on existing climate science and frameworks like the Scoping Plan, California has begun to effectively anticipate future challenges and change actions that will ultimately reduce the vulnerability of residents, resources and industries to the consequences of a variable and changing climate. Now that the state has produced plans for climate mitigation and adaptation, closer coordination is needed to implement both approaches.

The strategies included in this report were approved by the CAT Team, which represents all of state government. Now, the CAT will lead in the coordination of measures and push to develop the necessary tools to effect adaptation protocols. California's mitigation (CAT) and adaptation (CAS) processes will be further integrated through extensive information exchange and consolidation of working groups from both efforts.

To ensure a coordinated effort in adapting to the unavoidable impacts of climate change, the *2009 California Climate Adaptation Strategy* was developed using a set of guiding principles:

• Use the best available science in identifying climate change risks and adaptation strategies.
• Understand that data continues to be collected and that knowledge about climate change is still evolving. As such, an effective adaptation strategy is "living" and will itself be adapted to account for new science.
• Involve all relevant stakeholders in identifying, reviewing, and refining the state's adaptation strategy.
• Establish and retain strong partnerships with federal, state, and local governments, tribes, private business and landowners, and non-governmental organizations to develop and implement adaptation strategy recommendations over time.

• Give priority to adaptation strategies that initiate, foster, and enhance existing efforts that improve economic and social well-being, public safety and security, public health, environmental justice, species and habitat protection, and ecological function.
• When possible, give priority to adaptation strategies that modify and enhance existing policies rather than solutions that require new funding and new staffing.
• Understand the need for adaptation policies that are effective and flexible enough for circumstances that may not yet be fully predictable.
• Ensure that climate change adaptation strategies are coordinated with the California Air Resources Board's AB 32 Scoping Plan process when appropriate, as well as with other local, state, national and international efforts to reduce GHG emissions.

The *2009 California Climate Adaptation Strategy* takes into account the long-term, complex, and uncertain nature of climate change and establishes a proactive foundation for an ongoing adaptation process. Rather than address the detailed impacts, vulnerabilities, and adaptation needs of every sector, those determined to be at greatest risk are prioritized.
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Preliminary Recommendations
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It is recognized that implementation of the following strategies will require significant collaboration among multiple stakeholders to ensure they are carried out in a rational, yet progressive manner over the long term. These strategies distinguish between near-term actions that will be completed by the end of 2010 and long-term actions to be developed over time, and are covered in more detail in the sector chapters in Part II of this report as well as in initial efforts.

Key recommendations include:

1. A Climate Adaptation Advisory Panel (CAAP) will be appointed to assess the greatest risks to California from climate change and recommend strategies to reduce those risks building on California's Climate Adaptation Strategy. This panel will be convened by the California Natural Resources Agency, in coordination with the Governor's Climate Action Team, to complete a report by December 2010. The state will partner with the Pacific Council on International Policy to assemble this panel. A list of panel members can be found on the California adaptation Web site.

2. California must change its water management and uses because climate change will likely create greater competition for limited water supplies needed by the environment, agriculture, and cities. As directed by the recently signed water legislation (Senate Bill X71), state agencies must implement strategies to achieve a statewide 20 percent reduction in per capita water use by 2020, expand surface and groundwater storage, implement efforts to fix Delta water supply, quality, and ecosystem conditions, support agricultural water use efficiency, improve state-wide water quality, and improve Delta ecosystem conditions and stabilize water supplies as developed in the Bay Delta Conservation Plan.

3. Consider project alternatives that avoid significant new development in areas that cannot be adequately protected (planning, permitting, development, and building) from flooding, wildfire and erosion due to climate change. The most risk-averse approach for minimizing the adverse effects of sea level rise and storm activities is to carefully consider new development within areas vulnerable to inundation and erosion. State agencies should generally not plan, develop, or build any new significant structure in a place where that structure will require significant protection from sea level rise, storm surges, or coastal erosion during the expected life of the structure. However, vulnerable shoreline areas containing existing development that have regionally significant economic, cultural, or social value may have to be protected, and in-fill development in these areas may be accommodated. State agencies should incorporate this policy into their decisions and other levels of government are also encouraged to do so.

4. All state agencies responsible for the management and regulation of public health, infrastructure or habitat subject to significant climate change should prepare as appropriate agency-specific adaptation plans, guidance, or criteria by September 2010.

5. To the extent required by CEQA [California Environmental Quality Act] Guidelines Section 15126.2, all significant state projects, including infrastructure projects, must consider the potential impacts of locating such projects in areas susceptible to hazards resulting from climate change. Section 15126.2 is currently being proposed for revision by CNRA to direct lead agencies to evaluate the impacts of locating development in areas susceptible to hazardous conditions, including hazards potentially exacerbated by climate change. Locating state projects in such areas may require additional guidance that in part depends on planning tools that the CAS recommendations call for.

6. The California Emergency Management Agency (Cal EMA) will collaborate with CNRA, the CAT, the Energy Commission, and the CAAP to assess California's vulnerability to climate change, identify impacts to state assets, and promote climate adaptation/mitigation awareness through the Hazard Mitigation Web Portal and My Hazards Website as well as other appropriate sites. The transportation sector, led by Caltrans, will specifically assess how transportation nodes are vulnerable and the type of information that will be necessary to assist response to district emergencies. Special attention will be paid to the most vulnerable communities impacted by climate change in all studies.

7. Using existing research the state should identify key California land and aquatic habitats that could change significantly during this century due to climate change. Based on this identification, the state should develop a plan for expanding existing protected areas or altering land and water management practices to minimize adverse effects from climate change induced phenomena.

8. The best long-term strategy to avoid increased health impacts associated with climate change is to ensure communities are healthy to build resilience to increased spread of disease and temperature increases. The California Department of Public Health will develop guidance by September 2010 for use by local health departments and other agencies to assess mitigation and adaptation strategies, which include impacts on vulnerable populations and communities and assessment of cumulative health impacts. This includes assessments of land use, housing and

transportation proposals that could impact health, GHG emissions, and community resilience for climate change, such as in the 2008 Senate Bill 375 regarding Sustainable Communities.

9. The most effective adaptation strategies relate to short and long-term decisions. Most of these decisions are the responsibility of local community planning entities. As a result, communities with General Plans and Local Coastal Plans should begin, when possible, to amend their plans to assess climate change impacts, identify areas most vulnerable to these impacts, and develop reasonable and rational risk reduction strategies using the CAS as guidance. Every effort will be made to provide tools, such as interactive climate impact maps, to assist in these efforts.

10. State fire fighting agencies should begin immediately to include climate change impact information into fire program planning to inform future planning efforts. Enhanced wildfire risk from climate change will likely increase public health and safety risks, property damage, fire suppression and emergency response costs to government, watershed and water quality impacts, and vegetation conversions and habitat fragmentation.

11. State agencies should meet projected population growth and increased energy demand with greater energy conservation and an increased use of renewable energy. Renewable energy supplies should be enhanced through the Desert Renewable Energy Conservation Plan that will protect sensitive habitat that will while helping to reach the state goal of having 33 percent of California's energy supply from renewable sources by 2020.

12. Existing and planned climate change research can and should be used for state planning and public outreach purposes; new climate change impact research should be broadened and funded. By September 2010, the California Energy Commission will develop the CalAdapt Web site that will synthesize existing California climate change scenarios and climate impact research and to encourage its use in a way that is beneficial for local decision-makers. Every effort will be made to increase funding for climate change research, focusing on three areas: linkages with federal funding resources, developing Energy Commission -led vulnerability studies, and synthesizing the latest climate information into useable information for local needs through the CalAdapt tool.

NOTES AND QUESTIONS

1. Given that climate change impacts will vary among the country's regions and localities, states seem a natural site for adaptation planning. As stated by Professor J.B. Ruhl, "It seems unlikely that the federal government could effectively devise a national adaptation strategy that fulfills the need of every state and local community." J.B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, 40 ENV. L. 427 (2010). What do you think would be the most important considerations in adaptation planning in Florida? Iowa? Texas? Do you think it would be useful for states to participate in regional bodies to jointly consider adaptation issues? If you were charged with dividing the country into regions for this purpose, what divisions would you propose? How would this approach fit into the federalism schemes described by Professor Glicksman in Chapter Three?

2. States and localities are also the "first responders" to the types of natural disasters that are expected to increase in prevalence with climate change such as hurricanes, floods, fires, and heat waves. States that are overwhelmed by a major disaster can request federal aid under the Stafford Act of 1988. Will the legal structure that governs disasters need to change because of climate change? To what extent should state and local governments be allowed to continue making potentially hazardous areas such as floodplains and the wildland-urban interface safe for development, and then seek federal assistance when disaster strikes? See Raymond J. Burby, *Hurricane Katrina and the Paradoxes of Government Disaster Policy: Bringing About Wise Governmental Decisions for Hazardous Areas*, 604 ANNALS OF THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE 171 (2006).

3. How should the costs of adapting to climate change be distributed? Should the states or the federal government pay for adaptation measures such as constructing sea walls to fend off sea level rise and developing new water supplies? Professor Daniel Farber explains there is an argument for placing responsibility "at the lowest possible government level so that both costs and benefits would be concentrated on the same group." Daniel A. Farber, *Climate Adaptation and Federalism: Mapping the Issues*, 1 SAN DIEGO J. CLIMATE & ENERGY L. 259, 270 (2009). Under this view, federal tax dollars wouldn't be spent on protecting residences in coastal cities. Rather, states or localities would be responsible for assessing the taxes necessary to do so if they chose to. Yet there is also an argument for having society as a whole—through federal tax dollars—protect individuals from climate change: "This system achieves the maximum amount of loss-spreading, in essence providing social insurance against the risk of climate change." *Id.* at 272.

6. Federalism: The Federal-State Relationship

The present array of climate law developments in U.S. states points to a critical federalism question for the future. What should the respective roles of the federal and state governments be and how should they be coordinated? Chapter Three considers this question from the perspective of the federal government role, whereas this section focuses on the state role.

A common approach in U.S. environmental law has been "cooperative federalism," wherein federal and state levels of government share authority in a cooperative manner. In the Clean Air Act, for example, Congress gave the federal agency broad authority to identify pollutants and establish regulatory standards for them. States, in turn, were authorized to take the primary role in implementing these standards by writing permits with facility specific emissions limits and enforcing permit requirements.

Assuming the future passage of a federal climate law, some degree of cooperative federalism seems inevitable. However, its dimensions and characteristics are very much up for debate. Consider the following discussion of how state climate initiatives might fare with further development of federal climate law.

Kirsten H. Engel, *Whither Subnational Climate Change Initiatives in the Wake of Federal Climate Legislation?* PUBLIUS: THE JOURNAL OF FEDERALISM, vol. 39 no. 3, pp. 432-454 (2009).

[The] prospect of a federal climate regulatory regime poses two critical questions for state climate initiatives: (1) will the states nevertheless continue to push forward with climate-related initiatives—might any be dropped?—and (2) if they do, what ought to be the scope of federal preemption, if any, of such initiatives?

Will States and Localities Continue to Pursue Climate Mitigation Measures?

Whether states and localities continue to pursue any particular climate change policy is a function of two factors: the degree to which the motivations underlying the state or local government's pursuit of that policy is independent of and unrelated to the current lack of federal climate legislation and the degree to which future legislation preempts state and local action on that policy. With respect to the first factor, this article suggests an assortment of different motivations underlying state and local action on climate change: the prospect of achieving tangible emission reduction benefits through legal action to compel the federal government to regulate emissions nationally or obtain reductions from major emitters through court-ordered relief; the potential for credit-claiming and publicity-seeking, the prospects of developing new or expanded markets in renewable energy and energy efficiency technologies, the quest for energy cost savings and other co-benefits of climate mitigation, the chance to reap network-related benefits proffered by translocal organizations of government actors devoted to the climate change issue, the rewards of policy entrepreneurship, and a desire to counter the anticompetitive effects of subnational regulation.

Of this list, only a few seem to rely upon the current lack of federal climate legislation and hence to indicate a change in state and local climate action following the enactment of federal climate legislation. Most obviously, there will be little reason to sue EPA to compel it to regulate greenhouse gases should Congress mandate such regulatory action in federal legislation. And certainly the existence of such legislation will weaken the cache associated with the smallest governing jurisdictions tackling the largest of environmental problems. Hence to the degree any of these initiatives are being driven by a local politician's quest for credit and publicity, federal legislation will definitely take the wind [out] of his or her sails.

A second area in which we should expect to see a downturn in state action is state-initiated common law public nuisance actions against large emitters of greenhouse gases, such as electric utilities. Nationally applicable emissions standards for the industries that have been targeted in these lawsuits should eliminate the regulatory disparity that drives emissions leakage. Again, this will of course not be the case if the federal legislation fails to enact standards applicable to the industries targeted in this litigation. Nationally applicable federal emissions standards that impose only a minimum standard, leaving states the discretion to impose more stringent standards (the framework employed in most federal environmental laws) will not eliminate the regulatory disparity where states decide to impose more stringent standards upon in-state facilities but the out-of-state facilities remain subject only to the minimum federal standards. But the fact that the out-of-state facilities are subject to a regime of emissions controls means that it will be difficult for states to argue that they constitute a public nuisance.

Federal climate legislation could also deal a blow to state's motivation to engage in at least some policy entrepreneurship. Again, however, the degree to which federal legislation will have this

effect will depend upon the design of the legislation, most importantly, the extent to which the federal legislation makes room for states to continue to innovate in the climate policy realm, keeping robust the market for policy innovation. Similarly the extent to which the federal government adopts, in federal legislation, any of the policy innovations generated thus far by state and local governments may influence the degree to which states continue to be motivated to be climate policy entrepreneurs. The federal government's adoption of state innovations in federal legislation would appear to underscore the value of state and local policy innovation and thereby encourage its continuation.

However, because the remaining motivations—most importantly those driven by the prospect of reaping economic, networking and policy entrepreneurship benefits—appear unrelated to the current lack of federal climate legislation, there is every reason to believe that states will continue to push forward with these policies. Furthermore, federal climate legislation may prove to be a boon to states and local climate initiatives. Clean energy is now a federal priority. The $787 billion federal stimulus package, for example, contains large sums for energy efficiency, renewables, and technological development (Galbraith, 2009). Such federal investment should boost state efforts in these areas and encourage states to invest in clean energy research and development.

Will Congress Preempt State-Local Initiatives?
Assuming that state and local governments will continue to be motivated to pursue climate change policies, the extent to which they will, in fact, continue to exist will depend upon the degree to which Congress expressly or impliedly preempts state policies in the context of federal climate legislation. This in turn may depend upon the design of the federal regulatory program.

It seems likely that Congress will enact some sort of cap and trade program, administered by EPA, and applicable to the largest stationary industrial emitters of greenhouse gases such as electric utilities and other industries that burn large quantities of fossil fuels. The program may resemble, at least superficially, the cap and trade program put in place to control sulfur dioxide emissions from utilities under the acid rain trading program of the 1990 Amendments to the Clean Air Act. To date, nearly all of the major federal proposals for climate legislation employ a cap and trade program…

Should Congress enact a cap and trade regime as predicted, the scope of federal preemption of state climate initiatives is likely to be sweeping with respect to those aspects of the program subject to federal regulation. Thus, should Congress follow the model of the Acid Rain Trading program for carbon dioxide emissions, states will be barred from, for example, restricting trades in greenhouse gas allowances distributed under the program. Similarly, should Congress follow, for greenhouse gas emissions from motor vehicles, the regulatory model employed generally for vehicle emission standards under the Clean Air Act x 209(a), with the exception of California, states will be barred from promulgating their own vehicle emission standards (but can adopt standards identical to that of California).

The narrowness of a cap and trade regime focused on one or more high carbon dioxide-emitting sectors of the economy may actually be fairly favorable for the continuation of a robust field of state and local climate initiatives. Provided the courts do not interpret Congress's action in the

area to preempt the entire field of greenhouse gas regulation most of the initiatives discussed in this article should be unaffected by such a program. Thus states should continue to retain authority to impose renewable portfolio standards to develop and implement green building energy efficiency standards, to provide tax credits and subsidies for energy efficiency and renewables, and to pursue all manner of land use and transportation planning. Under this scenario, probably the most uncertain area will be the preemptive effect of a federal cap and trade program upon the regional cap and trade programs, such as RGGI and, in the future, the WCI…

Of course, there is no guarantee that a federal climate regulatory program will be limited to a cap and trade regime for only certain sectors of the economy. Congress may decide to regulate with a broader brush with the result that the risk of federal preemption is that much greater. With respect to such broader regulatory proposals, it is worthwhile noting that federal preemption has greater sway with respect to certain issues than with others. The economies of scale achieved by uniform product manufacturing standards supports strong preemption in the case of vehicle emissions standards. So too the efficiency benefits achieved by an unencumbered emissions trading market argue for strong preemption to the extent states might be regulating in a manner that undermines the fungibility of emissions allowances in the federal market.

Outside these concerns, however, it is important that Congress and the courts adopt a narrow approach to federal preemption. If anything, the quite remarkable history of state and local action on climate change underscores the benefits of overlapping regulatory jurisdiction of the states and federal government. For years, while the federal government largely ignored climate change, states and local governments stepped into the breach and began grappling with the problem with a vast array of initiatives. Some of these initiatives, such as building codes, lie in areas traditionally subject to state and local control, but others deal with topics, such as interstate emissions trading, that have traditionally been the domain of federal regulation. Some of the latter may serve as models for federal regulators but, in any case, they jump-started the regulatory developments that many regard as necessary to a less fossil-fuel dependent economy. State and local regulation thus serves as a backstop when the federal government fails to regulate. It also serves as an important source of regulatory innovations. Broad federal preemption should be disfavored because it will undermine important benefits that accrue from preserving broadly overlapping regulatory authority between the states and the federal government.

NOTES AND QUESTIONS

1. Like Professor Engel, Professor Alice Kaswan also advocates against broad federal preemption. Alice Kaswan, *A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federal System*, 85 DENV. U. L. REV. 791, 794-803 (2008). As she states, "the states have a vital interest in establishing their own climate change goals and in asserting at least limited control over key implementation decisions." In her view, the federal government should set minimum goals or standards for greenhouse gas reductions but allow states to exceed them. In this way, states could mandate additional emissions restrictions that, for example, encourage the development of a local

renewable energy industry or reduce the emission of greenhouse gas co-pollutants that cause smog. The ability of states to go beyond federal minimum goals could also help protect against lapses or inadequacies in the federal government's implementation and enforcement of the law. Imagine that you represent the cement industry, a major emitter of greenhouse gases throughout the US. What arguments would you make against such state autonomy and in favor of broad federal preemption?

2. States have often been considered in U.S. law as "laboratories" of policy innovation. The term comes from a 1932 Supreme Court decision in which Justice Brandeis observed that "[i]t is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country." New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932). Do you think states have fulfilled this vision in the arena of climate law? Do you think they should continue to be able to do so even if Congress passes a new comprehensive federal climate law?

3. The Waxman-Markey bill that the U.S. House of Representatives passed in 2009 adopted an interesting approach to the preemption of state cap-and-trade programs. With its proposed creation of a national cap-and-trade program, the bill provided that "no State or political subdivision thereof shall implement or enforce a cap that covers any capped emissions emitted during the years 2012 through 2017." The provision would have thus temporarily preempted the programs developed under AB32, the WCI and RGGI. Why do you think the House opted for this approach? If the bill had passed into law, what would have likely happened?

C. Localities: Cities and Counties

Localities are the level of government closest to both the sources of greenhouse gases and the on-the-ground impacts of climate change. They are also closest to the will of the people, and they may be more responsive and nimble than higher levels of government. This section examines the innovative roles that localities are playing in climate change law and policy.

1. Emissions Reductions

As primary decision makers in policy areas spanning from land use to waste management, local governments will arguably be essential to fashioning successful climate change policies. Professor Katherine Trisolini highlights four areas of "well-accepted local power" in which local governments can act to reduce greenhouse gas emissions.

Katherine A. Trisolini, *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. REV. 669, 697-724 (2010)

1. *Buildings and energy efficiency*
Building energy efficiency provides perhaps the most straightforward and dramatic opportunity to reduce greenhouse gas emissions downstream by shrinking demand. Improving buildings'

environmental performance—through green building programs, efficiency standards, and/or building code changes— provides a particularly attractive means for reducing greenhouse gases. Mature, available, and well-studied technologies render building energy efficiency a technologically easy, proven, and often cost-effective emissions reduction strategy.

Because reduction in demand continues throughout a building's lifespan, employing these technologies reduces both immediate and long-term greenhouse gas emissions. Moreover, because these reductions are built in to the physical environment, construction or rehabilitation of existing building stock creates lasting emissions savings regardless of subsequent political changes. Forecasts of future construction underscore the potential to reduce emissions through improved building efficiency: between now and 2050, U.S. residents will build or replace an estimated 89 million residential units and construct 190 billion square feet of commercial, office, institutional, and other non-residential space.

Why is this a local issue? In the United States, local governments have significant power to regulate building construction and renovation through their traditional authority to adopt and enforce building codes. . . .

2. *Zoning and land use power: reducing vehicle use*
Local governments also substantially shape the built environment through their well-accepted power over zoning and land use. This power places local governments in a potentially critical position for reducing transportation emissions because land use and urban form shape vehicle usage. . . .

3. *Waste and garbage*
Waste management, another typical and well-accepted area of local power, has the potential to decrease energy demand while simultaneously eliminating new sources of greenhouse gas emissions. Because landfills and sewage treatment plants generate methane from discrete sites, they can also generate power to displace demand for energy from greenhouse gas-intensive sources. . . .

4. *Proprietary functions of local governments . . .*
Local governments' most direct (and likely least politically challenging) route to reducing downstream energy consumption is through targeting their own resources and operations. Potential reductions from proprietary activities alone may be substantial given the sheer number of local governments, the size of their operations, and the types of things that they own and operate. In 2002, the United States had nearly 40,000 general-purpose local governments. When combined with school districts and special use districts, the number is nearly 88,000.

The collective number of local employees as compared with the federal and state governments provides a rough sense of the size of local government operations. As of the 2006 census, local governments in the United States employed nearly twelve million full-time equivalent workers as compared to the federal government's 2.5 million and the collective 4.25 million of all fifty states combined. (Even discounting the employees from independent school districts and special purpose districts, general-purpose local governments still employed more people than the governments of all fifty states combined.) In addition to buildings, vehicles, lighting structures,

and schools, local governments own utilities, airports, landfills, and ports, among many other things.

Large cities provide a particularly useful lens through which to grasp the potential impact of proprietary activities and operations. Los Angeles estimates that municipal operations accounted for nearly seventeen million metric tons of CO2, comprising one-third of the carbon dioxide output from the area. Part of the reason this figure is so high is that, like a number of large local governments, the city owns its utility company. It also directly controls large sources of emissions, including several airports and the Port of Los Angeles.

Many mayors across the country appear to recognize their importance in climate change policy. The U.S. Mayors Climate Protection Agreement below was endorsed at the 73rd Annual Meeting of the U.S. Conference of Mayors in 2005. As of 2011, 1054 mayors from the 50 states, the District of Columbia and Puerto Rico, representing a total population of over 88,499,854 citizens, had signed onto it.

The U.S. Mayors Climate Protection Agreement (As endorsed by the 73rd Annual U.S. Conference of Mayors meeting, Chicago, 2005), available at http://www.usmayors.org/climateprotection/agreement.htm

A. We urge the federal government and state governments to enact policies and programs to meet or beat the target of reducing global warming pollution levels to 7 percent below 1990 levels by 2012, including efforts to: reduce the United States' dependence on fossil fuels and accelerate the development of clean, economical energy resources and fuel-efficient technologies such as conservation, methane recovery for energy generation, waste to energy, wind and solar energy, fuel cells, efficient motor vehicles, and biofuels;

B. We urge the U.S. Congress to pass bipartisan greenhouse gas reduction legislation that 1) includes clear timetables and emissions limits and 2) a flexible, market-based system of tradable allowances among emitting industries; and

C. We will strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and communities such as:

1. Inventory global warming emissions in City operations and in the community, set reduction targets and create an action plan;
2. Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities;
3. Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit;
4. Increase the use of clean, alternative energy by, for example, investing in "green tags", advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology;

5. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;
6. Purchase only Energy Star equipment and appliances for City use;
7. Practice and promote sustainable building practices using the U.S. Green Building Council's LEED [Leadership in Energy and Environmental Design] program or a similar system;
8. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel;
9. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;
10. Increase recycling rates in City operations and in the community;
11. Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO2; and
12. Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.

NOTES AND QUESTIONS

1. What benefits do you think mayors gain by joining the agreement? What drawbacks or risks exist? Does signing the statement commit a mayor to taking any particular actions?

2. An important organization in motivating local governments to act on climate change has been "ICLEI—Local Governments for Sustainability," established in 1990 by more than 200 local governments from 43 countries at the United Nations-sponsored World Congress of Local Governments for a Sustainable Future. See ICLEI Fast Facts, available at http://incheon2010.iclei.org/incheon-iclei/iclei-fast-facts.html. ICLEI's Cities for Climate Protection Campaign assists cities in adopting and implementing emissions reductions policies. Local governments join the campaign by passing a resolution pledging to reduce their greenhouse gas emissions, and then ICLEI assists them through a five-step process that includes measuring their emissions; committing to an emissions reduction target; planning their actions; implementing their plan; and monitoring their emissions reductions. Which of these tasks do you think would be most difficult for local governments? *See* Hari M. Osofsky, *Is Climate Change "International"? Litigation's Diagonal Regulatory Role*, 49 VA. J. INT'L L. 585, 610 (2009) (identifying demands for local economic development and growth, constraints imposed by higher levels of government, and the large degree of public involvement in local government as particular challenges faced by localities that commit to emissions reductions).

3. Green building is an active area of legal development at the local level. However, rather than developing their own green building rules, many municipalities are relying on the Leadership in Energy and Environmental Design (LEED) standards set by the U.S. Green Building Council (USGBC), a private organization. As described by Professor Sarah Schindler, cities have begun to incorporate LEED standards into their municipal codes, requiring for example that a local developer register with the USGBC and achieve a specific number of LEED

checklist points prior to the issuance of a building permit. Sarah Schindler, *Following Industry's LEED®: Municipal Adoption of Private Green Building Standard*, 62 FLORIDA L. REV. 285 (2010). Why would municipalities choose to do this rather than develop and enforce local standards? What tensions or conflicts could arise when a local government relies on a private building industry organization's standards in this way?

2. Adaptation Planning

As suggested above, localities have a great deal of authority in the realms of law implicated by mitigation. In addition, localities will be the front line for climate change adaptation. Many cities and counties have begun to study how climate change is likely to affect them and plan for these changes. The county of Miami-Dade, Florida provides an example.

ICLIE, Institutionalizing Climate Preparedness in Miami-Dade County, FL (2010)

A NEED FOR CLIMATE CHANGE ADAPTATION

As a coastal community located at sea level and surrounded by water on three sides, with typical land elevation only three to ten feet above mean high water, Miami–Dade County is acutely aware of the dangers posed by climate change. Climate changes, including sea level rise, increases in temperature, changes in precipitation patterns, and changes in the intensity and/or frequency of extreme events all threaten the health and safety of residents, the integrity of infrastructure, and the vitality of regional ecosystems. In 2007, the Organization for Economic Cooperation and Development (OECD) quantified the vulnerability of various municipalities across the world towards climate change and identified Miami–Dade County as having the highest amount of vulnerable assets exposed to coastal flooding (for the 2070's) with a projected potential cost of approximately $3.5 trillion….

Moreover, the County's geographical location at the tip of a peninsula, its large, dense population, and the reality that many key economic drivers for the county are weather dependent (e.g. tourism and agriculture), have created a clear impetus to plan for climate change…
…

PREPARING FOR CLIMATE CHANGE WHILE ADVANCING LOCAL SUSTAINABILITY

Recognizing the increased urgency for dealing with climate change, the County created a formal Climate Change Advisory Task Force (Task Force) that has been instrumental in providing guidance and recommendations on both adaptation and mitigation issues to the Miami–Dade Board of County Commissioners. Created in June of 2006 through the adoption of Ordinance 06–113 sponsored by Commissioner Natacha Seijas, the Task Force includes 25 appointed members and over 150 additional individuals who represent key sectors of the community, such as non-profit organizations, universities, building and architecture firms, national parks representatives, regional and state planning agencies, private sector business, federal partners and community residents.

Seven sub-committees were formed to focus on key areas of concern with the County; each chaired by a member of the Task Force and comprised of participants from the Task Force and the public. The seven committees include:
• Built Environment Adaptation
• Economic, Social, and Health
• Alternative Fuels and Transportation
• Energy and Buildings
• Science Committee
• Intergovernmental Affairs
• Natural Systems Adaptation

Meeting monthly, the Task Force has been a vehicle for community engagement in the County's climate change efforts, ensuring that voices from important community sectors are integrated into long-term adaptation and mitigations strategies. While the Task Force does not have the authority to make decisions, it does provide critical input and feedback, and helps to facilitate support from the community. To date, fifty-seven recommendations have been forwarded to the Board of County Commissioners and several are already being implemented. Sample activities already underway in the County that have been recommended by the Task Force include:

• The County Manager met with key department directors in the fall of 2008 and began the discussion of how to start incorporating climate change planning into department strategic plans. The County partnered with the National Oceanic and Atmospheric Association (NOAA) in March 2010 to provide an initial introduction and training for climate adaptation to department heads and operational staff to expedite this process.

• Through the Southeast Florida Regional Climate Compact's Regional Vulnerability Assessment Technical Work Group and NOAA, the County and Compact partners have been working with the U.S. Geological Survey (USGS) and the U.S. Army Corps. of Engineers (USACE) to build consensus on climate vulnerability and sea level rise mapping and planning parameters, utilizing regional digital elevation data and models. This information will be used in conjunction with Miami–Dade County's Stormwater Master Plan to identify flood hazard prone areas and create planning maps and tools for use in the comprehensive planning and zoning process.

• County staff has contacted the National Park Service (NPS), U.S. Geological Survey (USGS), Everglades National Park (ENP) and the South Florida Water Management District (SFWMD) to establish a team to work on a Pilot Program to assess the feasibility of using existing monitoring efforts and the information collected during this monitoring as indicators or "vital signs" of climate change.

• The Evaluation and Appraisal Report that will be going to the Board of County Commissioners in January 2011 includes a recommendation for the County to initiate an analysis on climate change and its impacts on the built environment with an eye towards addressing development standards and regulations related to investments in infrastructure, development/ redevelopment and public facilities in hazard prone areas.

• The Evaluation and Appraisal Report that will be going to the Board of County Commissioners in January 2011 also includes a recommendation for the County to establish Climate Change evaluation criteria, to be used to evaluate proposed new development and redevelopment or assess the suitability or proposed use(s), density and/or intensity of use(s), and the level or risk of exposure to climate change impacts, among others.

• County staff has begun working with the Epidemiology, Disease Control and Immunization Services program of the Miami–Dade Health Department to create a working group to track and analyze potential climate change-related health impacts.

…

CHALLENGES TO ADAPTATION

Throughout Miami–Dade County's adaptation and sustainability process, the County has faced numerous challenges and overcome many obstacles which have resulted in a series of potential stumbling blocks that other communities should be cognizant of during their climate preparedness efforts:

• **Complexity of Issue:** Climate change is a complex issue with multiple impacts that span all agencies/departments, and all sectors of society. This can be an enormous hurdle to overcome and poses difficulty in conveying the need for action. Communities need to acknowledge this complexity but not let it be a barrier to action.

• **Scientific Uncertainty and Timeframe:** One significant obstacle to overcome is determining which climate change projections to utilize for planning from the numerous and varied impact projections that currently exist. The extended timeframe of projected impacts (e.g., 2050, 2100), in conjunction with shorter-term decision-making, create a challenging political dichotomy. This is further exacerbated by the reality that some impacts may not be felt until far into the future but require tough decisions to be made today.

• **Scale and Complexity of Data:** Vast amounts of data need to be gathered and analyzed in order to guide decision making. In addition, systems, programs, and security mechanisms need to be created to store and manage this data to ensure data accuracy and integrity. Creation of these systems can be a lengthy and resource-intensive process, but is important for tracking changes and success.

• **Competing and Immediate Needs:** Miami–Dade County provides all basic services to residents in the County. Climate change impacts will affect most of these services but can also be seen as a separate priority which creates competition between existing, more immediate needs and the need to take action now to prepare for future challenges. Finding ways to integrate climate concerns into existing community concerns can lessen this competition.

• **Current Economic and Budget Constraints:** Communities across the U.S. are currently grappling with how to deliver basic services while facing a severe budget shortfall. Miami–Dade County is no different and is struggling with integrating climate adaptation and preparedness

activities into operations, while also dealing with the reality that this is likely to create added burdens on already strained budgets.

• **Land Use Realities:** Can coastal development really be thwarted? In regards to climate change, it's clear that it should, but how can this become a reality? Making tough land-use decisions will require support from federal, state, regional, and local counterparts, which can be challenging to foster, but will be critical for success.

• **Turning Science in to Action:** How does a community translate complicated and often 'difficult- to- understand' issues into action? This, along with effective communication, is the key to moving forward and aggressively addressing and acting on climate change.

• **Effective Communication:** The most important stepping stone to climate change policy can often be the most challenging obstacle to overcome. Effective communication is pivotal in dealing with any community-wide issue.

NOTES AND QUESTIONS

1. With sea level rise, a critical question for coastal cities like Miami, Florida will be whether to defend or retreat. In other words, should they "armor the coasts with dikes, concrete and steel bulwarks" or should they "retreat strategically over time by moving costly and sensitive infrastructure inland"? Chris Wold, David Hunter & Melissa Powers, CLIMATE CHANGE AND THE LAW 100 (2009). The decision is made more difficult by scientific uncertainty regarding the magnitude of sea level rise. While the IPCC's 2007 Fourth Assessment projected a quarter- to half-meter sea level rise by 2100, more recent projection are in the one to two meter range. J.T. Overpeck and J.L. Weiss, *Projections of Future Sea Level Becoming More Dire*, 106 PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 21461 (2009). What factors should cities consider in determining when to defend and when to retreat? Should urban and suburban coastlines be equally defended? Should wealthy and poor residential neighborhoods be equally defended? Should the United States and other wealthy countries help pay for the defense of large cities in poor countries?

2. Non-coastal cities will have many concerns other than sea level rise. The adaptation section of the Chicago Climate Action Plan focuses on reducing the urban heat island effect, protecting air quality, managing stormwater, and preserving urban vegetation. See Chicago Climate Action Plan 39-43 (2008). What do you think would be the main adaptation concerns for the city of Phoenix, Arizona?

3. Building on its work helping localities reduce emissions, ICLEI established a Climate Resilient Communities program to help localities plan for adaptation. After localities join this program, they follow a five-step process: conducting a climate resiliency study, setting preparedness goals, developing a climate preparedness plan, implementing the preparedness plan, and monitoring resiliency. Even with the kind of assistance that ICLEI offers, why do you think that many localities are reluctant to plan for climate change? If counties and cities

have limited resources to spend on climate policy, how should they allocate these resources between mitigation and adaptation?

4. How might local mitigation and adaptation efforts fit together? If a city begins to make plans to address significant impacts that it faces, could that help incentivize it to act to mitigate emissions as well? To what extent could steps to mitigate and adapt be brought together and when might they conflict?

D. Transnational Collaborations

One of the most fascinating aspects of sub-national action on climate change has been the extent to which sub-national jurisdictions in different national jurisdictions have communicated and cooperated with each other. These collaborations have ranged from agreements like the Western Climate Initiative, which involves a confined geographic region, to those among cities, states, and provinces around the world made in conjunction with COP negotiations. Such collaborations not only raise national law questions about when subnational entities can interact transnationally, but also challenging issues for state-centric models of international law. This section explores these agreements and their implications for multi-level climate change regulation.

1. Regionally-Based Transnational Collaborations: The California Example

California has been a leader in creating regionally-based collaborations with other states and provinces, and its efforts therefore provide a helpful model for exploring such efforts. One important example of cross-national collaboration at the state level is the Western Climate Initiative, discussed above. In addition to including both U.S. states and Canadian provinces as partners, several Mexican states have signed on as "observers." Observer jurisdictions do not commit to the program's emissions reduction goals, but they are able to participate in the program's proceedings to facilitate the possibility of joining the program later. RGGI does not have any foreign jurisdictions as partners, but three Canadian provinces participate as observers.

Apart from the WCI, California has forged other state-level collaborations outside the U.S. Most significantly, it has sought to establish relationships with foreign jurisdictions that could serve as a reliable source of carbon offset credits generated from the reduction of deforestation and forest degradation (REDD). Emitters in California would be able to buy the REDD credits in lieu of reducing their in-state emissions, which would help lower the price of allowances in California's cap-and-trade program. Towards this end, California negotiated the following memorandum of understanding (MOU) with the states of Chiapas, Mexico and Acre, Brazil.

Memorandum of Understanding on Environmental Cooperation Between the State of Acre of the Federative Republic Of Brazil, the State of Chiapas of the United Mexican States, and the State of California of the United States of America (November 16, 2010)

The State of Acre of the Federative Republic of Brazil, the State of Chiapas of the United Mexican States, and the State of California of the United States of America, hereinafter referred

to as "the Parties":

ACKNOWLEDGING the friendship and excellent cooperation among the governments of the Federative Republic of Brazil, the United Mexican States, and the United States of America;

TAKING INTO ACCOUNT the global nature of environmental problems and the ability of joint efforts to enhance joint policies for environmental protection and sustainable natural resources, especially reducing emissions from deforestation;

RATIFYING the willingness to promote new mechanisms of dialogue and agreement that lead to the strengthening of relationships and productive mutual action;

CONSIDERING the opportunities for collaboration between the State of Acre, the State of Chiapas, and the State of California in combating climate change;

RECOGNIZING the importance and value of implementing climate mitigation and adaptation actions at sub-national levels, both in their own right and as a means to furthering national and international efforts;

Recognizing further the importance of focusing on issues of common interest between the Parties, such as reducing greenhouse gas emissions in the forest sector by preserving standing forests and sequestering additional carbon through the restoration and reforestation of degraded lands and forest, and through improved forest management practices;

Recognizing further that the Governors' Climate and Forests (GCF) Task Force is a unique subnational collaboration between 14 states and provinces from the United States, Brazil, Indonesia, Nigeria, and Mexico that seeks to integrate Reducing Emissions from Deforestation and Forest Degradation (REDD) and other forest carbon activities into emerging greenhouse gas (GHG) compliance regimes in the United States and elsewhere. As such, the GCF represents an important foundation for identifying enhanced partnerships.

EXPRESS their willingness to cooperate, in the search of joint actions that improve environmental quality and optimize the quality of life in the State of Acre, the State of Chiapas, and the State of California.

ARTICLE 1

This Memorandum of Understanding is intended to promote broader cooperation regarding environmental issues among the Parties within their respective purview and based on principles of reciprocity, information exchange and mutual benefit.

ARTICLE 2

The Parties will coordinate efforts and promote collaboration for environmental management, scientific and technical investigation, and capacity building, through cooperative efforts focused particularly on:

a. Reducing greenhouse gas emissions from deforestation and land degradation - otherwise known as "REDD" - and sequestration of additional carbon through the restoration and reforestation of degraded lands and forests, and through improved forest management practices.

b. Developing recommendations together to ensure that forest-sector emissions reductions and sequestrations, from activities undertaken at the sub-national level, will be real, additional, quantifiable, permanent, verifiable and enforceable, and capable of being recognized in compliance mechanisms of each party's state.

ARTICLE 3

In furtherance of the priorities referenced in Article 2, the Parties will develop the following method of cooperation, among others:

a. The states will develop a Sub-national REDD Working Group that will convene monthly between December 2010 through October 2011 to begin the process for developing a state to state sectoral REDD linkage recommendation that will provide the foundation for an eventual submittal to the California Air Resources Board, as defined in California's cap and trade program (CCR, Title 17, Sections 95991-95997) and to other necessary state entities to approve such a recommendation amongst the Parties. This group will weigh the legal, technical and economic considerations in developing sector-based credits generated by the Parties. This group should include no more than 15 representatives with experience developing sector-based REDD programs or directly involved with the states supplying the credits, or from the California state government. The process should be led by a facilitator to ensure the group focuses on meeting the needs of ARB in their existing cap and trade regulations. Membership should be limited to a small number of representatives of each Party, a national representative from the selected states;, a limited number of NGO representatives and expert advisors including one on the social dimension of greenhouse gas mitigation, but no more than 2 project based standard organization representatives, and a facilitator.

b. Other methods developed between the Parties.

ARTICLE 4

The Parties will cooperate in the development of a workplan for the REDD Partnership Working Group containing cooperative actions.

The workplan will include all necessary provisions for implementing the cooperation activity agreed upon, including its scope, coordination and administration, resource allocation, expert and professional exchanges, administrative issues, and any other information deemed necessary for achieving the objective of this Memorandum of Understanding.

Independent of the formalization of work plans the Parties agree that collaboration proposals can be presented that allow the parties to optimize outcomes for achieving the objective of this Memorandum of Understanding.

ARTICLE 5

In activities of cooperation and information exchanges, if Parties deem it convenient, private and public sectors may be invited to participate, as well as public, academic and research institutions, or any other organization, as long as they can directly contribute to the achievement of the objective of this Memorandum of Understanding. Other states are also encouraged to participate as Observers to working group discussions.

ARTICLE 6

The Parties will finance activities referred to in this Memorandum of Understanding with resources allocated in their respective budgets, as these resources become available and as stipulated by their own legislation processes. Each Party will pay for expenses related to its own participation, unless alternative financial mechanisms can be used for specific activities, as appropriate and as approved by their respective appointing authority.
. . .

ARTICLE 10

This Memorandum of Understanding can be modified by mutual consent of the Parties in writing, specifying the date of the entry into force of any such modifications.

ARTICLE 11

Termination of this Memorandum of Understanding can be made by any of the Parties, through written communication directed to the other Parties with thirty (30) days advance notice.

ARTICLE 12

The Parties acknowledge that this Memorandum of Understanding is only intended to provide for cooperation between the Parties, and does not create any legally binding rights or obligations. To the extent any other provision of this Memorandum of Understanding is inconsistent with this paragraph, this paragraph shall control.

NOTES AND QUESTIONS

1. This agreement was signed at the Third Governors' Global Climate Summit in 2010, and it built on agreements forged at the previous two such summits in 2008 and 2009. In 2008, nine governors from Brazil, Indonesia and the United States signed an agreement to cooperate on forestry and climate change action and established a Governors' Climate and Forest Task Force. *Governor Schwarzenegger Convenes Governors' Global Climate Summit*, ENVIRONMENT NEWS SERVICE (2008), available at http://www.ens-newswire.com/ens/nov2008/2008-11-18-02.html.

At the 2009 summit, the Task Force signed a letter addressed to the leaders of the U.S., Indonesia, and Brazil calling for international leadership to reduce forestry-related greenhouse gas emissions. Also at the 2009 summit, the California governor signed an agreement with the governor of China's Jiangsu Province to partner on climate and energy policy, representing China's first-ever subnational agreement to reduce greenhouse gas emissions. United Nations Development Programme, 30 *Global Leaders Sign Declaration Before next Climate Agreement* (2009), available at http://content.undp.org/go/newsroom/2009/october/30-global-leaders-sign-declaration-in-advance-of-next-climate-agreement.en.

What purposes do sub-national events and agreements such as these serve? How important are they to the implementation of initiatives such as California's cap-and-trade program? In what ways might such agreements affect climate law at larger scales?

2. In Article 12, the MOU states that it does not create any legally binding rights or obligations. Are legally binding rights and obligations necessary for a future agreement that would authorize the creation and transfer of carbon offset credits? Does the state of California have the constitutional authority to enter into an agreement with a foreign sub-national jurisdiction that creates legal rights? See the discussion above on foreign affairs preemption. Consider also that the Constitution states that "no State shall enter into any Treaty, Alliance, or Confederation" (Art. 1, Sect. 10).

3. To what extent should California be viewed as a model or as an anomaly that few other U.S. states are likely to follow? Other U.S. states, in addition to California, have formed cross-border regional arrangements regarding energy. For example, MISO, the Midwestern Regional Transmission Organization, provides regional grid management and open access to transmission facilities across all or part of twelve U.S. states and the Canadian province of Manitoba. *See* MISO, *About Us*, https://www.midwestiso.org/AboutUs/Pages/AboutUs.aspx (last visited Dec. 31, 2011).

2. Internationally-Based Transnational Collaborations

Cities, states, and provinces have forged transnational collaborations on climate change in parallel with the UNFCCC meetings and independently of them. These agreements have no formal international legal status and have very limited integration with the official COP negotiations; these subnational entities are making voluntary pledges, which are not legally enforceable. However, the voluntary quality of these pledges does not diminish their potential impact on mitigation. In many instances, cities, states, and provinces are making more ambitious pledges than some of the UNFCCC nation-state parties and their emissions reductions are substantial in the aggregate.

States and provinces have also been collaborating transnationally on climate change under the auspices of the Governors' Global Climate Summits and the R-20 – Regions of Climate Action. The Governor's Global Climate Summit 3, held at UC Davis in November 2010, was co-hosted by then-California Governor Arnold Schwarzenegger, other subnational leaders, the United Nations Development Programme, and the United Nations Environment Programme. It aimed to create opportunities for mutual learning and partnership development, as well as officially launch R20, a subnational collaboration announced at the 2009 Copenhagen COP. The

R20's mission is "To help states, provinces, regions and other subnational governments around the world develop, implement and communicate low-carbon and climate-resilient economic development projects, policies and best practices." R-20 – Regions of Climate Action, Mission, http://regions20.org/about-r20/mission (last visited Dec. 31, 2011).

With respect to the cities, Local Governments for Sustainability (ICLEI), in partnership with the broader United Cities for Local Government (UCLG), has played a leading role in supporting local action around in the world and organizing local efforts at the COP negotiations. Cities have collaborated over a series of COPs in the Local Government Climate Roadmap, initiated as a parallel agreement to the official Bali Roadmap at the 13th Conference of the Parties (COP13) in Bali. The roadmap process highlighted the role that local action plays in mitigation and adaptation actions worldwide while advocating for a strong and comprehensive post-2012 global climate agreement. See http://www.iclei.org/index.php?id=7694.

The roadmap process gained momentum during the 14th Conference of the Parties (COP14) in Poznan in 2008, and the 15th Conference of the Parties (COP15) in Copenhagen in 2009 saw the participation of the largest local government delegation ever at a UNFCCC event. In the lead-up to the 16th Conference of the Parties in Cancun, local governments gathered at the World Mayors Climate Summit 2010. They launched the "Global Cities Covenant on Climate—the Mexico City Pact," which is excerpted below. As of its first progress report at the Durban COP, this pact had been signed by over 207 cities and other local governments including Bogotá, Johannesburg, Los Angeles, Buenos Aires, Rio de Janeiro, Istanbul, and Barcelona.

Global Cities Covenant on Climate, "The Mexico City Pact" (2010), available at http://www.wmsc2010.org/the-mexico-city-pact/

Acknowledging that cities play a strategic role in the fight against climate change, because they are centres of economic, political and cultural innovation, host to half of the world population, and manage vast public resources, infrastructure, investments and expertise;
Recalling that between 1992 and 2007, whilst the UNFCCC and its Kyoto Protocol were designed, numerous local governments demonstrated leadership and implemented innovative actions to combat climate change at the local level;
Reminding that as today half of the world's population lives in cities; that the International Energy Agency estimates that cities accounted for 67% of the world's primary energy demand and more than 70% of global CO2 emissions in 2006. With continued urbanisation and urban growth, energy use in cities is projected to increase to 73% of the global total, and CO2 emissions to 76%, by 2030;
Noting that since our cities are at increased risk of the devastating consequences of global climate change, particularly affecting the urban poor, many cities around the world, despite limited budgets and capacities, are already developing and implementing local adaptation strategies to address problems caused by climate change, even in the absence of a binding global commitment on adaptation;
Recognizing that since 2007, when national governments embarked on the UN Climate Roadmap, local governments signed the World Mayors and Local Governments Climate Protection Agreement and developed a parallel *Local Government Climate Roadmap* to mirror and influence the on-going work of the Conference of the Parties (COP), with the purpose of seeking recognition for local climate action within global climate governance;

Emphasizing that during COP15 in 2009, when the Copenhagen Accord was announced with national commitments and actions of governments, local governments published the *Copenhagen World Catalogue of Local Climate Commitments*, which identified more than 3,500 voluntary greenhouse gas reduction commitments of local governments in countries of Annex 1 and Non-Annex 1 countries;
Welcoming and seeking synergies with regional initiatives such as the Covenant of Mayors in Europe and the U.S. Conference of Mayors Climate Protection Agreement in the U.S.A;
Inviting more cities, local and regional governments to initiate action or accelerate their climate efforts, both in developed as well as in developing countries;
Acknowledging that our local commitments and actions must be measurable, reportable and verifiable in order to attract recognition and support from existing or new multilateral institutions and funding mechanisms;
Considering that the Intergovernmental Panel on Climate Change (IPCC) has determined that reductions in greenhouse gases emissions must limit the increase of global temperatures to less than 2 degrees Celsius by the end of this century;
Gathering on the eve of COP16, at the World Mayors Summit on Climate, in Mexico City on 21 November 2010, we state the following:

WE, THE MAYORS AND LOCAL AUTHORITY REPRESENTATIVES BY SIGNING THE GLOBAL CITIES COVENANT ON CLIMATE "THE MEXICO CITY PACT", WE COMMIT TO:

1. Reduce our local greenhouse gas emissions voluntarily
We shall promote measures, public policies, laws, plans and campaigns to reduce emissions of greenhouse gases in our cities, taking into account our individual resources and capacities to do so.

2. Adopt and implement local climate mitigation measures designed to achieve our voluntary reduction targets
If we have set targets for reducing GHG emissions, we will adopt and implement measures to achieve them, in areas such as sustainable transportation, proper waste management, energy efficiency, as well as implement low carbon options that help to green our local economies and lifestyles.

3. Develop local adaptation strategies to address the local impact of climate change
We shall design appropriate local adaptation plans and implement climate change adaptation and preparedness measures with operational mechanisms that improve the quality of life of our inhabitants, in particular the urban poor, who are most vulnerable to the harmful impacts of climate change.

4. Register our emission inventories, commitments, climate mitigation and adaptation measures and actions in a measurable, reportable and verifiable (MRV) manner
With a view to launch and follow-up on our commitments, we will enter our climate actions in the **carbon*n Cities Climate Registry***. Acknowledging our common but differentiated responsibilities in responding to climate change, we agree to make our actions transparent and provide regular information and data so that our efforts can be measured, reported and verified.

5. Seek the creation of mechanisms that allow direct access to international funding for local climate actions

We will seek the development of mechanisms to directly access financing for our registered mitigation and adaptation actions and in doing so, we will seek the support of various national governments and multilateral funding institutions.

6. Establish a *Global Cities Covenant on Climate* Secretariat

We agree that a Global Cities Covenant on Climate Secretariat will be established to follow-up on actions arising from this instrument and to promote the Global Cities Covenant on Climate with other local and regional authorities. We request the Secretariat to undertake all efforts to facilitate cooperation, exchange and expertise on climate mitigation and adaptation among all signatories of the Global Cities Covenant on Climate.

7. Promote the involvement of civil society in the fight against climate change

We will engage our citizens in our actions to address climate change, and will support proposals from civil society that encourage changes in lifestyles that contribute to our local climate actions.

8. Advocate and seek partnerships with multilateral institutions and national governments on our local climate actions

We agree to cooperate actively with each other to advocate support before multilateral institutions and national governments – within the scope of the UNFCCC process and beyond -, to seek recognition and support for our measurable, reportable and verifiable local climate actions, and to implement sub-national, national, regional and multilateral frameworks that are complementary to our climate actions and which may result from multilateral climate negotiations.

9. Promote partnerships and city-to-city cooperation

We agree to seek active partnerships and promote city-to-city cooperation among all signatories of the Global Cities Covenant on Climate, including sharing information and knowledge, capacity building and technology transfer in all areas relevant to climate mitigation and adaptation.

10. Spread the message of the Global Cities Covenant on Climate and, in particular, encourage and invite other leaders of local and sub-national governments to join our climate actions.

NOTES AND QUESTIONS

1. The cities that have signed include rich and poor cities, and large and small cities. What do cities share in common that enable them to band together in this way? How might differences among cities in wealth, size or other characteristics make it difficult to agree on some issues or approaches?

2. Are subnational governments more able to reach agreement than nation-states because their agreements do not bind them in the same way? How do the consequences of noncompliance vary between these transnational agreements among subnational governments and agreements among nation-states under international law?

3. The carbon*n* Climate Cities Registry (cCCR) referred to in the Mexico City Pact was established at the same 2010 World Mayors Summit. Registered cities are considered either "Signatory Cities," meaning that they have signed the Mexico City Pact and thereby expressed their willingness to report their commitments, emissions and mitigation/adaptation actions as soon as possible; or "Pioneer Cities," meaning they have actually commenced

reporting their commitments, emissions inventories and actions through the registry. The goal is to "ensure that local climate action is measurable, reportable and verifiable, and that data are consistent with the standards of the global climate regime." *See* Carbon*n* Cities Climate Registry, http://citiesclimateregistry.org/ (last visited Dec. 31, 2011). The cCCR 2011 Annual Report released at the Durban COP detailed 107 energy and climate commitments, 90 greenhouse gas inventories, and 555 actions by fifty-one cities in nineteen countries. *See id*. Why are cities interested in building the credibility of local climate actions? Might they hope that the reductions they make will be able to generate carbon offsets that could be purchased by companies or individuals? Also, what difficulties do you expect that cities will encounter in measuring and verifying their emissions reductions? How could being registered with the cCCR assist them?

4. At the 2011 COP-17 meetings in Durban, 114 mayors from 28 countries adopted the Durban Climate Change Adaptation Charter. They pledged to consider adaptation in key local government decisions, undertake local level impact and vulnerability assessments and prepare long-term local adaptation strategies. Does the collaborative work of cities on climate change indicate the need for a rethinking of the nation-state centered model of international law or does this action by subnational governments complement international negotiations among nation-states? Should the UNFCCC process be more inclusive of these governments and, if so, how would that work in practical terms? For further exploration of these questions, see Hari M. Osofsky, *Is Climate Change "International"? Litigation's Diagonal Regulatory Role*, 49 VA. J. INT'L L. 585 (2009); Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen*, 25 MARYLAND J. INT'L L. 64 (2010).