

States Step Up to Address Global Warming and Climate Change

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The authors explain that real estate is an area that is likely to see a significant impact from the panoply of climate change proposals under consideration by the states — proposals that, they believe, invariably will result in higher costs.

Hardly a day goes by that a news program on television or a newspaper or periodical does not mention climate change and global warming. Climate change may appear to be a flavor-of-the-moment issue in the popular press, but for the last several years, state and local governments have viewed climate change as a serious problem that needs prompt attention. Today, some 30 states have either developed, or are in the process of developing, a wide range of strategies to respond to climate change, and are using those strategies to draft legislation and regulations affecting diverse sectors such as electricity generation, transportation, land use and construction. The real estate industry in particular is likely to see many impacts.

This type of bottom-up approach has the advantage of tailoring measures to each state's particular circumstances, rather than one-size-fits-all mandates from the federal government, but also poses risks of duplicate efforts and a patchwork of inconsistent regulations. The costs are bound to be significant, although advocates assert that the ultimate benefits — both environmental and economic — will outweigh those costs. Furthermore, the cost of doing nothing also figures into the calculation. While the federal government may step in to preempt some of these efforts, for now it is the states that are acting, in effect, as laboratories for addressing climate change issues.

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Background

The primary focus of efforts to slow or reduce climate change is on carbon dioxide, aided and abetted by methane, nitrous oxide and halocarbons, all of which are referred to collectively as greenhouse gases (“GHG”). The majority of human-generated GHG emissions come from burning fossil fuels such as coal, oil, gasoline, diesel and natural gas. The United Nations Intergovernmental Panel on Climate Change (“IPCC”) concluded that human-generated GHG emissions have been increasing steadily since the inception of the Industrial Age, and will probably double or triple over the latter half of this century, assuming a business-as-usual scenario.¹ The IPCC predicts that the likely consequence of doing nothing to address GHG emissions is a rise in global average temperatures of 2.5 degrees to 10.4 degrees Fahrenheit by 2100. These increasing global temperatures are expected to cause sea levels to rise, increase the intensity and frequency of extreme weather events, and change the amount and pattern of precipitation. Other effects could include changes in agricultural cycles, trade routes, species extinctions, an increase in pests and diseases, and retreat and depletion of glaciers through ice melt.

In December 1997, under the United Nations Framework Convention on Climate Change, a treaty that the U.S. had ratified in 1992, industrialized nations signed the Kyoto Protocol (the “Protocol”), committing to reduce their GHG emissions to 5.2 percent below 1990 levels between 2008 and 2012.² The Protocol did not *require* developing nations to reduce their GHG emissions, which has been the source of much criticism of the agreement. Although the U.S.

signed the Protocol, it has never been submitted for ratification to the U.S. Senate³ and, in 2001, President Bush withdrew the U.S. from the Protocol on the grounds that it placed unreasonable demands on the U.S. and was too costly for the U.S. economy. More than 170 countries have now ratified the Protocol, but it expires in 2012 and efforts to discuss a replacement have stalled over a number of issues.

The Bush administration has proposed its own climate change initiative, calling for voluntary reduction in GHG emissions, tax credits for such reductions, and increased research and development for new energy technologies. Congress, however, has not enacted any legislation to mandate compliance with GHG reductions. Furthermore, critics of the voluntary approach contend that it actually would result in substantial increases in GHG emissions.

A federal lawsuit seeking to compel the U.S. Environmental Protection Agency (“EPA”) to begin regulating GHG emissions resulted in a 5-4 U.S. Supreme Court decision in 2007 that ruled carbon dioxide from burning fossil fuels is a pollutant under the federal Clean Air Act, and directed the agency to determine if such emissions endanger public health and welfare.⁴ In April 2008, almost a year after the decision, Massachusetts and 11 other states and the District of Columbia, together with three cities and several interest groups, filed a petition with the D.C. Circuit Court of Appeals requesting the court to order the EPA to issue, within 60 days, a determination whether GHG emissions from motor vehicles cause air pollution that endangers public health or welfare.⁵

Regional and State Efforts

Against this backdrop, many states, either individually or in conjunction with neighboring states in their regions, are not waiting for the federal government to act, and have begun to adopt their own climate change policies. Three major regional organizations are developing what are known as “cap-and-trade” markets and, at the same time, approximately 30 individual states have undertaken in-depth studies to advise their governors and legislatures on the possible extent of global warming problems and viable solutions.

Regional Cap-and-Trade

In 2005, seven Northeastern and mid-Atlantic states — Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York and Vermont — formed the Regional Greenhouse Gas Initiative (“RGGI”) to develop a market to trade GHG emission allowances. Massachusetts, Maryland and Rhode Island later joined RGGI to raise the total number of participants to 10.⁶ Shortly after RGGI was formed, Arizona, California, New Mexico, Oregon, Utah, Washington, and the Canadian provinces of British Columbia and Manitoba formed the Western Climate Initiative (“WCI”) to cre-

ate a similar market for their GHG emissions.⁷ In November 2007, six Midwestern states — Illinois, Iowa, Kansas, Michigan, Minnesota and Wisconsin — together with the Canadian province of Manitoba, signed the Midwestern Greenhouse Gas Accord (“MGGA”) as full participants.⁸ The signatories to the MGGA agreed to establish regional GHG reduction targets and timeframes, develop a market-based and multi-sector cap-and-trade mechanism to help achieve GHG reduction targets, and track and manage GHG emissions.

These market-based strategies are called cap-and-trade programs because an upper limit is set on total emissions, and allowances are distributed on the basis of a set number of tons of GHG equaling a specified number of allowances. If a source does not have allowances equal to its emissions, then it must either reduce the emissions or buy allowances from another source that has excess allowances. The theory of cap-and-trade is that the market will find low-cost ways to reduce GHG emissions.

On September 10, 2008, RGGI will be the first in the nation to conduct an auction of GHG emissions allowances. The program initially is aimed solely at GHG emissions from power plants, which constitute the majority of emissions in the Northeastern and mid-Atlantic states. After the program is implemented, the RGGI states will look at expanding to other sources of GHG emissions. By contrast, the WCI program is a multi-sector approach, and has targeted late August 2008 to unveil its design.

State Studies and Recommendations

In the late 1990s, a small number of individual states undertook efforts to study the issue funded in whole or in part by a program administered by the EPA.⁹ Since 2002, more than 30 states, in response to executive orders from their governors, have directed their environmental agencies to coordinate with other state agencies and stakeholders to study whether and how climate change will impact state interests. A table of the status of these state efforts as of April 2008 is at the end of this article. The dramatic rate of production of these reports reflects mounting pressure to address anticipated global warming threats.

A number of common themes emerge from the states’ efforts — consensus on the scientific basis for taking action, expected serious impacts from doing nothing and multi-sector strategies for addressing climate change.

Scientific Consensus

Most reports rely on the work of the IPCC, as well as state and federal research in the U.S., to support the conclusion that “the global climate is changing at a rate unmatched in the past 1,000 years . . . [M]ost of the global warming observed over the last 50 years is

attributable to human activities and . . . anthropogenic climate change will persist for many centuries.’’¹⁰ While a few reports highlight disagreements in the literature,¹¹ most reports drafted after 2002 tend to reflect more confidence in the certainty, and urgency, of addressing GHG emissions and global warming.¹²

Impacts

While the anticipated impacts of climate change vary from state to state depending on geography, core industries, agricultural products and population distribution, a few common features emerge. Coastal states are naturally concerned about rising sea levels, erosion of beaches and altered coastlines, and infusions of salt water into otherwise fresh water estuaries. For low-lying population centers, there is particular concern about possible flooding, as well as stronger and more frequent coastal storm systems. States that rely upon snowmelt to provide a substantial portion of their fresh water and hydroelectric power are concerned about losses of those resources, in addition to loss of winter recreation revenue. Sun-belt states that already experience water shortages and oppressive summer heat foresee increasing strain on those fronts.

All states express concern about the impact on agriculture due to heat and water resource losses and increased insect infestations. Some states hypothesize that they may experience periods of increased rainfall and lengthened growing seasons that might positively benefit agriculture, if only briefly. States that have substantial tourism industries foresee reduced recreational appeal resulting in declining revenue. States with substantial forestry resources are concerned about increased frequency and intensity of forest fires and the compromised health of many species, in addition to the migration of various insect and plant species pests that are better adapted to the changed climate. States with large urban centers look at increased risk of heat-related deaths, ozone production and increasing energy demands associated with air conditioning.

All states extrapolate from the environmental impacts the resulting social and economic costs, and attempt to calculate the losses in state revenue, economic health and the quality of life that may follow. Other foreseeable impacts include hydro power loss, loss of wetlands and estuaries, native plant and animal extinctions due to habitat loss or inability to adapt to ecological changes, landslides and floods threatening the built environment, human health problems such as heat-related illnesses and respiratory problems from increasing smog due to higher summer temperatures, and loss of recreational opportunities.

Strategies for Reducing GHGs

A core element of each state’s study is an inventory of the sources of their GHG emissions. Electricity generation, primarily from coal and natural gas, consti-

tutes the largest source for most states. Transportation is a close second, followed by residential, commercial and industrial fuel use. The specific distributions of GHG sources often suggest the most productive paths that a particular state should pursue to reduce its emissions. For example, states with a higher percentage of GHG emissions deriving from electrical generation tend to emphasize market based cap-and-trade programs, while states where transportation accounts for a larger share of emissions tend to emphasize the cumulative improvement achieved by making even minor improvements in individual transportation emissions.

Many of the reports recognize that any meaningful impact will require a number of steps across all sectors. As the Wisconsin Governor’s Task Force on Global Warming put it: “There is no ‘silver bullet’ solution to climate change. Instead, the Task Force will propose a ‘silver buckshot’ strategy that requires action across all sectors of the economy[.]”¹³ Thus, states propose some or all of the following:

- Carbon fee or cap-and-trade programs;
- Monitoring emissions to regulate progress toward emissions goals;
- Redesigning communities and managing land use to minimize use of fossil fuels;
- Promoting mass-transit and other alternatives to single-occupancy motor vehicle use;
- Promoting and developing fuel-efficient transportation and lower carbon-intensity fuels;
- Building and upgrading buildings and equipment to maximize energy efficiency;
- Delivering energy from low-carbon or non-carbon sources;
- Protecting natural sources of carbon sequestration, such as forests and rural land;
- Promoting improved product designs to minimize GHG emissions in production or consumption;
- Monitoring and regulating residential, commercial and industrial practices;
- Adopting state and local growth management policies to minimize GHG emissions;
- Developing renewable in-state biofuel resources;
- Developing energy production systems that minimize GHG emissions, including wind, solar, hydro-power, alternative and bio-fuels fuels, energy cells and nuclear power, among others;
- Monitoring and regulating forestry, agriculture and waste management practices to promote minimal GHG emissions;
- Developing educational programs to enhance public awareness and promote low-emissions practices; and
- Undertaking best energy consumption and GHG

emissions practices within the operations of state governmental agencies, which are among the largest employers and energy users in many states.

Impacts on Real Estate

Real estate is one area that is likely to see a significant impact from the panoply of climate change proposals under consideration by the states. These proposals invariably will result in higher costs. The range of strategies includes upgrading building codes to reduce energy use, integrating land use and transportation decisions with GHG consequences (for example, considering transportation demand management and expanded transit service before building roads), local planning and state policy changes to target investments in GHG efficient locations (*i.e.*, locating homes near places people regularly go), promoting transit-oriented development, mixed-use development, minimum densities and parking standards, increasing farm and forest land base, and increased forestation of under-producing lands. In some cases, counties and cities are going even further than the states. For example, both the City of Seattle and surrounding King County have adopted requirements that all construction projects consider GHG emissions as part of their permit applications.

A likely outcome of adding GHG regulations to permitting considerations is an increase in the cost of building. One recent study by University of Washington economics professor Theo Eicher, concluded that \$200,000 of the median inflation-adjusted price increase of a home in Seattle between 1986 and 2006 was caused by land use regulations such as the state Growth Management Act.¹⁴ Other studies have reached similar conclusions for other localities.¹⁵

Economic Analysis of the Strategies

In addition to the impacts on real estate, state efforts to address climate change will be costly in terms of up-front expenses to both purchase and implement new technology and to abandon older technology. These efforts also will result in potential reductions in revenue and profit margins associated with present energy practices. The state reports naturally devote substantial attention to these economic impacts, balanced against the truly devastating costs that will arise if climate change is permitted to continue unabated.

The expense of converting to “green” technologies and practices is not, however, a one-way street. Money spent purchasing, developing and promoting these practices has the effect of creating its own “green economy,” and will result in emerging job opportunities, products, services and markets that did not exist

even a handful of years ago. Thus, expenditures and projects undertaken to combat climate change will not only draw from financial resources, but will create new revenue streams as well. Adopting more fuel-efficient means of energy production and providing transportation options may also produce significant cost savings in reduced fuel expenses. In addition, as the cost of fossil fuels rise, the cost savings produced by energy efficient technologies will rise, and the comparative cost of developing non-fossil-fuel based technologies will decrease.

Most reports do not delve into a precise cost analysis for adopting the various proposals considered, acknowledging that the cost of any one program will depend on the specific parameters mandated by legislation, and depending on the cumulative effects of multiple programs enabling green market synergy. California’s report, however, concludes that climate change strategies “already underway as well as new strategies being proposed . . . are expected to translate into job and income gains for Californians.”¹⁶

What’s Next?

As the states work through their processes, Congress is beginning to get involved as well. In December 2007, Congress passed, and President Bush signed, the Energy Independence and Security Act, which established a new, higher federal mileage standard for passenger vehicles, including light trucks, of 35 miles per gallon by 2020 on a fleet-wide basis.¹⁷ Other legislative efforts at the federal level focus on cap-and-trade. At least six measures focusing on cap-and-trade were introduced in the current session of Congress. Senate Bill 2191, known as the Lieberman-Warner Climate Security Act, gained the distinction of being the first cap-and-trade bill to be passed out of committee. It may reach the Senate floor this summer.¹⁸ The measure would set caps for electric power, transportation, manufacturing and natural gas sources, accounting for more than 85 percent of U.S. GHG emissions. Whether this or any of the other measures pending in Congress become law is uncertain, particularly because there is opposition in the Senate that could effectively block any bill. Partly in response to sluggish legislative action, former Vice President Al Gore’s Alliance for Climate Protection launched its “We” campaign in March 2008, which may be one of the largest public advocacy campaigns in U.S. history.¹⁹

Even without federal involvement, the sheer number of states tackling GHG emissions issues is likely to fill in many of the gaps. While significant questions remain to be resolved, including the costs and benefits and whether the technologies even exist for some of the proposed strategies, the next several years promise robust debate on this issue along with plentiful challenges and opportunities.

State Global Warming Reports

| | Final Report Issued | Final Report |
|----------------|----------------------------|--|
| Alabama | Dec. 1997 | http://www.westgroup.comwww.epa.gov/climatechange/wycd/stateandlocalgov/downloads/Alabama_action_plan.pdf |
| Alaska | Jan. 2008 | http://www.climatechange.alaska.gov/docs/ghg_ei_rpt.pdf |
| Arizona | Aug. 2006 | http://www.azclimatechange.gov/download/O40F9347.pdf |
| Arkansas | In Progress | |
| California | March 2006 | http://www.climatechange.ca.gov/climate_action_team/reports/index.html |
| Colorado | Nov. 2007 | http://www.coloradoclimate.org/Climate_Action_Panel.cfm |
| Connecticut | Feb. 2005 | http://www.ctclimatechange.com/StateActionPlan.html |
| Delaware | Jan. 2000 | http://ceep.udel.edu/publications/globalenvironments/reports/deccap/fullreport.pdf |
| Florida | Nov. 1, 2007 | http://www.dep.state.fl.us/climatechange/files/20071101_final_report.pdf |
| Hawaii | Nov. 1998 | http://hawaii.gov/dbedt/info/energy/publications/ccap.pdf |
| Idaho | In Progress | |
| Illinois | Sept. 2007 | http://www.epa.state.il.us/air/climatechange/documents/final-recommendations.html |
| Iowa | In Progress | |
| Kansas | In Progress | |
| Kentucky | June 1998 | http://www.epa.gov/climatechange/wycd/stateandlocalgov/downloads/ky_2_fin.pdf |
| Maine | In Progress | http://mainegov-images.informe.org/dep/air/greenhouse/MaineClimateActionPlan2004Volume%201.pdf |
| Maryland | In Progress | Interim report: http://www.mdclimatechange.us/ewebeditpro/items/O40F14798.pdf |
| Massachusetts | In Progress | |
| Michigan | In Progress | |
| Minnesota | In Progress | |
| Montana | Nov. 2007 | http://www.mtclimatechange.us/ewebeditpro/items/O127F14041.pdf |
| Nevada | In Progress | |
| New Hampshire | In Progress. | http://www.des.state.nh.us/ard/climatechange/challenge_intro.htm |
| New Jersey | In Progress | http://www.njleg.state.nj.us/2006/Bills/A3500/3301_R2.HTM |
| New Mexico | Dec 2006. | http://www.nmclimatechange.us/ewebeditpro/items/O117F10150.pdf |
| New York | In Progress | In progress. |
| North Carolina | Draft final report issued | http://www.ncclimatechange.us |
| Oregon | Dec. 2004 & Jan 2008 | 2004 Report: http://www.sustainableoregon.net/documents/climate/Oregon_Strategy_Final_Report.pdf ; 2008 Report: http://egov.oregon.gov/ENERGY/GBLWRM/docs/CCIGReport08Web.pdf |
| Rhode Island | July 2002 | http://righg.raabassociates.org/Articles/GHGPlanBody7-19-02FINAL.pdf |
| South Carolina | In Progress | |
| Utah | Oct. 2007 | http://www.deq.utah.gov/BRAC_Climate/final_report.htm |
| Vermont | Oct. 2007 | http://www.anr.state.vt.us/air/Planning/docs/GCCC%20Final%20Report_pages%201-10.pdf |
| Virginia | In Progress | |
| Washington | Feb. 2008 | http://www.ecy.wa.gov/climatechange/CATdocs/020708_InterimCATReport_final.pdf |
| Wisconsin | In Progress | http://dnr.wi.gov/environmentprotect/gtfgw/documents/interim_report.pdf |

¹ Nearly every discussion of climate change and greenhouse gas emissions has a tendency to stall in a debate over

whether there is even a problem, let alone one that can be remedied. The limitations of space and the authors' backgrounds as lawyers and not scientists do not permit a critique

of the scientific pros and cons of the issue here. Readers interested in the poles of the arguments should consult the works of the IPCC (available at www.ipcc.ch) and the Pew Center for Global Climate Change (available at www.pewclimate.org) on the one hand, and the Heartland Institute (available at www.heartland.org) for the contrary viewpoint. For purposes of our review of state efforts here, the authors assume that the weight of scientific authority on which the states are relying for their consideration of the issues supports the notions that there is a significant problem and that steps should be taken to address it. Not coincidentally, some of the strategies proposed by the states also address issues that merit consideration for unrelated reasons, even if limiting greenhouse gas emissions was not a motivating factor.

² The actual reduction will have to be much greater, due to the expected increases in emissions levels by 2010 under a business-as-usual forecast. A copy of the Kyoto Protocol is available at <http://unfccc.int/resource/docs/convkp/kpeng.html>.

³ While the Kyoto Protocol was being negotiated, the Senate expressed its opposition in a non-binding resolution that the U.S. should not sign any protocol that failed to include binding targets and timetables for both developing and industrialized nations or would result in serious harm to the U.S. economy. S. Res. 98 (105th Cong., 1st Session, July 25, 1997).

⁴ *Massachusetts v. EPA*, 549 U.S. , 127 S. Ct. 1438, 167 L. Ed. 2d 248 (2007) (available at <http://www.supremecourt.us/opinions/06pdf/05-1120.pdf>).

⁵ www.mass.gov/cago/docs/press/2008_04_02_epa_petition.pdf.

⁶ The District of Columbia, Pennsylvania and the eastern Canadian provinces are observers in RGGI.

⁷ Alaska, Colorado, Idaho, Kansas, Nevada and Wyoming, together with the Canadian provinces of Ontario, Quebec, and Saskatchewan, and the Mexican states of Chihuahua, Coahuila, Sonora, and Tamaulipas are WCI observers.

⁸ Indiana, Ohio and South Dakota signed as observers.

⁹ See, e.g., Alabama — www.epa.gov/climatechange/wycd/stateandlocalgov/downloads/Alabama_action_plan.pdf; Hawaii — www.hawaii.gov/dbedt/info/energy/publications/ccap.pdf; and Kentucky — www.epa.gov/climatechange/wycd/stateandlocalgov/downloads/ky_2_fin.pdf.

¹⁰ California Environmental Protection Agency, *Climate*

Action Team Report to Governor Schwarzenegger and the Legislature, at 8 (March 2006) (available at www.climatechange.ca.gov/climate_action_team/reports/index.htm).

¹¹ See, e.g., *Climate Change Mitigation Strategies for Kentucky*, at 15 (1998).

¹² See, e.g., *Minnesota Climate Change Action Plan: A Framework for Climate Change Action*, at 15-20 (Feb. 2003) (available at www.mnclimatechange.us/index.cfm); and *Blue Ribbon Advisory Council on Climate Change: Report to Gov. Jon M. Huntsman, Jr.*, App. A, *Climate Change & Utah: The Scientific Consensus* (Sept. 2007) (available at www.deq.utah.gov/BRAC_Climate/final_report.htm).

¹³ *A Wisconsin Strategy for Reducing Global Warming, Interim Report to Gov. Jim Doyle*, at 2 (Feb. 2008) (available at www.dnr.wi.gov/enrironmentprotect/gtfgw/documents/interim_report.pdf).

¹⁴ See http://seattletimes.nwsource.com/html/business/technology/2004181704_eicher14.html.

¹⁵ See, e.g., *Boston Globe*, “Building Curbs Lift Housing Costs Here,” (Jan. 18, 2007); http://www.boston.com/business/globe/articles/2007/01/18/building_curbs_lift_housing_cost_here; O’Toole, *The Planning Tax: The Case Against Regional Growth Management Planning*, Policy Analysis No. 606 (Cato Institute, December 6, 2007) (available at http://www.cato.org/pub_display.php?pub_id=8811).

¹⁶ California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, at 84 (March 2006) (available at http://www.climatechange.ca.gov/climate_action_team/reports/index.html).

¹⁷ It was this law that EPA Administrator Stephen Johnson cited as one of his justifications to deny California’s request for a waiver of the federal Clean Air Act preemption of more stringent state regulation of mobile sources of pollution.

¹⁸ The other measures are the Sanders-Boxer Global Warming Pollution Reduction Act (S. 309); Bingaman-Specter Low Carbon Economy Act (S. 1766); Lieberman-McCain Climate Stewardship & Innovation Act (S. 280); and Waxman Safe Climate Act (H.R. 1590).

¹⁹ See Juliet Eilperin, “Gore begins huge campaign to go green,” *Washington Post*, March 31, 2008 (http://seattletimes.com/online/version/available/at/http://seattletimes.nwsource.com/html/nationworld/2004316880_gore31.html).