Governmental Responses to Climate Change

An Updated Look at State and Local Actions Affecting the Real Estate Industry

A White Paper Report

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The opinions expressed in this White Paper Report are those of the authors and do not necessarily reflect the opinions or policy of the NATIONAL ASSOCIATION OF REALTORS®, its members or affiliate organizations.

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- *State-by-State Guide to Employee Leave and Disability*
- *Recovering Online Legal Research Costs*
- *Private Transfer Fees—Potential for Trouble, Problems for the Future?*
- *Government Responses to Climate Change—A Look at State and Local Actions Affecting the Real Estate Industry*
- *Maintaining Properties in Foreclosure—How Communities Across America are Responding to the Vacant Property Crisis in Their Own Backyards*
- *Water Rights—A White Paper Report*
- *Building Codes: Origins and Implementation*
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- *State and Local Taxation—A White Paper Report*
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- *Sales Tax on Services—A White Paper Report*

Introduction: Climate Change

I. Introduction: Climate Change

Since NAR® first visited this topic in the 2009 White Paper, the "green" movement has taken on more force and effect, though it is still not without its detractors. The movement has been largely fueled by concerns about changes occurring on the earth's surface and in the earth's near-surface atmosphere, generally referred to as "climate change." Federal, state, and local governments are continuing to respond, and the reverberations are being felt across nearly all industries and professions, including real estate. "Green collar jobs" are more commonplace, and "green homes" are becoming popular sellers in a still-recovering market. Environmentally friendly products, for homes and a multitude of other applications, are flooding the market. As a result, it's much easier "being green"[1] in 2015.

This Paper revisits the issues raised in NAR's 2009 report and explores the causes and effects of climate change, the governmental responses, and the implications for real estate professionals. Although, with all due respect to Kermit the Frog, it may now be *easier* to be green, it is now more important than ever.

[1] "It's Not Easy Bein' Green" is a popular song originally performed by Jim Henson as Kermit the Frog on both *Sesame Street* and *The Muppet Show*.

A. What Is "Climate Change"?

Climate change—It's a concept that can engender a lot of debate and strong opinions. Once referred to primarily as "global warming," *climate change* has become the preferred terminology, because it encompasses more than rising temperatures. *Climate change* covers changes in precipitation amounts, wind patterns, snow and ice cover, and sea level, for instance, whereas *global warming* refers specifically to an average increase in the temperature of the earth's atmosphere—just one of the various effects included in the more comprehensive "climate change" concept.

Despite the recent increase in attention, climate change is not actually a recent phenomenon. In fact, the earth's climate has changed many times throughout history, ranging from long periods of warmth to ice ages.[2] Not until the Industrial Revolution, however, did human activities become associated with climate change. Over the past century, the burning of coal and oil—attributed as a primary cause of climate change—is believed to have caused concentrations of heat-trapping "greenhouse gases" to increase significantly. These gases prevent heat in the earth's near-surface atmosphere from escaping into space, thereby acting like the glass panels on a greenhouse—hence their name.[3] This concept is illustrated in Figure 1 below.

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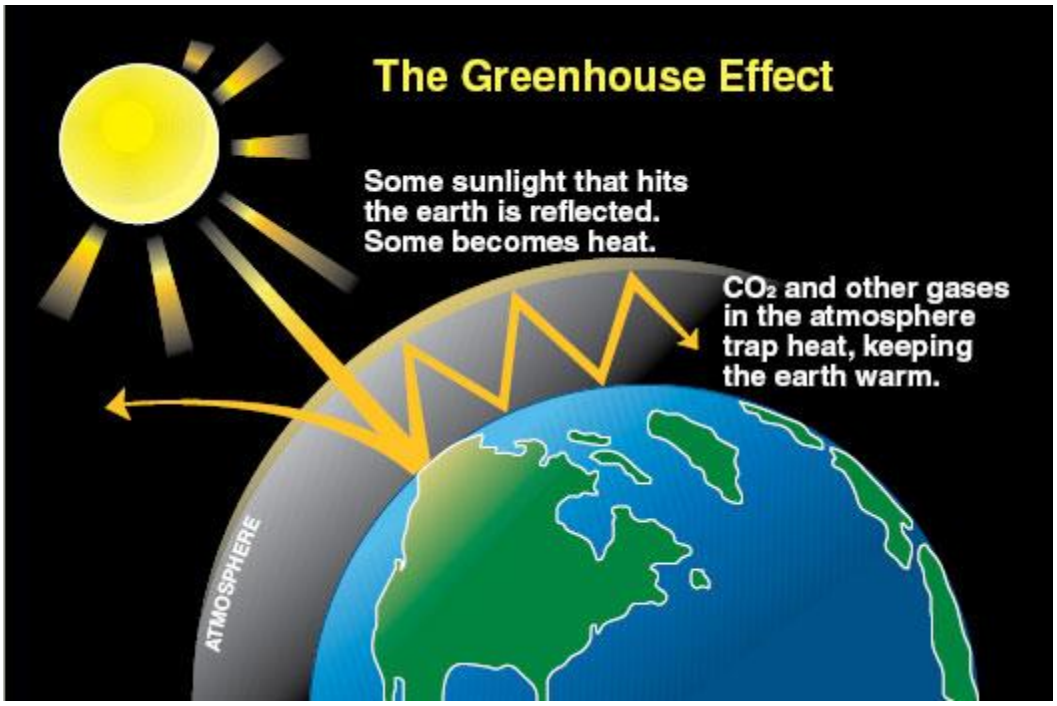
[2] *See* Environmental Protection Agency, *Climate Change: Basic Information*, http://www.epa.gov/climatechange/basicinfo.html.

[3] *Id.*, http://www.epa.gov/climatechange/basicinfo.html.

Figure 1. The Greenhouse Effect[4]



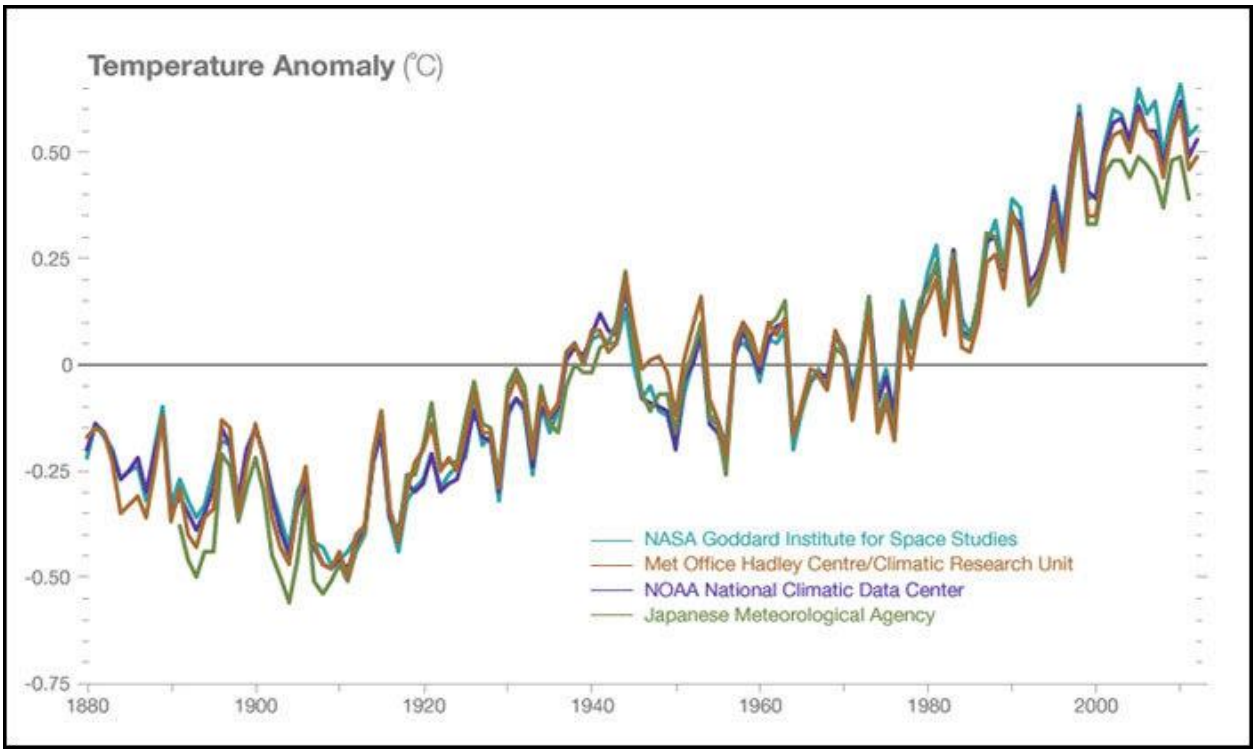
Although greenhouse gases play an essential—and in fact partially beneficial—role in keeping the planet warmer than it otherwise would be, as the concentrations of these gases have increased, average temperatures have risen above past levels. According to the U.S. Environmental Protection Agency (EPA), the top ten warmest years on record have all occurred since 1998.[5] Extreme temperature conditions are becoming more common. Since the 1970s, unusually hot summers have become more commonplace in the United States, and heat waves have become more frequent—although the most severe heat waves in U.S. history remain those that occurred during the "Dust Bowl" of the 1930s. Record-setting daily high temperatures have become

[4] Source: Washington State Department of Ecology, *Climate Change*, http://www.ecy.wa.gov/climatechange/whatis.htm.

[5] EPA, *Climate Change Indicators in the United States,* http://www3.epa.gov/climatechange/science/indicators/index.html.

more frequent than record lows. In fact, the decade from 2000 to 2009 had twice as many record highs as record lows.[6] The figure below demonstrates the temperature anomalies over the past 130 years.

Figure 2. Temperature Anomalies[7]



Most scientists[8] are certain that human activities contribute to these changes, and that changes in human behavior are therefore required to limit the harmful effects of global warming. Potential effects include extreme weather, glacier retreat, sea level rise,

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[6] *Id.*

[7] NASA, *Global Climate Change*, *available at* http://climate.nasa.gov/scientific-consensus/. Data sources: NASA's Goddard Institute for Space Studies, NOAA National Climatic Data Center, Met Office Hadley Centre/Climatic Research Unit, and the Japanese Meteorological Agency. The data show rapid warming in the past few decades and that the last decade has been the warmest on record.

[8] *See id*., http://climate.nasa.gov/scientific-consensus/.

and changes in the distribution of plants and animals, which, in turn, can lead to significant losses of human life and wildlife habitats.[9]

> *"How can there be a 'scientific consensus' on the causes or consequences of climate change when thousands of scientists, economists, and policy experts attend conferences devoted to expressing the opposite theme, that the science is still unsettled and climate change is not a crisis?" asks Heartland* President Joseph Bast.

Not everyone—and certainly not every scientist—agrees with the most dire global warming predictions.[10] Ian Plimer, for instance, a Professor of Mining Geology at the University of Adelaide, and Emeritus Professor of Earth Sciences, University of Melbourne, has published a counterpoint in his book, "Heaven and Earth: Global Warming, the Missing Science."[11] And in June 2015 scores of skeptics took part in the tenth annual International Conference on Climate Change, sponsored by the Heartland Institute, a conservative think tank.[12] "How can there be a 'scientific consensus' on the causes or consequences of climate change when thousands of scientists, economists, and policy experts attend conferences devoted to expressing the opposite theme, that the science is still unsettled and climate change is not a crisis?" asks Heartland President Joseph Bast.[13] Regardless of these varying

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[9] *See generally* EPA, *Climate Change Science*, http://www.epa.gov/climatechange/science/.

[10] *See, e.g., Is Global Warming a Myth?*, Scientific American, Apr. 8. 2009, http://www.scientificamerican.com/article.cfm?id=is-global-warming-a-myth.

[11] An interview of Professor Plimer is available at http://www.abc.net.au/rn/counterpoint/stories/2009/2550682.htm, and his book is available at http://www.connorcourt.com/catalog1/index.php?main_page=product_info&products_id=103.

[12] *See* Alan Caruba, *Climate Skeptics Gather in Washington, D.C. for #ICCC10*, Watts Up With That (WUWT), June 10, 2015, *available at* http://wattsupwiththat.com/2015/06/10/climate-skeptics-gather-in-washington-d-c-for-iccc10/.

[13] Alan Caruba, *International Climate Skeptics Gather in Las Vegas,* Renew America, June 6, 2014, *available at* http://www.renewamerica.com/columns/caruba/140706.

opinions and positions, the reality is that climate change concerns have captured the nation's attention, and the resulting grassroots and policy responses have far-reaching impacts.

B. Causes: Buildings vs. Transportation

Climate change can result from natural factors, such as changes in the sun's intensity or the Earth's orbit around the sun, or from natural processes within the climate system, such as changes in ocean circulation. The focus of this Paper is the changes that result from human activities, such as the burning of fossil fuels, deforestation, urbanization, and desertification, all of which create changes in the earth's surface and atmosphere. Both the building and the transportation sectors are responsible for a significant portion of the "blame" for these changes, and just how much responsibility is assignable to each may depend upon whom you ask.

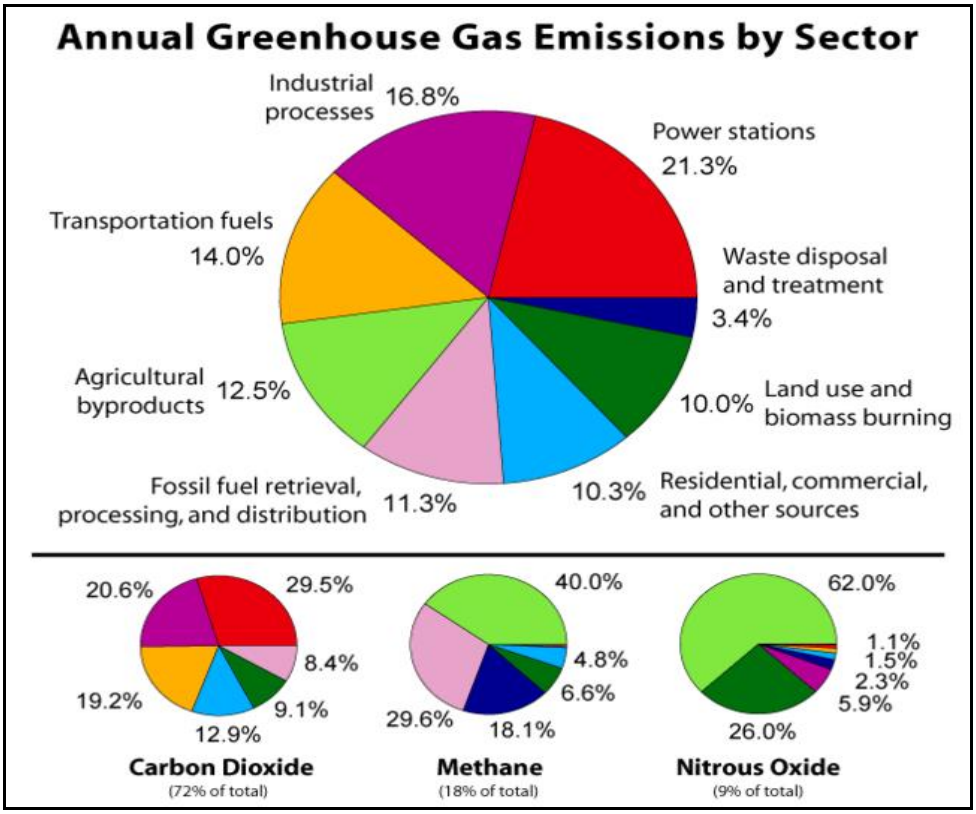
1. Sources of CO_2 Emissions

According to the EPA, U.S. residents' energy-related activities account for ***three-fourths*** of the human-generated greenhouse gas emissions in this country, primarily in the form of carbon dioxide (CO_2) emissions from the burning of fossil fuels for the production of energy.[14] It may surprise many to learn that, per the Environmental Protection Agency, more than half of these energy-related emissions comes from large stationary sources, like buildings and power plants, while only a third comes from

[14] *See* EPA, *Human-Related Sources of Sinks and Carbon Dioxide*, http://media.northernpasseis.us/attachments/a9.__epa,_human-related_sources_and_sinks_of_co2.pdf (stating that "[t]he **main** source of direct CO_2 emissions is the burning of natural gas and oil for heating and cooling of buildings," and that "[t]he transportation sector is the **second largest** source of CO2 emissions in the U.S.") (emphasis added).

transportation, often viewed as the greatest CO_2-releasing culprit.[15] In other words, according to some statistics, buildings—industrial, commercial, and residential combined—represent a greater source of global-warming pollution than cars and trucks. Figure 3 below presents these findings in more detail, with more specific breakdowns.

Figure 3. Sources of CO_2[16]



So why are buildings arguably more culpable than the ever-bigger personal vehicles clogging U.S. freeways and the constant stream of smoke-spewing eighteen-wheelers? First, significant energy is required to build and maintain factories,

[15] *See id.*

[16] Penn State College of Earth and Mineral Science, Proximate Causes, *The Human Activities that Cause Climate Change*, https://www.e-education.psu.edu/geog438w/node/364.

commercial buildings, and residential properties. Second, deforestation has been blamed for fifteen percent or more of all carbon dioxide released into the atmosphere.[17] Trees collect the CO_2 that mammals breathe out, so eliminating trees for construction leads to greater concentrations of carbon dioxide in the atmosphere. The cutting and burning of acres of trees each year, partly to clear land for development and partly to create building materials for new factories, commercial buildings, and homes, has been deemed a significant factor in the climate-change analysis.[18] But this attribution of fault can be misleading. Trees cut for buildings in the United States typically come from sustainable tree farms (rather than forests), which continually renew their resources. Further, the bulk of global deforestation occurs in South America and third world countries to clear land for agricultural purposes, not for development.[19]

While the focus on gas-guzzling vehicles is not entirely misplaced, having a myopic transportation focus when thinking about climate change thus overlooks the biggest source of emissions and energy consumption both in this country and around the globe. There are, however, some simple and practical solutions. The use of alternative energy sources, for instance, can dramatically reduce the carbon footprint of commercial and residential properties. The building and real estate industries have a remarkable potential for reducing energy consumption and carbon dioxide emissions,

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[17] *See, e.g., Deforestation and Its Extreme Effect on Global Warming*, Scientific American, Nov. 13, 2012, *available at* http://www.scientificamerican.com/article/deforestation-and-global-warming/.
[18] *See Global Deforestation*, Univ. of Mich., Jan. 4, 2010, http://www.globalchange.umich.edu/globalchange2/current/lectures/deforest/deforest.html.

[19] *See, e.g.*, Rhett Butler, *Deforestation in the Amazon* (July 9, 2014), http://www.mongabay.com/brazil.html; *Deforestation*, University of the Western Cape, Dep't of Biodiversity & Conservation Biology (Feb. 1, 2001), http://www.botany.uwc.ac.za/envFacts/facts/deforestation.htm.

and, some would say, a tremendous obligation to capitalize on this potential to stave off the harmful effects of climate change. REALTORS® and others involved in the industry have a responsibility to educate themselves about the right way and the wrong way to achieve environmental equilibrium, and to exercise their voices to effect the change that best serves the profession and its clients.

2. An Integrated Approach

Perhaps the better approach in responding to climate-change concerns is not to segregate responsibility between the transportation and building sectors, but rather to combine forces and integrate planning to create the most environmentally conscious designs. After all, the problems are interrelated, so why shouldn't the solution be? That is, as new communities are created, more roads are needed and drivers commute greater distances, thereby increasing vehicle emissions. Thus, eliminating urban sprawl would also tend to significantly reduce transportation-related pollution. And it works both ways: as new highways are constructed, development tends to spread to farther reaches, perhaps giving rise to more deforestation, as well as more vehicle emissions. Accordingly, it makes little sense to engage in fault-attributing finger pointing, and great sense for the forces to combine to make environmentally responsible decisions.

Land-use and transportation planning are—or at least should be—integrally interconnected. Indeed, coordinating (or integrating) land use and transportation planning and development is considered one facet of "smart growth."[20] An integrated approach tends to foster a balance of mixed uses (including housing, educational,

[20] *See* U.S. Dep't of Transp., Fed. Hwy. Admin., *Coordinating Land Use and Transportation: What is the Role of Transportation?* (Nov. 1, 2013), http://www.fhwa.dot.gov/planning/processes/land_use/.

employment, recreational, retail, and service opportunities) that recognize the importance of spatial or geographic proximity, layout, and design. "In addition, the consideration of long term and broader (even global) impacts of land use decisions on our natural and human-made environment, including transportation systems and facilities, is critical to these concepts, as well."[21]

3. The California Example

As reported in 2009, the California legislature recognized the need for an integrated land-use/transportation-planning approach. California's SB 375 and SB 732 promoted the reduction of vehicle emissions through more environmentally friendly land-use planning, incentivizing, for instance, high-density, public-transit-oriented housing projects. California's "Global Warming Solutions Act" requires the state to reduce greenhouse gas emissions to 1990 levels by no later than 2020. The legislature noted when enacting this new law that, in California, the transportation sector contributes over forty percent of greenhouse gas emissions, and that automobiles and light trucks alone contribute almost thirty percent. The Act aligns three critical policy areas of importance to local government: (1) regional long-range transportation plans and investments; (2) regional allocation of the obligation for cities and counties to zone for housing; and (3) a process to achieve greenhouse gas emissions reduction targets for the transportation sector.[22]

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[21] *Id.*

[22] *Id. See also* Cal. Energy Comm'n, 2013 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (2014); U.S. Dep't of Energy, Energy Efficiency & Renewable Energy, Building Energy Codes Program: California DOE Status of State Energy Codes; Cal. Energy Comm'n, *Renewable Energy Program Overall Program Guidebook* (6th ed. Apr. 2013); Energy Upgrade California website.

The legislation called for the development of “Sustainable Community Strategies” (SCS) to achieve California’s climate change goals by:

- Identifying the general location of uses, residential densities, and building intensities within the region.
- Identifying areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan.
- Identifying areas within the region sufficient to house an eight-year projection of the regional housing needs for the region.
- Identifying a transportation network to service the transportation needs of the region.
- Gathering and considering the best practically available scientific information regarding resource areas and farmland in the region.
- Setting out a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, will reduce greenhouse gas emissions from automobiles and light trucks to achieve the reductions target approved by the state board.
- Quantifying the reduction in emissions projected to be achieved by the SCS and, if the SCS does not achieve the targeted reduction, setting forth the difference between the amount that the SCS would reduce emissions and the target for the region.[23]

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[23] *Id.*

California's recent initiatives highlight the importance of aligning transportation and housing measures to achieve environmental goals. Cities and other regional authorities, too, are shifting to a combined focus, demonstrating that integrated land-use and transportation plans are the wave of the future.[24]

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[24] *See, e.g.*, Tom Jacobs, *Green Infrastructure, Environmental Mitigation and Transportation Planning in Kansas City*, http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1400&context=jmie/roadeco (Kansas City, MO); National Capital Region Transportation Planning Board, Long Range Transportation Plan, http://www.mwcog.org/clrp/elements/environment/default.asp (including Washington, D.C., and surrounding areas of MD, VA).

National Overview

II. National Overview

A. Impact of Climate Change Policies on the Real Estate Profession

Climate change-based policies impact most communities in some way, but these governmental actions have special relevance and urgency for real estate professionals. The real estate and building sectors are particularly affected, one commentator has observed, due to evolving federal policies, as well as local and regional standards relating to carbon disclosure, newly implemented building codes, and recently enacted "green" building standards.[25] The demand for "green" commercial real estate will grow, predicted Betsy Boyle, Manager of the Real Estate Program at Ceres,[26] as companies realize they can cut their operating costs by occupying higher-performing buildings.[27] As a result, the value of more efficient buildings will increase.[28] The same concept applies with regard to residential homeowners and prospective buyers as well. The market for green home building is expected to reach $83 to $105 billion in 2016, up from $36 billion in 2013, according to a 2014 McGraw Hill Construction report.[29] As savvy homebuyers become more energy-conscious, it becomes even more imperative to stay up-to-date and knowledgeable.

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[25] *See* Denis DuBois, *Emerging Climate Change Regulations Impact Real Estate Valuations*, *available at* http://energypriorities.com/entries/2008/11/green_real_estate_ceres.php.

[26] Ceres describes itself as a "powerful network of investors, companies and public interest groups [who] accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy." *See* http://www.ceres.org/Page.aspx?pid=415.

[27] DuBois at http://energypriorities.com/entries/2008/11/green_real_estate_ceres.php.

[28] *Id.*

[29] *See* Joyanna Laughlin,*The Green Homebuilding Business: A Primer for Those Just Entering the Market* (May 10, 2015), http://www.greenbuildermedia.com/blog/popularity-of-green-homes-continues-to-rise.

On a more immediate level, REALTORS® and others involved in property transactions are directly affected, on a day-to-day practical basis, by the changes implemented by state and local governmental units. A few examples of local legislation include labeling and permitting requirements on buildings, requiring energy efficiency in new construction, and imposing point-of-sale requirements in property transactions (like mandated energy disclosures or audits). Even federal laws have local implications, with requirements that vary from location to location. The Clean Air Act,[30] for instance, while a federal law, empowers state and local pollution control agencies to issue two types of required "Clean Air Act" permits: construction permits and operating permits. Construction permits are required for all new stationary sources of pollution that meet certain thresholds, as well as all existing stationary sources that are adding new CO_2 emissions units or modifying existing emissions units. Operating permits (also known as Title V permits) are also required for all major stationary sources of pollution. Some local agencies even require operating permits for minor sources of pollution. The EPA's website has more information on these permitting requirements,[31] and provides links to the local permitting authorities.[32]

In addition to *permitting* requirements, buildings may be subject to (or eligible for) *labeling* programs, some of which are national in scope, but others of which vary from state to state. Both commercial and residential buildings may qualify for the Energy

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[30] *See* U.S. EPA*, Summary of the Clean Air Act*, http://www2.epa.gov/laws-regulations/summary-clean-air-act.

[31] *See* U.S. EPA, *Operating Permits Issued Under Title V of the Clean Air Act*, http://www2.epa.gov/title-v-operating-permits.

[32] U.S. EPA, *Permitting Under the Clean Air Act*, http://www2.epa.gov/caa-permitting.

Star® label, for instance, which ensures that they meet certain standards of energy efficiency, just like appliances or heating and air conditioning units that have earned Energy Star® approval.[33] The Energy Star® program is discussed in more detail in Part E.1 below. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has also developed standards promoting the value of energy efficiency in the real estate market (*see* Part C.2.a below).[34]

Why are these programs, and others like them, so important to real estate professionals? Because even when the credit crunch hit the hardest, seventy-five percent of commercial real estate executives, including developers, rental building owners, brokers, architects, engineers, and others, predicted that financial constraints would not dissuade anyone from building "green."[35] A full eighty-three percent indicated they would be extremely or very likely to seek a "green" certification for buildings they were planning to build within the next three years.[36] Moreover, according to at least one source, seventy percent of homebuyers were reportedly more—or even *much* more—inclined to buy a green house, and that number rises to seventy-eight percent for those earning less than $50,000 a year, which indicates that it is not just the "upscale" buyer

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[33] *See* U.S. EPA, *Energy Star Certified New Homes*, http://www.energystar.gov/index.cfm?c=new_homes.hm_index; *The Energy Star Buildings and Plants*, http://www.energystar.gov/buildings?s=mega .

[34] ASHRAE Standards and Guidelines, https://www.ashrae.org/standards-research--technology/standards--guidelines.

[35] *See* U.S. Green Building Council News Release, *National Studies Show Green Building as Key Part of American's Economic Future—Green Building Creates Green Jobs that Save Energy and Money* (Jan. 13, 2009), http://www.usgbc.org/Docs/News/National%20Studies%20Show%20Green%20Building%20as%20Key%20Part%20of%20America%20(2).pdf.

[36] *Id.* The survey respondents specifically referred to seeking LEED® certification. The LEED® program is discussed in Part E.2 below.

who wants to be green.[37] The desire to buy green thus extends across all economic tiers—and into the commercial sector as well. In fact, eighty percent of commercial building owners say they have allocated funds to green initiatives.[38]

There are a plethora of energy-related statutes, ordinances, and incentives that affect real estate sales. A consideration of all of them is beyond the scope of any one paper. But various types of national, state, and local programs and requirements, and some community-specific examples, are discussed more fully in **State and Local Responses to Climate Change** (Part III below). As the following discussion demonstrates, there is much to know about the ever-evolving landscape of climate change, and the more REALTORS® know, the better they can serve their clients and their own financial interests. When REALTORS® stay abreast of proposed changes in their communities, they are better able to be involved at a grassroots level to effect desired changes, and to forestall those that will interfere with their clients' best interests.

B. Federal Government Initiatives

The federal government has already established comprehensive policies to address climate change concerns, aimed at slowing the growth of emissions, strengthening science and technology, and enhancing international cooperation.[39] To implement these policies, the government employs primarily voluntary, incentive-based

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[37] *Id.*

[38] *Id.*

[39] *See* Environmental Protection Agency, *Climate Change: Basic Information*, http://www.epa.gov/climatechange/basicinfo.html.

programs. The federal government's actions in response to climate change concerns include:

- **Collecting Emissions Data.** The EPA collects various types of greenhouse gas emissions data that helps policy makers, businesses, and the Agency track greenhouse gas emissions trends and identify opportunities for reducing emissions and increasing efficiency.
- **Achieving Reductions.** The EPA is reducing greenhouse gas (GHG) emissions and promoting a clean energy economy through partnerships and common-sense regulatory initiatives, including:
    - *Regulatory initiatives to reduce GHG emissions and increase efficiency*. For example, the EPA's vehicle greenhouse gas rules will save consumers $1.7 trillion at the pump by 2025 and eliminate six billion metric tons of GHG pollution. The EPA's Clean Power Plan addresses emissions from power plants, the largest source of carbon pollution in the country. When the Plan is fully implemented in 2030, carbon pollution from the power sector will be thirty-two percent below 2005 levels.
    - *Partnerships with the private sector through voluntary energy and climate programs*. The EPA's partners reduced over 345 million metric tons of greenhouse gases in 2010 alone, which is equivalent to the emissions from 81 million vehicles and saved consumers and businesses about $21 billion.

- *Reductions in the EPA's own carbon footprint*, by monitoring emissions from its own energy use and fuel consumption and working to reduce greenhouse gas emissions by one-fourth by the year 2020.

- **Evaluating Policy Options, Costs, and Benefits.** The EPA conducts economy-wide analyses to understand the economic impacts and effectiveness of proposed climate policies.
- **Advancing the Science.** The EPA also contributes to world-class climate research through the U.S. Global Change Research Program and the Intergovernmental Panel on Climate Change. The EPA's Office of Research and Development performs research to better understand the environmental and health impacts of climate change and to provide solutions for adapting to and reducing its impact.
- **Partnering Internationally.** The EPA is engaged in a variety of international activities to advance climate change science, monitor the environment, and promote activities to reduce greenhouse gas emissions. The EPA also establishes partnerships, provides leadership, and shares technical expertise to support these activities.
- **Partnering With States, Localities, and Tribes.** The EPA's State and Local Climate and Energy Program provides technical assistance, analytical tools, and outreach support on climate change issues to state, local, and tribal governments.

- **Helping Communities Adapt.** The EPA's Climate ReadEstuaries and Climate Ready Water Utilities programs help coastal resource managers and water utility managers plan and prepare for climate change.[40]

The EPA also plays a primary role in helping the federal government achieve its goals through voluntary initiatives, such as the national Energy Star® program (*see* Part E.1 below).[41] Climate change concerns have also spurred several non-governmental national programs encouraging energy conservation (also detailed in Part E below).

C. The Obama Administration's Stance on Climate Change

1. The Obama Initiatives

President Barack Obama wasted no time in addressing climate change concerns. Just days after taking office, he began to "shred" Bush administration climate policies, signing measures encouraging the production of fuel-efficient cars and vowing to lead the fight against global warming.[42] "We cannot afford to pass the buck or push the burden onto the states," the President proclaimed, suggesting that the federal government will take the proverbial climate-change bull by the horns.[43] The administration quickly named Todd Stern as the Special Envoy on Climate Change.[44]

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[40] *See* EPA, *What EPA Is Doing About Climate Change*, http://www3.epa.gov/climatechange/EPAactivities.html.

[41] *Id.*

[42] *See generally* Press Release, *Obama Administration starts defining climate policy*, Jan. 27, 2009, http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=556&ArticleID=6051&l=en&t=long; *see also Climate Change*, https://www.barackobama.com/climate-change/.

[43] *See id*.

[44] Press Release, *Obama Administration starts defining climate policy*, Jan. 27, 2009, http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=556&ArticleID=6051&l=en&t=long.

Stern previously coordinated the Clinton administration's Initiative on Global Climate Change, from 1997 to 1999.[45]

> *"We cannot afford to pass the buck or push the burden onto the states,"* President Barack Obama proclaimed.

Obama's "New Energy for America" plan called for, among other things:

- Creating five million new jobs to catalyze private efforts to build a clean-energy future.
- Implementing an economy-wide cap-and-trade program to reduce greenhouse gas emissions by eighty percent by the year 2050.
- Weatherizing one million homes each year.[46]

President Obama continues to focus on energy initiatives, and in the summer of 2015 he set out his new energy plans and goals, including:

- Making $1 billion in additional loan guarantee authority available and announcing new guidelines for distributed energy projects utilizing innovative technology.
- Unlocking residential Property-Assessed Clean Energy (PACE) financing for single-family housing to make is easier for Americans to invest in clean energy technologies.

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[45] *Id.*

[46] Obama Biden New Energy for America Plan, *available at* http://change.gov/agenda/energy_and_environment_agenda/; http://www.cfr.org/united-states/obama-biden-new-energy-america-plan-january-2009/p18306.

- Launching a new HUD and Department of Energy program to provide home owners with a simple way to measure and improve the energy efficiency of their homes by increasing homeowners' borrowing power.
- Creating a Department of Defense Privatized Housing Solar Challenge in which companies commit to providing solar power to housing on over forty military bases across the United States, saving military families money on energy bills and making military communities more energy secure.
- Announcing $24 million for eleven projects in seven states to develop innovative solar technologies that double the amount of energy each solar panel can produce from the sun.
- Approving a transmission line that will support bringing online a 485-megawatt photovoltaic facility that will be constructed in Riverside County and produce enough renewable energy to power more than 145,000 homes.
- Creating an Interagency Task Force to Promote a Clean Energy Future for All Americans.
- Announcing independent commitments from local governments, utilities, and businesses that are stepping up to drive energy efficiency in more than 300,000 low-income households and investing more than $220 million in energy saving activities for veterans and low-income customers to help decrease their energy bills.[47]

[47] Press Release, *FACT SHEET: President Obama Announces New Actions to Bring Renewable Energy and Energy Efficiency to Households across the Country*, https://www.whitehouse.gov/the-press-office/2015/08/24/fact-sheet-president-obama-announces-new-actions-bring-renewable-energy.

2. Carbon Tax or Cap-and-Trade?

Although President Obama discussed the relative merits of carbon tax and cap-and-trade programs during his campaign for the presidency, his New Energy for America plan pushed the cap-and-trade concept, not carbon taxing.[48] The cap-and-trade program essentially continues in effect in 2015.[49]

Under a cap-and-trade program, the government sets emissions caps and issues tradable allowances that grant businesses the right to emit a pre-determined set amount of CO_2.[50] Those businesses that can reduce their emissions more cheaply are able to sell extra allowances to others who would otherwise have to pay more to comply.[51] A cap-and-trade system helps businesses achieve their overall cap at the lowest possible cost. Cap-and-trade is the basis of U.S. efforts to control acid-rain pollution, which has achieved even greater reductions—at lower costs—than originally anticipated.[52]

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[48] *See* John Carey, *Obama's Cap-and-Trade Plan*, Bloomberg Business, Mar. 4, 2009, *available at* http://www.bloomberg.com/bw/stories/2009-03-04/obamas-cap-and-trade-plan.

[49] *See* Mark Drajem & Lynn Doan, *Don't Like Obama's Carbon Plan? Fine, Here's Cap-and-Trade*, Bloomberg Business, Aug. 4, 2015, *available at* http://www.bloomberg.com/news/articles/2015-08-04/don-t-like-obama-s-clean-power-plan-fine-here-s-cap-and-trade; Will Oremus, *Obama's Climate Plan is Basically Cap and Trade*, Slate, Aug. , 2015, *available at* http://www.slate.com/blogs/moneybox/2015/08/04/clean_power_plan_obama_s_climate_plan_is_cap_and_trade_after_all.html.

[50] Eileen Claussen & Judith Greenwald, *Handling Climate Change*, Miami Herald, July 12, 2007, *available at* http://www.pewclimate.org/press_room/opinion_editorials/oped_miamih07122007.

[51] *Id.*

[52] *Id.*

Under a carbon tax, by contrast, emitters pay a tax for every ton of pollution they emit.[53] Both systems require monitoring and enforcement and must address the question of how to distribute costs and benefits.

Pursuant to the cap-and-trade program encompassed in the American Clean Energy and Security Act of 2009, lower-income households could actually experience a financial *benefit* from a cap-and-trade system.[54] Taking into account households' share of the gross compliance and resource costs, and the relief that would flow to households through direct rebates and transfers (or indirectly through the allocation of allowances), the Congressional Budget Office estimated that households in the lowest income brackets would see an average net benefit of about $40 per year.[55] Households in the highest income brackets,

Proponents of a cap-and-trade system also laud its market-based approach.

Prior to the adoption of environmental regulation, pollution and other environmental harms were addressed through the law of nuisance. Nuisance is an efficient way of resolving a conflict between two parties. Once a cost of the harmful activity is identified by a court, the party engaging in the activity can determine if it is worth it to continue the activity and pay off the harmed party.

While nuisance is an effective way to address a harm inflicted on an individual person or community, it is less effective at addressing widespread harms such as climate change. These harms are often identified as "externalities" by economists, as they are a cost to society that is not captured as a cost to the person engaging in the harmful activity (or external to the market).

Proponents of a cap-and-trade system believe that these costs to society can be captured and passed on to the harming party by requiring them to purchase credits for emissions that exceed the government's proscribed limit. Others will be motivated to decrease their carbon emissions for the potential benefit of selling their carbon credits or avoiding the purchase of additional credits.

[53] *See, e.g.*, Carbon Tax Center, http://www.carbontax.org/.

[54] *The Estimated Costs to Households from the Cap-and-Trade Provisions of H.R. 2454* (Congressional Budget Office 2009), *available at* https://www.cbo.gov/publication/41194?index=10327; https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/reports/06-19-capandtradecosts.pdf.

[55] *Id.*

however, would experience net annual *costs* of about $245 to $340.[56] Overall, under such a system, costs per household would average 0.2% of their average after-tax income per year.[57]

Proponents of the **cap-and-trade** system, like President Obama, assert that its benefits include:

- *Comprehensive scope*: If all major sectors of carbon emitters are included under the cap, the cap is as effective as possible and ensures a fair playing field for all of those covered.
- *Upstream regulation*: The cap-and-trade system operates where fossil fuels enter the economy. Upstream regulation means that fewer than one-tenth of one percent of businesses will need to interact with the system.
- *Auctioned permits*: To prevent unfair windfall profits for big energy companies at the expense of consumers, pollution permits can be sold rather than given away free to polluters.
- *Protection for in-state families*: Auction Revenues can be invested in community "green" benefits like job training, energy efficiency, and renewable energy production, providing a local competitive advantage in a growing clean-energy economy.[58]

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[56] *Id.*

[57] *Id.*

[58] Cap and Trade 101: A Climate Policy Primer, *What Makes Cap and Trade Work Best?*, Sightline Inst., July 2009, *available at* http://www.sightline.org/research_item/cap-and-trade-101/.

Proponents of the **carbon tax**, by contrast, argue that it has the following advantages:

- *Energy cost stability*: Carbon taxes will lend predictability to energy prices, whereas cap-and-trade systems could aggravate the price volatility that historically has discouraged investments in less carbon-intensive electricity generation, carbon-reducing energy efficiency, and carbon-replacing renewable energy.
- *Faster implementation*: Carbon taxes, proponents argue, can be implemented much sooner than cap-and-trade systems.
- *Understandability*: Carbon taxes are transparent and easily understandable, making them more likely to elicit public support.
- *Broad applicability*: Carbon taxes address emissions of carbon from every sector.
- *Public benefits*: Carbon tax revenues can be returned to the public through dividends or progressive tax-shifting.[59]

It appears likely that the cap-and-trade system will be the favored policy approach for the near future, but it remains to be seen what a new administration will do about climate change in 2017 and beyond.

D. Paris Agreement on Climate Change

In late 2015, representatives of almost 200 countries met in Paris to discuss climate change issues facing the global community.[60] The talks represented the 21st

[59] *Id.*; Carbon Tax Center, *Why a Carbon Tax?*, http://www.carbontax.org/why-a-carbon-tax/.

[60] *See* COP 21, *A COP of Firsts*, http://www.cop21.gouv.fr/en/la-cop-des-premieres-fois/.

annual meeting of the parties to the 1992 United Nations Framework Convention on Climate Change.[61] The outcome of the meeting was the first legally binding international agreement on climate change issues—the Paris Agreement. The Paris Agreement will enter into force a month after at least 55 nations representing at least 55% of the world's greenhouse gas emissions ratify the Agreement.[62]

The Agreement's goal is to hold global warming to within two degrees Celsius of pre-industrial temperatures by adopting and promoting more environmentally friendly energy and other technologies. Each country is to set its own Nationally Determined Contribution to this overall reduction, representing a change from past accords that sought climate change action only from the richest and most developed nations.[63] But this growth of accountability to other nations does not shift the commitment of the current administration to make substantial cuts in U.S. greenhouse gas emissions. If the United States ratifies the Agreement, it would need to present its plan to meet its goal in 2018.[64] While the United States signed the Agreement at a United Nations signing ceremony in April 2016, the Agreement has not yet been ratified by Congress as binding on the nation. President Obama has pledged to seek ratification before the end of his second term.[65]

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[61] United Nations Framework Convention on Climate Change, http://unfccc.int/2860.php.

[62] *See id*.

[63] Coral Davenport, *Nations Approve Landmark Climate Change Accord in Paris* (New York Times Dec. 12, 2016), http://www.nytimes.com/2015/12/13/world/europe/climate-change-accord-paris.html.

[64] John D. Sutter, What's Next for the Paris Agreement? (CNN.com April 22, 2016), http://www.cnn.com/2016/04/21/opinions/sutter-paris-agreement-whats-next/.

[65] *Id.*

E. National Certification Programs

1. The EPA's Energy Star® Program

The Energy Star® program is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy that is geared toward helping consumers save money while protecting the environment through the use of energy efficient products and practices.[66] In 2013, millions of consumers tapped the value of Energy Star® and achieved impressive financial and environmental benefits. Their investments in energy-efficient technologies and practices reduced utility bills by $30 billion and will continue to provide cost savings for years to come. Americans, with the help of Energy Star®, prevented more than 277 million metric tons of GHG emissions in 2013 alone— providing over $10 billion in benefits to society by reducing damages from climate change.[67] Household products that have earned Energy Star® approval meet strict energy efficiency guidelines set by the EPA and the Department of Energy. In addition to individual products, entire new homes can earn an Energy Star®. The EPA also provides an innovative energy performance rating system that businesses have applied to more than 62,000 buildings across the country. The EPA recognizes top-performing buildings with the Energy Star®.[68]

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[66] *See generally* http://www.energystar.gov. The annual reports for recent years are available at https://www.energystar.gov/index.cfm?fuseaction=publications.showPublications&view=all&st=Type&pub_type_code=REP.

[67] Energy Star® Overview of 2013 achievements, *available at* http://www.energystar.gov/sites/default/uploads/about/old/files/EnergyStar_POY_4page_040414_PrintReady_508compliant.pdf?acf7-9a7f.

Why does this program matter to real estate professionals? Because in a still-recovering market buyers may need extra encouragement to make the next big purchase, whether it is in the residential or commercial arena. Assurances of energy savings and environmental accountability can provide a needed nudge to undecided buyers and help them make the move.

2. USGBC's LEED® Programs

The LEED® (Leadership in Energy and Environmental Design) green building certification program, administered by the U.S. Green Building Council (USGBC), is a feature-oriented certification system that awards buildings a certain number of points for meeting specified green building criteria in the following categories:

- Sustainable siting.
- Water efficiency.
- Energy and atmosphere.
- Materials and resources.
- Indoor environmental quality.
- Innovation and design.[69]

Depending on the number of points awarded, LEED® status can be certified, silver, gold, or platinum. Incentives, such as tax credits, expedited permit review, and

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[68] *Earn Recognition for Your Building or Plant*, https://www.energystar.gov/buildings/about-us/how-can-we-help-you/recognition/earn-recognition-your-building-or-plant.

[69] *See* U.S. Green Building Council, www.usgbc.org/LEED.

grants, may be available nationally at both the state and local level.[70] Earning this certification can be extremely important in a sagging market, as more and more buyers seek to build (and buy) green or not at all, or need all the economic incentives they can get to encourage them to take the financial leap.

3. NAHB National Green Building Program

The National Association of Home Builders (NAHB) Green Building Program offers several resources and tools to help builders and others involved in real property transactions learn how to "go green."[71] A key element of the program is a certification system, administered by the NAHB Research Center. The Center accredits home certification program verifiers and acts as the sole certifying body for the Green Building Program. Certification is based on the NAHB Model Green Home Building Guidelines[72] and the ICC 700National Green Building Standards[73]—a much needed and nationally recognized standard definition of green building. The Standard includes provisions that define green attributes for developments, multi-unit dwellings, and single-family homes (as well as remodeling and additions).

Factors considered in granting certification include:

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[70] *See, e.g.,* USGBC, *Summary of Government LEED Incentives—March, 2009*, http://www.usgbc.org/ShowFile.aspx?DocumentID=2021. The point breakdowns are set out at http://www.usgbc.org/certification.

[71] *See* NAHB, Green Building, Remodeling and Development, http://www.nahbgreen.org.

[72] The guidelines are available at http://www.pinelandsalliance.org/downloads/pinelandsalliance_118.pdf.

[73] These standards are available for purchase via a link on the NAHB website, http://www.nahb.org/en/research/nahb-priorities/green-building-remodeling-and-development/ngbs-green-certification.aspx, and at https://builderbooks.com/2012-icc-700-national-green-building-standard.html.

- Lot and site development.
- Resource efficiency.
- Energy efficiency.
- Water efficiency.
- Indoor environmental quality.
- Homeowner education.[74]

The NAHB Green Building Program, like other energy-efficiency stamps of approval, can be the catalyst for sales in today's market.

[74] For more information, see Home Innovation Research Labs, *Certification—Green Homes and Products*, http://www.homeinnovation.com/green.

State and Local Responses to Climate Change

III. State and Local Responses to Climate Change

A. Summary of Recent State Action

Recent comprehensive legal research performed by Legal Research Center, Inc.,[75] demonstrates that climate change and energy conservation have emerged as issues of great importance. Almost every U.S. jurisdiction surveyed has taken legislative or regulatory action to address the issue of energy conservation, and some of those efforts have been directed at—or will impact—real estate and real estate transactions. The scope of these efforts has varied, with some jurisdictions imposing new requirements on real estate sales and others relying on incentives to encourage upgrades and retrofits to all homes. The results are summarized in greater detail according to the types of action taken in each jurisdiction in Part C.2 below.

As the research bears out, most states, during the last decade or so, implemented some type of climate change plan to address present concerns and to plan for the future. State planning and measurement efforts typically include the creation of a state advisory board, the completion of a greenhouse gas inventory, and/or the development of a state climate change action plan.[76] Often these state efforts are undertaken in an interrelated and simultaneous fashion. Climate change action plans help states identify and evaluate possible and practicable policies to reduce their greenhouse gas emissions through a combination of public- and private-sector programs. By taking a proactive approach, states hope to lower their greenhouse gas

[75] *See* www.legalresearch.com.

[76] *See, e.g.,* Center for Climate and Energy Solutions, *Climate Action Plans*, http://www.c2es.org/us-states-regions/policy-maps/climate-action-plans.

emissions, reduce their energy costs, protect air quality and public health, and improve the economy and environment.[77]

In California, for instance, the state's Climate Action Team, at the direction of Governor Schwarzenegger, completed the state's Climate Change Action Plan in 2006, but the proposals did not end there. The California Air Resources Board released a new draft plan in 2008, providing a road map to reduce the state's greenhouse gas emissions by thirty percent over the next twelve years. Central to the plan is a cap-and-trade program for major emitters, and a proposal that utilities produce one-third of their energy using renewable resources. The plan, which was finalized in December 2008, also calls for full implementation of the California Clean Car law and the state's Low Carbon Fuel Standard.[78]

Meanwhile, in Minnesota, then-Governor Tim Pawlenty announced the Next Generation Energy Initiative in 2006, recommending the development of an aggressive plan to reduce greenhouse gas emissions in the state.[79] The Next Generation Energy Act of 2007, which the governor signed into law the same year, aims to reduce greenhouse emissions in Minnesota by fifteen percent by the year 2015, by thirty percent by 2025, and by an impressive eighty percent by the year 2050.[80]

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[77] For summary information on each state's initiatives, see EPA, *Initiative Types by State & Locality*, http://yosemite.epa.gov/gw/heatisland.nsf/HIRIInitiativeTypesbyStateLocal?openview&count=500.

[78] *See* AB 32 Climate Change Scoping Plan Document, http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm. For the latest on California's Climate Change Action Plan, see CA.gov, *California Climate Change Portal*, http://www.climatechange.ca.gov/.

[79] *See Minnesota's Next Generation Energy Initiative*, https://mn.gov/commerce/energy/images/SummaryNext%20Generation%20Energy%20Initiative.pdf.

[80] *Id.*

Minnesota's utilities are ahead of schedule in meeting a mandate to provide twenty-five percent of electricity from renewable sources by 2025, but the state is falling short of the goal to reduce Minnesota's share of the heat-trapping greenhouse gas emissions that scientists believe are driving climate change.[81] The 2007 state law said that by 2015 Minnesota should have reduced its carbon dioxide emissions by fifteen percent from 2005, but the most recent data, from 2012, indicate that the state is not even halfway there. "We're not on track to meet the 2025 reduction goals, either," said David Thornton, assistant commissioner for the Minnesota Pollution Control Agency. "Given the kinds of things that are in place now, we only see a little bit more additional reduction occurring out to 2025 and 2030."[82]

The fact that Minnesota is falling behind on its greenhouse gas reduction goals has not been lost on those who worked to enact them. A new group of leaders from business, environmental advocacy, state agencies, and academia have launched an effort similar to what Governor Pawlenty's climate change task force tried to do eight years ago. A group called Climate Solutions and Economic Opportunities (CSEO) is looking for a path to reach Minnesota's climate change goals while encouraging economic growth. Instead of coming up with broad ideas, like many recommendations for change have been, the new group hopes to propose specific actions that could easily be implemented.[83]

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[81] Elizabeth Dunbar & Dan Kraker, *Minnesota's Efforts to Fight Climate Change Lose Steam*, MPR News, Feb. 6, 2015, http://www.mprnews.org/story/2015/02/06/climate-change-enough.

[82] *Id.*

[83] *Id.*

B. Local Tie-ins to National Programs

Many states and local communities have adopted the voluntary standards set out in national initiatives like the Energy Star® program. Connecticut, for example, offers a sales and use tax exemption for residential weatherization products, which include windows, doors, and natural gas and propane furnaces and boilers that meet the federal Energy Star® standard.[84] Georgia declares an annual sales tax holiday for energy-efficient residential appliances, lighting, doors, and windows that meet or exceed the federal Energy Star® requirements.[85] Cities, too, get into Energy Star® mode with incentives and rebates. Tallahassee, Florida, for example, has offered rebates for the purchase of energy-efficient appliances and heating and air-conditioning equipment,[86] and the city of Winter Park provided rebates to both residential and commercial customers for implementing energy conservation measures at their home or business.[87]

In addition, the LEED® program has been embraced at both the state and local level. Maryland state law allows counties and municipalities to provide an optional property tax credit for high performance buildings, such as buildings that achieve at

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[84] For more information on Connecticut's statewide conservation measures, *see* Conn. Gen. Stat. §§ 12-81, -412(117)(A), -412k; 16-1(a)(40); -243i, -243j, -245n; -243v(k); 16a-40b, -40/ (2015); Conn. Agencies Regs. § 16a-14-202 (2015); Conn. Agencies Regs. § 16a-14-202 (2008).

[85] Details regarding the sales tax holiday are posted on the Georgia Department of Revenue website. *See* http://gefa.georgia.gov/energy-star-and-watersense-sales-tax-holiday for provisions that applied to the 2015 holiday, which ran from October 2 through October 4.

[86] *See* City of Tallahassee, *ENERGY STAR Appliance Rebates for Your Home*, *https://www.talgov.com/you/you-products-home-es-rebates.aspx* . Note, however, that many statewide Energy Star® rebate programs have exhausted their funding and were closed as of April 2014.

[87] *See* https://cityofwinterpark.org/departments/electric-utility/energy-conservation-rebates-and-incentive-program/.

least a Silver rating according to LEED® standards.[88] The District of Columbia joined the growing list of communities embracing LEED® standards back in 2006, initially for city works, but as of 2009 for a broader range of commercial projects.[89] Other cities adopting LEED® standards for certain city/public projects include Atlanta, Georgia; Austin, Texas; Berkeley, California; Boston, Massachusetts; Boulder, Colorado; Chicago, Illinois; Dallas, Texas; Houston, Texas; Kansas City, Missouri; Los Angeles, California; Portland, Oregon; San Diego, California; San Francisco, California; Scottsdale, Arizona; and Seattle, Washington.[90] A number of these requirements have been in place for some time, paving the way for their expansion into the private development arena, as occurred in D.C.

[88] For more information on Maryland's conservation measures, see Md. Code Ann., Tax–Prop. §§ 7-242, 8-240, 9-203, 9-242; Tax–Gen. §§ 10-720, 10-727, 11-207, 11-226, 11-230; Pub. Util. Cos. §§ 7-701, -704; State Fin. & Proc. § 5A-303; State Gov't §§ 9-2007, -2008; 9-20C-01, -02, -03, -04 (2015); Md. Code Regs. 14.26.04.02, .05, .06 (2015).

[89] *See* Beveridge & Diamond PC, *District of Columbia Passes Green Building Bill*, Dec. 8, 2006, *available at* http://www.bdlaw.com/news-news-102.html.

[90] *See American's Cities "LEED" the Way*, http://www.buildings.com/ArticleDetails/tabid/3321/ArticleID/2475/Default.aspx.

C. Regional, State, and Local Programs

1. Regional Programs

In addition to the programs discussed above that are national in scope, environmental initiatives that impact REALTORS® may arise at the regional, state, county, or city level.

Regional programs include the Regional Greenhouse Gas Initiative (RGGI, or ReGGIe), an initiative by states in the northeastern United States to reduce greenhouse gas emissions. The RGGI is designing a cap-and-trade program for greenhouse gas emissions from power plants. Ten states currently participate in the initiative, although Pennsylvania, a major coal producer and manufacturing state, only participates as an observer.[91]

Another regional program is the Midwestern Greenhouse Gas Reduction Accord.[92] Nine Midwestern governors and two Canadian premiers signed on to participate in or observe the Accord, as first agreed to in November 2007 in Milwaukee, Wisconsin. Members include Illinois, Iowa, Kansas, Manitoba, Michigan, Minnesota, and Wisconsin, and the official observers are Indiana, Ohio, Ontario, and South Dakota. While the Midwest has intensive manufacturing and agriculture sectors, making it the most coal-dependent region in North America, it also has world-class renewable energy resources and opportunities to allow it to take a lead role in solving the effects of climate change. Through the Accord, the member and observer states have agreed to establish

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[91] *See* Regional Greenhouse Gas Initiative, http://www.rggi.org. Participants include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

[92] *See* Center for Climate and Energy Solutions, *Midwestern Greenhouse Gas Reduction Accord*, http://www.c2es.org/us-states-regions/regional-climate-initiatives/mggra.

a Midwestern greenhouse gas reduction program to reduce greenhouse gas emissions.[93]

Finally, the Western Climate Initiative,[94] launched in February 2007, is a collaboration among seven U.S. governors and four Canadian premiers that was created to identify, evaluate, and implement collective and cooperative ways to reduce greenhouse gases in the region, focusing on a market-based cap-and-trade system.[95] Founding members include Arizona, British Columbia, California, Manitoba, Montana, New Mexico, Ontario, Oregon, Quebec, Utah, and Washington, and observers include Alaska, Colorado, Idaho, Kansas, Nevada, and Wyoming, as well as several Canadian and Mexican governments.[96]

Membership in any of these regional programs can affect what policies a particular state will implement. State programs and requirements are discussed in the next section.

2. State- and Local-level Activity

There is a growing recognition of the connection between climate change and the business of real estate. In September 2015, for instance, more than 100 Missoula, Montana-area real estate agents attended a seminar on the effects of climate change

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[93] *Id.*

[94] *See* Western Climate Initiative, http://www.wci-inc.org/; http://www.westernclimateinitiative.org/history.

[95] *Id.*

[96] *Id.*

on their industry.[97] The presenter, Steve Thompson, president of Climate Realty LLC, has enlisted a multidisciplinary team to assist his efforts toward getting the real estate industry to appreciate the impact of climate change on real estate sales. "Basically, we believe that climate change is very relevant for real estate," Thompson said. "Because real estate is a long-term, serious investment, . . . the biggest investment that most Americans will make in their life, . . . I tell [them] I think it would be foolish to sign a 30-year mortgage without having some sort of clue what climate change might mean for that location in 30 years," Thompson said.[98]

> *There is "a lot we can do right away in our communities, with both individual houses and communities. And the real estate industry is part of that leading edge. They're part of marketing and buying real estate every day. So they're actually a pretty pivotal part of our urban design . . . ."*
> Steve Running

The purpose of the course was to help real estate agents recognize the emerging market for climate-smart homes and communities, and to develop tools that recognize the increasing relevance of climate change impacts on neighborhoods. Steve Running, a Regents professor of forest ecology at the University of Montana who was on the Nobel Prize-winning Intergovernmental Panel on Climate Change in 2007, says that there is "a lot we can do right away in our communities, with both individual houses and communities. And the real estate industry is part of that leading edge. They're part of

[97] *See* David Erickson, *Missoula Real Estate Agents Study Effect of Climate Change on Homebuyers, Neighborhoods*, Missoulian, Oct. 1, 2015, available at http://missoulian.com/business/local/missoula-real-estate-agents-study-effects-of-climate-change-on/article_7dad1f99-3165-517a-abd1-4a78098122a1.html.

[98] *Id.*

marketing and buying real estate every day. So they're actually a pretty pivotal part of our urban design[.]"[99]

Steve Loken, a Missoula builder, added that there is an enormous opportunity to retrofit and restore existing houses. "New housing is going to be better and smarter," he said. Loken pointed out a number of ways Missoulians can reduce their impact on climate change, from creating edible gardens to more walkable communities. "This is an exciting time to look at how we can slowly turn Missoula around to be a more sustainable community," he said.[100]

The Greater San Diego Association of REALTORS® has also taken a leading role in shaping the city's comprehensive Climate Action Plan as part of its effort to implement state and federal environmental mandates and establish San Diego as a leader in sustainability.[101] In the process, it helped keep costly point-of-sale mandates out of the plan. Early drafts of the plan included point-of-sale mandates that would have required homeowners selling or substantially renovating their homes to make retrofits to reduce water and energy consumption.

The point-of-sale requirements were one of the most expensive proposals in the plan—compliance would have cost as much as $3,000 per home—but they would have had only a nominal impact on the environment. To put that figure in perspective, in California every $1,000 increase in the price of a home disqualifies 20,000 households

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[99] *Id.*

[100] *Id.*

[101] National Association of REALTORS®, *San Diego REALTORS® Help Shape City's Climate-Change Policy*, Apr. 27, 2015, http://homeownershipmatters.realtor/california/san-diego-realtors-help-shape-citys-climate-change-policy/

from achieving homeownership. Accordingly, the mandates would have taken away the opportunity for homeownership from many Californians.

The REALTORS® Association galvanized its membership and successfully opposed the point-of-sale mandates. As an alternative, the REALTORS® recommended a plan to provide homeowners with incentives for making upgrades. They testified at City Council meetings, developed policy briefs, and educated consumers, with the result being that the updated Climate Action Plan does not include point-of-sale requirements, but instead relies on incentive-based programs like those recommended by the REALTORS® Association.

Other state or local associations have made their climate-change positions known as well. The Pennsylvania Association of REALTORS® (PAR), for example, issued the following policy statement in 2011:

> PAR is committed to supporting commercially reasonable strategies with voluntary, performance-based incentives to support sustainability, energy conservation and the reduction greenhouse gas (GHG) emissions. Development of climate change policy should be guided by the key principles of protecting private property rights, maintaining affordability/ availability and Smart Growth principles, which accommodate commercial and residential growth. Because environmental initiatives and responsible development are not mutually exclusive, those initiatives should not be barriers to the ability to own, use and transfer property. We support state and local approaches based on Smart Growth principles to reduce GHG and to conserve natural resources and promote sustainability. We support solutions that encourage sustainable practices and energy efficiency through measures such as expedited permitting, tax credits, abatements and other direct incentives to property owners and tenants. We support voluntary programs and investments that incentivize retrofits, transportation, infrastructure, water availability, and risk management with regard to climate change policy. We oppose transaction

> triggered mandates. We oppose requirements that impose undue economic impact on property owners, managers and tenants. PAR encourages energy efficiency, environmental responsibility and education of REALTORS®, affiliates, boards and the community regarding the benefits of voluntary, market-based reductions in GHG and energy conservation.[102]

a. Statewide Energy Code Adoptions

Climate change and energy conservation have emerged as issues of great importance. Almost every U.S. jurisdiction surveyed by LRC has made legislative or regulatory efforts to address the issue of energy conservation, and some of those efforts have been directed at real estate and real estate transactions. The scope of these efforts has varied, with some jurisdictions imposing new requirements on real estate sales and others relying on incentives to encourage upgrades and retrofits to all homes.

A large majority of jurisdictions have adopted an energy code for residential buildings. Four jurisdictions[103] have adopted their own energy codes, while the remaining jurisdictions have adopted a version of the International Energy Conservation Code (IECC) or the International Residential Code (IRC), promulgated by the International Code Council. As of October 2015, Guam was in the process of adopting the Tropical Energy Code. Just one jurisdiction[104] still has a code based on the 2006 version of the IECC, although that state (Tennessee) allows compliance with either the

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[102] PA Ass'n of REALTORS®, *Policy Statement—Climate Change*, Jan. 2011, http://www.parealtor.org/clientuploads/Legislative/Policy_Statements/ClimateChange.pdf.

[103] California, Florida, Guam, and North Carolina.

[104] Tennessee.

2006 or 2009 version. Twenty-two[105] jurisdictions have codes based on the 2009 IECC as of October 2015. Delaware, the District of Columbia, Idaho, Illinois, Iowa, Massachusetts, Minnesota, Montana, Nevada, Rhode Island, Utah, Virginia and Washington have adopted the 2012 IECC. Maryland has adopted the 2015 version of the IECC and the 2012 International Green Construction Code. New Jersey, Texas and Vermont have also now adopted the 2015 IECC, which became effective in 2015 in each of those states. Eight states have no statewide energy code for privately financed residential property.[106]

Thirty-six jurisdictions[107] have adopted a version of the IECC for commercial buildings. Seven jurisdictions[108] have adopted versions of the standards developed by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), while five jurisdictions[109] have developed their own energy codes for commercial buildings. Alaska, Arizona, Colorado, Missouri, Oklahoma and Wyoming have no statewide energy code for privately owned commercial buildings.

South Dakota, which has no statewide energy codes, encourages local governments to adopt the 2009 IECC.

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[105] Alabama, Arkansas, Connecticut, Georgia, Hawaii, Indiana, Kentucky, Maine, Michigan, Nebraska, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, Texas, Washington, West Virginia, and Wisconsin.

[106] Alaska, Arizona, Colorado, Kansas, Mississippi, Missouri, South Dakota, and Wyoming.

[107] Alabama, Connecticut, Delaware, Georgia, Guam, Hawaii, Illinois, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Virgin Islands, Washington, West Virginia, and Wisconsin.

[108] Arkansas, District of Columbia, Indiana, Louisiana, Michigan, Mississippi, New Jersey.

[109] California, Florida, North Carolina, Oregon, and Puerto Rico.

The map in Figure 4 below illustrates the U.S. IECC residential energy code adoptions as of June 2015, and Figure 5 illustrates the ASHRAE commercial code adoptions by state. The maps are followed by the example of one state's—Massachusetts'—energy code adoptions.

Figure 4. U.S. IECC Residential Energy Code Adoptions

Source: U.S. Department of Energy, https://www.energycodes.gov/status-state-energy-code-adoption

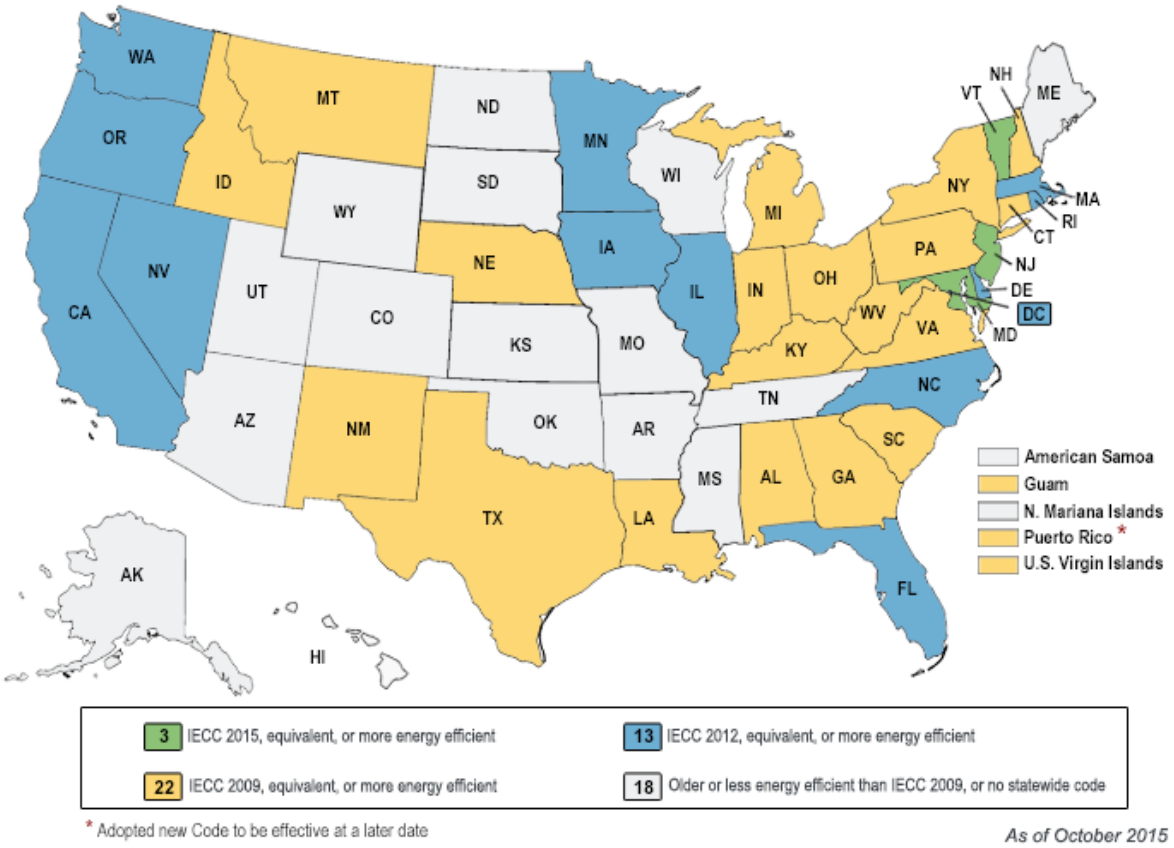
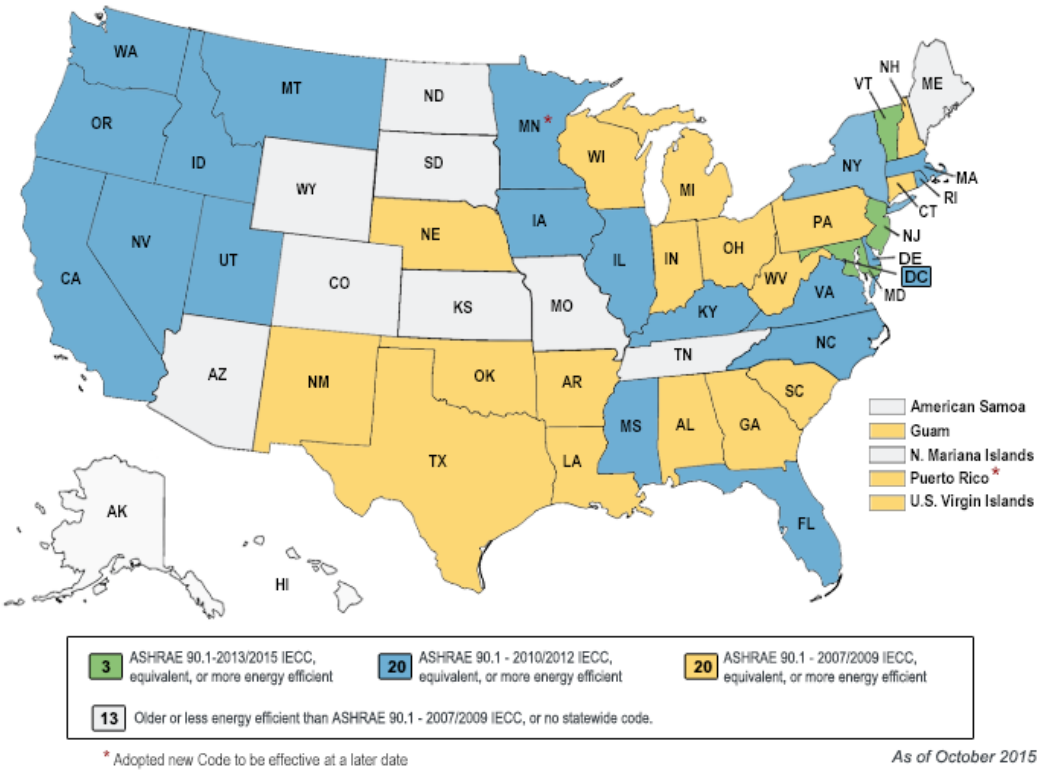


Figure 5. U.S. ASHRAE Commercial Energy Code Adoptions

Source: U.S. Department of Energy, https://www.energycodes.gov/status-state-energy-code-adoption



Example 1. Massachusetts Energy Codes

ADOPTION OF ENERGY-EFFICIENT STANDARDIZED CODES

Residential energy code

Massachusetts adopted the 2009 version of the International Energy Conservation Code (IECC), with Massachusetts amendments, as its residential energy code. The Board of Building Regulations and Standards (BBRS) later adopted the 2012 IECC, which was phased in during 2014 when it became the sole baseline energy code.

The Massachusetts building code allows towns and cities to adopt a more efficient building code, commonly called the "Stretch Code." More information and copies of the codes are available at the BBRS website.

The 2009 and 2012 IECC are available for purchase from the International Code Council. "Unofficial" copies of the Massachusetts amendments are available for download at the Office of Public Safety.

Commercial energy code

Massachusetts adopted the 2009 version of the International Energy Conservation Code (IECC), with Massachusetts amendments, as its commercial building energy code. The Board of Building Regulations and Standards (BBRS) later adopted the 2012 IECC, and ASHRAE 90.1-2010, which was phased in during 2014 when it became the sole baseline energy code.

The Massachusetts building code allows towns and cities to adopt a more efficient building code, commonly called the "Stretch Code." More information and copies of the codes are available at the BBRS website.

The 2009 and 2012 IECC are available for purchase from the International Code Council. "Unofficial" copies of the Massachusetts amendments are available for download at the Office of Public Safety.

LOCAL OPTIONS FOR CODES

The building codes referenced above are mandatory statewide in residential and commercial construction.

U.S. Dep't of Energy, Energy Efficiency & Renewable Energy, Building Energy Codes Program: Massachusetts DOE Status of State Energy Codes (last visited Oct. 20, 2015).

b. State Incentives and Tax Credits

Virtually all of the jurisdictions surveyed offer some incentives to increase energy efficiency in buildings. Twenty-three jurisdictions[110] offered an income tax deduction or credit for the purchase of alternative energy equipment or for the cost of energy conservation measures. Thirty-three jurisdictions[111] offered some property tax incentive for alternative energy systems or energy efficient buildings by exempting the system from the tax or excluding the system's value from the assessed value of the real property on which the system is installed. Twenty-three jurisdictions[112] give exemptions or special sales or excise tax treatment to energy efficiency related equipment. Four states[113] offer temporary sales tax exemptions, or "holidays," for energy efficient appliances or fixtures.

A major development in recent years has been the enactment of state laws that authorize property assessed clean energy, or PACE, financing. Laws that authorize PACE financing allow municipal governments to establish loan funds to assist property owners with energy efficiency-related improvements. The loans are repaid through a special assessment on the property tax for the affected property. Seventeen

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[110] Alabama, Arizona, Georgia, Hawaii, Idaho, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Missouri, Montana, New Mexico, New York, North Carolina, North Dakota, Oregon, Puerto Rico, Rhode Island, South Carolina, Utah, and West Virginia.

[111] Arizona, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Puerto Rico, Rhode Island, South Dakota, Texas, Vermont, Virgin Islands, Virginia, and Wisconsin.

[112] Arizona, Colorado, Connecticut, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Minnesota, Nebraska, New Jersey, New Mexico, New York, Puerto Rico, Rhode Island, Vermont, Virgin Islands, Washington, and Wisconsin.

[113] Georgia, Maryland, Missouri, and South Carolina.

jurisdictions[114] have enacted laws authorizing PACE financing. Eighty-three percent of the jurisdictions[115] surveyed now offer some form of loans, grants, or rebates to homeowners or property owners who make energy efficiency improvements to their homes or who install alternative energy systems. For instance, Alaska offers low-interest mortgages to purchasers of energy-efficient homes. New Jersey offers rebates to builders of energy efficient homes. The availability of funding for such programs varies over time.

A popular program in past years involved the paying of rebates to purchasers of Energy Star® certified appliances. Nearly all of these programs have exhausted their funding and have been closed as of April 2014.

Table 1 below summarizes this information, and is followed by the example of one progressive state's (Alaska's) statewide incentives and tax credits.

Table 1. State Incentives and Tax Credits

Jurisdiction	Income Tax Credit or Deduction for Efficiency-related Costs	Property Tax Incentives for Alternative Energy Systems or Energy Efficient Buildings	Special Sales or Excise Tax Treatment for Energy-Efficient Equipment	Special Loans, Grants, or Rebates for Energy Efficiency Improvements or Construction
AL	X			X
AK			X	X
AZ	X	X		
AR	X			X
CA		X		X

[114] Arkansas, California, Colorado, District of Columbia, Florida, Georgia, Illinois, Kentucky, Maine, Michigan, Minnesota, Missouri, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oregon, Rhode Island, Texas, Vermont, Virginia, and Wisconsin.

[115] Alabama, Alaska, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Guam, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Puerto Rico, Rhode Island, Texas, Utah, Vermont, Virginia, Virgin Islands, Washington, Wisconsin, and Wyoming.

Jurisdiction	Income Tax Credit or Deduction for Efficiency-related Costs	Property Tax Incentives for Alternative Energy Systems or Energy Efficient Buildings	Special Sales or Excise Tax Treatment for Energy-Efficient Equipment	Special Loans, Grants, or Rebates for Energy Efficiency Improvements or Construction
CO		X	X	X
CT		X	X	X
DE				X
DC				X
FL		X	X	X
GA	X		X	X
GU				
HI	X	X		X
ID	X	X	X	X
IL		X		X
IN		X	X	X
IA	X	X	X	X
KS		X		X
KY	X		X	X
LA	X	X		X
ME			X	X
MD	X	X	X	X
MA	X	X	X	X
MI	X			X
MN		X	X	X
MS				
MO	X		X	X
MT	X	X		X
NE			X	X
NV		X		X
NH		X		X
NJ		X	X	X
NM	X	X	X	X
NY	X	X	X	X
NC	X	X		X
ND	X	X		X
OH		X		X
OK				X
OR	X	X		X
PA				X
PR	X	X	X	X
RI	X	X	X	X
SC	X		X	

Jurisdiction	Income Tax Credit or Deduction for Efficiency-related Costs	Property Tax Incentives for Alternative Energy Systems or Energy Efficient Buildings	Special Sales or Excise Tax Treatment for Energy-Efficient Equipment	Special Loans, Grants, or Rebates for Energy Efficiency Improvements or Construction
SD		X		
TN				
TX		X		X
UT	X			X
VT		X	X	X
VI		X	X	X
VA		X		X
WA			X	X
WV	X			
WI		X	X	X
WY				X

Example 2. Alaska's Incentives and Rebates

PROPERTY TAX REBATES, INCENTIVES, OR EXEMPTIONS
Municipalities may enact ordinances that exempt residential renewable energy systems "used to develop means of energy production using energy sources other than fossil or nuclear fuel, including windmills and water and solar energy devices" from property taxation.

OTHER STATE INCENTIVES FOR RETROFITTING A HOME
Association Loan Program

The Alaska Housing Finance Corporation (AHFC) will lend money to fund homeowners' associations' common area improvements that are necessary for the residents' health and safety or for the building's structural integrity. These may include improvements made for energy efficiency. Loan limits are determined on a case-by-case basis. Click here for details.

Energy Efficiency Interest Rate Reduction Program

The AHFC offers interest rate reductions when

- they finance new or existing energy-efficient homes; or
- borrowers purchase and make energy improvements to an existing home.

Property may qualify for the Energy Efficiency Interest Rate Reduction (EEIRR) program, if it

- can be energy rated; and
- is otherwise eligible for AHFC financing.

for existing Interest rate reductions apply to the first $200,000 of the loan. A loan exceeding $200,000 receives a blended interest rate, rounded up to the next one-eighth of one percent. The percentage rate reductions depend on whether the home is new or existing, its energy rating, whether the property has access to natural gas, and other factors. Generally, EEIRR reductions are as follows:

- for new construction, from .25 to .5 percent;
- for existing energy efficient property, from .125 to .375 percent; and
- properties with energy improvements, from .125 to .75 percent.

For additional information regarding EEIRR rate reductions under various situations, application procedures, and other information and conditions, see the AHFC website here.
The EEIRR program is available through AHFC approved lenders.

Second Mortgage Program for Energy Conservation
The AHFC offers loans of up to $30,000, with a maximum term of 15 years, to finance energy improvements on owner-occupied properties. Applicants must select from the list of energy upgrades that are provided by an AKWarm-certified Energy Rater. All improvements must be completed within 365 days of loan closing. Improvements that are not listed may not be included in the loan. The interest rate is the Taxable Program or Rural Owner Occupied 15-year interest rate, plus .375.
If a borrower participates in the Home Energy Rebate Program (see below), the rebate received will be applied to the outstanding balance of the Second Mortgage for Energy Conservation loan.
For additional information, see the AHFC website here.

Home Energy Rebate Program

The Home Energy Rebate Program (HERP) provides a rebate to homeowners who want to make their own energy efficiency improvements on their home. The program requires a home energy rater to evaluate homes before and after the improvements. Rebates depend on the efficiency gained during the update.

HERP may provide the following rebates:

- up to $10,000 to homeowners who improve the energy efficiency of their homes; and
- a $7,000 rebate for qualified new 5 Star Plus homes and up to $10,000 for 6 Star new homes (see **here**).

Homeowners must have AKWarm Energy Ratings performed by AKWarm-certified energy raters before doing any work. The costs of ratings are eligible for reimbursement to the homeowner, up to total of $325. A post-improvement energy rating is done after the work is completed.
Only owner-occupied, year-round residences are eligible.
For additional information, see the AHFC website **here**.

Weatherization Program
Homeowners and renters may, subject to income limits, apply for the **Weatherization Program** through the weatherization provider in their area. Services will be provided to successful applicants at no cost.

Other
A few local utility companies provide incentives or rebates for the purchase of energy-efficient products.

Alaska Stat. § 29.45.050 (2014); **Alaska Housing Fin. Corp. (last visited Oct. 14, 2015)** (see links in text above for specifically relevant webpages).

c. State Energy Disclosure and Alternative Energy Provisions

Nine jurisdictions[116] have, or have recently enacted, statewide requirements that all residential real estate sellers disclose the building's energy usage to purchasers. Florida requires that such disclosures be made to the purchasers of new construction, and New Hampshire requires disclosures regarding the performance of a building's insulation. No statute or regulation was found that explicitly requires energy audits or inspections for all transactions.

[116] Alaska, California, Florida, Hawaii, Kansas, Maine, New Hampshire, South Carolina, and South Dakota.

Without state guidance, wind generation may depend on local opinion.

While wind generation provides an environmentally friendly way of generating energy, it raises sticky property law issues that are yet to be resolved. The unique structures used for wind generation will rarely meet any of the existing zoning ordinance requirements in a municipality that has not specifically addressed the issue.

This leaves the zoning variance process as the only route for the would-be wind generator. A zoning variance requires overcoming a fairly high legal hurdle under state law, but that legal hurdle is routinely ignored by local zoning boards who grant variances freely and subjectively. Zoning boards frequently make decisions based on the public response of neighboring property owners, rather than by the legal standard. Thus, even if a property owner is able to meet the legal standard required, a vocal minority could easily prevent a wind generation structure in a community.

Some states have required municipalities to recognize and allow for wind generation facilities in their zoning ordinances. Where this is not the case, a property owner's ability to erect a wind generation facility remains uncertain.

Twenty-two jurisdictions[117] have laws that make restrictions or covenants prohibiting or limiting the use of solar energy systems or collectors or other renewable energy restrictions unlawful. Easements for solar power are explicitly recognized by statute in twenty-nine jurisdictions.[118] (Note that other jurisdictions may recognize solar or wind easements; these were the only jurisdictions found that have enacted legislation explicitly recognizing them.)

Table 2 below includes this information for each state, and is followed by one state's (New Hampshire's) programs as an example.

[117] Arizona, California, Colorado, Delaware, Florida, Hawaii, Illinois, Louisiana, Maryland, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Oregon, Texas, Vermont, Virgin Islands, Virginia, Washington, West Virginia, and Wisconsin.

[118] Alaska, Georgia, Idaho, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Rhode Island, South Dakota, Tennessee, Utah, Virginia, Washington, and Wyoming.

Table 2. State Energy Disclosure & Alternative Energy Provisions

Jurisdiction	Required Energy Disclosures to Purchasers	Solar Energy Restrictions Unlawful	Easements for Solar Power Recognized
AL			
AK	X	X	X
AZ			
AR			
CA	X	X	
CO		X	
CT			
DE		X	
DC			
FL	X	X	
GA			X
GU			
HI	X	X	
ID			X
IL		X	
IN			X
IA			X
KS	X		X
KY			X
LA		X	
ME	X		X
MD		X	X
MA			X
MI			
MN			X
MS			
MO			X
MT			X
NE			X
NV		X	X
NH	X	X	X
NJ		X	X
NM		X	X
NY			X
NC		X	
ND			X

Jurisdiction	Required Energy Disclosures to Purchasers	Solar Energy Restrictions Unlawful	Easements for Solar Power Recognized
OH			X
OK			
OR		X	X
PA			
PR			
RI			X
SC	X		
SD	X		X
TN			X
TX		X	
UT			X
VT		X	
VI		X	
VA		X	X
WA		X	X
WV		X	
WI		X	
WY			X

Example 3. New Hampshire's Solar & Wind Power Provisions

ENERGY USE DISCLOSURES

Real estate licensees must disclose to a prospective buyer or tenant any material on-site environmental condition affecting the subject property of which the licensee has actual knowledge. There is no affirmative obligation on the part of the licensee to investigate material defects.

Information "relative to the insulation" of a dwelling, including the type and location of the insulation, must be disclosed.

Before or during the preparation of an offer for the purchase and sale of real property and before the signing of the agreement, the seller must disclose in writing to the buyer whether any metered public utility services that the buyer may be "responsible for paying as a condition of such utility service is provided under a tariff with unamortized or ongoing charges for energy efficiency or renewable energy improvements." The disclosure must include, if known:

- the charges' remaining term and amount; and
- any estimates or documentation of gross or net energy or fuel savings resulting from the financed or amortized improvements and investments.

The buyer must sign a copy of the disclosure to acknowledge its receipt.
If information regarding the required disclosure is not available, that fact must also be conveyed, in writing.

N.H. Rev. Stat. §§ 331-A:25-b, -c; 477:4-d, -h; :49, :50; 674:63 (2015).

OTHER RELEVANT PROVISIONS

Solar Skyspace Easements

Property owners may create easements to ensure the exposure of a solar collector to the sun. The easement must be in writing, and must be recorded. Easements run with the land and last at least ten years, unless otherwise stated.

Documents that create a solar easement must include, at a minimum, the following:

- a description of the vertical and horizontal angles at which the solar skyspace easement extends over the real property subject to the easement, or any other description which describes the 3-dimensional space, or the place and times of day in which an obstruction to solar energy is prohibited or limited;
- the terms or conditions under which the easement is granted or shall be terminated;
- provisions for compensation of the benefited landowner in the event of interference with the enjoyment of the easement or compensation of the burdened landowner for maintaining the easement; and
- a description of the real property subject to the solar skyspace easement and a description of the real property benefiting from the easement.

A planning board may not require a landowner to grant an easement.

Small Wind Energy Systems

Local ordinances that regulate the installation and operation of small wind energy systems may not unreasonably limit or hinder the performance those systems. Unreasonable limits or hindrances to performance include the following:

- prohibiting small wind energy systems in all districts within the municipality;
- restricting tower height or system height through application of a generic ordinance or regulation on height that does not specifically address allowable tower height or system height of a small wind energy system;
- requiring a setback from property boundaries for a tower greater than 150 percent of the system height;
- setting a noise level limit lower than 55 decibels, or not allowing for limit overages during short-term events such as utility outages and severe wind storms; or
- setting electrical or structural design criteria that exceed applicable state, federal, or international building or electrical codes or laws.

N.H. Rev. Stat. §§ 331-A:25-b, -c; 477:4-d, -h; :49, :50; 674:63 (2015).

3. Local Initiatives

In addition to national, regional, and state action, many cities and counties have taken the green bull by the horns. Austin, Texas, for example, imposed a mandatory energy audit requirement for home sales in that city, and Montgomery County, Maryland requires that home sellers disclose their energy expenditures for the last twelve months. The types of local programs are as varied as the cities themselves, as the following discussion illustrates.

a. City Green-building Programs

In addition to the LEED communities discussed above, other **green-building city programs** include the following:

- The City of **Dallas, Texas** was one of the first major cities in the U.S. to pass comprehensive green building standards for both new residential and commercial construction. The City recognizes the link between the building code's intent of "safeguarding the public health, safety and general welfare" and preserving a safe and healthy natural environment. The standards incorporate sustainability through energy efficiency, water conservation, and resource reuse and reduction, which translates into a stronger economy and area growth.[119]
- The City of **Lakewood, Ohio** Green Building Policy initially required the City to incorporate green building principles and practices into the design, construction, and operation of all city facilities, and to evaluate all land purchases for future

[119] *See* City of Dallas, *Sustainable Development and Construction—Green Building*, http://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/pages/greenBuilding.aspx.

development on the basis of reducing environmental impacts. The greater Cleveland area, of which Lakewood is a part, is now developing a plan to extend those principles, in an affordable way, to residential and commercial properties.[120]

- The City of **Berkeley, California** requires that new buildings, alterations, and additions meet the requirements of the California State Green Building Code (CALGreen)**.** In addition, Berkeley has supplemental green building policies that ensure that residents continue to divert waste from landfills, reduce energy and water usage in their buildings, and help the community meet its environmental and Climate Action Plan goals.[121]
- The **New Pattonsburg, Missouri** Declaration of Community Responsibility, Covenants, and Restrictions encourages the sustainable construction, energy efficient design, and orderly development of the town.[122]

[120] *See* Sustainable Cleveland, *Cleveland Green Building Coalition*, http://www.sustainablecleveland.org/working-groups/current-working-groups/green-building-coalition/.

[121] *See* City of Berkely, *Energy and Sustainable Development—Green Building Requirements*, http://www.ci.berkeley.ca.us/Green_Building_Requirements/.

[122] *See* Smart Communities Network, http://www.smartcommunities.ncat.org/codes/nwpatdec.shtml.

b. City Solar Energy Measures

Local **solar-access and solar energy measures** include the following examples:

- **Port Arthur, Texas,** has an ordinance that provides solar access protection and establishes requirements for street design in new building projects to maximize solar energy benefits.[123]
- **Boulder, Colorado**'s ordinance limits the amount of permitted shading by new construction and requires that new buildings be sited to provide good solar access.[124]
- **Soldiers Grove, Wisconsin**'s ordinance establishes energy performance standards for new buildings, including a requirement that non-residential buildings receive a minimum of fifty percent of their heating from solar energy.[125]
- **New Pattonsburg, Missouri**'s ordinance provides for protection of solar access and encourages alternative housing design, the use of wind energy conversion systems, and other resource-efficient technologies.[126]

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[123] *See id.* at http://www.smartcommunities.ncat.org/codes/portatx_gb.shtml.

[124] *See id.* at http://www.smartcommunities.ncat.org/codes/boldera1_gb.shtml.

[125] *See id.* at http://www.smartcommunities.ncat.org/codes/soldiers_gb.shtml.

[126] *See id.* at http://www.smartcommunities.ncat.org/codes/solar.shtml.

c. Local Carbon-neutrality Requirements

An alternative approach to charging fees for carbon emissions (or other pollutants) is to impose a "carbon neutrality" requirement.[127] Being "carbon neutral" means achieving net-zero carbon emissions, or having a net-zero carbon footprint, by balancing carbon output (including the burning of fossil fuels) with equivalent environmentally friendly efforts (such as using alternative energy or planting trees). The term is also used to describe the practice of "carbon offsetting," which includes paying others to remove carbon dioxide from the atmosphere. Funding efforts that help prevent future greenhouse gas emissions is one popular form of offset.[128]

Although early carbon-neutral initiatives appeared to be focused at the institutional level, such as on specific university or business campuses, or in regions outside the United States, U.S. cities soon caught on—indeed, according to a 2009 Newsweek magazine article, a "Carbon Neutral Phoenix Could Be on the Way."[129] The Carbon Neutral Cities Alliance now includes Boston, Massachusetts; Boulder, Colorado; Minneapolis, Minnesota; New York, New York; Portland, Oregon; San Francisco, California; and Seattle, Washington.[130]

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[127] *See, e.g.*, National Resources Defense Council, *Footloose and Carbon-Free*, http://www.nrdc.org/thisgreenlife/0606.asp?gclid=CK3127WPqJoCFQJvswodNUDk1g.

[128] *See, e.g.*, The Carbon Neutral Company, http://www.carbonneutral.com/.

[129] *See* Huffington Post (from *Newsweek*), Mar. 31, 2009, http://www.huffingtonpost.com/2009/03/31/carbon-neutral-phoenix-co_n_181368.html (video).

[130] *See* Urban Sustainability Directors Network, *Carbon Neutral Cities Alliance*, http://usdn.org/public/Carbon-Neutral-Cities.html.

D. Community Examples

Exemplary programs in specific communities shed additional light on the types of innovative measures that can affect the day-to-day business of real estate professionals.

1. Atlanta, Georgia's EarthCraft Program

The Expansion of EarthCraft

In 2001, EarthCraft Renovation was created to offer guidelines for renovating existing homes to save energy and water while improving indoor air quality. The program has grown in recent years as tax incentives and utility rebate programs have lowered the cost of renovation.

Launched in 2004, EarthCraft Multifamily was the first multifamily-specific green building program in the U.S. The program serves multifamily market-rate and affordable housing units including new construction, renovation, and adaptive reuse.

EarthCraft Communities was launched in 2005 to help land developers and government agencies create sustainable communities based on principles of efficiency, resource management, community connectivity, and walkability.

Established in 2008, EarthCraft Light Commercial is a cost-effective and environmentally responsible prescriptive pathway to certification for commercial buildings under 25,000 square feet.

EarthCraft Sustainable Preservation, the first green building certification for historic buildings, was founded in 2014 and provides guidance on alterations that make historic buildings more energy and water efficient.

See Who Is EarthCraft, http://www.earthcraft.org/who-is-earthcraft/.

The EarthCraft House™ program was created in 1999 as a residential green building program of the Greater Atlanta Home Builders Association.[131] EarthCraft House™ serves as a blueprint for energy-efficient homes; if homes meet the program's standards, they are "certified" as EarthCraft Houses™. Since the program's inception, more than 430,000 unites have been certified by EarthCraft.[132]

Based on a consideration of various factors, including site planning, efficient building envelope, efficient design, efficient materials, waste management, indoor air quality, and water conservation, a house earning a minimum

[131] *See* http://www.earthcrafthouse.com.

[132] *Id.*

of 150 points may be certified as an EarthCraft House™. Builders can also achieve Select or Premium status by exceeding the standard criteria.[133]

As homebuyers become increasingly concerned about rising energy and water costs, one way to attract buyers in a "down" market is to entice them with potential significant savings in energy and maintenance expenditures, which can be accomplished through the EarthCraft House™ program.[134] The program also offers training and resources to REALTORS® selling EarthCraft™ properties.[135]

2. Austin, Texas's Mandatory Energy Audits

An Austin, Texas energy ordinance requires that homeowners have an energy efficiency audit performed prior to selling their home.[136] The audits focus on finding leaks and closing gaps in air-conditioning ducts, improving attic insulation, fitting solar screens on windows, and reducing the loss of cooled air through cracks. Energy-efficiency improvements are not required in most cases, but disclosure of the audit results is.[137] These requirements became effective in mid-2009.[138] The ordinance does

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[133] *Id.*

[134] For EarthCraft™ guidelines and Worksheets, see the Resources page at http://www.earthcraft.org/builders/resources/.

[135] See the Real Estate Professionals page at http://www.earthcraft.org/earthcraft-professionals/real-estate-professionals/.

[136] See Austin Energy, Energy Conservation Audit and Disclosure Requirement Ordinance, http://austinenergy.com/wps/portal/ae/programs/ecad-ordinance/energy-conservation-audit-and-disclosure-ordinance/!ut/p/a1/jZFBT8JAEIV_C4celx2XqMXbWkmtCD1Zai9mbYd2k7LbzG4x8ustciEElLlN5s03eW94wXNeGLXVtfLaGtXu--LuA0QoniMQSXwvQpBx9Di_zZY30xAGwfuxIJ2lT5BkaSbTeQRxNLly_0JJ-G__5YoDghbRouZFp3zDtFlbnqNBqr9ZaY1D2v66ZaqvtGfKVKzSrmyt6wmZpUobZUrcg6T5nIQDiHCNhDTuaUio8b57CCAA1TuvzYE8Lu0mgK_OBdBZ8qodxhiAQ0Vlcw7VWOd5forgK178ZVDOxKngzAcOgssRd5u3fPeKq9BPEy1Hox9kQsl-/dl5/d5/L2dBISEvZ0FBIS9nQSEh/.

[137] *Id.*

not specify who must perform the audits, or what the qualifications of the auditor must be, but Austin Energy provides a list of audit service providers on its website.[139] The ordinance is now limited to requiring an energy audit by the seller as a part of the standard disclosures in a real estate sale as a result of REALTORS'® negotiations with the city council.

3. Babylon, New York's Aid for Energy Conservation Measures

The Long Island Green Homes (LIGH) program[140] is a self-financing residential retrofit program in Babylon, New York for upgrading the energy efficiency of existing homes, with little up-front cost to the homeowner.[141] The town pays a licensed contractor to make energy-efficiency improvements to a home, and then the homeowner repays the town for the improvements on a pre-set monthly basis, from energy savings experienced as a result of the improvements. Once the obligation is satisfied, which generally occurs in six to ten years, the remainder of the savings goes directly to the homeowner. If the homeowner moves before the obligation is satisfied, the debt is assigned to the home.[142]

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[138] *Id.*

[139] See the list of ECAD Auditors at http://austinenergy.com/wps/wcm/connect/6448f917-64bc-416f-a3cf-d792ce99d18c/ECAD-EnergyProfessionalsList.pdf?MOD=AJPERES.

[140] *See* Long Island Green Homes, http://www.ligreenhomes.com/.

[141] *See* Long Island Green Homes FAQs, http://ligreenhomes.com/faq#40.

[142] *See* Carolyn Nardiello, *In Babylon, an Incentive for Energy Efficiency*, New York Times, Jan. 18, 2009, at L15, *available at* http://www.nytimes.com/2009/01/18/nyregion/long-island/18greenli.html?n=Top/Classifieds/Real%20Estate/Locations/New%20York/Long%20Island; Long Island Green Homes FAQs, http://ligreenhomes.com/faq#40.

After just three years in operation, the Long Island Green program announced that it had completed its six-hundredth whole-home energy retrofit, signifying that it had succeeded in reaching one percent of all single family homes in the Town of Babylon. Retrofitting just 600 single-family homes in Babylon means that:

- Every year, they prevent 2,777 metric tons of CO^2 from entering the air.
- Every year, $682,000 is spent in the town's local economy instead of on energy bills.
- Every year, they reduce our country's energy dependence by 4,634 barrels of oil.[143]

4. Montgomery County, Maryland's Disclosure Requirement

A Montgomery County ordinance ensures that homebuyers are informed of a property's energy performance before the sale, and helps them take advantage of financing incentives that may be available. The new requirements, which went into effect in 2009, apply to all single-family homes and mandate that, before signing a contract to purchase a home, the seller provide to the buyer copies of electricity, gas, and home heating oil bills, or a cost and usage history, for the twelve months prior to the sale. If the home was unoccupied for the previous twelve months or any portion thereof, the seller must provide the buyer with the required information for any part of the prior twelve months that the seller occupied the home.[144]

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[143] *See* Long Island Green Homes, *LIGH Hits 1%!*, http://ligreenhomes.com/blog/item/ligh_hits_1.

[144] *Energy Useage [sic] Disclosure Requirement Starts Jan 1 2009!*, Rockville Forum, Dec. 25, 2008, http://www.topix.com/forum/city/rockville-md/TIEJLLD5A410PP6NM.

The energy disclosure requirement—actually called a *utility* disclosure requirement—requires sellers (not agents) to disclose the utility bills. There are two parts to the disclosure. The first is a general educational disclosure, which requires sellers to direct buyers to web-based information on energy audits and energy efficiency improvements. The language on the website was drafted by the local REALTORS® Association and approved by the local Department of Environmental Protection. The second part of the disclosure requirement is the actual energy disclosure. The requirement applies to all owner-occupied single-family homes, including townhomes and condominiums.

The push for the new disclosure requirement began when a local council member sought to require energy audits as a part of every real estate sale. He modified his initial proposal, urging instead the idea of mandatory energy audits as a part of every home inspection. Area REALTORS® initially opposed that proposal—in Maryland, home inspections are not mandatory, and adding an energy audit to the cost would drive up the price and discourage inspections. But a compromise was struck, and the REALTORS® helped push a plan that would focus on education and voluntary action. The emphasis became educational, seeking to inform the public of the importance of energy efficiency and the impact it has on energy bills. The Association created forms, and worked with utilities to learn how customers could obtain copies of their energy bills.[145]

[145] Telephone Interview with Meredith Weisel, former Vice President, Public Policy, & Legal Counsel, Greater Capital Area Association of REALTORS® (June 3, 2009).

For the most part, implementation of the measure went smoothly.[146] Agents should be informed that getting the information is not their responsibility, but they must tell the sellers to do it. Initially, the hardest part was getting the utilities to provide the information, and making sure that the information was easily accessible. One specific access problem is making the information available to sellers who do not use the Internet. Another issue has been the definition of "the previous twelve months," as it relates to the disclosure requirement. Ultimately, it was clarified that the phrase refers to the twelve months prior to listing.[147]

The idea for another local initiative—HELP, the Home Efficiency Loan Program—came from the same council member who initiated the disclosure law. It is a voluntary program to encourage energy efficiency improvements.[148] Resale homes constitute the largest segment of the Montgomery County real estate market, and thus improving their energy efficiency is likely to have a great impact. The idea of no- or low-interest HELP loans is to encourage individual homeowners to make affordable improvements to reduce their carbon footprint. Homes that have taken advantage of the offer to become more energy efficient will be identified upon resale. When the homeowners take out the HELP loan, they agree with the county that the loan will be a special assessment and repaid through property taxes. The assessment will stay with the home, but will not be a lien.[149]

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[146] *Id.*

[147] *Id.*

[148] *Id.*

[149] *Id.*

The point of the REALTORS'® involvement in the HELP measure, as well as the energy disclosure requirement, was to "change the conversation." The county government was going to pass *some* law, and the REALTORS® worked with the county so that their voices would be heard. The effort was to steer the county away from burdensome point-of-sale requirements, and to encourage an understanding of the seller's perspective—to come up with solutions, rather than simply saying "no." In other words, the REALTORS'® emphasis was on voluntary change, not burdening properties with mandatory, costly point-of-sale requirements.[150]

5. Other Community Responses to Climate Change

a. Gainesville, Florida Solar Power Payments

A financing technique that gave Europe an early lead in renewable energy has crossed the Atlantic. This solar-incentive scheme involves paying homeowners and businesses top dollar for producing green energy beyond what they themselves consume. In Germany, for example, a homeowner with a rooftop solar system may be paid four times more to produce electricity than the rate paid to a coal-fired power plant. The new payment method is referred to as a "feed-in tariff." It is, in essence, a mandate by the government telling a utility to pay above-market rates for green electricity. It shifts the burden of subsidizing green energy from taxpayers to electricity ratepayers. The

[150] *Id.* For more information on the HELP program, see *Home Energy Efficiency Loan Programs*, http://marylandenergyaudit.net/256-2/.

technique includes assurances that a utility will pay these high rates for a long period, often for as long as fifteen to twenty-five years.[151]

In March 2009, Gainesville, Florida became the first city in the United States to introduce these higher payments for solar-generated power, which is otherwise too expensive for many families and businesses to install. Other cities, like Los Angeles, were soon intrigued by the concept. Not only do solar-heated homes save the homeowner thousands on utility bills, they may also fetch a much higher price on resale—a point that should capture the attention of REALTORS® as well.[152]

Older solar heating methodologies are less popular, because the systems depreciate quickly. In fact, the market discounts them by nine percent each year they age, even though the systems have a life span of about twenty-five years, according to a study performed by Berkeley Lab in California. Recently, however, homeowners have embraced "photovoltaic" (PV) solar systems as means to power their homes. Roughly thirty-two percent of the total PV systems in the U.S. were added in 2013 alone, spurred by technology improvements and aggressive promotion by states, according to the Solar Energy Association. Roughly half a million homes in the U.S. used PV systems for power in 2014, with the systems being most popular in California, Hawaii, and Arizona.[153]

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[151] *See* Kate Galbraith, *Europe's Way of Encouraging Solar Power Arrives in the U.S.*, New York Times Mar. 13, 2009, at B1, *available at* http://www.nytimes.com/2009/03/13/business/energy-environment/13solar.html?_r=3&ref=business.

[152] *See* Sanette Tanaka, *Payback Time for Solar Power Energy Systems*, The Wall Street Journal, May 22, 2014, http://www.wsj.com/articles/SB10001424052702304198504579571960667560156.

[153] *Id.*

In the Berkeley Lab study, researchers examined 1,598 PV homes and 6,140 non-PV homes that sold in California between 2000 and 2009, and concluded that the PV homes sold for an average of $24,705 more than non-PV homes. The research was controlled for home features, like square footage and number of bathrooms, to isolate the effect of having a photovoltaic system. The study, "Exploring California PV Home Premiums," was published by the Berkeley Lab and funded by the U.S. Department of Energy. Photovoltaic systems make up about a quarter of some agents' listings in Palm Springs, California, "It helps sell a property, to be quite honest," says Benjamin Leaskou, CEO of Leaskou Partners.[154]

b. New York City—The Green Apple?

New York City and the state of New York have initiated a number of climate initiatives. In response to the climate challenge, former Governor Paterson implemented new requirements applicable to large-scale real estate development throughout the state. In New York City, PlaNYC includes an initiative to strengthen the City's energy and building codes to make buildings more energy efficient and sustainable.[155] The City explored LEED® requirements for new construction, but concluded that LEED® was designed as tool that promoted innovation more than regulation. Therefore, the City turned to its design and real estate community for suggestions. In July 2008, then-Mayor Bloomberg and then-Speaker of the City Council Christine Quinn asked the Urban Green Council (the New York chapter of the U.S. Green Building Council) to

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[154] *Id.*

[155] *See* NYC Mayor's Office of Sustainability, *Green Buildings & Energy Efficiency*, http://www.nyc.gov/html/gbee/html/codes/codes.shtml.

convene a task force of more than 200 experts to recommend changes in the City's codes and regulations to make buildings more sustainable.[156]

The resulting coalition produced 111 recommendations to bring the most cost-effective green building benefits to all buildings in the City. The proposals address a wide array of building impacts, including water consumption, landscape practices, materials toxicity, building resilience, occupants' physical activity, and energy efficiency. Within the first two years after the proposals were introduced, many had already been incorporated into city law or practice, while others remained in the process of being crafted into workable laws.[157]

In addition to the Green Codes Task Force enacted proposals, additional New York City codes promote sustainability through green buildings and energy efficiency, including the following:

- **Energy Code.** New York City adopted its own Energy Code, called the New York City Energy Conservation Code (NYCECC). The Code enables the City to follow rules best adapted to New York City's needs and adopt amendments to make significant gains in energy efficiency.
- **Zone Green.** Zone Green amends zoning regulations to help property owners install a wide range of green features in new and existing buildings. By removing obstacles caused by previous zoning regulations, Zone Green unlocks opportunities to make buildings greener.

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[156] *Id.*

[157] *Id.*

- **Heating Oil Regulations.** Heating Oil Regulations provide crucial health benefits by improving air quality for all New Yorkers. Air pollution from heating oil burned in New York City buildings contributes to air pollution levels that result each year in more than 3,000 deaths, 2,000 hospital admissions for lung and heart conditions, and about 6,000 emergency department visits for asthma. The City is working to enact the 111 recommendations made by the Green Codes Task Force.[158]

Fifty-three of the 111 recommendations had been enacted or partially enacted by April 2015.[159] Cumulatively, these new laws and regulations will improve air quality, reduce carbon emissions, keep waste out of landfills, and clean the City's harbor by detaining more stormwater through green technologies. Some of the impacts will be immediate, and most are substantial. Already, 2,100 architects and engineers have been trained in the Energy Code. After 2015, 100,000 tons of asphalt waste will be diverted from landfills each year. By 2030, there will be five percent less citywide carbon emissions, ten percent lower lighting energy costs, and thirty Central Park Reservoirs' worth of conserved water.[160]

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[158] *Id.*

[159] *Id.*, GCTF Enacted Proposals, http://www.nyc.gov/html/gbee/html/codes/enacted.shtml.

[160] *Id.*, *Green Buildings & Energy Efficiency*, http://www.nyc.gov/html/gbee/html/codes/codes.shtml.

Conclusion

IV. Conclusion

Since NAR® first visited the climate change issue in 2009's White Paper, policymakers continue moving quickly to address the issue of climate change at all levels of government. It still may not be "easy being green," as REALTORS® adjust to the ever-evolving numerous and varied policies related to climate change. Still, there is perhaps a "Rainbow Connection" to an unprecedented opportunity. REALTORS® can provide new and distinguishing value to the real estate consumer and commercial developers if they are well versed in the relationship between climate change and a potential real estate purchase. Although there have been many developments on the climate-change front, one thing has not changed—the pivotal role of REALTORS®, who can effect environmental change by encouraging responsible legislation, green building, energy efficiency, and overall environmental conscientiousness, all while serving the best interests of their communities, their clients, their profession, and their personal bottom line.

Through it all, REALTORS® must keep their clients informed of the potential impact of climate change on properties that are for sale—such as rising sea levels and increased hurricane risks. The role of advisor has taken on yet a new dimension in a climate-changing world.