

## ARTICLES

### The Next Greenhouse Gas Executive Order?

by Charles Openchowski

*Editors' Summary: Although the United States has not ratified the Kyoto Protocol, governments at local, state, regional, and even federal levels have taken steps to begin reducing greenhouse gas (GHG) emissions. In this Article, Charles Openchowski explains that five presidential Executive Orders mentioning GHGs have been signed since the Kyoto Protocol was drafted, two others related to GHGs have been issued, and several state governors have signed similar orders. He examines the orders on both the federal and state levels and proposes text for what the next presidential Executive Order could look like. He concludes the Article with some predictions on climate change's growing import on the political and economic fronts.*

Since the Kyoto Protocol's drafting 10 years ago,<sup>1</sup> some countries that signed the agreement have taken active steps to start reducing their overall greenhouse gas (GHG) emissions, e.g., the European Union's cap-and-trade program. Even so, global growth of those emissions has continued and is expected to increase.<sup>2</sup> That growth and its effect

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1. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, U.N. Doc. FCCC/CP/1997/L/7/Add/1, art. 3.1 & Annex B, *reprinted in* 37 I.L.M. 22 (1998).
2. See Intergovernmental Panel on Climate Change (IPCC), 2007: *Summary for Policymakers*, in CLIMATE CHANGE 2007: MITIGATION. CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (B. Metz et al. eds., 2007) [hereinafter CLIMATE CHANGE 2007]:

A range of policies, including those on climate change, energy security, and sustainable development, have been effective in reducing GHG emissions in different sectors and many countries. The scale of such measures, however, has not yet been large enough to counteract the global growth in emissions . . . The SRES (non-mitigation) scenarios project an increase of baseline global GHG emissions . . . Hence CO<sub>2</sub> emissions between 2000 and 2030 from energy use are projected to grow 40 to 110% over that period.

See also H.H. Rogner et al., 2007: *Introduction*, in CLIMATE CHANGE 2007, *supra* at 98.

Atmospheric CO<sub>2</sub> concentrations have increased by almost 100 [parts per million (ppm)] in comparison to its preindustrial level, reaching 379 ppm in 2005, with mean annual growth rates in the 2000–2005 period that were higher than those in the 1990s. . . . The numerous mitigation measures that have been undertaken by many Parties to the UNFCCC and the entry into force of the Kyoto Protocol in February 2005 (all of which are steps towards the implementation of Article 2) are inadequate for reversing overall GHG emission trends.

on climate change have been getting greater attention worldwide, from Hollywood to Stockholm, and from the United Nations (U.N.) to the U.S. Congress.

During this time frame, five presidential Executive Orders that specifically mention GHG emissions have been signed. Two others indirectly dealing with topics closely related to such emissions have been issued. At the same time, a number of governors have signed Executive Orders or similar directives in conjunction with state legislative and administrative initiatives put in place to curb GHG emissions.

Certain common elements have emerged from these documents. For example, some of them set short-term and long-range goals for lowering GHG levels; these are generally expressed in percentage terms using a baseline year and normally are projected out to the year 2050. Many identify particular activities within the broad array of potential partial solutions, such as encouraging energy efficiency (EnergyStar<sup>®</sup>), promoting green building designs (Leadership in Energy and Environmental Design (LEED) ratings), boosting renewable energy use (solar photovoltaic systems, wind, tides), increasing reliance on alternative fuels (clean diesel, ethanol), and regulating carbon dioxide (CO<sub>2</sub>) automobile tailpipe emissions. Others establish reporting requirements, create GHG emission inventories, or set in motion studies to explore additional measures for achieving overall GHG reduction goals.

At the federal level, the size and economic clout of all federal agencies combined translates into significant leverage on these issues:

The Federal Government, as the Nation's largest energy consumer, shall significantly improve its energy management in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change. With more than 500,000 buildings, the Federal Government can lead the Nation in energy effi-

cient building design, construction, and operation. As a major consumer that spends \$200 billion annually on products and services, the Federal Government can promote energy efficiency, water conservation, and the use of renewable energy products, and help foster markets for emerging technologies.<sup>3</sup>

Reflecting this unique potential to exert substantial influence over an increasingly visible issue, this Article summarizes some of the key provisions found in Executive Orders issued by presidents and governors to address GHG emissions; then, drawing on selected portions of these orders and recent developments, it includes a draft of what the next presidential GHG Executive Order could look like. As an available tool, such an order could not only lead to a noticeable improvement in reducing GHG emissions, it also could serve as an important catalyst for designing an environmentally sustainable way to meet future energy needs.

## I. Presidential Executive Orders

A few months after the United States signed the U.N. Framework Convention on Climate Change,<sup>4</sup> Congress enacted the Energy Policy Act of 1992.<sup>5</sup> That statute, amended several times since, addresses many of the issues implicated by the ongoing debate about the future of fossil fuel combustion and its role in global warming. For example, the Act encourages increased energy efficiency as well as the development and use of alternative fuels and renewable energy sources. It also contains a voluntary GHG emissions reporting provision, which the U.S. Department of Energy has implemented through general guidelines.<sup>6</sup> With regard to federal agencies specifically, the Act contains “[m]inimum [f]ederal fleet requirements” that set forth a schedule for acquiring light-duty alternative fuel vehicles.<sup>7</sup>

A number of presidential Executive Orders have been signed to implement specific aspects of the Energy Policy Act and more generally to give guidance to federal agencies on GHG emissions.<sup>8</sup> Some of the relevant provisions, which can serve as starting points in crafting a consolidated set of instructions to federal agencies, have appeared in the policy and purpose statements of these orders, while other relevant

provisions have appeared in sections setting actual GHG reduction goals or in sections dealing with related objectives.

### A. Policy and Purpose Statements

The reduction of GHG emissions is addressed in the policy section of several presidential Executive Orders. For example, Executive Order No. 13123, entitled “Greening the Government Through Efficient Energy Management,” begins with the following statement:

Section 101. *Federal Leadership.* The Federal Government, as the Nation’s largest energy consumer, shall significantly improve its energy management in order to save taxpayer dollars and reduce emissions that contribute to air pollution and global climate change.<sup>9</sup>

Similarly, the first section of Executive Order No. 13149, which calls for “Greening the Government Through Federal Fleet and Transportation Efficiency,” provides:

Section 101. *Federal Leadership.* The purpose of this order is to ensure that the Federal Government exercises leadership in the reduction of petroleum consumption through improvements in fleet fuel efficiency and the use of alternative fuel vehicles (AFVs) and alternative fuels. Reduced petroleum use and the displacement of petroleum by alternative fuels will encourage new technologies, enhance the United States’ energy self-sufficiency and security, and ensure a healthier environment through the reduction of GHGs and other pollutants in the atmosphere.<sup>10</sup>

The reference to GHG emissions in Executive Order No. 13134, “Developing and Promoting Biobased Products and Bioenergy,” is more indirect, made in the context of potential technologies that might lead to promising results:

Section 1. *Policy.* Current biobased product and bioenergy technology has the potential to make renewable farm and forestry resources major sources of affordable electricity, fuel, chemicals, pharmaceuticals, and other materials. Technical advances in these areas can create an expanding array of exciting new business and employment opportunities for farmers, foresters, and other businesses in rural America. These technologies can create new markets for farm and forest waste products, new economic opportunities for underused land, and new value-added business opportunities. They also have the potential to reduce our Nation’s dependence on foreign oil, improve air quality, water quality, and flood control, decrease erosion, and help minimize net production of GHGs. It is the policy of this Administration, therefore, to develop a comprehensive national strategy, including research, development, and private sector incentives, to stimulate the creation and early adoption of technologies needed to make biobased products and bioenergy cost-competitive in large national and international markets.<sup>11</sup>

Finally, Executive Order No. 13432, signed May 14, 2007, is the only presidential Executive Order to date that specifically mentions GHG emissions in its title—“Cooper-

3. Exec. Order No. 13123, 64 Fed. Reg. 30852 (June 8, 1999). While the actual numbers used are out of date at this point, the federal government’s relative scale and power to impact the market place remain impressive.

4. United Nations Framework Convention on Climate Change, May 29, 1992, U.N. Doc. A/AC.237/18 (1992), reprinted in 31 I.L.M. 849 (1992).

5. Pub. L. No. 102-486, 106 Stat. 2871, Oct. 24, 1992.

6. 10 C.F.R. §300. One purpose of the guidelines is “to encourage . . . government agencies . . . to submit annual reports of their greenhouse gas emissions.” *Id.* §300.1(a).

7. 42 U.S.C. §13212. In contrast to other federal environmental statutes that require federal facilities to comply with federal, state and local laws to the same extent as private parties (*see, e.g.*, waiver of sovereign immunity provisions in §7418 of the Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR STAT. CAA §§101-618, in §6961 of the Resource Conservation and Recovery Act, 42 U.S.C. §§6901-6992k, ELR STAT. RCRA §§1001-11011, and §1323 of the Federal Water Pollution Control Act, 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607), here Congress clearly intended for federal facilities to assume a leadership role by taking concrete steps not yet required of the private sector.

8. For purposes of comparison in this Article, the orders are described in present tense even though some have been superseded and/or revoked (*see infra* note 15).

9. Exec. Order No. 13123, 64 Fed. Reg. 30852 (June 8, 1999).

10. 65 Fed. Reg. 24608 (Apr. 26, 2000).

11. 64 Fed. Reg. 44640 (Aug. 16, 1999). In §2, the order calls for taking full advantage of the potential economic and environmental benefits of bio-energy,” and lists “reducing greenhouse gas emissions” as a “national environmental objective.”

ation Among Agencies in Protecting the Environment With Respect to Greenhouse Gas Emissions From Motor Vehicles, Nonroad Vehicles, and Nonroad Engines.” It states:

Section 1. *Policy.* It is the policy of the United States to ensure the coordinated and effective exercise of the authorities of the President and the heads of the Department of Transportation, the Department of Energy, and the Environmental Protection Agency to protect the environment with respect to GHG emissions from motor vehicles, nonroad vehicles, and nonroad engines, in a manner consistent with sound science, analysis of benefits and costs, public safety, and economic growth.<sup>12</sup>

### B. GHG Reduction Goals and Targets

Actual GHG reduction goals have been included in two presidential Executive Orders. They first appeared in 1999, in §201 of Executive Order No. 13123:

Through life-cycle cost-effective energy measures, each agency shall reduce its greenhouse gas emissions attributed to facility energy use by 30 percent by 2010 compared to such emission levels in 1990. In order to encourage optimal investment in energy improvements, agencies can count greenhouse gas reductions from improvements in non-facility energy use toward this goal to the extent that these reductions are approved by the Office of Management and Budget (OMB).<sup>13</sup>

In 2007, revised goals for reducing GHG emissions were issued in Executive Order No. 13423; these focus more narrowly on reducing energy intensity<sup>14</sup>:

Sec. 2. *Goals for Agencies.* In implementing the policy set forth in §1 of this order, the head of each agency shall:

(a) improve energy efficiency and reduce greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline of the agency’s energy use in fiscal year 2003.<sup>15</sup>

In revoking Executive Order No. 12123, this Executive Order also adopts different target dates for implementing reductions (2015 in Executive Order No. 13423 instead of 2010 in Executive Order No. 12123), and new baseline dates<sup>16</sup> for making calculations (2003 in Executive Order No. 13423 instead of 1990 in Executive Order No. 12123).<sup>17</sup>

12. 72 Fed. Reg. 27718 (May 16, 2007). This order calls for overall coordination and consultation among certain federal agencies for rulemaking related to greenhouse gas (GHG) emissions, but does not include any substantive GHG reduction goals or targets.

13. Exec. Order No. 13123, §201.

14. Section 9(i) of the order defines energy intensity as “energy consumption per square foot of building space, including industrial or laboratory facilities.” “Energy intensity” was not used in prior Executive Orders addressing GHGs, although §202 of Executive Order No. 13123 did use the phrase “reduce energy consumption per gross square foot of its facilities.”

15. Exec. Order No. 13423, §2 (2007).

16. The wording in §2(a) of Executive Order No. 13423 regarding the baseline is somewhat unclear (especially when compared to the language of §2(g), for example) and could be interpreted to only apply to Clause (ii); such an interpretation would allow agencies more discretion in calculating the 3% annual reduction goal in Clause (i), i.e., each successive year could be the baseline for the next year.

17. Executive Order No. 13423 also revokes four other existing Executive Orders that addressed, directly or indirectly, reduction of GHG emissions. The revoked orders are Executive Order No. 13101 of

### C. Related Objectives

Tracking the major underlying goals of the Energy Policy Act of 1992, several Executive Orders have called upon federal agencies to take steps that would complement GHG reduction goals. Some examples include:

#### 1. Renewable Energy Sources

Each agency shall strive to expand the use of renewable energy within its facilities and in its activities by implementing renewable energy projects and by purchasing electricity from renewable energy sources. In support of the Million Solar Roofs initiative, the Federal Government shall strive to install 2,000 solar energy systems at Federal facilities by the end of 2000, and 20,000 solar energy systems at Federal facilities by 2010.<sup>18</sup>

Each agency shall (b) ensure that (i) at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources, and (ii) to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.<sup>19</sup>

#### 2. Alternative Fuels and Reducing Petroleum Consumption

Each agency operating 20 or more motor vehicles within the United States shall reduce its entire vehicle fleet’s annual petroleum consumption by at least 20 percent by the end of FY 2005, compared with FY 1999 petroleum consumption levels.<sup>20</sup>

Sept. 14, 1998; Executive Order No. 13123 of June 3, 1999; Executive Order No. 13134 of Aug. 12, 1999; Executive Order No. 13148 of Apr. 21, 2000; and Executive Order No. 13149 of Apr. 21, 2000.

18. Exec. Order No. 13123, §204. In §403(f), the order further states: “Agencies shall explore efficiency opportunities in industrial facilities for steam systems . . . including cogeneration and other efficiency and renewable energy technologies.” Also, under §404, “each agency shall strive to use electricity from clean, efficient, and renewable energy sources.” And under §404(c)(1),

[e]ach agency shall evaluate its current use of electricity from renewable energy sources and report this level in its annual report to the President. Based on this review, each agency should adopt policies and pursue projects that increase the use of such electricity. Agencies should include provisions for the purchase of electricity from renewable energy sources as a component of their requests for bids whenever procuring electricity. . . . (2) In evaluating opportunities to comply with this section, agencies should consider: my Administration’s goal of tripling nonhydroelectric renewable energy capacity in the United States by 2010 . . . .

19. Exec. Order No. 13423, §2(b).

20. Exec. Order No. 13148, §201. Section 202 goes on to describe

numerous options for developing a strategy to meet the petroleum reduction levels established in section 201 of this order. Measures include: the use of alternative fuels in light, medium, and heavy-duty vehicles; the acquisition of vehicles with higher fuel economy, including hybrid vehicles; the substitution of cars for light trucks; an increase in vehicle load factors; a decrease in vehicle miles traveled; and a decrease in fleet size. As part of its strategy, each agency is to fulfill the acquisition requirements for AFVs established by section 303 of the Energy Policy Act of 1992. Agencies shall use alternative fuels to meet a majority of the fuel requirements of those motor vehicles by the end of FY 2005 . . . and (b) . . . [a]gencies shall increase the average EPA fuel economy rating of passenger cars and light trucks acquired by at least 1 mile per gallon (mpg) by the end of FY

Through life-cycle cost-effective measures, each agency shall reduce the use of petroleum within its facilities. Agencies may accomplish this reduction by switching to a less greenhouse gas-intensive, non-petroleum energy source, such as natural gas or renewable energy sources; by eliminating unnecessary fuel use; or by other appropriate methods. Where alternative fuels are not practical or life-cycle cost-effective, agencies shall strive to improve the efficiency of their facilities.<sup>21</sup>

[Each agency shall] ensure that, if the agency operates a fleet of at least 20 motor vehicles, the agency, relative to agency baselines for fiscal year 2005, (i) reduces the fleet's total consumption of petroleum products by 2 percent annually through the end of fiscal year 2015, (ii) increases the total fuel consumption that is non-petroleum-based by 10 percent annually, and (iii) uses plug-in hybrid (PIH) vehicles when PIH vehicles are commercially available at a cost reasonably comparable on the basis of life-cycle cost, to non-PIH vehicles.<sup>22</sup>

### 3. Energy Efficiency

Through life-cycle cost effective measures, each agency shall reduce energy consumption per gross square foot of its facilities, excluding facilities covered in section 203 of this order, by 30 percent by 2005 and 35 percent by 2010 relative to 1985. . . . Through life-cycle cost-effective measures, each agency shall reduce energy consumption per square foot, per unit of production, or per other unit as applicable by 20 percent by 2005 and 25 percent by 2010 relative to 1990.<sup>23</sup>

[Each agency shall] (a) improve energy efficiency and reduce greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually

2002 and at least 3 mpg by the end of FY 2005 compared to FY 1999 acquisitions.

21. Exec. Order No. 13123, §205.
22. Exec. Order No. 13423, §2(g). This Executive Order does not specifically mention alternative fuels, although they may be captured, in whole or in part, by the language in Clause (ii).
23. Exec. Order No. 13123, §§202 and 203. Section 403(b) of the order, "Energy Management Strategies and Tools," states that

[a]gencies shall select, where life-cycle cost-effective, EnergyStar® and other energy efficient products when acquiring energy-using products. For product groups where EnergyStar® labels are not yet available, agencies shall select products that are in the upper 25 percent of energy efficiency as designated by FEMP. . . . (3) Agencies shall incorporate energy efficient criteria consistent with EnergyStar® and other FEMP-designated energy efficiency levels into all guide specifications and project specifications developed for new construction and renovation, as well as into product specification language developed for Basic Ordering Agreements, Blanket Purchasing Agreements, Government Wide Acquisition Contracts, and all other purchasing procedures.

Under §403(c),

[a]gencies shall strive to meet the EnergyStar® Building criteria for energy performance and indoor environmental quality in their eligible facilities to the maximum extent practicable by the end of 2002. Agencies may use Energy-Savings Performance Contracts, utility energy-efficiency service contracts, or other means to conduct evaluations and make improvements to buildings in order to meet the criteria.

The order also encourages the development of "sustainable design principles . . . for siting, design, and construction of new facilities," as well as use of model "lease provisions that encourage energy and water efficiency wherever life-cycle cost effective."

through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003.<sup>24</sup>

### 4. Pollution Prevention

Finally, two other Executive Orders have indirectly encouraged, through pollution prevention generally, federal agency reductions of GHG emissions as air pollutants.<sup>25</sup> Thus, in promoting the "Greening the Government Through Leadership in Environmental Management" under §203 of Executive Order No. 13148, "[e]ach agency shall strive to reduce or eliminate harm to human health and the environment from releases of pollutants to the environment. Each agency shall advance the national policy that, whenever feasible and cost-effective, pollution should be prevented or reduced at the source."<sup>26</sup> And taking steps to reduce GHG levels is captured under Executive Order No. 13101's "national policy to prefer pollution prevention, whenever feasible."<sup>27</sup>

## II. State Initiatives

After the U.S. Senate failed to ratify the Kyoto Protocol, it became increasingly apparent that federal leadership on GHG issues would be slow in coming. States, and in some instances cities and counties,<sup>28</sup> began taking the initiative

24. Exec. Order No. 13423, §2(a). As a related matter, §2(f) addresses energy efficiency in building construction and renovation and provides that each agency is to ensure that

(i) new construction and major renovation of agency buildings comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings* set forth in the *Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006)*, and (ii) 15 percent of the existing Federal capital asset building inventory of the agency as of the end of fiscal year 2015 incorporates the sustainable practices in the *Guiding Principles*

and Subsection (h) encourages agencies to use EnergyStar® in certain circumstances.

25. Pursuant to the 1992 Framework Convention, EPA prepares an annual Inventory of Greenhouse Gas Emissions and Sinks, which tracks overall national trends in GHG levels since 1990. *See* <http://www.epa.gov>. While the inventory analyzes emissions from various sectors, e.g., transportation, industry, electricity generation, agriculture, and activities, e.g., coal mining, cement manufacture, wastewater treatment, iron and steel production, it does not single out federal agency emissions or reductions achieved due to presidential Executive Orders.
26. 65 Fed. Reg. 24596 (Apr. 26, 2000).
27. Exec. Order No. 13101, "Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition," 63 Fed. Reg. 49643 (Sept. 16, 1998). Section 212 of this Executive Order defined "pollution prevention" to mean "source reduction" as defined in the Pollution Prevention Act of 1990 (42 U.S.C. §13102), and other practices that reduce or eliminate the creation of pollutants through: (a) increased efficiency in the use of raw materials, energy, water, or other resources; or (b) protection of natural resources by conservation." The breadth of this definition certainly would encompass measures to eliminate or minimize GHG emissions cause by carbon-emitting technologies.
28. For example, King County in Washington State has issued a plan to cut GHG pollution by 80% below current levels by 2050. *See* <http://www.kingcounty.gov>. In addition, since the Kyoto Protocol came into effect in early 2005, at least 500 mayors across the country have signed on to advance the goals of the Kyoto Protocol, with cities committing to meet or beat its targets. *See* <http://www.mayors.org>. As another example, Mayor Michael Bloomberg has put in place a plan to completely convert the taxi cab fleet in New York City to hybrid vehicles by 2012. *See* <http://www.eere.gov>.

using a variety of approaches.<sup>29</sup> These have included petitions for federal rulemaking, state legislation and litigation, regional compacts, and state administrative actions, as well as Executive Orders issued by governors that contain potentially useful building blocks for assembling a comprehensive federal model.

#### A. Petitions for Federal Rulemaking

Late in 1999, 19 private organizations petitioned the U.S. Environmental Protection Agency (EPA) to use its authority under §202 of the Clean Air Act (CAA) to issue regulations for new motor vehicles that would regulate GHGs such as CO<sub>2</sub>.<sup>30</sup> EPA denied the petition in 2003, in part based on its determination that GHGs were not air pollutants under the CAA.<sup>31</sup> Massachusetts, together with a number of states and local governments, intervened on behalf of the petitioners when they filed a challenge to EPA's decision in the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit. After an adverse decision, Massachusetts and other parties appealed the case to the U.S. Supreme Court.

In *Massachusetts v. U.S. Environmental Protection Agency*,<sup>32</sup> the Court reversed and remanded the case. Relying on "the special position and interest of Massachusetts," the majority opinion held that the petitioners had standing to challenge EPA's action.<sup>33</sup> The Court went on to find that GHGs are covered as pollutants under the CAA,<sup>34</sup> that EPA has authority to regulate GHGs emitted from mobile sources,<sup>35</sup> and that "a reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere."<sup>36</sup> The Court also concluded that on remand, EPA's decision with regard to regulating GHGs under the CAA "must relate to whether an air pollutant 'causes, or contributes to, air pollution which may reasonably be anticipated to endanger public health or welfare.'"<sup>37</sup>

29. For a survey of early state actions, see John Dernbach, *Moving the Climate Change Debate From Models to Proposed Legislation: Lessons From State Experience*, 30 ELR 10933 (Nov. 2000).

30. *Massachusetts v. EPA*, 127 S. Ct. 1438, 1449, 37 ELR 20075 (2007).

31. *Id.* at 1450.

32. 127 S. Ct. 1438, 1449, 37 ELR 20075 (2007).

33. *Id.* at 1458. For a detailed analysis of the decision and its ramifications, see Arnold W. Reitze Jr., *Controlling Greenhouse Gas Emissions From Mobile Sources—Massachusetts v. EPA*, 37 ELR 10535 (July 2007).

34. 127 S. Ct. at 1459 ("Because EPA believes that Congress did not intend it to regulate substances that contribute to climate change, the agency maintains that carbon dioxide is not an 'air pollutant' within the meaning of the provision. The statutory text forecloses EPA's reading . . . The statute is unambiguous.")

35. While the Court acknowledged that EPA's regulatory authority under the CAA may overlap with the U.S. Department of Transportation's authority to set mileage standards, it found that "there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency." *Id.* at 1462. The directive in Executive Order No. 13432 (which was issued soon after the Supreme Court's decision) for federal agencies to cooperate and coordinate is designed to address this point.

36. *Id.* at 1458.

37. *Id.* at 1462. Justice John Paul Stevens also cautioned the Agency that it cannot "avoid its statutory obligation by noting the uncertainty surrounding various features of climate change and concluding that it would therefore be better not to regulate at this time . . . The statutory question is whether sufficient information exists to make an endangerment finding." *Id.* at 1463.

#### B. State Legislation and Litigation

State legislatures across the country have enacted a variety of laws governing GHG emissions, from reporting requirements to performance standards for vehicles and power plants to economywide mandates for reductions.<sup>38</sup> In California, for example, the Global Warming Solutions Act of 2006 requires an across-the-board lowering of GHG emissions to 1990 levels by 2020.<sup>39</sup> This law builds on a related 2002 enactment that authorizes GHG vehicle emission standards<sup>40</sup>; in December, 2005, the California Air Resources Board notified EPA that it had adopted its implementing regulations for passenger cars and light-duty trucks,<sup>41</sup> and requested a waiver under the CAA to allow those regulations to go into force.<sup>42</sup>

While that waiver request has been pending, eleven other states have adopted the California standards.<sup>43</sup> In Vermont, automakers filed a challenge to prevent the state from doing so.<sup>44</sup> After taking note of the Supreme Court's decision in *Massachusetts*, the district court in September 2007 ruled that the Energy Policy and Conservation Act does not preempt Vermont's emissions standards, assuming EPA grants California's §209(b) waiver request. The state of California

38. For example, Illinois enacted a statewide renewable energy standard in 2007 requiring utilities in that state to produce 2% of their power from renewable sources in 2008 (going up to 25% by 2025). Illinois Power Agency Act, Pub. Act 095-0481; see <http://www.ilga.gov/legislation/publicacts/95/PDF/095-0481.pdf>. In general, the law mandates that most of the electricity generated will come from wind power generation, with the rest coming solar, biomass, and existing hydropower sources. An Energy Efficiency Portfolio Standard, designed to have utilities implement cost-effective measures to bring down electric usage, is also included. And recent Oregon legislation mandates an end to the growth of GHG emissions by 2010, followed by achievement of emission levels at 10% below 1990 levels by 2020 and at 75% below 1990 levels by 2050. House Bill 3543; see <http://landru.leg.state.or.us/07reg/measpdf/hb3500.dir/hb3543.en.pdf>. For other examples, including some establishing inventory and reporting mechanisms, see [http://www.pewclimate.org/what\\_s\\_being\\_done/in\\_the\\_states/state\\_legislation.cfm](http://www.pewclimate.org/what_s_being_done/in_the_states/state_legislation.cfm).

39. CAL. HEALTH & SAFETY CODE §§38501-38599 (West 2006). For an examination of this law and other initiatives in California, see Erwin Chemerinsky, *California, Climate Change, and the Constitution*, 37 ELR 10653 (Sept. 2007).

40. 2002 Cal. Legis. Serv. ch. 200 (AB 1493) (West), *codified at* CAL. HEALTH & SAFETY CODE §43018.5(a) (West 2002).

41. See 72 Fed. Reg. 21260 (Apr. 30, 2007). The regulations would require a 30% reduction in GHG tailpipe emissions by 2016, starting with the 2009 model year. See "Fact Sheet: Climate Change Emission Control Regulations," [http://www.arb.ca.gov/cc/factsheets/cc\\_newfs.pdf](http://www.arb.ca.gov/cc/factsheets/cc_newfs.pdf).

42. See 72 Fed. Reg. at 21260. Because of its long history of regulating automobile pollution, California is the only state that can apply under §209(b) to have EPA waive the Act's preemption provision that normally precludes states from adopting their own vehicle emission standards. EPA has typically granted California's waiver requests in the past.

43. In testimony before the Senate Environment and Public Works Committee on July 26, 2007, EPA Administrator Stephen Johnson indicated the Agency would issue its decision on the waiver petition by the end of 2007. See <http://www.epw.senate.gov>.

44. *Green Mountain Chrysler v. Crombie*, No. 2:05-cv-302, 2007 WL 2669444, 37 ELR 20232 (D. Vt. Apr. 3, 2007). Similar lawsuits have been filed in California and Rhode Island. See *Central Valley Chrysler-Jeep, Inc. v. Witherspoon*, No. 1:04-cv-06663-REC-LJO, 37 ELR 20023 (E.D. Cal. filed Dec. 7, 2004); *Association of Int'l Auto. Mfrs. v. Sullivan*, No. 06-cv-69 (D.R.I. filed Feb. 13, 2006); *Lincoln Dodge, Inc. v. Sullivan*, No. 06-cv-70 (D.R.I. filed Feb. 13, 2006).

filed suit on November 8, 2007, seeking to force EPA to grant that waiver.<sup>45</sup>

In other GHG-related litigation, 11 states, the District of Columbia, and several public interest groups challenged Corporate Average Fuel Economy (CAFE) standards issued in 2006 by the National Highway Traffic Safety Administration (NHTSA) pursuant to the Energy Policy and Conservation Act.<sup>46</sup> In striking down and remanding the regulations, the U.S. Court of Appeals for the Ninth Circuit recently held, in part, that the NHTSA had failed to “monetize the value of carbon emissions,”<sup>47</sup> and found that this failure “underestimates the benefits of stricter standards.”<sup>48</sup> In addition, the Court recognized the link between mileage standards and the environmental impacts associated with CO<sub>2</sub> emissions: “Moreover, the CAFE standard will affect the level of the nation’s greenhouse gas emissions and impact global warming.”<sup>49</sup> This link underscores the usefulness of more vigorously exploring high-efficiency engines, clean fuels technology, and the as-yet untapped potential of “clean-combustion” technology (e.g., micro-electronically controlled fuel injection and ignition by turbulent jets) that could greatly increase fuel economy in a relatively short time frame while drawing on largely existing technology.<sup>50</sup>

### C. Regional Compacts

In 2001, the New England Governors Conference issued a Climate Change Action Plan, which among other things calls for a regional, standardized inventory for GHG emissions, as well as steps aimed at reducing emissions from the electricity and transportation sectors, lowering energy demand through conservation, and exploring the creation of a regional cap-and-trade system.<sup>51</sup> The goals of the plan include reducing GHG emissions to 1990 levels by 2010, to 10% below 1990 levels by 2020, and by up to 85% in the long run.

The somewhat overlapping Regional Greenhouse Gas Initiative (RGGI) includes 11 Northeastern and Mid-Atlantic states that are developing a strategy to control and reduce GHG emissions through a multistate cap-and-trade program

45. Samantha Young, *EPA, Don't "Stand in Our Way,"* WASH. POST, Nov. 9, 2007, at D2.

46. *Center for Biological Diversity v. National Highway Traffic Safety Admin.*, 508 F.3d 508 (9th Cir. 2007). The standards set fuel economy requirements and targets for light-duty trucks (including many pickups, minivans and sport utility vehicles) for the 2008-2011 model years.

47. *Id.* at 14841.

48. *Id.* at 14853. The court also noted that the NHTSA “assigned no value to the most significant benefit of more stringent CAFE standards: reduction in carbon emissions.” *Id.* at 14872.

49. *Id.* at 14903.

50. See, e.g., A.K. OPPENHEIM, *COMBUSTION IN PISTON ENGINES: TECHNOLOGY, EVOLUTION, DIAGNOSIS, AND CONTROL* 146 (Springer 2004).

Prospective benefits of MECC [Micro-Electronically Controlled Combustion] should be of substantial significance to the world economy. By proper control of the exothermic process of combustion, its action as a generator of pollutants can be vastly reduced, while its effectiveness as energy converter can be greatly improved. Mobile sources of pollution can be thereby virtually eliminated, while the mileage out of a tank of fuel at least doubled.

51. See <http://www.negc.org/environmental.html>.

using a market-based system.<sup>52</sup> Some of the states signed a memorandum of understanding in 2005 to implement a CO<sub>2</sub> cap-and-trade program; the others, and several Canadian provinces, are “observers” that may join the program later.

A third effort, the Western Climate Initiative, was started in February 2007, when the governors of Arizona, California, New Mexico, Oregon, and Washington agreed to collaborate on climate change generally.<sup>53</sup> Utah, British Columbia, and Manitoba have joined the initiative since then, and several other states and provinces (including Colorado, Kansas, Nevada, Wyoming, Ontario, Quebec, Saskatchewan, and Sonora) are observers. The group’s goal is to establish a regional target for lower GHG emissions and to set up a regional cap-and-trade system for buying and selling GHG credits.

### D. State Administrative Actions

In the wake of the Supreme Court’s ruling that CO<sub>2</sub> is a pollutant under the CAA, states making air quality permitting decisions have a new factor to consider. In mid-October, the Kansas Department of Health and Environment denied an air quality permit for a new coal-fired power plant on the basis of the risk to human health and the environment posed by the CO<sub>2</sub> emissions associated with the facility’s operation.<sup>54</sup> In denying the permit, the department referred to *Massachusetts* and noted that the estimated additional CO<sub>2</sub> emissions from the proposed power plant expansion would largely offset projected reductions that would be gained from the RGGI cap-and-trade program.

### E. Executive Orders

Compared to the approach taken in 2007’s Executive Order No. 13423, several governors have issued Executive Orders that are more ambitious in several respects.<sup>55</sup> For example, adopting a long-term perspective, Gov. Charlie Crist (R-Fla.) issued three Executive Orders on July 13, 2007, each one dealing with different aspects of GHG emissions<sup>56</sup>:

Executive Order No. 07-126, “Establishing Climate Change Leadership by Example: Immediate Actions to Reduce Greenhouse Gas Emissions From Florida State Government.”<sup>57</sup> This order sets the following GHG reduction targets for government agencies: by 10% from current levels by 2012, by 25% from current levels by 2017, and by

52. See <http://www.rggi.org>.

53. See <http://westernclimateinitiative.org>.

54. See <http://www.kdheks.gov>.

55. Some governors have expressed frustration with the lack of federal leadership on this topic. This impatience is reflected, for example, in Executive Order 2006-69, issued on Dec. 28, 2006, by New Mexico Governor Richardson: “Whereas, the federal government has failed to take sufficient action to address global climate change through initiatives to reduce greenhouse gas emissions in the United States.” See <http://www.state.nm.us>.

56. Governor Crist also signed partnership agreements with the United Kingdom and Germany to improve cooperation on several fronts (including trade, scientific exchange, and public policy development) in moving toward “a global low carbon economy.” See <http://www.dep.state.fl.us>. Gov. Arnold Schwarzenegger (R-Cal.) signed a similar agreement with British Prime Minister Tony Blair in 2006. See Chemerinsky, *supra* note 39.

57. See <http://www.state.fl.us>.

40% from current levels by 2025. The order also requires improvements for government facilities, such as conducting energy use assessments, adopting green building standards, and drawing up energy conservation guidelines. Furthermore, it imposes various performance improvements for the state government's vehicle fleets, including a requirement to purchase "only those vehicles with the greatest fuel efficiency in a given class as required for that vehicle to minimize emissions of greenhouse gases" and alternative fuels "when locally available."

Executive Order No. 07-127, "Establishing Immediate Actions to Reduce Greenhouse Gas Emissions within Florida."<sup>58</sup> This order sets the following statewide GHG reductions targets: to 2000 levels by 2017, to 1990 levels by 2025, and to 80% of 1990 levels by 2050.<sup>59</sup> The order also initiates a process for promulgating regulations that will: set "a maximum allowable emissions level of greenhouse gases for electric utilities in the State of Florida"<sup>60</sup>; adopt "the California motor vehicle standards in Title 13 of the California Code of Regulations, effective January 1, 2005, upon approval by the U.S. Environmental Protection Agency of the of the pending waiver"; and adopt "a statewide diesel engine idle reduction standard." The order also calls for a rulemaking "to require that utilities produce at least 20% of their electricity from renewable sources (Renewable Portfolio Standard) with a strong focus on solar and wind energy."

Executive Order No. 07-128, "Establishing the Florida Governor's Action Team on Energy and Climate Change."<sup>61</sup> This order creates an action team to prepare a plan for achieving or surpassing the GHG reduction targets the governor has established and to make recommendations on additional future steps.

Other governors have issued Executive Orders and directives with similar goals and objectives. Since 2004, for example, Gov. Bill Richardson (D-N.M.) has signed several Executive Orders calling for various steps to meet the following GHG reduction targets: to 2000 levels by 2012, 10% below 2000 levels by 2020, and 75% below 2000 levels by the 2050.<sup>62</sup> Other governors have followed suit, including

Arizona (reach 2000 levels of GHG emissions by 2020, 50% below 2000 by 2040),<sup>63</sup> California (reduce GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, 80% below 1990 levels by 2050),<sup>64</sup> Washington (reduce GHG emissions to 1990 levels by 2020, 25% below 1990 levels by 2035, 50% below 1990 levels by 2050),<sup>65</sup> and New Jersey (reduce GHG emissions to 1990 levels by 2020, 80% of 2006 levels by 2050).<sup>66</sup> Such variability in how to measure reductions and which year to use as the baseline is not uncommon in the continually expanding patchwork of evolving regional, state, and local initiatives.

### III. The Next GHG Executive Order

One way the federal government could regain its leadership role on climate change issues—and bring to bear some measure of national consistency and certainty—is through the legislative process. Congress is currently debating a varied menu of options, some of which reflect the previously described state, local, and regional actions being taken to address GHG emissions directly. Many of the features and trade offs between alternatives, including a cap-and-trade program, a carbon tax, and various incentives and subsidies, are complicated and controversial. The prospects of reconciling different, divergent U.S. House of Representatives and Senate approaches into a comprehensive bill, and doing so in a form that will be signed into law in the near term, appear uncertain at best.

Another way the federal government could play a more active role is by setting an example as it carries out its day-to-day operations. Based on their size, purchasing power, and nearly ubiquitous presence, federal agencies are uniquely positioned to exert enormous influence through their behavior. Similarly, their collective knowledge and expertise gained from implementing complex, wide-ranging, multifaceted programs can be tapped more vigorously as an invaluable resource in identifying new avenues and possibilities to influence the outcome, from more effective tax incentives to more influential international trade policy, from environmentally preferable energy generation to improved natural resource management, from harnessing consumer awareness to laying a sound economic foundation for a carbon-neutral economy. While waiting for the legislative process to run its course, and building on recent efforts spearheaded by state and local officials, the next presidential Executive Order on reducing GHG emissions could combine action, analysis and investigation to look like this:

58. *Id.*

59. It is interesting to note that the emission reduction targets for government agencies in Executive Order No. 07-126 are different than those established for the state generally in Executive Order No. 07-127. On the face of the orders themselves, it is not possible to compare the two or determine which is more demanding.

60. The order states that

[t]he standard will require at minimum, three reduction milestones as follows: by 2017, emissions not greater than Year 2000 utility sector emissions; by 2025, emissions not greater than Year 1990 utility sector emissions; by 2050, emissions not greater than 20% of Year 1990 utility sector emissions (i.e., 80% reduction of 1990 emissions by 2050).

61. *Id.*

62. Exec. Order No. 2006-69 (reinforcing targets first set in Executive Order No. 2005-033). See <http://www.state.nm.us>.

63. See <http://www.state.az.us>.

64. See <http://www.state.ca.us>.

65. See <http://www.state.wa.us>.

66. See <http://www.state.nj.us>. In a similar vein, on Sept. 12, 2007, Gov. Tim Kaine (D-Va.) announced a statewide Energy Plan that calls for reducing GHG emissions by 30%, slowing the growth rate in energy use by 40%, and expanding energy produced in the state by 20%. See <http://www.state.va.us>; see also <http://www.pewclimate.org> for a summary of state reduction targets.

**Title 3—  
The President  
Executive Order XXXXX**

**Federal Leadership in Reducing Greenhouse Gas Emissions**

By the authority vested in me as president by the Constitution and the laws of the United States of America, and §301 of title 3, United States Code, and to provide leadership by federal agencies in reducing emissions of greenhouse gases (GHGs), stimulating the creation and adoption of more efficient and alternative energy technologies, expanding the use of non-carbon-emitting energy and products, and accelerating the adoption of sustainable approaches and practices, it is hereby ordered as follows:

**Section 1. Policy.** It is the policy of this Administration to reduce GHG emissions to 80% below 1990 levels by 2050. Federal agencies shall conduct all of their activities under the law in support of their respective missions in a manner that reduces emissions of GHGs consistent with the policies, objectives, and requirements set forth in this order. The head of each federal agency is responsible for providing leadership and taking all necessary actions in day-to-day decisionmaking and long-term planning processes across all agency missions, activities, and functions to ensure the policies, objectives, and requirements of this order are met. Wherever possible, life-cycle cost-effective energy measures shall be used to carry out this order.

**Section 2. Reducing GHGs.** (a) Each agency shall reduce GHG emissions attributed to its activities and facilities as follows: (1) to 2000 levels by 2012; (2) to 1995 levels by 2016; (3) to 1990 levels by 2020; (4) to 50% below 1990 levels by 2040; and (4) to 80% below 1990 levels by 2050.

(b) Each agency shall strive to meet GHG emission reduction goals and targets established by a state, where the agency conducts activities or operates facilities in that state.

**Section 3. Energy Efficiency and Use.** (a) Each agency shall take significant and measurable actions to improve energy efficiency and reduce total energy use (as measured at the source) to the maximum extent possible for all of its activities and facilities.

(b) At a minimum, each agency shall reduce energy consumption associated with its activities and facilities as follows: (1) by 35% by 2012 relative to 1990 levels; and (2) by 40% by 2016 relative to 1990 levels.

**Section 4. Renewable Energy.** (a) Each agency shall increase the use of renewable energy for its activities and facilities. As soon as practicable, each agency shall purchase green power equal to 100% of its estimated annual electricity use nationwide.

(b) At a minimum, each agency shall increase its purchase of electricity from renewable energy sources as follows: (1) by 15% by 2012 relative to 2008 levels; and (2) by 30% by 2016 relative to 2008 levels.

(c) To the maximum extent possible, each agency shall install onsite renewable energy systems for its facilities.

**Section 5. Transportation.**<sup>67</sup> (a) Each agency shall reduce its vehicle fleet's annual petroleum consumption as follows: (1) by 2016, all passenger vehicles and light-duty trucks owned, leased, or otherwise used by each agency shall meet the 2002 California mobile source standards for GHGs emissions; (2) by 2016, the average fuel economy rating of all passenger vehicles and light-duty trucks owned, leased, or otherwise used by each agency shall attain at least 35 miles per gallon; and (3) through the use of conservation, environmentally preferable alternate fuels and high-efficiency vehicles (including vehicles with hybrid or clean diesel engines), and other measures,<sup>68</sup> each agency shall reduce the amount of fossil fuels consumed by passenger vehicles and light-duty trucks owned, leased, or otherwise used by that agency, as follows: (A) by at least 20% by 2012 relative to 2008 levels; and (B) by at least 30% by 2016 relative to 2008 levels.

(b) Each agency shall reduce non-mission critical air travel as follows: (A) by at least 20% by 2012 relative to 2008 levels; and (B) by at least 30% by 2016 relative to 2008 levels.

**Section 6. Buildings and Products.** (a) Each agency shall meet the highest possible Leadership in Energy and Environmental Design (LEED) rating requirements and EnergyStar<sup>®</sup> building energy performance standards for all new building construction and major renovation projects.<sup>69</sup>

(b) Each agency shall purchase EnergyStar<sup>®</sup>-qualified products to the maximum extent possible after the date of this order.<sup>70</sup>

**Section 7. Carbon Footprint Analysis and Carbon Offsets.**

(a)(1) Each agency shall conduct a carbon footprint analysis for any proposed agency action. (2) Where the agency is preparing a document pursuant to the National Environmental Policy Act of 1969, as amended, it shall include a carbon footprint analysis of possible long-term and short-term GHG emissions associated with the proposed agency action. (3) Each agency shall specifically request public comment on its carbon footprint analysis prior to making a final decision on the proposed agency action. Each agency shall publish its responses to comment at the time of the final decision on the agency action.

(b) Each agency shall avoid, to the maximum extent possible, undertaking or providing assistance for any action that will result in a net increase in GHG emissions, and shall favor, consistent with applicable law, alternatives that maximize the use of non-carbon-emitting technologies.

(c) Each agency shall purchase carbon offsets that completely balance out any net increase in GHG emissions that cannot be avoided by any final agency action.

67. The transportation sector is a major contributor of GHG emissions. See *Massachusetts v. EPA*, 127 S. Ct. 1438, 1457, 37 ELR 20075 (2007).

68. There is an extensive discussion of current work being undertaken to improve alternative fuels and conventional automobile engine technologies in *Green Mountain Chrysler v. Combie*, No. 2:05-cv-302, 2007 WL 2669444 (D. Vt. Apr. 3, 2007).

69. For a description of EPA's new building in Denver and how it meets the LEED Silver certification requirements, see <http://www.epa.gov/region8/building/>.

70. One example is EnergyStar<sup>®</sup> qualified lighting, which can use up to 75% less energy than conventional lighting. See <http://www/energystar.gov>.

**Section 8. *Baseline Assessment and Inventory.*** Each agency shall conduct a baseline assessment and inventory no later than 12 months after the date of this order to identify and quantify all GHG emissions attributed to its facilities and activities.

**Section 9. *Semi-Annual Progress Reports.*** Each agency shall publish a progress report on March 15 and September 15 of each year identifying and quantifying all GHG emissions attributed to its facilities and activities during the previous six months, and describing the agency's progress in carrying out and complying with the policies, objectives and requirements of this order. At a minimum, the report shall identify whether the agency is carrying out and complying with each of the policies, objectives and requirements of this order, explain the reasons for any failure to comply with this order (including budgetary constraints, technological limitations, or engineering feasibility), and provide an updated strategy that includes corrective measures being implemented to achieve full and timely compliance. The report shall describe progress made in complying with each provision of this order. Each agency shall submit its report to the council, established in §12 of this order, and make it available to the public.

**Section 10. *Energy Savings Performance Contracts and Other Procurement.*** (a) Each agency shall use Energy Savings Performance Contracts to the maximum extent possible.

(b) Each agency shall acquire goods and services, including vehicles, energy, and electricity, in a manner that reduces, minimizes, or eliminates GHG emissions consistent with the policies, objectives, and requirements of this order.

(c) Each agency shall ensure that contracts entered into after the date of this order for contractor operation of government-owned facilities or vehicles require the contractor to comply with the policies, objectives, and requirements of this order to the same extent as the agency would comply if the agency operated the facilities or vehicles.

**Section 11. *Strategic Goals and Agency Mission.*** Within 12 months, each agency shall: (a) incorporate into its Government Performance Results Act annual performance plan the strategic goal of carrying out and complying with the policies, objectives and requirements of this order; and (b) ensure that the policies, objectives, and requirements of this order are fully incorporated into agency directives, policies, and procedures.

**Section 12. *Establishment of the GHG Interagency Council.***

(a) There is established the GHG Interagency Council (the Council). The Council shall be composed of the heads of each agency. Members may serve on the Council through designees. Designees shall be senior officials who report directly to the agency head (Assistant Secretary or equivalent).

(b) The Chairman of the Council on Environmental Quality shall serve as the Chair of the Council and shall: (1) convene and preside at meetings of the Council; (2) direct the work of the Council; and (3) establish, as necessary, committees to assist the Council.

(c) The Council shall issue guidelines within six months of the date of this order to assist agencies in accurately and

uniformly: (1) identifying and quantifying GHG emissions for purposes of conducting a baseline assessment and inventory; (2) preparing semi-annual progress reports; (3) purchasing carbon offsets that verifiably fund projects to develop new renewable, non-carbon-emitting energy sources; (4) amending, in coordination with the Federal Acquisition Regulation Council, federal acquisition regulations and agency procurement policies and practices, if necessary; and (5) otherwise carrying out and complying with the policies, objectives and requirements of this order.<sup>71</sup>

(d) The Council shall compile and publish the agencies' semi-annual progress reports, and shall ensure that corrective measures are taken to address any agency's failure to carry out and comply with any policy, objective, and requirement of this order.

(e) The Council shall prepare and publish within 12 months of the date of this order initial studies and recommendations, to be updated annually, on the following: (1) A long-range plan to phase out, to the maximum extent possible, the use of carbon-emitting fuel and energy sources in order to achieve a carbon-neutral economy by 2050. At a minimum, this study shall address the most effective mechanisms to minimize potential economic disruptions of such a phaseout on both the domestic economy as a whole and on particular industry sectors such as coal and mining, oil and natural gas, electric utilities, aircraft and automobile manufacturing, airline travel, transportation, and agriculture. The study shall identify opportunities for temporary federal financial assistance, if needed, to facilitate the transition to a carbon-neutral economy by 2050; (2) a plan to increase tailored federal tax incentives, low-cost loans, grants, subsidies, and other financial support in a manner that encourages increased energy efficiency and the use of environmentally preferable non-carbon-emitting fuels and energy sources. At a minimum, the study shall present the true market cost of carbon-emitting fuel and energy sources, taking into account existing federal tax incentives, low-cost loans, grants, subsidies, and other financial support, as well as remediation costs and damage to natural resources that result from exploration, extraction, production, waste disposal, and use of fossil fuels. The study also shall identify the federal policies and actions needed in the short term to equalize federal incentives, low-cost loans, grants, subsidies, and other financial support for carbon-emitting and environmentally preferable non-carbon-emitting fuels and energy sources, and identify the most effective federal policies and actions, including federal tax incentives, low-cost loans, grants, subsidies, and other financial support, that will accelerate the large-scale commercial affordability and availability of existing and new non-carbon-emitting technologies; (3) a study to develop a comprehensive approach for accurately evaluating environmentally preferable non-carbon-emitting fuels, including biofuels, and energy sources. At a minimum, the study shall recommend an analytic framework for assessing alternatives per unit of energy in terms of: (A) environmental impacts associated with production and use, including potential adverse impacts on water quality and supply, and increased use of pesticides and fertilizers; (B) energy efficiency and the return on energy investment; (C) actual reduction of GHG emissions; and

71. As an initial step, the Council could temporarily adopt guidance that was developed pursuant to earlier Executive Orders. *See, e.g.*, Exec. Order No. 13123, §§502-505.

(D) the true economic costs of associated with production and use, including inflationary pressures on the price of food and other commodities; (4) a strategy for maximizing green power purchases in a manner that achieves reduction of GHG emissions as quickly as possible; (5) a blueprint to improve federal management of natural resources in a manner that reduces, mitigates and more effectively offsets GHG emissions. At a minimum, the blueprint shall address current federal policies regarding logging, oil and natural gas exploration and production, and coal mining, and how those activities, on balance, contribute to overall GHG emissions. The blueprint also shall address how reforestation on federal lands can be used as a reliable, measurable carbon offset; (6) a review of U.S. international trade policies to ensure they maximize sharing and transfer of non-carbon-emitting technologies, and encourage and reward reduction of GHG emissions by trading partners, and promote investment that will reduce GHG emissions abroad. At a minimum, this review shall explore potential mechanisms for promoting imports manufactured by non-carbon-emitting technologies and restricting imports manufactured by carbon-emitting technologies; (7) a study to explore mechanisms promoting full and accurate disclosure of GHG emissions. At a minimum, the study shall provide recommendations for instituting standardized, accurate and verifiable labeling to inform consumers about GHG emissions attributed to product use and energy consumption. The study also shall recommend measures to provide consumers with easily accessible information regarding the price per kilowatt hour (kwh) of energy conservation and efficiency measures as compared to the price per kwh for new energy based on financing and building new power-generating capacity. In addition, the study shall recommend effective GHG reporting mechanisms for carbon-emitting energy sources, including all electric utilities and other power-generating facilities; and (8) other studies recommending additional steps that will improve energy efficiency, reduce energy consumption and where possible reduce the growth in demand for electricity, and will facilitate the accelerated reduction in GHG emissions, and will further the policies, objectives, and requirements of this order.

(f) The Council shall prepare annually a strategic plan documenting progress by each Federal agency in meeting the policies, objectives and requirements of this order and recommending specific steps, including legislative proposals, that can improve and accelerate the implementation of this order in a sustainable manner that protects human health and the environment and promotes national economic growth and energy security.

(g) The Council shall coordinate its activities with actions called for in all relevant Executive Orders in a manner that does not conflict with the requirements of other Executive Orders.

**Section 13. *Establishment of Advisory Committee on Reducing GHG Emissions.*** (a) The Administrator shall establish an Advisory Committee on Reducing GHG Emissions (the Committee), under the Federal Advisory Committee Act, as amended (5 U.S.C. App.), to provide information and advice for consideration by the Council. The Administrator shall, in consultation with other members of the Council, appoint up to 25 members representing interested stakeholders, including representatives from state and local gov-

ernments; environmental, consumer and conservation organizations; farm, forestry, oil and natural gas, coal, manufacturing, and other industry and business interests, including energy companies and electric utilities; the university research community; and other critical sectors. The Administrator shall designate Co-Chairs from among the members of the Committee.

(b) Among other things, the Committee shall provide the Council with independent assessments and advice on matters that include: (1) how to meet and exceed the policies, objectives, and requirements of this order; (2) how to accelerate the timetables established in this order; (3) other actions agencies can take to reduce their carbon footprint and facilitate the research, development and commercialization of non-carbon-emitting technologies; (4) how the federal government can enhance and improve the scope and pace of scientific and technological progress in reducing GHG emissions; and (5) any other matters related to expeditiously achieving a carbon-neutral economy.

(c) To the extent permitted by law and subject to the availability of appropriations, the Administrator shall serve as the secretariat for, and provide the financial and administrative support to, the Committee.

**Section 14. *Revocation.*** The following are revoked:

- (a) Executive Order No. 13423 of January 24, 2007;
- (b) Executive Order No. 13432 of May 14, 2007.<sup>72</sup>

**Section 15. *General Provisions.*** (a)(1) Agencies must carry out the provisions of this order to the extent consistent with their statutory authority and subject to the availability of appropriations. (2) Each agency's budget submission to the Director of the Office of Management and Budget (OMB) shall specifically request funding necessary to achieve the policies, objectives and requirements of this order.

(b) This order is intended only to improve the internal management of the executive branch and is not intended to create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law by a party against the United States, its agencies, its officers, or any other person.

(c) This order applies to all federal agencies and their facilities in any state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the United States has jurisdiction. Each agency with facilities outside of these areas, however, is encouraged to make best efforts to comply with this order for those facilities.

(d) Agencies must ensure that all government-owned, contractor-operated facilities and vehicles comply with the

72. Revoking existing Executive Orders that address GHG issues avoids creating confusion and would more easily delineate a new policy direction based on expectations of actual, significant reductions by federal agencies instead of discretionary goals containing substantial flexibility in terms of compliance. Broader policy considerations than the focus of this Executive Order (reducing GHG emissions) would need to be addressed in a separate Executive Order. Some of those related considerations include provisions in earlier Executive Orders that were revoked by Executive Order No. 13423, such as federal facility reporting under Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. §§11001 et seq.). Other matters for a separate Executive Order might include the continuing role of the federal environmental executive.

policies, objectives and requirements of this order and that these policies, objectives and requirements are incorporated into each contractor's management contract.

(e) Department of Defense military tactical vehicles are exempt from this order. Law enforcement, emergency, and any other vehicle class or type determined by the Director of the OMB, are exempted from §5 of this order. Agencies claiming vehicle exemptions must: (1) provide information on the number of each class or type of vehicle claimed as exempt as well as an estimate of total fuel consumption of exempt vehicles on an annual basis; (2) increase fuel efficiency for non-exempt vehicles; and (3) obtain carbon offsets to otherwise achieve compliance with §5 of this order.

(f) If an agency is unable to comply with the policies, objectives or requirements of this order, the head of that agency may request a temporary waiver, not to exceed one year, when compliance with this order would jeopardize national security, pose a potential endangerment to the health or safety of any person, or interfere with law enforcement activities of that agency. The head of an agency may submit such a request to the president, through the Chairman of the Council. In making the temporary waiver request, the head of the agency must show that the agency has made substantial good faith efforts to comply with the policies, objectives, and requirements of this order.

**Section 16. Definitions.** As used in this order:

(a) "Acquire" or "acquisition" means acquiring by contract supplies or services (including construction) by and for the use of the federal government through purchase or lease, whether the supplies or services are already in existence or must be created, developed, demonstrated, and evaluated. Acquisition begins at the point when agency needs are established and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contract financing, contract performance, contract administration, and those technical and management functions directly related to the process of fulfilling agency needs by contract.

(b) "Action" or "proposed action" includes rulemaking, issuing permits and licenses, making grants, procuring goods and services, construction, and other activities undertaken to carry out agency authorities and programs.

(c) "Activities" include actions taken to carry out agency authorities, water consumption<sup>73</sup> and associated energy use, travel, operations, and combustion and combustion-related practices such as flaring.

(d) "Administrator" means the Administrator of EPA.

(e) "Agency" means an executive agency as defined in 5 U.S.C. 105.

(f) "Carbon footprint analysis" means a detailed agency evaluation of the potential overall GHG emissions associated with an agency action, which shall include, at a minimum, a detailed analysis of alternatives that would result in fewer GHG emissions and their short-term and long-term costs. The analysis also shall identify any feasible and practicable options, including revisions of existing agency regulations and policies, that would result in fewer GHG emissions.

(g) "Energy-Savings Performance Contract" means a contract that provides for the performance of services for the

design, acquisition, financing, installation, testing, operation, and where appropriate, maintenance and repair, of an identified energy or water conservation measure or series of measures at one or more locations. Such contracts shall provide that the contractor must incur costs of implementing energy savings measures, including at least the cost (if any) incurred in making energy audits, acquiring and installing equipment, and training personnel, in exchange for a predetermined share of the value of the energy savings directly resulting from implementation of such measures during the term of the contract. Payment to the contractor is contingent upon realizing a guaranteed stream of future energy and cost savings. All additional savings will accrue to the federal government.

(h) "Environmentally preferable" means products or services that lead to a net overall reduction of GHG emissions, considering all aspects of production and use for energy, and that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service.

(i) "Facility" means any individual building or collection of buildings, installation, or structure, as well as any fixture or part thereof, which is constructed, manufactured, renovated, or purchased or leased in whole or in part for use by the federal government. It also means any land, grounds, and other property owned or operated by, or leased to, the federal government. This term includes a group of facilities at a single location managed as an integrated operation, as well as government owned contractor operated facilities. It also includes leased facilities where the federal government has a purchase option or facilities planned for purchase.

(j) "Greenhouse gases" or "GHG" include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

(k) "Life-cycle costs" means the sum of the present values of investment costs, capital costs, installation costs, energy costs, operating costs, maintenance costs, and disposal costs, over the lifetime of the project, product, or measure.<sup>74</sup>

(l) "Life-cycle cost-effective" means the life-cycle costs of a product, project, or measure are estimated to be equal to or less than the base case, i.e., current or standard practice or product. Additional guidance on measuring cost-effectiveness is specified in 10 C.F.R. 436.18 (a), (b), and (c), 436.20, and 436.21.

(m) "Passenger vehicle" means sedans, minivans, sports utility vehicles, and other similar vehicles used to transport agency personnel.

(n) "Renewable energy" includes energy produced by solar, wind, geothermal, biomass power and similar non-carbon-emitting technologies that provide light, heat, cooling, or mechanical or electrical energy.

(o) "Return on energy investment" means the amount of energy an alternative source produces in relation to the amount of energy it consumes.

#### IV. Looking Forward

As the 2008 election approaches, virtually every serious

73. This would include water consumption associated with water pollution treatment facilities, for example.

74. For an example, see *Green Mountain Chrysler v. Combie*, No. 2:05-cv-302, 2007 WL 2669444 (D. Vt. Apr. 3, 2007).

presidential contender acknowledges the need to take some action on GHG emissions. Climate change may quickly become one of the defining issues for the next Administration because of its potential impacts on human health and the environment<sup>75</sup> and because of the major political, social and economic ramifications associated with possible solutions. Moving away from fossil fuel combustion toward a carbon-neutral-emitting economy could lead to important advantages over the current energy model. These include the following: enhanced national security as dependency on petroleum imports decreases; less pollution caused by the production and use of coal, oil and natural gas; and greater economic stability and prosperity from diminished market disruptions that are caused by commodity scarcity, price speculation, and supply fluctuations (and that routinely affect prices, inflation, and employment).

The transition will take years and will not necessarily be a smooth ride. Vested interests, established investments, and an extensive infrastructure need time (and quite possibly some temporary financial assistance) to adjust to a new, less

centralized energy paradigm that does not rely so heavily on mining and extraction of natural resources, conventional power plant electricity generation, and distribution using utility grids. As the world moves away from fossil fuel combustion, there will be winners and losers. Hoping that the problem solves itself or goes away—or that the momentum of the status quo can prevail over time—could be a risky, counterproductive gamble economically and politically. A more pragmatic, proactive approach would be to position ourselves to take maximum advantage of the new opportunities that will arise as the world searches for an achievable balance between energy production and environmentally sustainable GHG levels.

In a global economy, the United States needs to play an active leadership role to stay relevant and help direct the outcome. A first step in this direction would be for federal agencies to lead the way on a new course of action, one that aggressively tackles the critical challenge of achieving meaningful and timely reductions of GHG emissions. That step could be taken on January 20, 2009, regardless of which party wins the White House. A president has the power to make it happen with the stroke of a pen.

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75. See *Massachusetts v. EPA*, 127 S. Ct. at 1455.