



IBM Center for
The Business of Government

Conserving Energy and
the Environment Series

Implementing Sustainability in Federal Agencies:

An Early Assessment of President Obama's Executive Order 13514



Daniel J. Fiorino
American University

Implementing Sustainability in Federal Agencies: An Early Assessment of President Obama's Executive Order 13514

Daniel J. Fiorino

Executive in Residence and
Director, Center for Environmental Policy
Department of Public Administration and Policy
School of Public Affairs
American University



Table of Contents

Foreword	4
Introduction	6
Greening the Federal Government: The Path to Executive Order 13514	9
Differences between the Bush Administration and Obama Administration	
Executive Orders	9
Relevant Laws Setting the Stage for EO 13514	11
The Obama Administration Actions on Federal Sustainability	12
The Centrality of the Sustainability Concept	12
Goals and Targets	13
Strategic Sustainability Performance Plans	14
The Management Structure for Implementation	15
The OMB Scorecard	17
Criteria for Setting Priorities and Allocating Investments	18
Comparing Agency Sustainability Plans	20
Challenges to Environmental and Energy Sustainability	22
The Challenge of Financing Sustainability	23
The Challenge of Reporting and Public Transparency	25
Expanding the Boundaries: The Executive Order and Smart Growth	27
Findings, Recommendations, and Assessment	30
Findings	30
Recommendations	32
Assessment of the Executive Order	34
Appendix I: Executive Orders on Environmental Management and Performance	36
About the Author	38
Key Contact Information	39

Foreword

On behalf of the IBM Center for The Business of Government, we are pleased to present this report, *Implementing Sustainability in Federal Agencies: An Early Assessment of President Obama's Executive Order 13514*, by Daniel J. Fiorino, Executive in Residence and Director, Center for Environmental Policy at American University.

With the issuance of Executive Order 13514 (the EO) on federal sustainability, the Obama administration has called upon the federal government to lead by example by making its operations more sustainable, responsible, and efficient. "As the largest consumer of energy in the U.S. economy, the federal government can and should lead by example when it comes to creating innovative ways to reduce greenhouse gas emissions, increase energy efficiency, conserve water, reduce waste, and use environmentally responsible products and technologies," said President Obama. This EO is an attempt to make operational the concept of sustainability. By pushing the integration of environmental, energy, and transportation indicators, the EO combines into one strategy the core elements of sustainability.

The purpose of this report is to describe the initial implementation of Executive Order 13514. The report aims to:

- Examine the EO as a strategy for promoting sustainability in federal agencies
- Assess its early implementation—its strengths, weaknesses, and areas for improvement
- Offer recommendations for the next phases of implementing the EO

The report is prepared in the second year of Executive Order 13514's implementation. Given the 10-year timeframe of targets and goals, this is an early assessment of the EO and its implementation strategy. The first year (2010) was one of planning, collecting data, and creating the organizational and information infrastructure needed for implementation. The primary planning tool required by the EO, the Strategic Sustainability Performance Plan, was submitted by agencies to the Office of Management and Budget (OMB) and Council on Environmental Quality (CEQ) in June 2010.



Jonathan D. Breul



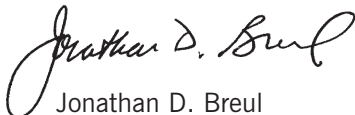
Timothy Fain

During the second year of the EO (2011), agencies have shifted from planning to implementation. The final year for implementation of the EO, based on the target dates for all the goals, is 2020. Agencies are thus just at the start of the entire process.

We offer this report as an implementation analysis, not a program evaluation. It is far too early for an evaluation of EO 13514; there are few outcomes to assess. An implementation analysis, on the other hand, may be helpful at this point in time. Our goal is that this report will provide the groundwork for subsequent evaluations to be conducted later in the EO's implementation process. The concept of sustainability is a unifying principle of Executive Order 13514 and it represents a significant effort to articulate the concept of sustainability and incorporate it into national policy.

This report by Dan Fiorino complements two recent IBM reports, *A Guide for Local Government Executives on Energy Efficiency and Sustainability*, by Nathan Francis and Richard Feiock; and *Breaking New Ground: Promoting Environmental and Energy Programs in Local Government*, by James Svava, Anna Read, and Evelina Moulder, which focus on local government efforts in pursuing sustainability programs. Taken together, these three reports provide insights into how governments at the federal, state, and local levels are taking action today in the hopes of securing a better, more sustainable future.

We trust that this report will add to this timely and continually evolving pursuit.



Jonathan D. Breul
Executive Director
IBM Center for The Business of Government
jonathan.d.breul@us.ibm.com



Timothy Fain
Associate Partner for Business Strategy
Public Sector Strategy and Innovation
tfain@us.ibm.com

Introduction

Sustainability is the integration of economic, environmental, and social systems in modern governance and the preservation of a balance among them. The concept suggests a search for positive relationships among the three systems, so that economic security and prosperity, environmental quality, and social well-being proceed hand-in-hand rather than as a series of zero-sum trade-offs.¹

Central to the concept of sustainability is the idea of thinking about and preparing for the future. Choices made now for the benefit of the current generation should not foreclose the options available to future ones.² The issue of climate change illustrates this long-term imperative clearly: By not reducing greenhouse gas emissions and promoting a transition to clean energy sources, the current generation transfers the costs of climate change to future generations and forecloses options available for meeting their economic, environmental, and social goals. The same may be said of the other issues that make up environmental sustainability, such as water quantity and quality, use and disposal of chemicals, patterns of land use and development, and the efficient use of resources, among others. Choices made now in consuming resources, managing development, protecting ecosystems, and sustaining air and water quality will constrain or foreclose the options available to future generations.

The concept of sustainability is a unifying principle for President Barack Obama's Executive Order 13514 on "Federal Leadership in Environmental, Energy, and Economic Performance," issued on October 5, 2009 (the EO).³ The sustainability concept, especially the notion of integrating environmental and energy issues and linking them with opportunities for economic efficiency and social well-being, is expressed throughout the EO. The idea of not foreclosing options for the future is implied in the scope, targets, and activities in the EO. It is implied that actions taken now will deliver benefits in the future, by increasing near-term costs that will be offset by longer-term gains in environmental, economic, and social well-being. Executive Order 13514 represents a significant effort to articulate the concept of sustainability and incorporate it into national policy.

Two aspects of the sustainability concept as used in this report should be noted. First, the EO is concerned primarily with environmental sustainability and secondarily with the economic and social dimensions of the concept. Environmental sustainability may be described as having three elements:

1. The approach taken here draws upon John Robinson and Jon Tinker, "Reconciling Ecological, Economic, and Social Imperatives: A New Conceptual Framework," in Ted Schrecker, ed., *Surviving Globalism: The Social and Economic Challenges* (New York: St. Martin's Press, 1997), pp. 71–94. For other discussions of sustainability, see Robert C. Paehlke, "Sustainability," in Robert F. Durant, Daniel J. Fiorino, and Rosemary O'Leary, eds. *Environmental Governance Reconsidered: Challenges, Choices, and Opportunities* (Cambridge, MA: MIT Press, 2004), pp. 35–67, and Daniel J. Fiorino, "Sustainability as a Conceptual Focus for Public Administration," *Public Administration Review*, 70 (December 2010), pp. S78–S88.

2. This commonly used definition is from the report of the World Commission on Environment and Development, *Our Common Future*, (Oxford: UK: Oxford University Press, 1987).

3. Executive Order 13514 and documents associated with it are available at www.whitehouse.gov.

- Human health and well-being, including amenities such as clean air and water or protection from toxic chemicals
- Ecosystem vitality, including activities such as protecting habitat, preserving bio-diversity, and managing stresses on water resources
- Resource use and efficiency, which describes how energy, water, and materials are used and with what effects⁴

Although the EO covers all three to a degree, it highlights resource efficiency given the focus on energy, greenhouse gases, and economic efficiency.

Second, the term “sustainability transition” is used in this report. This term is based on the notion that environmental sustainability is less a well-defined outcome than a process of transition from one set of conditions to another. The characteristics of this transition include, for example, moving from:

- Inefficient to more efficient energy use
- Pollutant-intensive to renewable energy sources
- Energy-consuming, unhealthy buildings to green design and construction
- High environmental impact to low-impact development
- High-risk to safer chemicals

The term “sustainability transition” as used in this report refers to the process of moving in these and similar directions. The EO is aimed at promoting such a transition in federal agencies.

The purpose of this report is to describe the initial process for implementing Executive Order 13514. This report aims to achieve three objectives:

- Examine the EO as a strategy for promoting sustainability in federal agencies
- Assess its early implementation—its strengths, weaknesses, and areas for improvement
- Offer recommendations for the next phases of implementing the EO

This report is prepared in the second year of Executive Order 13514’s implementation. Given the 10-year timeframe of targets and goals, this is an early assessment of the order and its implementation strategy. The first year (2010) was one of planning, collecting data, and creating the organizational and information infrastructure needed for implementation. The primary planning tool required by the EO, the Strategic Sustainability Performance Plan, was due from agencies to the Office of Management and Budget (OMB) and Council on Environmental Quality (CEQ) in June 2010. During the following months, OMB and CEQ assessed the documents and provided feedback and guidance. During the second year of the EO (2011), agencies have shifted from planning to implementation. The final year for implementation of the EO, based on the target dates for all the goals, is 2020. Agencies are thus just at the start of the entire process.

This report should be seen as an implementation or process analysis, not a program evaluation. The former “concerns the way in which a particular policy or program is implemented.”⁵ An evaluation, in contrast, is concerned with the effects of a program or policy given the outcomes

4. Based on the definitions in Robert C. Paehlke, “Sustainability,” in Robert F. Durant, Daniel J. Fiorino, and Rosemary O’Leary, eds., *Environmental Governance Reconsidered: Challenges, Choices, and Opportunities* (Cambridge, MA: MIT Press, 2004), pp. 42–47.

5. David H. Rosenbloom, Robert S. Kravchuk, Richard M. Clerkin, *Public Administration: Understanding Management, Politics, and Law in the Public Sector*, 7th ed. (Boston, MA: McGraw-Hill, 2009), p. 352.

it is intended to achieve. It is far too early for an evaluation of EO 13514; there are few outcomes to assess. An implementation analysis, on the other hand, may be helpful at this point in time. The goal is that this report will provide the groundwork for more comprehensive evaluations later in the EO's implementation process.

The report begins with a brief history of federal greening as it has occurred under a series of executive orders, supplemented by statutes. Following the history is an analysis of the strategy for change as embodied in the EO, focusing on six topics:

- The centrality of the sustainability concept
- Goals and targets
- Strategic sustainability performance plans
- The management structure for implementation
- The OMB scorecard
- Criteria for setting priorities and allocating investments

The third section of the report compares five agency strategic sustainability performance plans and the approaches taken in each. The next part considers challenges in implementing the EO. The following section offers an examination of siting provisions as an example of how agencies may affect local and regional planning and extend the reach of federal agencies in promoting sustainability.

The final section of the report presents findings, recommendations, and an overall assessment of the EO.

Greening the Federal Government: The Path to Executive Order 13514

Executive Order 13514 is the latest in a series of presidential orders and statutes aimed at improving environmental and energy performance in the federal government. It can be seen as part of a long-term, incremental process of environmental improvement. However, this most recent order constitutes a departure from its many predecessors. EO 13514 illustrates both a process of incremental change in pursuit of long-term objectives and change that expands upon earlier efforts within the federal government. A look at the actions leading up to the current EO helps place it and the underlying strategy in historical context.

The federal government was a latecomer to the move toward stronger environmental protection in the 1970s and 1980s. Many of the laws and standards that applied to private-sector firms in such industries as steel, chemicals, autos, pulp and paper, and utilities did not apply to federal agencies and facilities. This changed through the 1980s and was codified in the Federal Facilities Act of 1992 and other policies. From a legal perspective, the standards of the Clean Air Act, Clean Water Act, and other laws are binding for federal agencies.⁶ Although federal agencies were exempted from some obligations, especially on matters of national security and defense, the federal government was placed on an equal footing with private firms in the last two decades.

Differences between the Bush Administration and Obama Administration Executive Orders

Executive Order 13423 (2007) was issued by President George W. Bush and is important in several respects. First, it was designed to consolidate requirements from previous orders. It was the most comprehensive set of directives on federal agency greening that had been issued to that point. Second, it reinforced existing orders and expanded slightly upon them. It represented a high degree of continuity. EO 13423 set a baseline from which emerged the more expansive goals of the Obama EO. The Bush EO set quantitative targets for energy efficiency, water consumption, fleet fuel use, building energy intensity, electronic products, and paper. It called for improving but did not set quantitative targets for the acquisition of goods and services; hazardous materials; waste recycling, prevention, and diversion; and renewable energy projects. This order did not set targets for GHGs, reflecting the overall position of the Bush administration on climate change. Provisions on energy efficiency, vehicles, and renewable energy, however, moved agencies in the direction of GHG reductions. By consolidating and reinforcing the provisions of previous orders on greening, the 2007 order set the stage for the more ambitious goals that were set out in 13514.

6. For a statement on the compliance status of federal facilities, see Administrator Christine Todd Whitman Letter to the Honorable James M. Jeffords, available at www.epa.gov/oecaerth/federalfacilities/index.html. On the Defense Department, see Robert F. Durant, *The Greening of the U.S. Military: Environmental Policy, National Security, and Organizational Change* (Washington, D.C.: Georgetown University Press, 2007).

Key Executive Orders in the Clinton Administration

The series of executive orders issued by President Bill Clinton preceded the sustainability orders issued by Presidents George Bush and Barack Obama.

- **Executive Order 13101 (1998)** addressed waste reduction, pollution prevention, recycling, and acquisition of “environmentally preferable” goods and services. It created the Office of the Federal Environmental Executive (OFEE), which plays a central role in implementing the current EO.
- **Executive Order 13123 (1999)** covered energy use and conservation and greenhouse gas (GHG) emissions. It set a goal of a 30-percent reduction of GHG emissions by 2010, using 1990 as a baseline. This order also pressed agencies to strive for renewable energy and water efficiency, defined a major role in federal energy management for the Department of Energy (DOE), and directed GSA to develop sustainable design principles for buildings. These principles now play a central role in EO 13514.
- **Executive Order 13148 (2000)**, titled “Greening the Government through Leadership in Environmental Management,” directed agencies to adopt environmental management systems (EMS) and incorporate them into day-to-day operations and long-term planning. It directed that an EMS be implemented at all “appropriate” federal facilities by the end of 2005 and created the Interagency Environmental Leadership Workgroup to promote their use within agencies. This order also included provisions on compliance auditing, reductions in chemical releases and use, and landscaping.
- **Executive Order 13149 (2000)** called for better federal fleet and transportation efficiency. It aimed to cut petroleum consumption through the use of alternative vehicles and fuels and improved fuel efficiency.

Other executive orders leading up to and setting the stage for the Obama executive order are presented in Appendix I.

Several contrasts in the concept and implementation of the Bush and Obama EOs are worth noting. The former states that federal agencies should carry out environmental, transportation, and energy-related functions “in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner.” (Section 1). Although “sustainable” is mentioned, the EO focuses more on continuous improvement, sound management, and eco-efficiency than on the broader concept of environmental, energy, social, and economic sustainability. The interagency coordinating body is the “Steering Committee on Strengthening Federal Environmental, Energy, and Transportation Management.” Contrast this with the “Steering Committee on Federal Sustainability” created in Obama’s EO 13514. The Bush order may be likened to the efforts of many firms in the 1980s and 1990s to improve environmental management, adopt pollution prevention, and track performance, while not explicitly embracing sustainability. The Obama order is consistent with more recent trends among leading private-sector firms with its emphasis on sustainability.

A second difference between the Bush and Obama EOs is that the process for implementing the former is far less prescriptive than it is for the latter. In contrast to the plethora of dates set out in the Obama EO, the Bush EO prescribed only two specific deadlines requiring that agency heads name someone to oversee implementation (Section 3[d]) and that the federal environmental executive report on agency activities no less often than every other year (Section 6[b]). Another difference between the two is that the Obama EO defines several oversight mechanisms and roles, while the Bush order contains few. In sum, EO 13514 relies far more on action-forcing prescription, agency accountability, and deadlines than its predecessor did.

Relevant Laws Setting the Stage for EO 13514

Many laws also set the stage for EO 13514. The Energy Policy Act of 2005 (EPAAct) and Energy Independence and Security Act of 2007 (EISA) deserve special attention. The 2005 law included several provisions aimed specifically at federal energy use and efficiency, including requirements for buildings, product procurement based on energy efficiency, use of energy savings performance contracts, and renewable energy targets. Among these was that the federal government meet or exceed a target of 7.5 percent renewable energy consumption in 2013 and later years. The EISA set new ethanol rules, increased corporate average fuel economy standards (CAFÉ), set efficiency standards for appliances and lighting, enacted smart grid provisions, and authorized more research on renewable energy and carbon capture and storage. It created an Office of Climate Change and Environment at the Department of Transportation (DOT) and Office of High Performance Green Buildings (OHPGB) at GSA to ensure compliance with the green building provisions in the law, among them sustainable design criteria for new and renovated buildings, conservation and renewable energy, and greenhouse gases. The law called for, by 2010, a 30-percent cut in energy use in federal buildings (from a 2005 baseline) and 55-percent cut in fossil fuels (from 2003). EISA codified many of the provisions of EO 13423 and defined much of the content of 13514.

In sum, when it set out to make its own mark on the federal sustainability agenda, the Obama administration started from an established legal and administrative foundation. Many elements for the next push to federal sustainability were in place.

The Obama Administration Actions on Federal Sustainability

The Obama administration moved quickly to implement its own interpretation of sustainability. The President had stressed the themes of clean energy, climate action, air and water quality, and other environmental issues throughout his presidential campaign. He also had articulated the sustainability concept by emphasizing that environmental and economic progress could not only be reconcilable but also synergistic. It was expected that CEQ and OMB staff would be tasked to draft an executive order as soon as the administration took office. The executive order issued in October 2009 explicitly linked the environment, energy, economics, and even some of the basic elements of social equity.

Executive orders offer presidents a means of influencing policy without having to contend with the numerous veto points in the American system. As the story of cap-and-trade legislation in the Senate in 2009–2010 reveals, the transition to a more sustainable and energy-friendly economy is beset with political and institutional challenges. As head of the executive branch, on the other hand, a president has leeway to direct operations of agencies in ways that improve government efficiency and effectiveness. The Obama EO aims at providing more than just a change in federal policy and behavior. Indeed, the notion that the EO is more than an internal agency strategy comes through in the emphasis it places on leadership and serving as an example for others. That emphasis is one of several aspects of the EO examined in this part of the report. The others are the goals and targets; sustainability plans; the management structure for implementation; the OMB scorecard; and criteria for determining investment priorities.

The Centrality of the Sustainability Concept

This executive order is best understood by focusing on the centrality of the sustainability concept. It is clear that the EO's overarching purpose is to promote environmental sustainability.⁷ The words *sustainability* and *sustainable* appear repeatedly. In the preamble, the stated purpose is “to establish an integrated strategy for sustainability in the Federal Government ...” The implementing mechanism is termed the Strategic Sustainability Performance Plan, and lead officials within agencies are Senior Sustainability Officers who make up the Steering Committee on Federal Sustainability. The role of the Federal Environmental Executive is to develop and promote the sharing of strategies, tools, and best practices from “successful Federal sustainability efforts.” The conceptual focus and scope of the EO clearly reflect an intent to embrace and promote the concept of sustainability.

The term sustainability has been defined in many ways. It is defined in the EO 13514 (Section 19) as follows: “to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of

7. The term “environmental sustainability” is used throughout this report to refer to the three elements of human health and well-being, ecosystem vitality, and resource use/efficiency. When used on its own, the term “sustainability” refers to the relationships among environmental, economic, and social issues.

present and future generations.” This is identical to the definition in the Bush EO and nearly identical to the statement of Congressional policy set out in Title I of the National Environmental Policy Act of 1969 (NEPA). The only substantive difference between the Obama and Bush EOs and NEPA is that the former uses the term to “permit fulfilling” future requirements while NEPA refers to the need to “fulfill” requirements of present and future generations. The actual meaning comes out in the goals and targets in the EO. They provide an operational definition of the environmental dimension of sustainability (although without a specific emphasis on air and water quality, habitat, and biodiversity) and make the link with economic efficiency and progress and, to a more limited extent, with the concept of social equity.

This explicit reliance on sustainability reflects not only an evolution in thinking similar to what many private firms have undergone; it expresses several core policy differences between the Obama administration and its predecessor. The Bush executive order did not directly focus on sustainability. It focused on the themes of stronger management and economic efficiency. The Obama EO embraces sustainability. More important, the leadership within the administration, especially from such key agencies as GSA and DOE, has articulated a vision and commitment that have been absent in recent years.

Goals and Targets

The goals of the EO provide an operational definition of the concept of environmental sustainability. The EO directs federal agencies to:

- Improve energy efficiency
- Measure and reduce greenhouse gases (GHGs)
- Conserve and protect water resources (including stormwater)
- Recycle and eliminate waste
- Prevent pollution
- Purchase green products
- “Leverage agency acquisitions to foster markets for sustainable technologies” and “environmentally preferable products, materials, and services”
- Incorporate green, high-performance principles and strive for zero-net-energy facilities in designing, constructing, renovating, operating, and siting buildings
- Adopt practices and make decisions that strengthen the “vitality and livability” of the communities in which they are located

In doing all of the above, agencies are to inform and involve federal employees and continue to implement environmental management systems (EMS) as directed in previous orders. Agencies are to accomplish these goals while setting priorities “based on full accounting of both economic and social benefits and costs ... ”

These goals are translated into specific performance targets and related policy, practice, and behavioral changes. The EO sets several specific, quantitative targets. Most are defined as percentage reductions to be achieved annually and with respect to a longer-term target date (either 2015 or 2020). Despite the emphasis on reducing GHGs, the EO itself does not set a quantitative target. Instead, it directs each agency to adopt targets for Scope 1 and 2 GHG emissions by January 4, 2010 (90 days after signing of the EO) and for Scope 3 emissions by June 2, 2010 (240 days after signing) as part of its sustainability plan. In January 2010, President Obama set the GHG parameters for agency reductions when he announced 28-percent (Scope

1 and 2) and 13-percent (Scope 3) goals for 2020 for the federal government as a whole. Agencies took this as a point of departure.

The distinctions among Scope 1, 2, and 3 emissions are critical to understanding the EO and its reach:

- Scope 1 includes direct emissions from facilities that are “owned or controlled” by a federal agency.
- Scope 2 covers emissions from power generation that is purchased.
- Scope 3 covers emissions not “owned or directly controlled” by the agency but “related” to its activities, including employee commuting and business travel, vendor supply chains, contractors, and delivery services.

Previous orders did not cover these Scope 3 emissions, nor had most agencies developed tools for measuring them. One of the implementation challenges has been defining a baseline and developing measurement tools for employee business travel, commuting, and vendor supply chains. At the same time, the Scope 3 provisions have greatly expanded the reach of federal agencies beyond their physical and conceptual fence lines. This is especially the case in promoting the goals of neighborhood livability and sustainable siting of federal facilities, as discussed in the final section of this report.

The EO specifies various management strategies and practices that reinforce and expand upon the targets and goals. Among these, agencies are to continue implementing the environmental management systems required under previous orders. Most agencies use these systems to organize and improve their environmental performance. The Department of Energy relies heavily on an EMS, as do the Department of Defense and the National Aeronautics and Space Administration, among others. Evidence of this reliance is these agencies’ participation in EPA’s former National Environmental Performance Track, for which the EMS was a condition of membership.

Strategic Sustainability Performance Plans

An important innovation is the agency strategic sustainability performance plans. Starting in 2010, each agency “shall develop, implement, and annually update an integrated Strategic Sustainability Performance Plan that will prioritize agency actions based on life cycle return on investment (section 8).” This is designed to serve as a comprehensive planning document incorporating key aspects of the EO. The plan includes a general statement of policy, a description of actions for implementing the EO, ways of measuring progress, and a list of policy changes to be made. Plans are to be updated annually and include, among other elements, an analysis of projects that will be extended or expanded, as well as those that will be discontinued.

Agencies are directed to integrate the EO into planning and budgeting processes. This integration extends to strategic plans prepared under the Government and Performance Results Act (GPRA) of 1993 and the GPRA Modernization Act of 2010.⁸ Just how this integration will occur is unclear at this point, given the timing of the order. EPA, for example, does not mention EO 13514 in its most recent performance plan, which is designed to link activities in the annual budget with the strategic plan and goals. DOT, however, explicitly incorporates EO

8. The GPRA Modernization Act revises the original 1993 act in several ways, including changes in agency planning and performance reporting, provisions on designating cross-cutting federal priority goals and agency-based priority goals, and codification of the existing governance framework.

13514 implementation into its draft Strategic Plan for FY2010–FY2025, under the Environmental Sustainability Strategic Goal.⁹ The DOT plan lists four specific targets from the EO as proposed performance measures, among them a 20-percent reduction in GHG emissions and 30-percent reduction in fleet petroleum use by 2020. It also lists several commitments it will undertake as required by the EO. The DOT plan offers an example of how agencies could link sustainability plans with GPRA activities.

In the initial round (June 2010), 56 agencies submitted plans to OMB and CEQ for approval. The plans follow a standard format as prescribed by OMB and CEQ.

The Management Structure for Implementation

Roles of OMB and CEQ

The EO creates an elaborate management structure for coordination, oversight, and accountability. Key responsibilities for implementing the EO were given to OMB and CEQ.

- **The Office of Management and Budget was tasked to:**
 - Review and approve the annual sustainability plans and annual updates (concurrently with annual budget reviews, “where feasible”) and
 - Prepare scorecards evaluating each agency’s performance and publish the results on a publicly accessible website

OMB’s role is to hold agencies accountable, specifically in making links to the annual budget process and producing the OMB scorecards, both of which are powerful oversight mechanisms.

- **The Council on Environmental Quality (CEQ) was tasked to:**
 - Issue GHG accounting and reporting instructions and general implementing guidance
 - Review and approve targets for GHG reduction
 - Provide government-wide GHG targets to the president
 - Review and evaluate the multi-year sustainability plans
 - Establish interagency work groups
 - Administer a presidential leadership and awards program

A central operating role was given to the Office of the Federal Environmental Executive (OFEE), housed within CEQ. Its functions are to identify strategies and tools that support implementation, monitor agency progress, and advise the CEQ Chair and OMB Director on implementation and performance.

Role of the Senior Sustainability Officers

Lead responsibility within agencies is assigned to senior sustainability officers (SSOs) “who shall be accountable for agency conformance with the requirements of this order” (Section 7). They oversee implementation within the agency and are the primary point of accountability with OMB and CEQ. The CEQ website lists 62 SSOs; most are top political or career executives responsible for administrative or management functions. The SSOs make up the Steering Committee for Federal Sustainability, which is the primary interagency coordinating body.

9. USDOT Draft Strategic Plan: 2010–2015 (public comment draft). Available at www.dot.gov/stratplan/dot_strategic_plan_10-15.pdf.

Beyond the designation of the SSO, the EO does not specify how agencies are to manage their internal plan development and implementation. As the upcoming discussion of five sustainability plans will describe, agencies formed internal task forces or work groups to focus on various aspects of the EO.

Role of the Department of Energy and General Services Administration

As part of its management structure, the EO designates roles for DOE and GSA based on their subject matter expertise or functional responsibilities within the government.

- DOE is designated based on the centrality of energy use and greenhouse gas reductions in sustainability. The Federal Energy Management Program at DOE serves as a resource on greenhouse gas reporting and accounting procedures, fleet management and economy, and options for improving energy efficiency.
- GSA is designated due to the emphasis on building construction, renovation, and maintenance and the acquisition of goods and services. As the federal property manager, GSA plays a central role in vendor and contractor performance as well as in building design, construction, maintenance, and demolition.

Role of Interagency Groups

Given the range and complexity of the demands placed on agencies, well-defined and managed networks for communicating expectations, sharing information and best practices, and coordinating actions are critical. Agencies are collecting and organizing a great deal of data, supporting change in a variety of organizations, and working through a number of challenges. The EO itself creates one interagency body—the Sustainability Steering Committee, comprised of senior sustainability officers and led by OMB and CEQ. Other interagency groups are created directly in the EO.

Several coordinating groups had been established to promote the goals of previous orders and statutes, including the following:

- **The Interagency Energy Management Task Force**, led by DOE's Federal Energy Management Program (FEMP), was created to promote the goals of the Federal Energy Management Improvement Act of 1988.
- **The INTERFUEL Working Group (the Interagency Committee on Alternative Fuels and Low Emission Vehicles)** dates back to 1991, but is still active.
- **The Federal Water Working Group** was created to implement the water reduction targets of Executive Order 13423 in 2007.
- **The Telework Issues Working Group**, formed by GSA and the Office of Personnel Management in 2000, is working on Scope 3 emission targets.
- **The Interagency Sustainability Working Group** (led by FEMP and GSA), started in 2001, remains active for issues related to the built environment.
- **The Federal Electronics Stewardship Working Group**, created to implement the Federal Electronics Challenge program, has more recently turned its efforts to end-of-life disposal of electronic waste.
- **The Sustainable Acquisition Management** group coordinates purchasing policy and practices.
- **The Federal Working Group** on GHG Accounting and Reporting is an active coordinating body. Because previous orders had not set targets for GHG reductions, accounting and reporting protocols were a new challenge.

- **The Climate Change Adaptation Task Force**, with representation from over 20 agencies, is responsible for recommending steps toward an integrated federal strategy within a year.

The OMB Scorecard

The principal tool for measuring agency performance and informing the public is the OMB management scorecard. Compiled semi-annually, it presents an OMB/CEQ assessment of status and progress in energy, transportation, and environment performance for 24 agencies. The scorecard serves a dual purpose:

- Internal management assessment
- Public reporting on individual agency performance

The idea of agency scorecards for rating environmental performance dates to the Clinton administration. Beginning as a quarterly assessment of energy performance, the scorecard later was expanded to cover transportation and environmental stewardship. The color coding (red, yellow, and green) was added in 2006, after which the scorecard was issued on a six-month schedule. The color-coding scheme is based on the scoring system adopted for the President's Management Agenda by the Bush administration. The old format was replaced by a new "sustainability and energy scorecard" format in 2011.

These scorecards are similar in concept and purpose to the environmental and sustainability "balanced" scorecards many private firms use. They are designed to provide an accessible, visual representation of performance. Until 2011, the scorecards evaluated agency performance in three categories: energy, environmental stewardship, and transportation (each technically was a separate scorecard). Each category included five or six metrics. As of April 2011, agencies now release the results of their OMB/CEQ assessment with the new sustainability and energy scorecards.¹⁰ This is a more streamlined and accessible format in which agencies are evaluated in seven categories:

- Scope 1 and 2 GHG targets
- Scope 3 targets; energy intensity
- Use of renewable energy
- Reduction in potable water intensity
- Reduction in fleet petroleum use
- Green buildings

There is some loss of detail with this format; many of the EO's goals are not tracked in the new version. But the format is more accessible and allows for more direct comparisons of the OMB/CEQ assessments in the seven categories presented. The new format retains the three-color coding system:

- Green ("success") indicates the agency has met all the standards.
- Yellow means "mixed" performance.
- Red ("unsuccessful") describes serious problems in meeting the standard.

The new format provides the specific criteria used to determine the ratings for each category.

10. Available at <http://www.whitehouse.gov/administration/eop/ceq/sustainability/omb-scorecards>. This site links with the individual reports that are posted on each agency's website.

Interviews with several executive order coordinators in federal agencies confirm that the scorecards carry weight. A red score is cause for concern and a signal from OMB that an issue requires attention. The upside is that it may spur additional resources or action by management. Green scores are taken as a sign of strong performance or recognition of improvement and yellow ones as a neutral or wait-and-see situation. The ratings are based on evaluations by CEQ and OMB staff and managers. Agency coordinators point out that the ratings are used not only to evaluate agency performance but also to highlight areas for which OMB sees a need for progress generally. An example is the OMB's feedback on green purchasing in the summer of 2010; critical evaluations of many agencies were taken as a sign that performance should improve across government. The scorecards appear to have value as an internal management tool, yet given their limitations, they are less useful as a public reporting tool.

Criteria for Setting Priorities and Allocating Investments

A major challenge in implementing this EO is applying a sound analytical standard for making investment decisions. Agencies must select from a range of investment opportunities as they attempt to become more sustainable. Whether the goal is energy or water efficiency, pollution prevention, building design and renovation, or facility siting, agencies must decide whether to make investments, set priorities among them, and be able to justify why one option is preferable financially to competing ones.

In one respect, the challenges for agencies are nearly identical to those for private firms. From a financial perspective, an organization must define and apply criteria for making rational choices among competing investment alternatives. These typically are captured in criteria for determining a desired return on investment or payback period. Federal agencies, however, may not be expected to act in the same ways that private, profit-seeking firms do. Although they are expected to operate efficiently, they also exist for the purpose of promoting broader social goals. This is apparent in their missions (e.g., public health, environmental protection, income security) and how they operate (with a high regard for process, fairness, diversity, and so on). It is strongly implied and sometimes explicit in the EO that agencies should look beyond measures of operating efficiency as measured by return on investment and payback periods toward broader social goals.

The general analytical standard is introduced in the policy section (Section 1) of the EO. It directs that agencies "shall prioritize actions based on a full accounting of both economic and social benefits and costs and shall drive continuous improvement by annually evaluating performance, extending or expanding projects that have net benefits, and reassessing or discontinuing under-performing projects." This standard is applied specifically to sustainability plans in Section 8; it provides that agencies "shall develop, implement, and annually update an integrated Strategic Sustainability Performance Plan that will prioritize agency actions based on life cycle returns on investment." Section 8(f) directs that the plans shall "take into consideration environmental measures as well as economic and social benefits and costs in evaluating projects and activities based on life cycle return on investment." Section 8(j) further provides that agencies identify, in annual updates, "opportunities for improvement and evaluation of past performance in order to extend or expand projects that have net life cycle benefits, and reassess or discontinue under-performing projects." The EO specifies a recurring, incremental, benefit-cost analysis based on life cycle returns. This applies not only for selecting and setting projects, but reevaluating them annually and deciding whether to continue, expand, or discontinue them. As noted above, Section 8c directs that plans "shall be integrated into the agency's strategic planning and budget processes, including strategic plans under section 3 of the Government Performance and Results Act of 1993 ..."¹¹

11. Section 3 of the Government Performance and Results Act requires comprehensive, five-year strategic plans from federal agencies that define goals and objectives and a plan for achieving them.

This is an ambitious set of analytical standards. They appear to be designed more to establish the rationality and efficiency-mindedness of the EO's sponsors than to meet the needs of the organizations making the decisions. There are three sets of instructions in these analytical standards:

- Evaluate all projects and investment options over their full life cycle.
- Incorporate the social costs and benefits of investment options as well as their effects on internal agency efficiency.
- Conduct a recurring, incremental analysis of life cycle costs and benefits that includes not only economic but environmental and social criteria as well.

These instructions establish high standards of comprehensive rationality; at the same time, they allow each agency wide discretion. As the analysis of plans below suggests, agencies have developed their own investment criteria, based on their capacities and needs, which may fall short of these analytical goals.

Comparing Agency Sustainability Plans

One of the more significant innovations in Executive Order 13514 compared with its predecessors is in its strategic sustainability performance plans. The first round of plans was due June 2, 2010, just nine months after the EO was issued. Updates are due annually. The sustainability plans should be seen as planning documents, although agencies often do report on their progress to date.¹² The purpose of the plans is to put agencies on a trajectory to meet the EO's ultimate goals by 2020. A secondary purpose is to provide annual updates on progress toward meeting the goals.

Fifty-six agencies submitted plans in the summer of 2010. They include an array of organizations, many of which are small agencies with modest environmental footprints. Yet even the universe of agencies tracked in the OMB scorecard displays a great deal of variety. Some, like the Department of Education (ED), are relatively small in budget and personnel and consist of office facilities; all of the department's buildings are managed by GSA, which is accountable for the buildings' energy use and emissions. At the other end of the spectrum is the Department of Defense (DOD), with an extremely large and diverse range of organizations, installations, and operations with a major environmental, energy, and transportation footprint. DOD alone accounts for 56 percent of federal government energy use.¹³ In the middle are such agencies as DOE, DOT, and EPA. In a class of its own is the Tennessee Valley Authority (TVA).

The agency sustainability plans reveal a great deal about strategy, management, priorities, and investment criteria, and offer hints on the likelihood of achieving the 10-year targets. They are especially revealing in listing the range of practices and tools agencies are using to improve their own operations and extend their influence out to vendors, employees, communities, clients, and others. This section provides highlights on the sustainability plans of five agencies: DOE, EPA, DOT, ED, and TVA. They present a mix of missions, size, organizations, and implementation challenges. The present discussion analyzes and compares the plans in four categories:

- Policy and management issues
- Investment criteria
- Performance targets, especially the GHG emissions targets, which were set by each agency
- Consistency and accessibility of the information presented

Policy and management issues. The plans give slightly different levels of attention to policy and management issues. EPA focuses more, for example, on the process of developing the plan than on implementation from this point on. DOE adopts a corporate perspective, given its diverse operations. It is the only agency to commit to creating a department-wide sustainability

12. Plans submitted to OMB and CEQ may include budget numbers but these are not published.

13. Next in energy use are the Postal Service (8% of the total); Energy (8%); Veterans Affairs (7%); GSA (5%); and DOJ (4%). All the remaining federal agencies account for only 12%. (From the Federal Energy Management Program website, August 2010.)

performance office to implement its plan. Of the five, DOT presents the most information on managing and budgeting, and it incorporates the core sustainability goals into its most recent update of its strategic plan. TVA's plan is similar in style and presentation to sustainability plans prepared by a private firm; this reflects its status as a major energy service provider dependent on customer revenue. It gives a fair amount of attention to its plans for integrating the EO's requirements and targets with its overall business planning, strategy, and metrics. The Department of Education provides less information on strategy and management than do the other four agencies.

Investment criteria. As for investment criteria, all five agencies are early in the process of sorting out their approach. As noted above, the EO calls for a high degree of comprehensive rationality in setting priorities and justifying investments in sustainability projects and initiatives. Practically, it is difficult to meet those high expectations. All of the plans give recognition to the need for a life cycle, cost-benefit analysis for setting priorities. What is apparent in the plans, however, is that the agencies are not yet sure how to do this. They appreciate the need to calculate and justify decisions on the basis of internal rates of return, although (except for TVA) they are not always explicit on what this should be. A larger issue, however, is how broader social benefits (e.g., benefits from reducing GHG emissions, generating less stormwater run-off, or buying greener products) should be measured and incorporated into the investment analysis. Of the five, for example, DOE is the only one to adopt a social cost of carbon to value social benefits. This issue is discussed later as an implementing challenge and is covered in the recommendations.

Performance targets. The many performance targets, variations in presentation, and early phase of implementation make it difficult to predict the likely performance that will be achieved. Most targets are fixed in the EO and are identical for each agency. In their plans, all agencies commit to meeting or making a good-faith effort to meet the targets. With GHGs, however, agencies are given discretion. The President's 28-percent and 13-percent targets by 2020 for the federal government as a whole set the parameters for agency targets on Scope 1–2 and Scope 3 emissions. DOE aimed for the largest reduction in Scope 1 and 2, of 28 percent. The other Scope 1–2 targets were 25 percent for EPA; 17 percent for TVA; 12.3 percent for DOT; and none for ED (given that GSA is responsible for its emissions). TVA was the most ambitious on Scope 3, with a 17-percent target, followed by DOE at 13 percent; DOT at 11 percent; EPA at 8 percent; and ED at 3 percent.

Consistency and accessibility of information. Another way to analyze and compare the plans is on the consistency and accessibility of the information presented. Here the plans vary, especially on management, budgeting, and other implementation issues. The plans present a great deal of information on performance and targets, but it is difficult to compare them. Although agencies follow the same format, some degree of repetition in that format and the different levels of detail in the agency presentations pose a challenge. These limitations are not surprising in what is essentially a rough-draft planning document. The opportunity now is to use these rough drafts to produce better plans in the future, by separating planning from reporting and creating a system of agency-specific and government-wide reports, as is proposed in the recommendations. The idea of the sustainability plans, despite these limitations, is a major innovation and what one agency sustainability coordinator described as a “brilliant” addition to federal greening.

Challenges to Environmental and Energy Sustainability

Sustainability transitions rarely are easy. Whether at the level of a nation, city, firm, or the federal government, they involve changes in policy, behavior, incentives, accountability, measurement, and culture. This applies to the strategy in EO 13514. Agencies are created for missions other than sustainable energy and resource use. They undergo regular changes in political leadership, both in the executive branch and Congress, during which goals and priorities change.¹⁴ They must obtain critical, expert staffing when competition for resources is intense and funds are declining. In many cases, agencies must integrate their sustainability strategies among diverse and geographically far-flung organizations for which security and secrecy concerns are paramount. Further, to be effective in making a transition to sustainability, agencies must be able to leverage resources and share lessons across government, which is always a challenge. Important institutional and management challenges facing agencies include:

- Financing capital investments with long-term payoffs
- Obtaining critical, expert staffing in an era of declining resources
- Providing objective, accessible information on performance
- Sustaining momentum in the face of leadership changes
- Integrating sustainability with agency missions and strategies
- Providing incentives within the constraints of the annual budgeting process
- Applying workable and defensible criteria for investment priorities
- Diffusing information, expectations, and practices within and among organizations
- Leveraging resources and sharing lessons, including across agencies
- Managing diverse and far-flung operations

The next two sections of the report will focus on two of these challenges. Financing sustainability initiatives is a major challenge, as these initiatives often require up-front capital investments that yield returns over time. The second is reporting and public transparency, both of which are recurring themes in the EO. Initial mechanisms are in place for both, but there is room to improve. In addition, in meeting both of these challenges, there are lessons to be gained from private firms that have been grappling with similar issues for many years. This section defines the issues, assesses what is in place, and sets the stage for the report's recommendations.

14. A comment from several agency sustainability staff was a perceived need to move quickly in implementing EO 13514 and achieve the early goals should administrations change in 2012 or 2016.

The Challenge of Financing Sustainability

The time lag between investing in sustainability initiatives and realizing financial returns is a constraint on a sustainability transition. Sustainability investments typically compete against a variety of other options in gaining financing. These constraints are similar conceptually in public and private organizations. Concerns over the rate of return and payback periods for investments in energy and water efficiency, waste and pollution prevention, sustainable buildings, and other initiatives exist in all settings. Government agencies, however, face particular challenges due to the annual cycles of government budgeting and the difficulty of accounting for up-front investments that may generate returns over a period of years. The normal, annual budget cycles are not well designed to support long-term investments.

Since the mid-1990s, federal agencies have addressed this issue as it applies to energy investments through:

- DOE: Energy Savings Performance Contracts (ESPCs)
- DOE: Utility Savings Performance Contracts (USPCs)
- DOD: Energy Conservation Investment Program (ECIP)

These three types of contracts are “budget neutral contracts paid over time from future energy savings, to fund energy efficiency projects.”¹⁵ The non-defense ESPCs, the focus of the discussion here, are administered by DOE’s Federal Energy Management Program (FEMP); these are indefinite delivery, indefinite quantity contracts that may be used by any federal facility nationwide.¹⁶

With an ESPC, the agency contracts with an energy services company (ESCO) to obtain the up-front capital needed to finance a project. The ESCO conducts a facility audit, recommends improvements, arranges financing, and guarantees a minimum level of cost savings. The agency pays back the ESCO with these savings; any additional returns become available to finance other projects or are returned to the agency’s budget. The contract may run for a maximum of 25 years, after which point any further savings accrue to the government. A USPC is similar in concept, except that a utility arranges the financing for the agency.

DOE has found these energy performance investments to be cost-effective, with payback periods that average just over six years. Most cost-effective are such measures as advanced metering and adjustable rate schedules, which typically pay for themselves in less than a year. Renewable energy technologies have the longest payback, of about 18 years. As of March 2010, DOE calculated that \$3.6 billion had been invested in 550 energy contracts and generated \$11 billion in savings. Managed by DOD for its own investments, the ECIP has yielded savings of about \$1.5 billion on investments of over half a billion dollars. Both the DOE and DOD programs yielded savings at a ratio of about 3 to 1.¹⁷

The roots of ESPCs date back to the 1985 amendments to the National Energy Conservation Policy Act. Authority was extended in the Energy Policy Act of 1992 and the 2007 EISA, which directed agencies to reduce energy use in federal buildings by 30 percent. EISA allows more flexible financing options; it restricts agencies from limiting the term of contracts to less than 25 years or limiting total obligations; and it directs the Defense Department to study potential uses of these contracts to non-building applications, such as vehicles and use of federally owned equipment to generate electricity or transport water.

15. Testimony of Richard Kidd, Program Manager, Federal Energy Management Program. Before the Subcommittee on Federal Financial Management, Government Information, Federal Services and International Security, U.S. Senate Committee on Homeland Security and Government Affairs, January 27, 2010, p. 6.

16. An excellent resource on ESPCs is the FEMP webpage at <http://www1.eere.energy.gov/femp/financing>.

17. Testimony of Richard Kidd, p. 7.

The ESPC model appears to have been an effective mechanism for financing long-term improvements in energy and water efficiency at federal facilities. The gradual expansion and refinement of ESPCs over nearly two decades has provided a way to finance long-term investments within the constraints of the federal budgeting process. The issues are whether they are sufficient for achieving the goals set out for federal agencies and, more important, what mechanisms may be used for other sustainability goals. Are they adequate, usable, and cost-effective for achieving the changes envisioned in the EO?

A study by the Government Accountability Office (GAO) in 2005 found that there are several benefits to using ESPCs for meeting energy and other goals. They allow access to up-front financing as well as private-sector expertise, enable agencies to adopt a more integrated approach, and shift some of the risk of new technologies and equipment to the energy service contractors.¹⁸ The GAO also found that ESPCs cost more than internally financed projects, because the federal government would pay lower financing rates than do private firms. For implementing ESPCs, the GAO saw a need for improvements, such as finding better ways of measuring energy savings, introducing more competition into the contracting process, and reducing transaction costs. With these caveats, GAO concluded that ESPCs “provide a valuable and practical tool that federal agencies use to meet energy reduction, environmental, infrastructure, and other goals.”¹⁹ In response to similar recommendations from its Office of Internal Review, DOE announced several administrative reforms in its ESPC program in 2009, including fast-track procedures for some projects, more direct price competition among contractors, full life cycle audits of projects, steps to reduce borrowing expenses, and a greater focus on carbon emissions.²⁰

ESPCs are a creative response to the difficulties of obtaining up-front financing. The GAO noted that the largest user of the ESPC model, the Department of Defense, relies on it “in part because of difficulties they encountered in obtaining adequate up-front funding for energy projects that were not categorized as mission-critical.” Similarly, the GSA and the Veterans Administration (the next largest users) used ESPCs because “adequate funding for their energy projects has been difficult to obtain in recent years.”²¹

If the federal government is serious about promoting investments in energy and water efficiency and other goals, it could establish a central fund to finance projects. Private firms have used this approach to support investments. Johnson & Johnson, for example, has created a “capital relief fund” for CO₂ reduction projects.²² As the federal government has now done, the company had committed to absolute reductions in emissions. It found, however, that energy and CO₂ reduction projects were competing with investments in such areas as marketing and product innovation, which often had higher expected return rates. The solution was to create a fund that would allow business units to spend up to a total of \$40 million annually on emission reduction projects. To qualify, projects had to be financially viable and provide a minimum 15-percent internal rate of return, although lower rates could be justified when “clear and definable other benefits” could be documented.²³ In its first few years, the fund provided \$86 million of capital for 49 projects and an average return of 16.3 percent, leading to 88,500 tons of CO₂ reductions.²⁴

18. United States Government Accountability Office (GAO), *Energy Savings: Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests* (Washington, DC: GAO-05-340, 2005).

19. *Ibid.*, p. 47.

20. Memorandum from Cathy Zoi, Assistant Secretary for Energy Efficiency and Renewable Energy, “Implementing Reforms for Department of Energy’s Use of Energy Savings Performance Contracts,” July 17, 2009 (<http://www1.eere.energy.gov/femp/financing/espcomodification.html>; accessed November 22, 2010).

21. GAO, p. 16.

22. See <http://investor.jnj.com/sustainabilityreport/pdf/2009-sustainability-report.pdf>, p. 22.

23. World Wildlife Fund and International Institute for Management, *Climate Innovation Case Study* (Climate Savers, 2009), p. 3.

24. *Ibid.*, p. 4.

Within the federal government, a central fund would allow agencies to compete for investment capital for projects with high rates of return, as defined under the EO's criteria. Although money is scarce in federal budgets, the likely returns on investment would pay off in a relatively short time. This is especially the case for the domestic (i.e., non-defense) agencies, for which ESPCs are less accessible and more difficult to use.

One possible model is the Clean Water State Revolving Fund (SRF) that the federal government uses to finance water projects. Established under the 1987 Clean Water Act, the SRF provides some \$5 billion annually to fund water quality protection through wastewater treatment, non-point sources, watershed, and estuary programs.²⁵ It offers low-interest, flexible loans (about 2.3 percent in recent years) for municipalities, communities, farmers, small businesses, and others. The fund has been compared to an infrastructure bank; loan repayment and interest payments are recycled back into the fund and become available for new projects. The SRF includes provisions for public-private partnerships, which enable agencies to contract with private entities, as is the case with an ESPC. The low rates, flexible financing, and partnerships with private financiers and expertise make the SRF useful for expanding on the ESPC concept.

The Challenge of Reporting and Public Transparency

Executive Order 13514 appropriately gives considerable attention to the need for transparency in goal-setting, implementation, and performance. The opening statement of policy (Section 1) directs that "agencies' efforts in implementing this order shall be transparent and that agencies shall therefore disclose results associated with the actions taken pursuant to this order." It is a required topic in the agencies' sustainability plans.

This is an area in which the private sector has had a great deal of experience. Public reporting and transparency have been mainstays of corporate environmental sustainability. In the last two decades, the amount and quality of corporate reporting increased markedly. Stimulated by demands from investors, shareholders, customers, and environmental activists, as well as by such information disclosure programs as the Toxics Release Inventory, most large and many small firms publish environmental and sustainability reports. Many firms publicly set quantitative goals, assess progress toward meeting them, and commission independent audits of the validity of their reports. Many organizations evaluate and rate corporate reports as a means of improving their quality and comprehensiveness. Further, several voluntary reporting formats and protocols, such as the Global Reporting Initiative (GRI), exist for standardizing company reporting.

Anyone familiar with the leading private reports will notice a clear difference between them and the current state of federal agency reporting. Such firms as Baxter, Bristol Myers Squibb, 3M, Xerox, and Intel are operating at a far higher level of public transparency than is the federal government in its sustainability reporting. An analysis of the two current mechanisms for agency reporting—the OMB scorecard and the agency sustainability plans—illustrates the room for improvement in federal agency reporting.

The scorecards may provide a useful mechanism for comparing agencies and holding them accountable, at least from an internal management perspective. Whatever their internal value, however, they are less useful for informing the public and other external audiences. They are more valid as a qualitative assessment of agency progress than as a source of information about agency environmental and energy performance.

25. Clean Water State Revolving Fund, at <http://water.epa.gov/grant>; accessed November 21, 2010).

One could argue that the agency sustainability plans provide annual reporting on performance. However, analysis of several plans suggests they will need to be modified if they are to serve as a mechanism for public transparency. The initial plans were almost entirely prospective, so it is reasonable that OMB and CEQ would give little attention to the reporting relative to the planning aspects of the plans. As agencies shift more to implementation, however, it will be increasingly important for them and the government as a whole to provide consistent, objective, and comparable information on performance.

Some limitations in the current reporting are readily apparent. One is simply the accessibility of performance data given the formatting of the current plans. It takes some digging to determine how agencies are doing on such basic indicators as energy efficiency, GHG emissions, fleet energy performance, water efficiency, and sustainable procurement. Agencies report their sustainable building data in many ways. Accessible formatting and clearer organization of data would help in tracking agency progress over time. Moreover, agencies report on different aspects of their management strategies, budget planning, use of environmental management systems, and public engagement.

Another area for improvement is in using the plans to evaluate performance. The EO relies almost entirely on percentage reductions to set targets. One consequence of this approach is that strong past performers are disadvantaged relative to weak ones. An agency that did well before 2007 and 2008 (baseline years for many targets) would have a more difficult time achieving the targets than one that had accomplished less and was starting from a higher baseline. In explaining its “red” rating for water intensity, for example, the Social Security Administration notes that “we are the lowest water user per gross square feet of all federal agencies ... so it is difficult to improve water use.”²⁶ A solution is to use normalizing factors for as many targets as possible. The EO defines such a factor for only two targets—potable and non-potable water—in its current form (although the new scorecard format does include energy intensity). The format could allow agencies to use normalizing factors for other indicators and allow a fairer comparison of agency performance relative to peers.²⁷ This will be difficult, to be sure, given the limits in data and range and diversity of agency operations. Other kinds of organizations face similar challenges, however. Working to achieve a more systematic approach to performance reporting should lead to better and more accurate data over time.

The goal for the federal government over the next several years should be to develop a system of annual, agency-specific and government-wide sustainability reporting. The private sector offers several useful models. One is the Global Reporting Initiative (GRI). Developed in the last 15 years by a coalition of socially responsible investors, NGOs, private firms, and accounting organizations, it reflects a great deal of experience with comprehensive environmental, energy, social, and economic reporting. Although focused largely on the private sector, the GRI issued a sector pilot for public agencies in 2005. Use of the GRI guidelines by agencies lags behind the private sector; only 1.7 percent of the reports issued in 2009 were from public agencies.²⁸ As the GRI notes, “sustainability reporting in the public sector is still emerging when compared to the private sector.”²⁹ The GRI offers agencies an opportunity to build upon an established foundation in moving toward more comprehensive sustainability reporting.

26. This was a comment on a narrative accompanying the Social Security Administration’s scorecard, available at <http://www.socialsecurity.gov/facilities>.

27. This normalized, comparative information is available from the Federal Energy Management website.

28. Global Reporting Initiative, *GRI Reporting in Public Agencies* (GRI, 2010), p. 7. Available at www.globalreportinginitiative.org (accessed November 17, 2010). The GRI is based on eleven reporting principles: transparency, inclusiveness, auditability, completeness, relevance, sustainability context, accuracy, neutrality, comparability, clarity, and timeliness.

29. *Ibid.*

Expanding the Boundaries: The Executive Order and Smart Growth

The Executive Order provisions on smart growth and sustainable communities illustrate a departure in strategy from the rest of the EO, which stresses numerical targets and near-term accountability.³⁰ These provisions go beyond the conceptual boundaries of federal facilities and extend into the community. Provisions include:

- Defining a strong role for local/regional planning organizations
- Aiming to align federal with local actions
- Integrating other goals (such as energy efficiency, GHG reduction, environmentally friendly development, and green buildings) within a longer-term strategy

Combined with the Scope 3 emissions provisions, the section on sustainable siting is a departure. The EO extends agency influence into the communities in which they operate. Smart Growth goals (in Section 2f) direct agencies to:

- Participate in local and regional transportation planning
- Align federal with local energy planning to, for example, support renewable energy generation
- Consider pedestrian-friendly sites that are accessible to public transit
- Emphasize existing city and town centers
- Assess energy issues and alternative sources in their NEPA assessments
- Coordinate federal with regional ecosystem and watershed management

Instead of setting measurable targets, the EO calls for activities (using terms like participating, analyzing, and coordinating).

The more substantial smart growth goals of the EO come through in Section 10 on “sustainable locations for federal facilities.” It directs DOT, “in accordance with its Sustainable Partnership Agreement” with the Department of Housing and Urban Development (HUD) and EPA, and “in coordination with” GSA, the Department of Homeland Security (DHS), and DOD, to recommend sustainable location strategies for use in sustainability plans. It directs that the recommendations “shall be consistent with principles of sustainable development” such as not developing sensitive land resources, giving priority to central business and rural town centers, and considering access to public transit and affordable housing, among others. The effect is to link the EO, sustainable development, and smart growth principles together in one set of interagency policies and actions. Given the historically limited role federal agencies

30. On the general topic of smart growth, see Kent E. Portney, “Sustainability in American Cities: A Comprehensive Look at What Cities Are Doing and Why,” in Daniel A. Mazmanian and Michael E. Kraft, eds., *Toward Sustainable Communities: Transition and Transformations in Environmental Policy*, 2nd ed (Cambridge, MA: MIT Press, 2009), pp. 227–254.

have played in local land use and development policy, this aspect of the EO is especially innovative and noteworthy.

At a policy level, there was an early consensus within the administration that smart growth and sustainable community goals should be addressed. Most proponents of sustainability recognize that land use and development issues are crucial. DOT, EPA, and HUD already were promoting actions under a livability initiative. This “Interagency Partnership for Sustainable Communities” was released by the heads of these agencies in July 2009, three months before 13514 was issued.³¹ The goal was “to help improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” HUD Secretary Shaun Donovan asserted at the time that “[f]or the first time, the Federal government will speak with one voice on housing, environmental, and transportation policy.” The partnership asserts the social and integrating aspects of sustainability better than any statement associated with the EO. Section 10 built on this agreement as well as on EPA’s Smart Growth and GSA’s Good Neighbor programs. Executive orders from the Carter and Clinton years on town centers and historic buildings, as well as the 2005 Energy Policy Act and 2007 EISA, also provided a foundation for this initiative.

Given the tight schedule, Section 10 does not specify a plan. It directs DOT, EPA, and HUD (in accordance with GSA, DOD, and DHS) to recommend actions for use in sustainability plans. As it turned out, DOT, EPA, and GSA took the lead in developing criteria for Section 10. Working with other agencies, a three-agency work group proposed its “Recommendations on Sustainable Siting for Federal Facilities” on April 5, 2010, just within the 180-day deadline after the signing of the EO. They include many elements of smart growth:

- Integrated planning and development
- Adaptive reuse of buildings; transit access
- Options for walkers and bikers; infill development
- GHG reduction
- Ecosystem and natural resource protection

The social aspect of sustainability is reflected in the second criterion—it calls for siting decisions that ensure proximity to “a sufficient amount of housing affordable to employees of the proposed facility” and/or proximity to transit that is accessible to affordable housing.

Also important is the priority given to coordination with local planning groups. The final criterion addresses the need to discuss “location alternatives with local and regional planning officials and consider their recommendations.” In making siting or redevelopment decisions, federal agency officials should consult with local officials early and “regularly reevaluate” the consultation process as the planning process proceeds.

Two implementation issues associated with the siting criteria and objectives deserve attention. One is the sensitivity to agency missions, especially national defense and security. The siting criteria are aimed at complementing and not displacing agency missions. This implies a careful balancing process as siting and renovation decisions are made in coming years. The second implementation issue is the instruction to integrate sustainability location into federal agency business planning processes. Siting decisions should be subjected to the same forms of life-cycle, cost-benefit analysis applied to other provisions. The sustainable location criteria

31. “HUD, DOT, and EPA Partnership: Sustainable Communities,” announced June 16, 2009. Available at <http://www.dot.gov/affairs/2009/dot8009.htm>. The quotes are from the accompanying press release.

should be integrated into sustainability plans, which in turn are to be integrated into the GPRA process. Once again, the EO calls for a high degree of rational-comprehensive decision making. This is challenging, given the practical administrative realities under which federal agencies must operate.

Section 10 is a major innovation. Along with the provisions on Scope 3 emissions, links to vendor/contractor behavior, and sustainable acquisition of goods and services, it extends the reach of federal agencies well beyond the proverbial fence line of their own operations. Politically, it is also the part of the EO that could be vulnerable in a change in administration.

This expansion of federal involvement in local growth decisions may be politically controversial and contentious. If one accepts, however, that federal agencies should use the resources that are available to promote local sustainability, the provisions on siting and local-regional collaboration, along with those on sustainable buildings and Scope 3 GHG emissions, offer an effective tool for moving in that direction.

Findings, Recommendations, and Assessment

Executive Order 13514 builds upon previous orders and statutes while also expanding significantly on them. The drafters of EO 13514 drew on existing policies and tools, among them the Guiding Principles for Sustainable Buildings, LEED, the Electronic Product Environmental Assessment Tool (EPEAT), and directives on EMS. Most of the agency performance goals, if not the numerical targets, had already been established. However, the Obama EO differs significantly from its predecessors in:

- Embracing the sustainability concept—this difference places federal greening on a more substantial conceptual foundation
- Adopting a more prescriptive strategy, with detailed planning and accountability—this difference applies a more direct and action-forcing implementation strategy
- Expanding the reach of federal agencies well beyond their own conceptual borders—this difference employs federal resources to leverage societal change, in particular through the provisions on Scope 3 emissions, vendor/contractor behavior, and sustainable locations

In these three respects, 13514 is a major departure.

Findings

Finding One: There is a mismatch between the expectations in the EO and agency capacities for making the necessary investments in sustainability.

Adequate funding is always an issue when organizations undertake a transition of this kind. Asked about the major implementation challenges, agency staff often cite the need for more dedicated staffing and financial resources. More specifically, however, meeting the goals of the EO over time will require a systematic and flexible investment strategy, one that allows agencies to make investments that will pay returns over time, either in terms of internal operating efficiency or benefits to society. Although the energy services model discussed above facilitates many such investments, especially in energy efficiency, it is worth evaluating and considering ways of improving on it. One option is to create a revolving loan fund from which projects compete for financing based on their expected operating and social benefits and their value as showcase technologies or best practices.

Finding Two: The system for interagency coordination has an ad-hoc quality and should be strengthened.

The coordinating and information-sharing groups described on page 16–17 play a vital role. They are viewed by agency sustainability coordinators as a valuable resource. With more than a year spent on implementation, however, it is appropriate to assess the network of interagency bodies that is underway and determine if it is meeting the needs of agencies. There is an ad-hoc quality to the structure and activities of the different groups. It also would be helpful to clarify the purpose and roles of the various work groups. Greater clarity on roles and more

consistent management could increase the value to agency coordinators, for whom the work groups are useful but time-intensive activities.

Aside from the senior sustainability coordinators from agencies and specific guidance (such as EPA's *Stormwater Guidance*), the EO allows for flexibility, which is a positive. As agencies move into the second and third years of carrying out the EO, however, the timing is right for understanding gaps in guidance and coordination and setting out a more formal implementation infrastructure across government. The process for interagency coordination has at times been haphazard and could improve.

Finding Three: The transparency goals of the EO will not be realized with the current mechanisms for public reporting.

Whatever value the OMB scorecard may have as an internal management tool, it is not effective for informing the public. The sustainability plans as currently configured do not meet this need either. CEQ and OMB should adopt government-wide and agency-specific sustainability reporting for use by employees, oversight bodies in Congress and elsewhere, and the public. As suggested above, the Global Reporting Initiative (GRI), especially its public agency format, is a starting point. A federal sustainability reporting system could begin with a limited set of indicators and be pilot-tested at agencies, then expanded. Several private-sector reports also offer useful models for federal sustainability reporting.

Finding Four: Federal agencies are missing opportunities to draw upon the experiences of private firms and other levels of government.

Many private firms began a transition to more sustainable operations and products well before the federal government did. Such firms as Johnson & Johnson, Intel, 3M, Hewlett Packard, IBM, and Xerox, to name a few, have moved much further toward environmental sustainability and offer lessons for agencies. Local governments offer tools and strategies for other agencies. The federal government should look for opportunities to learn from these experiences through benchmarking, sharing of best practices, and collaborative workshops and conferences.³² Two examples of private-sector practices offering lessons are the development of a system for interagency emissions trading and the creation of a central investment fund. An interagency GHG trading program, for example, could allow for greater reductions at less cost to the government by shifting more cuts to organizations and operations with lower marginal control costs.

Finding Five: As a strategy, the EO overall is highly centralized and incremental.

Except for greenhouse gases, the EO calls for identical, across-the-board percentage reduction targets for all agencies. There is no accounting for progress made to date; variations in marginal costs; or changes in agency budgets, staffing, and missions. There are no provisions, for example, that would encourage or allow emission reduction trading among agencies to reduce costs and achieve larger cuts with available resources. The targets also may be described as incremental rather than transformational. The EO calls for step-wise gains of 2–3 percent annually. This does not mean that incremental gains are not worthwhile; progress in the range of 20–30 percent by 2020 is by any measure a step forward. There is little attention, however, to deciding how to promote radical changes in technology or to rethinking how agencies perform their missions; this would enable leaps in federal sustainability while the incremental steps are being taken.

32. The author attempted one small step in the direction of private-public lesson-sharing by organizing a panel on "Learning from Corporate Leaders" at the November 2010 GreenGov conference sponsored by the Center for Environmental Innovation and Leadership in Washington, DC (November 7–9, 2010). It included presentations on the sustainability strategies and methods of 3M and Baxter Healthcare.

Finding Six: The social costs and benefits and their role in federal sustainability are opaque, at best.

In the five plans considered here, it is apparent that the agencies are not sure what to do with the instruction to analyze and measure the benefits their actions have for society, in addition to the gains in agency efficiency. A full life cycle analysis of social costs and benefits, as called for, is beyond the scope of what most agencies could realistically undertake at this point. Even conceptually, however, the weight to be given to and method for analyzing social benefits is unclear. Of the five agency plans, only DOE adopts a cost-of-carbon number to use in its analyses. It is clear from the EO, however, and from interviews with agency staff, that a core purpose of the actions called for in the EO is to deliver benefits to society, and to use those benefits as a way of justifying sustainability investments among federal agencies.³³ If so, that purpose should be reflected more explicitly in the agency sustainability plans and decision criteria.

Recommendations

The six recommendations below include those on financing sustainability investments; inter-agency coordination and lesson-sharing; reporting and transparency; partnerships with outside organizations; institutionalizing planning and implementation within the agencies; and clarifying the role of social benefits and costs.

Recommendation One: Develop improved financing mechanisms for investing in sustainability.

A challenge for any organization undertaking a sustainability transition is making investments that may not pay off for years. This is especially true of federal agencies, where the annual planning and budgeting process inhibits flexibility. Some agencies, notably the Departments of Defense and Energy, have drawn extensively on the model of energy savings performance contracts (ESPCs) to make long-term investments in energy efficiency and renewables. As the Obama EO moves into its third year, it is time to assess the existing financing mechanisms and consider creating a central revolving fund or other mechanism.

Lead agencies in implementing recommendation: OMB and CEQ would take the lead in achieving this change by requesting legislative authority for new financial mechanisms.

Recommendation Two: Strengthen the infrastructure for interagency coordination and information-sharing on best practices, measurement, and reporting.

A difference between the Obama EO and its predecessors is the elaborate procedural, accountability, and planning mechanisms it has created. The provisions on agency strategic sustainability performance plans create a complex planning process. The primary interagency coordinating body is the Steering Committee on Federal Sustainability, led by OMB and CEQ and composed of the senior sustainability officers from the agencies. Below that are staff coordinating groups that already existed or were formed to meet the needs of the EO, often on an ad-hoc basis.

Lead agency in implementing recommendation: CEQ should work with agencies to survey agency staff on gaps in guidance, establish a more formal system of working groups, and determine the need for guidance and tools for the next phases of implementation.

33. An approach to more systematically analyzing and accounting for social benefits was presented at an Interagency Sustainability Workgroup Meeting (ISWG) on December 10, 2009, in Washington DC. See Christopher Behr, "Shades of Green: Sustainable Return on Investment: Process and Metrics." Available at http://www1.eere.energy.gov/femp/pdfs/beh_r_pres1208.pdf.

Recommendation Three: Establish government-wide and agency-specific systems for sustainability reporting.

The two vehicles for tracking and reporting on performance are the OMB Management Scorecard (OMB Scorecard) and agency sustainability plans. Although both may be useful for internal management, they are less effective in providing usable performance and progress information across government and over time. Agencies should develop reporting mechanisms based on benchmarking of private-sector systems and on such formats as the Global Reporting Initiative. This could begin as agency pilots for a limited set of indicators and later expand to other agencies and government as a whole.

Lead agencies in implementing recommendation: Because they are involved in nearly all of the EO and the data associated with it, CEQ, OMB, the Department of Energy (DOE) and the General Services Administration (GSA) should take the lead with support from all agencies.

Recommendation Four: Create mechanisms for sharing best practices with other levels of government and private firms.

Federal agencies are not the only organizations attempting a long-term transition to sustainability. For the last two decades, many leading private firms have been moving from a strategy of environmental management to a more comprehensive one of sustainability. Similarly, local governments like Seattle, Portland, Denver, and Austin, among others, have adopted sustainability plans, indicators, and tools. Agencies should develop partnerships with private firms and local governments and explore opportunities, such as conferences and workshops, for sharing strategies and tools. To the extent that these efforts can be managed centrally, they may help to augment limited agency resources.

Lead agency in implementing recommendation: CEQ should take the lead across government. Agency senior sustainability officers should organize efforts to create collaborative mechanisms on an agency-specific basis.

Recommendation Five: Strengthen the implementation of sustainability programs in agencies.

Even a brief review of selected agency plans suggests a variety of internal arrangements. Several aspects of agency structure and process—the designation of senior sustainability officers, the relationship between implementation staff and senior management, the intentions for incorporating sustainability into strategic planning and budgeting, the relationships among agency components, and the status of staff for planning and implementation—vary greatly among agencies. This allows agencies to implement sustainability according to their own structures, cultures, and mission. It would make sense, however, for agencies to institutionalize staffing, budgeting, and implementation.

Lead agencies in implementing recommendation: Working with other agencies, CEQ should develop options for a model staffing and planning structure that agencies could adapt. Agencies should continue to integrate the EO into their strategic and performance plans. Senior sustainability officers in each agency should institutionalize sustainability in agencies and establish permanent offices, leadership positions, planning mechanisms, and staffing to promote long-term implementation.

Recommendation Six: Clarify the definition and application of the social benefit and cost criteria.

Although the EO stresses the importance of accounting for social benefits and costs in setting

priorities and making investments, nearly all the attention in agency plans is on reducing costs through operating efficiency or demonstrating qualitative improvements in environmental performance. Yet in the EO itself, and in the views of agency staff, the social benefits (e.g., the value to society of using fewer toxic chemicals or reducing greenhouse gas emissions) are central to justifying the EO and its goals. OMB and CEQ should clarify the role of social benefit and cost criteria and create analytical tools for incorporating them more systematically into agency planning and priority setting.

Lead agencies in implementing recommendation: This effort should be led by OMB and CEQ, with support from DOE, GSA, the Environmental Protection Agency (EPA), and a cross-section of other agencies with expertise on these kinds of issues.

Assessment of the Executive Order

Overall Assessment

Executive Order 13514 constitutes one of the most ambitious efforts to date to apply the concept of sustainability in U.S. national policy. This EO should be seen, in broad perspective, as an attempt to make operational the concept of sustainability. By pushing the integration of environmental, energy, and transportation indicators, the EO combines into one strategy the core elements of sustainability. By stressing economic efficiency and social costs and benefits in policy and investment decisions, it incorporates the economic aspects of sustainability. At the same time, key aspects of environmental sustainability are missing. There is little or no attention, for example, to habitat, biodiversity, or air and water quality. The EO treads softly on the social aspects of sustainability. The issue of environmental justice, which overall has been a major administration and EPA theme, is not mentioned.³⁴ The only explicit references to the social aspect come in the livability provisions of Sections 1 and 10. Still, the EO as a whole is a compelling application of the sustainability concept.

For this EO, as for sustainability transitions of any kind, a central issue is funding. The magnitude of the federal budget deficit has become a significant and difficult issue. Cuts in discretionary federal spending, budget and staffing freezes, and continued financial uncertainty present major challenges for agencies that want to invest in environmental sustainability. That resources will be tight for agency sustainability efforts is obvious. In this respect, however, federal agencies are not fundamentally different from most organizations and levels of government that have committed to a transition to environmental sustainability. The premise of the sustainability concept, as seen throughout Executive Order 13514, is that investments in environmental sustainability will pay economic returns that more than justify them, either in direct savings to agencies or in longer term benefits to society. If the federal government cannot make a sustainability transition economically possible, then the feasibility of the concept of sustainability itself comes into question. In this sense, the experience with federal sustainability becomes a test for society at large.

Strengths

Taking the EO and the resources supporting it on their own terms, there are many positives. Nearly all of the deadlines have been met. Agencies prepared and submitted comprehensive and detailed sustainability plans in June 2010, as called for in the EO. A second-year implementation process is underway. Many elements are in place for a transition to a sustainable federal government. In some organizational settings, an action-forcing strategy may be the only way to kick-start a process of change.

34. Juliet Eilperin, "Environmental Justice Issues Take Center Stage," *Washington Post*, November 21, 2010.

There is no doubt that Executive Order 13514 is stimulating activity in the form of data collection, planning, reporting, and coordination within and among agencies. All of these measures are essential to making incremental progress. In this sense, the EO constitutes an advance over its predecessors. The larger question is whether it can stimulate a durable, long-term sustainability transition in agencies and across the federal government. If this EO is to serve as a model for a long-term sustainability transition in society, it should be implemented with a greater commitment to access to investment capital, flexible and workable financing mechanisms, performance transparency, clarity about investment criteria, effective interagency coordination, and agency resources and capacities. If these issues are not addressed, the EO may succeed partially and in the short term, but its larger vision of transforming agencies and providing a model for American society are not likely to be fulfilled.

Weaknesses

There were several weaknesses in the design and implementation of the EO. The initial deadlines come rapidly, and the reporting cycles are demanding. The schedule allows little time for creating an organizational infrastructure in the form of staffing, access to expertise, employee education and training, guidance, and analytical tools. Although some useful tools are being used or assessed, the federal budget and planning process is not well-suited to the need for making near-term investments that yield long-term efficiencies and social benefits. The working groups for interagency coordination do not reflect a well-thought-out strategy for implementation. Guidance on many issues has not always been timely. In sum, the EO exhibits many weaknesses associated with an action-forcing strategy of organizational change. The emphasis is more on planning and action and less on having the resources and institutional capacity for achieving goals. Between now and 2020, this deficiency will be increasingly apparent.

Appendix I: Executive Orders on Environmental Management and Performance

Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition (Executive Order 13101; September 14, 1998).

Addresses waste reduction, pollution prevention, recycling, and the acquisition of “environmentally preferable products and services.” Encourages agencies to increase and expand markets for recovered materials. Creates the Federal Environmental Executive and Agency Environmental Executive positions. Requires a “Waste Recycling Strategic Plan.”

Greening the Government Through Efficient Energy Management (EO 13123; June 3, 1999)

Covers energy use and conservation and greenhouse gas emissions. Sets a GHG reduction goal of 30 percent of 1990 levels by 2010. Encourages agencies to strive for water efficiency and renewable energy. Directs use of and defines “life cycle cost analysis.” Defines a major role for DOE and directs GSA to develop sustainable design principles. Introduces the OMB “score-card” assessments of agency performance under the EO.

Developing and Promoting Biobased Products and Bioenergy (EO 13134; August 12, 1999)

Focuses specifically and narrowly on energy performance through biobased strategies.

Greening the Government Through Leadership in Environmental Management (EO 13148; April 21, 2000)

Focuses on the development and adoption of environmental management systems (EMS) and their integration into day-to-day operations and long-term planning. Includes provisions on compliance audit, EPCRA reporting, reducing TRI releases, chemical use reduction, and landscaping. Requires agency self-assessments of compliance and management and implementation of EMS at all “appropriate” federal facilities by the end of CY 2005. Creates the Interagency Environmental Leadership Workgroup. Directs EPA to assist in life cycle analysis.

Greening the Government Through Federal Fleet and Transportation Efficiency (EO 13149; April 21, 2000)

Directs reductions in petroleum consumption with fleet fuel efficiency, use of alternative fuel vehicles, and alternative fuels. Establishes roles for OMB, GSA, DOE, and EPA.

Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423; January 24, 2007)

Most comprehensive provisions on agency environmental and energy performance. Sets quantitative targets for several energy, water, and waste indicators. Requires that new agency construction and renovation comply with GSA’s Guiding Principles. Provisions on sustainable acquisition and electronic products. Reaffirms provision for use of EMS.

Federal Leadership in Environmental, Energy, and Economic Performance (EO 13514; October 5, 2009)

Expands upon the previous order with emphasis on sustainability. Adds quantitative and other goals (e.g., water use, waste diversion), with a particular focus on greenhouse gases. Expands on the previous order by adding provisions on sustainable communities and livability and more specific requirements on sustainable buildings and acquisition and electronics stewardship.

About the Author

Daniel J. Fiorino is Director of the Center for Environmental Policy and Executive in Residence at the School of Public Affairs at American University. The Center's mission is to evaluate and improve environmental governance in the United States. He also teaches courses on environmental and energy policy, environmental sustainability, and public management.

Dan is the author or co-author of four books and some thirty journal articles and book chapters. Among his books is *The New Environmental Regulation*, which won the National Academy of Public Administration's Brownlow Award in 2007. Before joining the faculty at American, Dan held several positions at the U.S. Environmental Protection Agency, including Associate Director of the Office of Policy Analysis, Director of the Waste and Chemical Policy Division, and Director of the National Environmental Performance Track. In the summer of 2009 he was a Public Policy Scholar at the Woodrow Wilson Center.

His current interests include the design and role of mechanisms for collaborative environmental governance and approaches to incorporating environmental sustainability into public policy. He is an elected Fellow of the National Academy of Public Administration.

Mr. Fiorino received his B.A. degree in Political Science from Youngstown State University and a M.A. and Ph.D. in Political Science from Johns Hopkins University.



Key Contact Information

To contact the author:

Daniel J. Fiorino

Executive in Residence
Director, Center for Environmental Policy
Department of Public Administration and Policy
School of Public Affairs
American University
4400 Massachusetts Avenue NW
Washington, DC 20016
(202) 885-3864 (office)

e-mail: dfiorino@american.edu

Visit the Center for Environmental Policy at American University:
<http://www.american.edu/spa/cep/>



Reports from **IBM Center for The Business of Government**

For a full listing of IBM Center publications, visit the Center's website at www.businessofgovernment.org.

Recent reports available on the website include:

Assessing the Recovery Act

Virginia's Implementation of the American Recovery and Reinvestment Act: Forging a New Intergovernmental Partnership by Anne Khademian and Sang Choi

Collaborating Across Boundaries

Environmental Collaboration: Lessons Learned About Cross-Boundary Collaborations by Kathryn Bryk Friedman and Kathryn A. Foster
Managing Innovation Prizes in Government by Luciano Kay

Conserving Energy and the Environment

Implementing Sustainability in Federal Agencies: An Early Assessment of President Obama's Executive Order 13514 by Daniel J. Fiorino
Breaking New Ground: Promoting Environmental and Energy Programs in Local Government by James H. Svava, Anna Read, and Evelina Moulder
A Guide for Local Government Executives on Energy Efficiency and Sustainability by Nathan Francis and Richard C. Feiock

Fostering Transparency and Democracy

Assessing Public Participation in an Open Government Era: A Review of Federal Agency Plans by Carolyn J. Lukensmeyer, Joe Goldman, and David Stern
Using Geographic Information Systems to Increase Citizen Engagement by Sukumar Ganapati

Improving Performance

A Leader's Guide to Transformation: Critical Choices That Shape the Success of Change Initiatives by Robert A. F. Reisner
Project Management in Government: An Introduction to Earned Value Management (EVM) by Young Hoon Kwak and Frank T. Anbari

Managing Finances

Strategies to Cut Costs and Improve Performance by Charles L. Prow, Debra Cammer Hines, and Daniel B. Prieto

Strengthening Cybersecurity

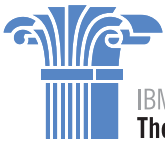
A Best Practices Guide to Information Security by Clay Posey, Tom L. Roberts, and James F. Courtney
Cybersecurity Management in the States: The Emerging Role of Chief Information Security Officers by Marilu Goodyear, Holly T. Goerdel, Shannon Portillo, and Linda Williams

Transforming the Workforce

Engaging a Multi-Generational Workforce: Practical Advice for Government Managers by Susan Hannam and Bonni Yordi
Implementing Telework: Lessons Learned from Four Federal Agencies by Scott P. Overmyer

Using Technology

Using Online Tools to Engage—and be Engaged by—the Public by Matt Leighninger
An Open Government Implementation Model: Moving to Increased Public Engagement by Gwanhoo Lee and Young Hoon Kwak
How Federal Agencies Can Effectively Manage Records Created Using New Social Media Tools by Patricia C. Franks



IBM Center for
The Business of Government

About the IBM Center for The Business of Government

Through research stipends and events, the IBM Center for The Business of Government stimulates research and facilitates discussion of new approaches to improving the effectiveness of government at the federal, state, local, and international levels.

About IBM Global Business Services

With consultants and professional staff in more than 160 countries globally, IBM Global Business Services is the world's largest consulting services organization. IBM Global Business Services provides clients with business process and industry expertise, a deep understanding of technology solutions that address specific industry issues, and the ability to design, build, and run those solutions in a way that delivers bottom-line value. To learn more visit: ibm.com

For more information:

Jonathan D. Breul

Executive Director

IBM Center for The Business of Government

600 14th Street NW

Second Floor

Washington, DC 20005

202-551-9342

website: www.businessofgovernment.org

e-mail: businessofgovernment@us.ibm.com

Stay connected with the
IBM Center on:



or, send us your name and
e-mail to receive our newsletters.