Conserving Energy and the Environment Series

A Guide for Local Government Executives on Energy Efficiency and Sustainability

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IBM Center for
The Business of Government

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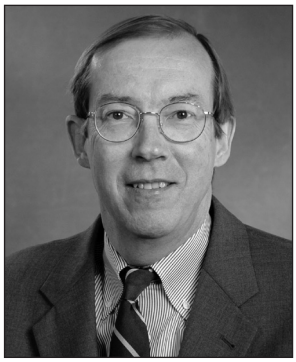
IBM Center for
The Business of Government

TABLE OF CONTENTS

FOREWORD

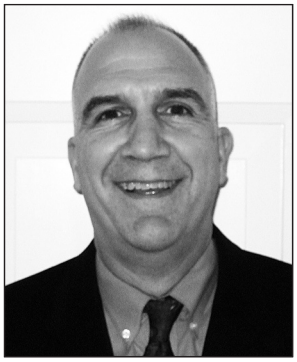
On behalf of the IBM Center for The Business of Government, we are pleased to present this report, *A Guide for Local Government Executives on Energy Efficiency and Sustainability,* by Nathan Francis and Richard C. Feiock, Askew School of Public Administration and Policy, Florida State University.



Jonathan D. Breul

This report describes an important trend in local government—an increased focus on energy efficiency and sustainability. While the federal government receives much attention for its environmental initiatives, much activity is now taking place at the state and local levels to improve energy efficiency and sustainability. The report sets forth six strategies that local government decision makers and administrators can use to develop new sustainability programs or refine existing programs.

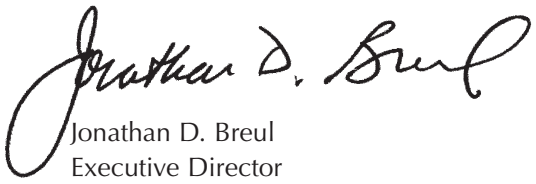
The strategies presented in the report by Francis and Feiock are based on a nationwide survey that the authors conducted of medium-sized cities (with populations between 20,000 and 50,000) about their energy efficiency, sustainability, and climate protection efforts. These medium-sized cities account for most of the urban population and energy conservation in the United States.



James Y. Loving, Jr.

Considerable money and attention has been directed toward local energy and sustainability issues in the last few years. The road ahead, however, will be challenging as local governments face tighter budgets and declining resources. Little practical information has been developed to guide local government officials and public managers in determining how best to approach local sustainability and climate protection programs. While energy efficiency and conservation promise long-term savings, nearly 40 percent of the cities surveyed report that limited financial resources will present a significant challenge for undertaking new energy efficiency and sustainability initiatives. The goal of this report is to serve as a useful guide to local government officials as they face such challenges.

We trust that this report will be helpful to local government decision-makers and executives across the nation as they continue to work toward improved energy efficiency and sustainability.



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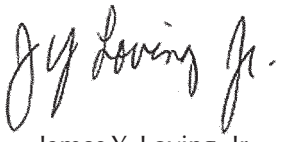

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EXECUTIVE SUMMARY

Over the past decade a growing number of local governments have become proactive in their efforts to create more sustainable communities. In lieu of broad federal action on sustainability and related issues such as climate protection and energy efficiency, state and local governments have begun to lead the charge. Nowhere has this become more evident than at the municipal level of government. Growing involvement in organizations such as the U.S. Conference of Mayors' Climate Protection Agreement and the International Council for Local Environment Initiatives' (ICLEI) Cities for Climate Change is illustrative of this trend. Yet while the number of local governments that have adopted sustainability programs continues to increase, little is known about the nature and scope of their efforts. Without such comprehensive knowledge, the efforts of these governments may be inconsistent, and undermine the type of collaboration envisioned by the sponsors of these programs.

By systematically reviewing the roles for local governments in sustainability, and by identifying management opportunities and challenges faced by local leaders in implementing their sustainability programs, we can broaden our understanding of how to improve these efforts so that they not only improve the specific communities in which they are adopted, but yield broader benefits as well. Hence, the purpose of this report is to:

- Provide public managers with a set of recommendations to aid them in implementing and strengthening sustainability programs in their communities
- Describe current local government efforts at promoting sustainability

The data used in this report come from a 2010 national survey that gathered information about sustainability, energy efficiency, and climate protection efforts in U.S. cities with populations ranging between 20,000 and 50,000. Additional information about specific programs and programs implemented by cities discussed in the report was gathered from local government websites.

The survey results indicate great potential for cities to address sustainability and energy concerns in meaningful and tangible ways. While some cities are more advanced in their efforts than others, the continued and increasing participation of cities in both formal and informal networks appears to contribute to a broadening of sustainability efforts in these governments. The survey results show considerable cooperation among jurisdictions and other stakeholders at both the local and regional levels. Moreover, cities in the sample recognize that their sustainability programs have significant benefits for other program areas and policy goals.

At the same time, the survey results show that cities may face several challenges in their efforts to promote sustainability. Chief among these challenges may be the adequacy of both fiscal and human resources dedicated to sustainability. While survey respondents overwhelmingly reported a clear desire among policy makers and stakeholders to create more sustainable communities, they also indicated that their cities face significant challenges in ensuring the availability of adequate financial and human resources to support these efforts.

Taken collectively, the survey results allow us to formulate a series of strategies to aid local government

decision makers and administrators as they develop new sustainability programs or refine existing programs. The following six strategies are set forth in the report:

- Strategy One: Formulate specific targets and performance measures as benchmarks in local climate action plans.
- Strategy Two: Promote citizen and stakeholder participation in administrative design decisions for energy efficiency and sustainability.
- Strategy Three: Engage interested parties and share knowledge through sustainability networks and regional collaboration initiatives.
- Strategy Four: Establish a dedicated sustainability office with appropriate funding.
- Strategy Five: Coordinate sustainability and energy programs with traditional services and economic development functions.
- Strategy Six: Lead by example—increase sustainability initiatives by first practicing sustainability within local government operations and activities.

Introduction: The Sustainable Energy Management Challenge

Overview

Despite the increased attention given to energy and sustainability issues in recent years, there is currently little practical guidance available to local government officials and public managers in shaping what role their governments can play in these efforts. This report addresses this need in two ways.

Six Strategies for Managing Sustainability (pages 10–15) outlines strategies that can guide local government executives in implementing sustainability efforts. For each strategy, we discuss implementation approaches and address background issues.

Managing Municipal Energy and Climate Change Programs (pages 16–25) presents results from the research study on which the six strategies are based. While municipal governments have become increasingly proactive in their efforts to address sustainability and energy issues, little is known about the specific actions and activities that are undertaken in these areas and how they are managed. Even less is known about the specific challenges and opportunities that municipal leaders face as they pursue their community's climate change and energy management agendas.

In 2010, the authors conducted a nationwide survey about energy efficiency, sustainability, and climate protection efforts in cities with populations between 20,000 and 50,000. Many prior studies focused on large cities. Medium-sized cities now account for most of the urban population and energy consumption in the U.S. These cities face unique challenges in promoting sustainability and energy efficiency. The sample cities referenced in this report are representative and diverse in their demographic characteristics, political dynamics, fiscal capacities, and experience in addressing sustainability. Taken together, the sample cities offer an ideal laboratory to identify innovations and best practices. Because of their diversity, municipalities provide an excellent basis for comparing not only levels of effort in pursuing sustainability activities, climate protection, and energy efficiency, but also for shedding light on similar opportunities and challenges.[1]

Our survey results indicate a great potential for cities to address sustainability and energy concerns. There is a clear desire among stakeholders to increase energy efficiency and to create more viable and sustainable communities. At the same time, the results show that managers may need to adopt more focused and deliberative practices.

Framing the Challenge

Local government managers are increasingly being called upon to implement and manage energy sustainability programs. Concern over the cost of energy, climate protection, and related problems have led elected bodies in many U.S. cities and counties to proactively address sustainability issues through innovative energy efficiency and climate protection programs. Yet, while local governments appear to be poised to address sustainability on the political front, many of the managers who will ultimately be called on to implement these policies may have only limited—if any—experience, background, or expertise in this area. This disconnection between policy development and management almost certainly impedes effective implementation.

Energy issues present unique challenges to public managers in both program design and implementation.

Although much of the discourse and debate on energy and sustainability takes place at the national and state levels, local governments have taken a leading role in implementation. There is a growing recognition among local elected officials and appointed managers that addressing energy issues carries the potential to enhance ongoing programs and improve efficiency of governmental operations. Unlike traditional environmental programs that are often seen as competing with other policy priorities, sustainability is recognized as complementary to advancing efficiencies in public programs and operations.

Sustainability has become a "buzzword" associated with positive connotations. Yet while efforts to increase sustainability are popular with citizens, their support may be based on very abstract, and even competing notions of what sustainability entails, the specific activities required to achieve it, and finally, what success looks like. The various outcomes of sustainability efforts can complement and reinforce each other, but the details of program design reveal important differences in emphasis and priority. Thus how energy sustainability is understood and defined by public managers will have significant policy and administrative consequences.

Local Government's Role in Managing Energy and Sustainability

Reducing energy consumption, decreasing dependency on non-renewable energy sources, and reducing greenhouse gas emissions—all components of sustainability—are generally cast as global issues requiring action by national governments. Given this perspective, the proactive role of local governments in energy and climate change policy may be surprising. It is local governments, not the federal government, that have taken the lead in sustainability policy innovation and implementation.

Despite support from President Obama and concern generated by the Gulf of Mexico Deep Water Horizon oil spill, comprehensive federal energy and climate protection legislation has not been realized to date. At the same time, numerous local governments in the U.S. have enacted energy conservation and efficiency measures along with emissions reduction plans to address the global dimensions of energy problems that extend far beyond their borders.

Cities play an integral role in advancing sustainability, not only because they are major contributors to climate change, but also because they are increasingly challenged to control costs associated with energy provision and consumption. Collectively, local governments can contribute to U.S. climate change mitigation by reducing emissions within their well-accepted domains of authority and responsibility. The powers and functions of local governments, especially over land use, make them well suited to play a lead role in sustainability and energy management.

Based on our review of local energy management programs and strategies, as well as the empirical findings of our survey research, this report presents six strategies that local managers can employ to strengthen their sustainability and energy management programs. Management of energy and sustainability at the local level encompasses several complex and interrelated sets of activities and program areas. While there is no single set of programs or policy tools that will be perfect for every community, the six strategies presented in the next section are applicable in most local government contexts.

Six Strategies for Managing Sustainability

Strategy One: Local government executives should formulate specific targets and performance measures as benchmarks in local climate action plans

The first strategy is to develop or update a Climate Action Plan (CAP) with specific targets and performance measures. A CAP is a strategic plan that outlines how best to meet energy reduction goals and successfully implement sustainability programs. It may be developed as a stand-alone plan or be incorporated into a more general strategic planning process.

When CAPs provide implementation timelines for emission reductions, specific reduction targets, and assessments of costs and benefits, they can more effectively guide local government efforts to reduce emissions and conserve energy. These plans enable local governments to link performance goals with accountability: assigning clear responsibilities to government departments and specific actions can then be linked to the achievement of targets.

Sustainability often means different things to different constituencies. These competing views, when combined with the complexity of energy management, make strategic planning with benchmarks and targets critical for managing energy and climate protection programs. The strategic planning process can have broad impacts if the key stakeholders are on board. It is critical for policymakers, administrators, and other key energy constituencies to make firm commitments to address the differing and perhaps conflicting visions for sustainability and energy and agree on a path forward.

In addition, the CAP should be directly linked to the government's other strategic objectives—financial, economic development, and comprehensive plans. Whether a stand-alone sustainability plan is crafted or elements are integrated into other local plans, sustainable energy management needs to be integrated with community goals.

These plans should be designed to serve as a roadmap to greater energy efficiency and climate protection in government and the community by providing transparent linkages to measurable outcomes, guidelines for evaluating implementation options, and specific action plans. Often this is not the case, as evidenced by the survey responses discussed in the next section of this report, which indicate that such plans often do not translate into the implementation of programs.

Strategy Two: Promote citizen and stakeholder participation in administrative design decisions for energy efficiency and sustainability

The second strategy focuses on the local government executive's role in promoting citizen and stakeholder participation in sustainability decisions. Citizen involvement is critical at the implementation stage because reductions of energy consumption and greenhouse gases require behavioral changes by employees and citizens to be successful. Demand-side management approaches must be taken into account when citizens are the end users.

Behavioral research demonstrates a number of issues that work against energy conservation. No matter how efficient a technology is, if people do not understand how to use it and are not provided with adequate information and appropriate incentives, the technology can fail to have a cost-effective impact. If the complexity of operating a technology provides a

frustrating user experience, the technology will be underused.

The credibility of the planning process demands engagement of diverse stakeholders including elected officials, appointed officials, department heads, technical staff, and other organizations within governments as well as many external actors. External actors include agencies at the state and federal levels of government, neighboring and more distant local and regional governing bodies, non-publicly owned utilities, the local business communities, universities, and community groups. The success of sustainability efforts will depend on local government leaders' ability to gain broad-based support for their efforts.

The complexity of issues involved in pursuing sustainability programs suggests an arduous path for public managers. The need to please many interests makes implementation difficult, and highlights the importance of framing climate change and energy management issues in a fashion that does not alienate constituencies. Sustainability efforts may be bolstered by managers' efforts to frame the issues in localized contexts, making their actions and goals more tangible for constituents and policymakers, while simultaneously helping them to better understand how their local efforts fit into overall climate protection and sustainable energy strategies.

Strategy Three: Engage interested parties and share knowledge through sustainability networks and regional collaboration initiatives

A third strategy is for administrators to proactively utilize policy network resources and regional collaboration tools. Administrators learn from one another through sharing information and personal interactions. Through networks sponsored by national organizations such as the U.S. Conference of Mayors' (USCM) Climate Protection Agreement, or by participating in the International Council for Local Environment Initiatives' (ICLEI) Cities for Climate Protection program, municipal governments commit themselves to addressing energy efficiency and sustainability in their own communities. Without these commitments, policies are likely to be haphazard and lack significant impact. This is even truer at the local and regional levels.

Cooperation and collaboration with other local governments as well as the state and regional stakeholders are essential to promoting sustainability and energy efficiency. Multiple levels of government can play complementary roles in promoting sustainability. Though local governments have an important role in fostering sustainability on their own, their actions, where possible and practical, should complement and be coordinated with the efforts of other levels of government.

Coordination with citizens and local stakeholders may also be important to spurring local action on sustainability issues. The Sierra Club Cool Cities

ICLEI's Cities for Climate Protection Program

The International Council for Local Environmental Initiatives (ICLEI) has strived to promote climate protection initiatives in cities around the globe since 1990. Recognizing the important role that local governments must play in climate change and sustainability, the organization was founded by representatives from 43 countries and more than 200 local governments convened at its inaugural conference in New York in September 1990.

Now formally called ICLEI—Local Governments for Sustainability, the organization aims to increase the number of local governments committed to sustainable development. ICLEI promotes increased networking and cooperation among local governments to address climate change and sustainability issues and to ensure the optimal effects for adopted programs and initiatives. It positions organizations to take a lead role in developing and promoting innovative programs and solutions to address sustainability concerns. Toward those ends, ICLEI's core mission has been to build and serve a worldwide movement of local governments to achieve tangible improvements in global sustainability with a special focus on cumulative local actions.

The number of local governments participating in ICLEI's Cities for Climate Protection Program has increased significantly since 1990. The organization's current membership includes nearly 1,200 local governments—including cities, towns, counties, and other local and regional bodies. To date more than 600 local governments of varying size in the United States alone have participated in the program.

U.S. Conference of Mayors' Climate Protection Agreement

Adopted in 1997 and its provisions becoming effective in 2005, the Kyoto Protocol was largely viewed as an effort to promote climate protection activities globally at the national level. And while nearly 200 nations have signed onto the agreement, it has proven an effective tool for promoting climate protection activities at the sub-national level as well. This is perhaps best illustrated in the United States by the growing number of local municipal governments that have signed onto the United States Conference of Mayors' (USCM) Climate Protection Agreement (CPA).

Coinciding with the implementation date of Kyoto Protocol (Protocol) requirements, the USCM CPA was initiated on February 16, 2005 by then Seattle Mayor Greg Nickels. Nickels' goal was to advance the aims of the Protocol in at least 140 cities in the United States. Under the USCM agreement, signees agree to engage in efforts that will allow them to meet or exceed Protocol targets in their communities through such efforts as adopting anti-sprawl planning, urban forest restoration, and by increasing public awareness about climate change and protection through public information campaigns. Participants also agree to spur action on climate protection at the state and federal levels of government to meet the Protocol's target of reducing greenhouse gas emissions by seven percent from their 1990 levels by 2012, and finally, to lobby the U.S. Congress for the passage of bipartisan greenhouse gas reduction legislation. Cities are also required to develop Climate Action Plans (CAP) which outline not only specific steps that they will take to address climate issues in their communities, but also benchmarks for measurement.

By October 2006, 319 mayors had signed onto the agreement. This number increased to more than 500 cities in 2007; by 2010 more than 1,000 cities had signed on to the agreement. While the growing number of cities participating in the agreement sends a strong symbolic message, it also appears to reflect a credible commitment by municipal governments to climate protection. Cities continue to develop and publicize their CAPs, and continue to identify and implement innovative programs to address local climate related concerns. Moreover, whereas in the past city officials may have been ambivalent about environmental remediation efforts because of their costs, or because of competition with other policy priorities, many city officials perceive that their climate protection actions will have not only positive effects on the local, regional, and global environment, but will also lead to greater efficiency and cost savings in their operations.

Cities are granted considerable flexibility in designing strategies to address climate change. Some are internally focused, emphasizing changes within the government's own operations. For example, the city of Bowie, Maryland has led the charge by executing a green building strategy for new construction of government facilities. Other cities have focused their attentions on their commercial sectors. The city of Tallahassee, Florida, for example, through a partnership with the local Chamber of Commerce established a pilot commercial recycling program that offered participants the potential for discounted garbage collection fees for their participation in the program.

Other governments have sought to effect change by reaching out to the general community. For example, Chapel Hill, North Carolina's Sustainable Future Initiative encourages youth to participate in the growing "green economy" by providing them with practical experience in sustainability-related activities. These are just a few examples of recognized best practices undertaken by cities participating in the USCM Agreement, but they clearly illustrate that cities are playing a central role in promoting climate protection and sustainability in the U.S.

Campaign, started in 2005, provides local environmental activists with a platform for working with their local government leaders to address global climate change. Community involvement is essential not only to provide guidance to policy makers, but also to increase the likelihood of buy-in to developed policies by the general public.

Our survey indicates that many of the energy efficiency commitments by city governments have been made in connection with campaigns initiated by environmental organizations. In the early 1990s, ICLEI began providing technical assistance to local governments that pay membership fees and pledge to reduce greenhouse gas emissions.

In 2005, the USCM launched its Climate Protection Agreement through which a growing number of participating cities continue to pledge to meet the goals stated in the Kyoto Protocol, and to lobby state

governments and the federal government to act on climate protection. This agreement has been signed by more than 1,000 mayors. ICLEI and USCM provide resources and technical assistance, and document best practices that help inform local decisions.

Regional network relationships with other governments can also provide critical information for effective sustainable energy management. Network and regional connections also have the potential for shaping and driving action at the federal level. As these networks and relationships grow and learn more from one another, there is likely to be greater consistency in the types of policies and programs adopted by other local jurisdictions.

Strategy Four: Establish a dedicated sustainability office with appropriate funding

A fourth strategy is for local governments to designate an office with government-wide sustainability responsibilities to coordinate efforts across programs and agencies. The successful implementation of sustainability and energy management programs is tied to the level of resources that local governments dedicate to them. The establishment of a sustainability office represents a tangible commitment of resources—human, financial, and capital—to sustainability and energy efficiency. These investments may in turn assist local governments in their identification of additional short-term and long-term opportunities for funding their sustainability programs.

Dedicated funding of a sustainability office institutionalizes energy management efforts in a local government. The cliché that the budget is the ultimate policy document is consistent with our survey results: cities that have dedicated funding to energy-related issues do much more to promote energy efficiency and sustainability. Once an item is included in the budget it is much more difficult to eliminate. If climate protection and energy efficiency are ancillary functions within an agency, and are not directly budgeted for, they are less likely to be sustained.

Even cities that budget for climate protection may not get the full benefit from their investments if promoting sustainability becomes just another function in an existing department whose core mission is something else. Sustainable energy management involves activities that cross-cut traditional city government agencies and departments. Where energy and sustainability functions are assigned to an agency with a broader mission such as transportation, planning, or community development, resource competition may lead to energy issues being given low priority. Coordination is a problem when energy and climate protection functions are among line departments. The establishment of a stand-alone sustainability office with professional expertise, resources, and a government-wide mandate ensures that these programs receive the requisite priority level they require to be successful.

For municipalities that have created a dedicated sustainability office, a key function is the measurement of performance. While the importance of measuring greenhouse gas emissions may be too abstract conceptually for many people to grasp, performance indicators such as total energy consumption and how much energy is consumed from renewable sources (and the savings achieved from it) are easier to quantify and thus easier for citizens to understand. Examples of specific goals include California's renewable energy consumption requirements. Specific indicators make sustainability clearer and more "real" for constituents.

Formal and informal arrangements for inter-departmental coordination and collaboration are also necessary. While sustainable energy projects typically complement ongoing activities, they are sometimes in conflict. For instance, a recent report by the Nature Conservancy introduced the term "energy sprawl" to the policy lexicon arguing some forms of renewable energy could consume great expanses of land.[2] Nevertheless, more commonly there are positive spillover effects when energy programs are linked to land use and smart growth, including reduced emissions, congestion, and vehicle miles travelled. Centralizing responsibilities in a sustainability office facilitates resolution of such conflicts.

Strategy Five: Coordinate sustainability and energy programs with traditional services and economic development functions

A fifth strategy is to design energy and sustainability programs to complement ongoing governmental activities, particularly with regard to a city's core land use, service provision, and economic development functions. There are ways local governments can reduce carbon emissions that may be associated with programs or program delivery. For example,

smart growth development reduces vehicle miles traveled and thus reduces energy use and emissions. The potential benefits include cost savings for local government from reduced energy costs, conservation of green areas, reduced environmental impacts, and opportunities to stimulate and enhance local government efforts in economic development, transportation, and growth management.

Sustainable energy management presents opportunities as well as challenges for local governments. If designed and managed strategically, energy programs can be tailored to address an array of unmet local needs while complementing existing programs. Hence the attainment of efficiencies even beyond energy savings is possible. Views that local sustainability policies are not economically prudent reflect a lack of information and a presumption that the costs of implementing them will outweigh their benefits. This presumption is often proven false. Unlike other types of environmental policies, energy efficiency and greenhouse gas reduction efforts can produce direct cost savings in government operations and for citizens as well as "co-benefits" by enhancing the performance of other local programs.

City government responsibilities include service delivery, the promotion of economic development, the development of regulations, and the regulation of land use. Sustainability programs can be designed to complement these functions if there are mechanisms to coordinate and align them with sustainability goals. Sustainable communities have the ability to attract potential business investments, a skilled workforce, and new business opportunities that may be related to green and clean energy industries.

Sustainability programs and policies can be tailored to local needs. Policymakers can frame sustainability and energy efficiency as local issues requiring local action. By scaling the problems addressed by sustainability and energy efficiency so that they can be weighed in the context of the local environment, policymakers and administrators can overcome some of the historical barriers to action on these issues. Cost savings are available to local government through efficiencies that reduce energy usage. To the extent that cost savings motivate energy sustainability, this will encourage a focus on government operations in addition to community energy use.

Strategy Six: Lead by example—increase sustainability initiatives by first practicing sustainability within local government operations and activities

A final strategy is for local officials to lead by example by focusing on in-house governmental activities and operations first. They can then use the success and support generated by these efforts to extend additional efforts to the community. Cost savings are available to local governments through efficiencies that reduce their own energy usage, which in turn can generate broader support for sustainability efforts.

Programs that produce fiscal benefits to local governments and can be implemented by existing bureaucracies face fewer political hurdles than those proposed at the federal and state levels. Moreover, investments in energy efficiency improvements often have short payback periods. Thus the financial benefits from achieving energy efficiency can counteract the collective action problems associated with climate protection and undercut the argument that environmental and economic development concerns are in conflict.

Sustainability can be revolutionary, producing bold and dramatic shifts policy. The survey results presented in the next section suggest that increasingly successful sustainability efforts follow an incrementalist approach beginning with the implementation of energy efficiency measures in government services and facilities. Our survey results clearly demonstrate that most cities are still far from fully achieving their potential when it comes to reductions in carbon and energy consumption. While a majority of cities support climate protections and claim to be promoting energy sustainability, their efforts are often confined to government operations and do not extend to the community they serve.

Given the realities of local governing, an incremental process may be the most viable approach. Grounding sustainability in efficiency values broadens support for sustainable energy policy in the larger community. Because significant energy and carbon reductions are possible often with only modest cost, measures to promote these savings in government operations represent low-hanging fruit.

Reductions in energy consumption translate directly into cost savings for taxpayers, and thus provide

mechanisms to overcome political or ideological opposition to sustainability initiatives in the community. Once the credibility and effectiveness of in-house efforts are established, the next step is to build on this momentum to extend efforts to reduce carbon emissions in the community at large. The result is that energy commitments become a permanent part of the management system, rather than a passing fad. Sustainability programs may then be less subject to shifts or reversals when new leaders prevail at the polls.

The success of local efforts to create sustainable communities is contingent upon governmental policies that meet specific local objectives, administrative and managerial understanding of these issues, and the capacity of local governments to implement them.

Although sustainability programs need to reflect specific conditions and needs that differ across communities, the six strategies discussed in this section set forth guidance for local governments on how to best implement sustainability programs and achieve specific sustainability goals. The survey responses reported in the next section support the efficacy of these strategies, some of which are now recognized as best practices.[3]

The survey results also suggest that while many cities have begun to engage in a number of these activities, few have implemented all or even a majority of them. Thus we hope the survey results add credibility to the strategies advanced here and will assist local governments in developing new, or enhancing existing strategies for sustainability and energy efficiency.

Managing Municipal Energy and Climate Change Programs

The six strategies presented in the previous section are based not only on best practices recognized by the U.S. Environmental Protection Agency (EPA), ICLIE, and the USCM, but also on our observations of the implementation of sustainability programs in municipal governments. These observations are grounded in part by the responses to a national survey that asked local government officials to respond to a series of questions on their sustainability and energy efficiency efforts.

While the survey results clearly demonstrate that local governments are becoming more proactive in their efforts to promote sustainability and energy efficiency, they also illustrate a need for greater internal and external coordination of these programs. The survey results also highlight the significant management challenges—and opportunities—that are likely to confront governments and decision makers as they increase their sustainability initiatives.

Developing Climate Action and Strategic Plans

A number of factors may lead local managers to focus on sustainability and energy efficiency as major policy priorities. These factors include:

- Concerns about the local environment
- Concerns about the competitiveness of the local government with other jurisdictions pursuing sustainability
- Desire for cost savings

Without the support of citizens, businesses, and other stakeholders, sustainability and energy efficiency initiatives are likely to achieve at best only modest success.

A majority of Americans now recognize global warming to be a significant problem. A 2006 report issued by the Laboratory for Energy and the Environment at the Massachusetts Institute of Technology found growing concern about environmental issues among Americans.[4] But while a considerable amount of scholarly work has been directed toward gauging citizen and policymaker perceptions about climate change, little attention has been paid to how these perceptions might shape the policy environment at the local level. Our national survey identified various paths that local governments are taking toward addressing energy management and sustainability issues.

Though a large number of local governments that have begun to address sustainability have done so in the last several years, our analysis suggests that truly effective sustainability programs require longstanding commitments to, and planning for, sustainability. Toward this end, our first strategy recommended that local government decision makers engage in and commit to long-term planning through the adoption of Climate Action Plans (CAP).

CAPs are customizable roadmaps that local governments use to guide their efforts to reduce pollution and greenhouse gas emissions. CAPs provide implementation timelines for reduction measures, details on costs and financing mechanisms, assignments of responsibilities to government departments, and actions that the local government must implement to achieve their targets. CAPs typically stipulate information-gathering mechanisms and action plans in the following areas (USCM: Climate Action Handbook):

- Greenhouse gas reduction

Charlottesville, Virginia
A Case Study in the Development of a Climate Action Plan

Climate Action Plans can greatly advance a city's environmental agenda. They are important not only because they reflect actual policy commitments for a community, but also because they can serve as models for other cities pursuing similar climate protection and sustainability goals. A city that has been especially active in planning for success is Charlottesville, Virginia.

Charlottesville has been engaged in efforts to promote climate protection and sustainability for more than a decade. As an initial step, the city signed on to the 1998 Sustainability Accords (the Accords) as part of its participation in the Thomas Jefferson Planning District Council. The Accords listed fifteen high priority action items to be addressed by participating entities. These action items addressed an array of issues including human population, basic human needs, economic development, transportation, land development, waste, values/ethics, community awareness, interdependence/balance, government, natural environment, and agriculture/forestry. These elements were incorporated into the city's 2001 comprehensive plan.

The city's formal declaration of its commitment to sustainability and climate protection came in 2003 when the Charlottesville City Council adopted a formal environmental sustainability policy. The policy reflected the city's desire to become a "world-class model of environmental performance and stewardship." Focusing primarily on internal government operations, the policy outlined four principles which stressed: conservation of resources, cooperation among both internal and external stakeholders, environmental compliance and risk reduction, and restoration. Further, the City Council committed to providing the human, financial, and technical resources necessary to meet its environmental objectives.

In 2006 Charlottesville signed on to the U.S. Conference of Mayors' Climate Protection Agreement (Agreement), requiring it to measure and set reductions targets for greenhouse gas emissions, and advance sustainability through community outreach and information efforts. The same year it established the Citizen Committee for Environmental Sustainability to:

- Assist in the establishment of performance measures and goals and the associated tracking
- Support preparation of an annual environmental sustainability report to City Council
- Evaluate future sustainability initiatives and "environmental best practices" for applicability to the City of Charlottesville
- Support public information and outreach efforts with the goals of promoting sustainability initiatives in the residential, commercial, and industrial sectors
- Cooperate with Albemarle County, the University of Virginia, the Thomas Jefferson Planning District Commission and other area agencies to promote regional sustainability

Charlottesville's 2007 Comprehensive Plan dedicated an entire chapter to environmental issues. To meet the targets outlined in the U.S. Mayors' Climate Protection Agreement, the city lists ten objectives. A key climate objective is to establish a baseline for 1990 greenhouse gas emissions, estimate 2012 emissions, and create relevant reduction targets. Another objective calls on the city to pursue green building practices, while yet another challenges the city to actively promote awareness about global warming and its remediation efforts.

In 2008 the city published its baseline report. Due to data limitations, the city opted to use the year 2000 as its baseline for reducing emissions. The city is now in the process of engaging the community in what it has termed its Local Climate Planning Process. Participants in the planning process include both elected officials and community stakeholders. The city has established working groups on energy conservation, energy sourcing, and energy and mobility, among other issues, to support the effort.

- Energy management
- Transportation
- Waste reduction
- Land use

They may also highlight local and regional vulnerabilities, identify mitigation options, and include recommendations and strategies for implementation.

Climate Action Plans may be developed as a standalone document or incorporated into the community's strategic planning process. Charlottesville, Virginia, for example, has increasingly emphasized sustainability within its overall development strategy over the past decade. Charlottesville demonstrates that appropriate planning and the creation of formal internal commitments can lead to broad-based cooperation across several jurisdictions at the local and regional levels.

The survey results confirm considerable action on planning among municipal governments in the U.S. Almost 20 percent of the cities in the survey reported that they have adopted a formal energy plan or CAP. Stakeholder interest in climate protection plays a significant role in determining local action. This is, perhaps, evidenced by the fact that none of the cities where climate change was perceived as an "unimportant" issue for citizens had adopted CAPs. This compares to nearly 60 percent for cities where climate and energy issues were perceived as "very important" issues for citizens, and 20 percent in cities where these were perceived to be "important" issues. Galvanizing and quantifying support for sustainability efforts is therefore an important initial step toward action.

CAPs provide mechanisms for managers to coordinate the diverse activities that fall under "sustainability" and are a particularly powerful management tool if they include specific performance measures. As more cities become involved in programs like the ICLEI Cities for Climate Protection or USCM's Climate Protection Agreement, and yet others move forward with fulfilling their obligations under these agreements, the number of municipalities adopting CAPs will increase.

Our research suggests, however, that CAPs will remain merely symbolic unless they include specific targets and benchmarks. For this reason, both the USCM Climate Protection Agreement and ICLEI Cities for Climate Protection program require participating cities to measure greenhouse gas emissions, set reduction targets, and work toward mediation through formal planning processes. These commitments help to make sustainability efforts more than mere symbolic gestures.

Increasing Citizen Participation

Given the diversity of opinions about sustainability and energy efficiency in most communities, there is an obvious need to engage citizens at the strategic vision level. Kent Portney, the leading scholar of sustainable cities in the U.S., has demonstrated that institutionalized neighborhood participation in the local sustainability processes often results in a more informed, effective, and participatory citizenry and more engaged and responsive administrators.[5]

As we have noted earlier, and as is illustrated by the Charlottesville, Virginia example, securing buy-in from citizens and other stakeholders contributes greatly to the success of sustainability and energy efficiency programs. Yet satisfying the concerns of diverse groups with equally diverse interests and expectations can prove to be a daunting task. While sustainability and energy efficiency may be generally acceptable goals for a cross-section of interests, it may be more difficult to channel these interests into cohesive and effective policies.

Our survey identifies how policy and management choices are influenced by several factors. First, local officials may take cues from internal and external interests. The most obvious constituency to whom decision makers must respond is citizens. Energy and sustainability issues were reported to be at least "somewhat important" to citizens in 90 percent of the cities. However, the preferences of a number of other players must also be considered. These include business interests, labor interests, the media, and other political actors. The survey results suggest that each of these interests brings its own set of preferences to the table.

The symbolic significance of these policies to citizens and policymakers cannot be ignored. The statements that these policies make may be considered benefits by their proponents. Politicians stand to gain political capital with constituents by acting on

climate and energy-related issues while distancing themselves from "dirty" energy interests and an unresponsive national government. Moreover, they may position a city to take advantage of opportunities that support other policy priorities such as the attraction of new businesses and industries.[6]

Equally important may be those perceptions held by other stakeholders with regard to sustainability and energy efficiency. When asked the extent to which certain groups or individuals in their community support various sustainability policies, managers generally perceived the general public, neighborhood organizations, business interests, and government entities to be supportive. At the same time, they indicated that labor unions, the media, and real estate developers were likely to be opposed or neutral with regard to sustainability initiatives (see Figure 1).

Engaging in Local, Regional, and Other Networks

By signing on to agreements such as the USCM Climate Protection Agreement, or participating in the ICLEI's Cities for Climate Protection program, municipal governments commit themselves to addressing these issues. These organizations and agreements provide formalized cooperative governance structures in lieu of governmental regulations. The visibility of these programs, and formal commitments made, compel municipal officials to more vigorously address climate and energy issues.

The survey asked local administrators about their city's participation in programs and initiatives addressing local energy management and environmental issues. These initiatives include:

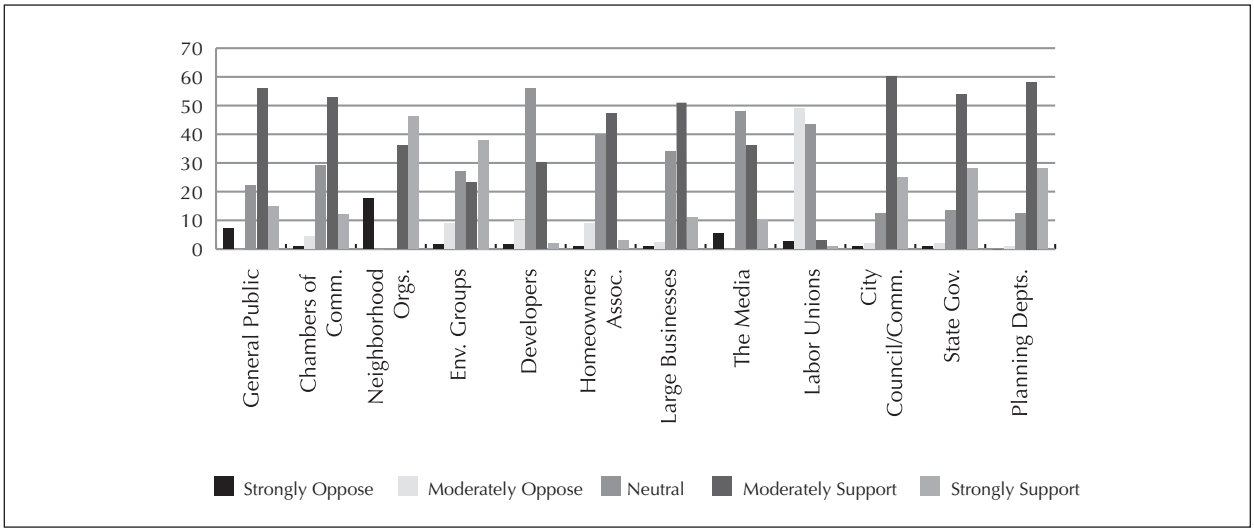
- United States Conference of Mayors Climate Protection Agreement
- ICLEI Cities for Climate Protection Program
- Sierra Club Cool Cities Initiative

Almost 25 percent of survey respondents indicated that their jurisdiction currently participates in the USCM's Climate Protection Agreement. About 15 percent of the respondents indicated that their city participates in ICLEI's Cities for Climate Protection program. Seven percent indicated that their city participates in the Sierra Club Cool Cities Initiative.

Participation in programs such as the ones discussed above are just one demonstration of a community's commitment to addressing sustainability and energy issues. While participation alone may tell us little about the amount of actual effort that a city directs toward addressing these issues, planning and measurement are central elements of each program. It is incumbent on managers to take advantage of these networks to share information and best practices.

Collaboration also takes place at a regional level. Because many sustainability issues cross jurisdiction borders and individual governments have limited resources to address them at this scale, coordination is critical. Even if the political will

Figure 1: Support for Climate Protection and Energy Policy by Community Groups



to promote sustainability programs exists within a jurisdiction, external factors, such as concerns about inaction in neighboring districts, may stymie local officials' efforts. Moreover, without financial support and related commitments, policies are likely to be haphazard and lack significant impact. Hence cooperation with other local governments, the federal and state governments, and other stakeholders is an essential ingredient for promoting local environmental agendas.

Local managers recognize the need for cooperation on sustainability, energy, and climate-related issues. More than one third of the survey respondents (36 percent) indicated that their city's goals relating to sustainability and energy conservation included provisions that address intergovernmental coordination. As Figure 2 demonstrates, at least half of respondents said they cooperated at least "somewhat" with other governmental units within their county on sustainability and energy planning, while 41 percent said this for climate issues.

Similar patterns are observed at a regional level. Figure 3 provides insight into the current level of regional cooperation by local governments on sustainability, energy, and climate-related issues. Fifty-five percent of respondents indicated their city worked with other jurisdictions in their region to address energy issues. Sixty-one percent indicated that their city worked collaboratively with jurisdictions in their region on sustainability issues.

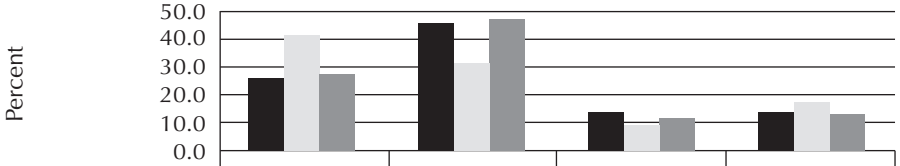
Cooperation is also supported by collaborative partnerships with other local entities, with 46 percent engaging in such partnerships. Informal agreements appear to be favored over formal ones. While 22 percent of respondents indicated that their city had entered into at least one informal agreement with another local government, only 11 percent indicated that their city had engaged in a formal agreement. The practical implications of this finding remain to be seen. However, the survey results suggest that cities that participate in more formalized agreements also enact policies that are consistent with overall regional planning efforts.

Local government administrators learn from one another. City officials frequently look to other local governments in their region or to state agencies when developing climate-related policies. Most cities (62 percent) studied other localities' climate protection programs before designing their own programs. Rachel Slocum's 2003 analysis of consumer advocacy describes how collaboration produces variation in local responses to climate change.[7] Threats from rising temperatures and sea levels differ across regions. Because local action is largely driven by concern over the direct impacts of a problem, policies that can address these needs at county or metropolitan levels will be more successful.[8]

Dedicating Resources and Funding

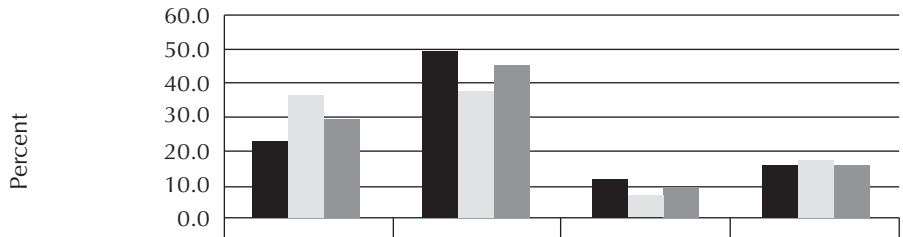
Competition among municipal programs for limited financial resources presents city leaders with significant challenges as they attempt to engage in climate protection and energy management. Thirty-eight percent of respondents indicated that conflicts with other budget priorities created substantial obstacles to their efforts to reduce energy consumption. Another 30 percent indicated that competing budgetary priorities created challenges to expanding

Figure 2: Cooperation within County on Sustainability, Climate Change, and Energy Planning



	Not at all	Somewhat	To a great extent	Don't know
Sustainability	26.0	46.0	14.0	14.0
Climate Change	41.8	31.8	9.1	17.3
Energy Planning	28.3	46.9	11.5	13.3

Figure 3: Regional Cooperation on Sustainability, Climate Change, and Energy Planning



	Not at all	Somewhat	To a great extent	Don't know
Sustainability	22.8	49.5	11.9	15.8
Climate Change	36.6	37.6	7.9	17.8
Energy Planning	29.4	45.1	9.8	15.7

these efforts. The availability of adequate financial and other resources presents managers with many challenges.

Resource scarcity also appears to be a barrier to advancing sustainability. When asked how vigorously their governments had moved to reduce their own energy consumption, 59 percent of respondents indicated that "modest efforts" had been undertaken. A similar pattern is observed among jurisdictions where high costs, or lack of funds, were cited as either a "major" or "substantial" barrier to reducing energy use. Respondents who reported that costs or lack of funds were "major" or "substantial" barriers also reported only modest action in this area. Yet while perceptions about scarce fiscal resources appear to result in more limited action on climate and energy- and sustainability-related issues, other factors, such as the availability of governmental and non-governmental expertise, timing and time investments, political will, and implementation timelines also appear to serve as substantial barriers to action.

Securing dedicated internal resources and expertise necessary to proceed with activities to reduce energy consumption reduction poses significant challenges for many jurisdictions. Half of the cities surveyed indicated that shortages of internal expertise and competing time commitments limit their ability to reduce energy consumption. An additional 41 percent indicated that time constraints and the unavailability of internal expertise acted as obstacles to these efforts. While time and expertise may be scarce, information about energy consumption reduction strategies is plentiful. It is the lack of internal resources to act upon this information that limits cities' ability to advance sustainability, especially in the areas of energy use or carbon emission reduction.

Coordinating and Centralizing Sustainability Programs

Coordination of city sustainability efforts across program areas, agencies and governments creates many management challenges. A CAP may be an important determinant of how municipal governments address climate issues, but having a department whose primary responsibility is to implement such plans may be even more important. Though addressing sustainability issues may require the involvement of a number of municipal agencies, translating objectives into action requires coordination. City agencies whose core missions have historically addressed other issues may be reluctant to dedicate sufficient human and fiscal resources to sustainability absent coordination and direction.[9]

When asked which office or department in their jurisdiction had the primary responsibility for developing energy-related plans or policy statements, only four percent of respondents indicated that these were responsibilities of a separate energy or sustainability office; 93 percent reported that the department primarily responsible for developing these statements was within another existing agency (e.g. public works, transportation, planning). This finding

is consistent with prior studies that found plan development at the municipal level has most often been led by planning departments.[10]

A city's commitment to addressing energy issues is further evidenced by how it administers remediation programs. Prior studies suggest that more limited action on sustainability issues occurs in jurisdictions where the responsibility for administering climate and energy programs resides in agencies whose historical and/or primary missions are in other areas. A common assumption is that local action is more likely to occur when an issue-oriented entity is tasked with tailoring and implementing sustainability agendas.

Fifty-nine percent of the cities in the survey reported that energy conservation and climate protection activities receive designated funding in their city's budget. Information about the effort and resources dedicated to climate protection and related activities have become increasingly more prominent on city websites. A majority of cities, however, appear to incorporate sustainability activities into existing operational infrastructures. Few have established a formal environmental or sustainability office to lead the charge on climate change and other environmental issues, with 65 percent indicating that their jurisdiction has no sustainability office.

The lack of a sustainability or energy office may have effects on both the planning and implementation of sustainability policies. Only four percent of respondents indicated that the development of their city's energy plans and policies was led by a sustainability or energy office. Thirty-two percent of respondents indicated that these activities were spearheaded by the city's Chief Administrative Officer, while 20 percent reported that the city's planning office was primarily responsible for developing energy-related policies. From a practical standpoint, sustainability efforts necessitate action from departments with diverse core missions, changing the ways that cities deliver services such as energy provision, transportation planning, and waste management. They also require knowledge, skills, and relationships that may not be present in agencies whose day-to-day responsibilities are in areas other than promoting sustainability. Thus, the establishment of a central agency or department to coordinate local sustainability efforts can be critical.

Table 1: Primary Department Tasked with Developing Climate Action Plans

Planning	20%
Building	7%
Energy/Sustainability	4%
Community Development	4.5%
Public Works	14%
Environment	2%
Mayor	3%
City Manager/Administrator	32%
City Council/Commission	4.5%
Local Utility	5%
Unknown	4%

The core functions of city government revolve around service delivery, economic development, and land use. The promotion of sustainability can complement these functions if there are mechanisms to coordinate and align them with sustainable energy efforts. This is particularly true in the case of economic development. Local efforts to address energy efficiency can foster job creation, making localities more competitive in attracting new businesses and a more skilled workforce. Thus certain interests such as clean energy and green product industries may support community action on climate change because it can increase competitiveness and potentially expand market share.

Because climate change and sustainability problems are increasingly recognized to require local action, and because green industry is projected to be one of the fastest growing segments of the overall economy over the next few decades, economic development provides abundant opportunities for local governments and public sector firms to attract green industries and inject environmentally friendly considerations into land use decisions. Attracting green business is widely recognized as an important component of a community's economic development strategy, but this potential has not yet been fully realized.

Almost 70 percent of the survey's respondents said attracting green industries was at least "somewhat important" to their city's overall economic development strategy. Yet while there are likely shared benefits from promoting energy efficiency and other green practices in economic development, few cities

offer specific incentives to increase the presence of green industries.

The most significant support for green sector development comes in the form of financial and other incentives encouraging the use of energy efficient technologies in new development, with 19.5 percent of the cities reporting they provide such incentives. Only 15 percent of cities in the survey reported that their jurisdiction provides any financial or other incentives to renewable energy entities. Cities are even less willing to relax regulatory or review processes to attract green industries. Only six percent of the cities surveyed provide any regulatory or procedural relief for private developments that incorporate energy efficient technologies. Similarly, only 11 percent reported that their city has altered its permitting practices or reduced permitting costs for industries promoting green practices.

Additionally, rather than reduce regulatory oversight, some cities favor imposing green standards on developers. For example, the District of Columbia's 2006 Green Building Act requires certain new development and substantial retrofits of existing private buildings to meet LEED certification standards. While many developers, green industries, and other entities may be attracted to a jurisdiction because of financial incentives, uncertainty about the commitment of policymakers to retaining these incentives across budget cycles may deter at least some firms.

Leading by Example

Leading by example is perhaps the most profound statement a government can make about the importance of sustainability and energy efficiency. Striving for increased energy efficiency and sustainability within the government is likely to increase buy-in from other stakeholders.

By investing in renewable and clean energy programs, for example, local governments send two messages. First, they are expressing their commitment to environmental stewardship through a reliance on cleaner energy sources. The second message is more a matter of responsible management. Local government investment in sustainability and energy efficient alternatives embodies the fiscal and managerial responsibility that many citizens demand. Cities may lead by example by increasing green purchasing, or by upgrading their own facilities to be more environmentally friendly. Green building programs, efficiency standards, and building code changes rely on well-developed technologies that are cost effective.

A number of localities have adopted green building programs that create incentives or mandates (or both) to improve the environmental performance in governmental construction and retrofitting projects. And since reductions in energy use are built into the physical environment, new construction or rehabilitation of existing public buildings create permanent savings for taxpayers. Our survey demonstrates that sustainability initiatives applied to governmental activities lead those at the community level. A number of cities now apply the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system or other similar standards to the construction of new facilities, or renovations of existing ones. More than 200 local governments require LEED certification for new or renovated government facilities.[11]

Utilizing Renewable Energy

The use of renewable and alternative energy is also critical, especially if the city operates an electric utility. The utilization of renewable energy is more common among cities that own and operate a municipal utility. Renewable energy use is also more common for municipal governments in states such as California, which have set targets for statewide renewable energy consumption.

While many cities have set goals for increasing their reliance on renewable energy, survey respondents reported only modest utilization of renewable energy technologies. Fewer than 40 percent of cities reported that they used any form of renewable energy. The most commonly used renewable energy source was biofuel, which 38 percent of the survey's respondents reported that their jurisdiction used. The second most commonly used source was solar energy (28 percent), followed by hydroelectric (19 percent), waste-to-energy (17 percent), and wind (16 percent).

Most jurisdictions report their first utilization of renewable energy within the last five years. For example, of the cities reporting utilization of wind energy, 77 percent report their initial use was in the past five

LEEDing by Example: Case Study of Bowie, Maryland's Green Building Initiative

In 2003, Bowie, Maryland became the first city in the state of Maryland to adopt a formal resolution declaring a commitment to incorporating green building and other low impact and environmentally friendly practices into municipal construction projects. The city honored that declaration three years later when it broke ground on a 13,260-square-foot complex that would ultimately house its Parks and Grounds Division as well as its Storm Water Management Division.

The Parks and Grounds Facility, Bowie's first green building. www.cityofbowie.org/

Upon its completion, the new facility would help the city to advance a number of programmatic and policy goals. First, it would allow the city to replace the existing forty-year-old facility that was no longer suitable for the Divisions' growing mission. The Parks and Grounds Division responsibilities include the maintenance of 78 ball fields, 23.5 miles of trails, 202 acres of grass, and 130 acres of athletic turf. The division was also responsible for maintaining grounds for all city buildings. The existing complex consisted of a 1,200-foot house and a number of other structures that were ill suited for accommodating division staff and equipment, or for advancing the division's mission. Moreover, completion of the facility would allow the city to make good on its commitment to incorporate green buildings into its facilities inventory.

Once completed, the new complex would consist of two structures with combined space of 13,260 square feet. Parks and Grounds staff would be housed in an 8,060-square-foot facility, while a shop and vehicles would be housed in a smaller 5,200-square-foot facility. Both buildings were designed to meet LEED Silver standards. The city broke ground on the project in 2006.

Construction of the facility was completed in May 2008. The total price tag for the facility was approximately $5 million dollars, with slightly more than $1.1 million of the project's funding coming from a series of grants. Some of the more notable environmentally friendly features of the Parks and Grounds facility include a green roof, which incorporates a mixture of plants and Energy Star-rated "cool" roof material, waterless urinals and water-saving toilets with variable flush controls, and the utilization of recycled building debris for construction fill. Additionally, three existing steel structures on the site were dismantled and relocated to another area for continued use.

Since completing the Parks and Grounds, facility the city has continued to demonstrate its commitment to environmentally friendly practices. In August 2009, city leaders passed a resolution further articulating their desire to promote sustainable building practices by committing the government to the attainment of LEED Silver or higher standards for construction projects. The city has again made good on its commitment in both the planning and development of Bowie's new 79,950-square-foot city hall, scheduled for completion in 2011, and designed to achieve LEED Silver status.

years. Similar patterns are observed for solar energy (82 percent), biofuels (79 percent), and waste-to-energy (83 percent). The notable exception from this pattern is hydroelectric energy where 93 percent of users indicated their initial use of it was more than ten years ago. This may reflect the limited number of jurisdictions with access to viable hydroelectric sources, and the relatively long time period during which hydropower technologies have been in place.

Recent growth in the number of cities using renewable energy is fueled by several factors. One of them is the adoption of statewide renewable portfolio standards that require specific percentages of a state's total energy consumption to come from renewable sources. Thirty-two states and the District of Columbia have set such standards. In California, for example, the Renewable Portfolio Standards adopted in 2002 and amended in 2009 require that 33 percent of all energy consumed in the state come from renewable sources by the year 2020. Similarly, Illinois has set a 25 percent renewable energy consumption target by 2025. The more ambitious targets and timelines set within these and a handful of other states have contributed greatly to increased utilization of renewable energy sources by their cities.

Renewable energy usage was proportionately greater in cities that indicated they operated their own utilities compared to cities that purchased energy from other producers. Ownership of an energy utility provides cities with greater flexibility in setting provision and consumption targets. Limited by their existing energy infrastructures, cities may require additional assistance to diversify their energy portfolios.

Due to limited resources and other barriers, diversification of energy portfolios may require support from other levels of government. For example, recognizing the challenges that cities face in broadening their use of solar energy, and the critical role cities will play in the effort to slow climate change, the United States Department of Energy's (DOE) Solar America Cities program provides technical and financial support to cities to aid their transition to solar energy. Twenty-five cities received awards to develop more comprehensive approaches to expanding the use of solar energy, and to eliminate barriers to increased utilization of renewable energy through the provision of incentives and by restructuring regulatory requirements (i.e. permitting, zoning).[12]

Conclusion

Considerable money and attention has been directed toward local energy and sustainability issues in the last few years. Nevertheless, little practical information has been developed to guide local government officials and public managers in determining how best to approach local sustainability and climate protection programs. The goal of this report was to begin to fill this gap by outlining six strategies that address the planning, policy, and organizational issues associated with sustainable energy management.

Our literature review and survey findings identified certain factors that influence the design and implementation of sustainable energy management in medium-sized U.S. cities. These results also shed light on some of the more innovative practices for energy management. Network relationships are important, both in integrating multiple departments and programs within a single government and in fostering collaboration and stewardship among local governments in a region. Energy management and sustainability is a rapidly expanding policy arena for local governments, and sustainability is destined to play a much larger role in local government management in the future. While there is still much to be learned, the experience gained in the last few years provides important insights to enhance program design and implementation.

One of the first barriers to effective management of local sustainability efforts is a lack of agreement among various stakeholders and constituencies on what sustainability means and what implementing it entails. In a general sense, sustainability involves developing and adhering to policies that help communities meet their present societal needs while not infringing on the ability of future generations to do the same. From a public policy perspective, this might entail the adoption of programs and policies that ensure that basic economic, social, and security needs of citizens are met while simultaneously promoting environmental stewardship. Private sector sustainability may lead firms to promote the economic interests of their shareholders while simultaneously working to reduce the adverse effects of their activities on the environment.[13]

Local sustainability efforts face significant obstacles. One obvious barrier to climate protection is the belief that local efforts are inconsequential relative to the enormity of the problem and thus can accomplish little more than symbolic gestures. The scale of the problem and its potential impacts would seem to overwhelm any actions that local governments can undertake. Some scholars, including Richard Stavins of the Kennedy School of Government at Harvard University, even suggest that local activism is counterproductive in that it can undercut the demand for and effectiveness of state and federal actions.[14]

Cost is often cited as a barrier to efforts to increase energy efficiency and to promote sustainability. While many local governments pursue these efforts with potential cost savings in mind, the amounts of these savings can vary, and financial constraints may make investing in energy efficiency and sustainability difficult no matter how prudent they may seem. Pursuit of an environmental agenda can be a costly endeavor with high up-front costs and savings that may not be apparent for several years. Thus managers must recognize and be willing to accept the fact that while programs to increase energy efficiency or sustainability are cost effective in the long-run, they may divert resources away from other policy priorities in the short-run.

Tight resources and perceptions about the limited impacts of local action are not the only barriers that managers are likely to face as they implement sustainability programs. Prior studies have shown that insufficient or asymmetric information, inadequate in-house expertise to shepherd environmental initiatives, and a lack of competent public or private sector partners to implement these policies play a role in limiting action on energy and sustainability-related issues.[15]

The enormous attention now being given to sustainability at all levels of government leads to legitimate concern that local government initiatives may be little more than symbolic actions designed to appeal to environmental constituencies and conform to popular policy trends and expectations. Undoubtedly this is true in some cases. For example, a recent evaluation of the implementation of climate protection programs in Florida cities that had signed on to the USCM climate protection agreement found that more than 10 percent of the cities had yet to pass even a non-binding resolution affirming the agreement, much less take any action to implement its recommendations.

This report can help by providing practical information and reporting on the policies and practices in place in medium-sized cities throughout the U.S. By systematically reviewing local government's role in sustainability and the management challenges faced by local leaders, we can enhance our understanding of how to improve local government operations and thus benefit our communities.

Endnotes

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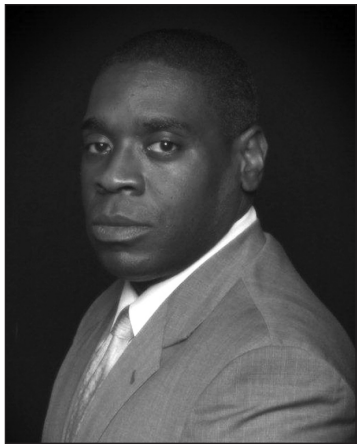

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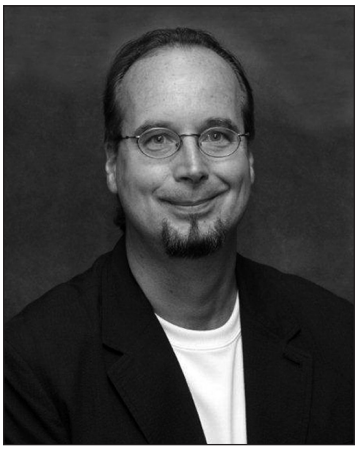
Francis holds an MPA from the George Washington University in Washington, DC, and a B.S. in political science from Florida A&M University in Tallahassee, Florida.



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Professor Feiock has lectured both throughout the United States and internationally including lectures in Moscow, Seoul, and Beijing. Feiock's current research is directed toward examining relationships between governance and institutional arrangements and the adoption and implementation of environmental policies in local government. Most recently, Professor Feiock presented his co-authored work, "Explaining the Adoption of Climate Change Policies in Local Government" at the Pathways to Low Carbon Cities Workshop in Hong Kong.

Feiock was a Fulbright Scholar in South Korea in 2006, and has served as the principal investigator on four National Science Foundation grant awards, and has recently received grant awards from the Lincoln Institute for Land Policy, the Aspen Institute, and the Fulbright Scholar Program.

Professor Feiock has written or edited six books and more than 100 refereed journal articles. His work appears in the leading scholarly journals of political science, public administration, and urban affairs. His books include Institutional Constraints and Local Government: An Exploration of Local Governance (SUNY Press 2001), City-County Consolidation and Its Alternatives (M.E. Sharpe 2004) and Metropolitan Governance: Conflict, Competition and Cooperation, (Georgetown University Press 2004). His most recent work in collaboration with John Scholz is an edited book Self-organizing Federalism: Collaborative Mechanisms to Mitigate Institutional Collective Action Dilemmas published by Cambridge University Press in 2010.

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