

US EPA ARCHIVE DOCUMENT

CHAPTER THREE

Establish the LBE Program Framework



This chapter builds on the descriptions of activities and measures provided in Chapter 2 and describes a key element of the LBE implementation process: establishing a robust framework to support a comprehensive program.

Establishing the framework is a critical step towards developing a comprehensive LBE program that (a) achieves expanded energy and other benefits, (b) leverages economies of scale across the programs, (c) encourages broader political support, and (d) results in increased visibility and support. The program framework described here serves as the basis for effective screening, program development, and evaluation, which are the subjects of the remaining chapters of this Guide.

Establishing the LBE program framework includes the following actions:

- Select a team – that includes the necessary expertise and represents the appropriate agencies – to be responsible for developing and implementing the program, and tracking and measuring progress;
- Establish the business case for the LBE program and work with key participants and stakeholders to obtain high-level support for the program;
- Identify agencies, organizations, and stakeholders who can help define, initiate, and implement the LBE program;

DOCUMENT MAP

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Related appendices:

Appendix A, State Executive Orders, Legislation, Policies, and Plans Initiating LBE Programs: summarizes and provides links to actions states have taken to initiate LBE programs

Appendix C, Resources for Implementing LBE Programs: contains examples and information resources on implementing LBE programs, including several state-developed agency guidance materials.

- Set clean energy goals or targets for state government facilities, operations, and/or fleets, based on the state's baseline energy use and other considerations; and
- Initiating the LBE program – a variety of approaches can be used to get an LBE program started – in some cases the LBE team conducts the ground work to encourage a governor, state legislature or other entity to establish its LBE goals; at other times LBE goals are initiated by the governor, or other entity, and the LBE team then implements the program.

Each of these steps is addressed in greater detail below. In addition, the information on key LBE activities presented in Chapter 2, *Lead by Example Activities and Measures*, can be used to help guide decisions during this first step, and Table 3.5.2, at the end of this chapter, presents selected resources to help establish an LBE program framework, including examples of LBE plans, guidance, and executive orders.

3.1 SELECT AN LBE TEAM

Establishing a team committed to developing a robust LBE program is a key step in the overall implementation process. This team can be informal or officially authorized by the governor. It is often composed of individuals with expertise in the specific LBE activities the state is considering for inclusion in its LBE program, as described in Chapter 2, *Lead by Example Activities and Measures*. Issues to consider when putting together an LBE team are described below.

3.1.1 IDENTIFY LEAD AND SUPPORTING LBE CLEAN ENERGY AGENCIES

States typically assign one agency to lead and coordinate LBE efforts. This lead agency can be selected in the following ways:

- *An existing state office can be the logical lead agency for a clean energy LBE program.* For example, the Georgia Environmental Facilities Authority (Division of Energy Resources), which promotes energy efficiency and renewable energy programs for public and private entities, is the lead agency for state LBE clean energy activities.
- *States can establish new entities to implement state energy policies and programs.* In Massachusetts, the State Sustainability Program was established to make recommendations to the Executive Office of Environmental

STATE AGENCIES FOR POSSIBLE INCLUSION ON THE LBE TEAM

- Energy Office
- Environmental Protection Office
- Clean Energy Fund
- Office of Sustainability
- Facilities Management Office
- Department of Transportation
- Procurement Office
- Department of Education
- Public Utility Control
- Department of Administrative Services
- Office of Policy and Management
- Department of General Services
- Department of the Treasury
- Housing Office
- Economic Development Office

Affairs and the Executive Office for Administration and Finance to promote innovative sustainable practices – including clean energy activities – in state operations (Massachusetts, 2002). In 2007, the new governor of Massachusetts established an executive order directing these two state agencies to create a Lead by Example program. The program is charged with coordinating efforts at state agencies, including all University of Massachusetts campuses and all state and community colleges, to reduce their environmental impact through a variety of measures including energy conservation and clean energy (Massachusetts, 2007; Massachusetts, 2008).

- *States can designate or work with an existing government-level entity that addresses a related issue, such as climate change.* For example, many states have legislative commissions or executive advisory groups on climate change (Pew Center on Global Climate Change, 2006). If such a body already exists, it can provide clean energy LBE leadership and/or help appoint an LBE team. In Connecticut, the Governor's Steering Committee on Climate Change, which is comprised of the chairmen and commissioners of energy, environmental, transportation, and other state agencies, led a Climate Change Action Plan Summit in 2002. The overall goal of the summit was to establish a process for developing a GHG emissions reduction plan, with one objective to identify opportunities for state agencies to lead by example in the areas of climate change and clean energy (Connecticut, 2002).

To support the lead LBE agency, a variety of state agencies and offices – including the state energy

office – can participate on the LBE team and take on related responsibilities. For example, in Connecticut, representatives of 13 state agencies gathered with the Governor’s Steering Committee (described above) for the Connecticut Climate Change Action Plan Summit to establish an initial framework for developing the LBE component of the state’s climate change action plan (Connecticut, 2002, 2006).

3.1.2 IDENTIFY KEY PERSONNEL

It is important to identify key personnel who have responsibility for clean energy and related issues (e.g., staff involved in sustainability, facility management, and/or environmental programs), and are positioned to participate on the LBE team. Selecting team members typically involves the following approaches (CaLEEP, 2006; Massachusetts, 2006b; NYSERDA, 2006):

- Select staff who are actively involved in decisions regarding energy consumption and who can vouch for LBE actions that will save energy (e.g., facilities managers, construction planners, fleet operators, and procurement directors).
- Identify the champions who are already working to implement clean energy activities within their agencies or offices.
- Include managers who will be part of the decision-making process. Their support, perspective, and credibility will be essential in ensuring the success of the LBE program.
- Include key finance personnel, fiscal department staff, and capital planning staff, who need to understand the cost savings and other economic benefits of the LBE program prior to lending their support.
- Include personnel who are concerned about the costs of clean energy. They may provide important perspectives and/or become important allies after getting more information.

3.2 ESTABLISH THE BUSINESS CASE AND IDENTIFY AND OBTAIN HIGH-LEVEL SUPPORT

Creating a sustainable LBE program requires identifying high-level policymakers whose support is critical to the success of the program, and providing them with

the appropriate information. These high-level policy-makers can include:

- The governor.
- Key legislators (e.g., legislators on finance, treasury, taxation, energy, resources, environment committees).
- Mayors and other elected officials.
- Administrators of key state agencies (e.g., finance, natural resources, and energy agencies).
- Local government officials, including representatives of school authorities (e.g., boards of regents, local school commissioners) and their advisors.

Approaches for building support and gaining sustained backing for an LBE program include:

- *Involve policymakers in the early stages of the LBE process.* Provide these individuals with data regarding LBE opportunities and include them on the LBE team. This can assist in gaining support and provides an early

LBE CHAMPIONS IN MASSACHUSETTS

The LBE program in Massachusetts was initiated when the Massachusetts Executive Office of Environmental Affairs hired a director to develop a new state sustainability program (including clean energy activities) and to coordinate state sustainability LBE efforts. Several state agencies in Massachusetts were already implementing LBE activities but there was no program coordination or integration.

In talking with personnel at other state agencies, the new director discovered that while agency staff often understood the importance of sustainability it was not a priority with their supervisors. Consequently, agency personnel wanted an executive order to give them official authorization to act. The governor ultimately issued Executive Order 438, which created a Sustainability Coordinating Council to develop the State Sustainability Program, and requires all state agencies to reduce energy consumption through energy efficiency and conservation.

Source: Massachusetts, 2006b.

GAINING SUPPORT FOR GEORGIA'S CLEAN ENERGY LBE PROGRAM

The Georgia Environmental Facilities Authority and the Department of Administrative Services worked with Georgia Power to determine state facility energy consumption levels for over 4,000 state accounts. By consolidating state accounts, they were able to obtain strategic rate changes that yielded \$2.1 million in electric cost savings. This savings helped convince the governor to issue an LBE Executive Order to help achieve additional savings.

Sources: Georgia, 2006a, 2006b.

opportunity to hear policymakers' perspectives and address their concerns.

- *If possible, identify influential persons to participate on the LBE team.* These are individuals with contacts and influence who can help the LBE champions present their case to key decision-makers who have the authority to initiate and approve the program.
- *Clearly articulate the value of the proposed LBE program and describe why policymakers should support it.* Include information on:
 - Context
 - Purpose of LBE program
 - Key benefits
 - Proposed activities
 - Costs and how they will be met
 - Strategies for addressing barriers
 - Description of how the benefits of clean energy LBE action relate to the broader national energy and environmental context.

It is not always necessary for all of these components to be presented in detail. A broad description, reinforced by evidence of the benefits of similar programs elsewhere, can be an effective way to begin.

3.3 IDENTIFY KEY AGENCIES AND OTHER GROUPS TO HELP SHAPE AND IMPLEMENT LBE PROGRAMS

The LBE team can call on a wide variety of groups to provide input to help initiate, shape, and implement the program, and/or serve as champions in the community. For example, environmental nonprofit organizations may be motivated to support LBE programs because of the environmental benefits of energy

EXECUTIVE BRANCH PARTICIPATION IN IOWA

Iowa's Executive Order 41 requires the state to reduce energy consumption in all conditioned facilities (i.e., buildings that are actively heated or cooled by a heating, ventilation, or air-conditioning system) by an average of 15% by 2010 (based on 2000 levels). It directs state agencies to obtain at least 10% of their electricity from renewable energy sources by 2010 and establishes requirements governing state fleets.

Source: Iowa, 2005.

efficiency and clean energy. Private sector firms can also play an important role, drawn by the potential for promoting local economic activity and providing a boost to energy services firms and other emerging industries. The decision to involve partners is often based on a state's LBE priorities, as determined by considering the benefits, costs, and implementation issues associated with specific activities and measures, as described in Chapter 2, *Lead by Example Activities and Measures*.

An overview of the agencies and organizations that can assist in initiating and developing an effective clean energy LBE program is presented below. Roles, responsibilities, and examples of how these groups have participated are also provided.

- *Executive Branch.* The executive branch typically plays a key leadership role in LBE initiatives. Many state governors have issued executive orders that set energy savings goals for existing buildings, define energy and environmental performance standards for new buildings, set fuel economy targets for state-owned or leased vehicle fleets, create green power purchasing policies, and create efficiency guidelines for purchasing energy-using equipment. The executive branch also has broad powers to change policies and practices involving state facilities, fleets, purchasing operations.

EXAMPLES: Wisconsin's Executive Order 145, issued in 2006, establishes a comprehensive set of LBE requirements for state government buildings. The most significant requirement is for the Department of Administration (DOA) to set goals for reducing overall energy usage in state facilities, office buildings or complexes, and campuses by at least 10% by 2008 and 20% by 2010, from a 2005 baseline. To help state agencies achieve these goals, the order directs the DOA to establish programs to conduct energy analyses in state-owned buildings, ensure that new state facilities are constructed to be 30% more energy efficient than the existing code requires, establish sustainable building operation guidelines based on LEED, and ensure that new construction incorporates an integrated design process. The order also requires state agencies to examine the feasibility of entering into performance contracts and directs the DOA to pursue opportunities to demonstrate PV and other renewable technologies at state facilities. Lastly, it directs the DOA to develop centralized reporting procedures and to report annually to the Governor's Office and the state Building Commission (Wisconsin Office of the Governor, 2006).

Ohio's Executive Order 2007-02S, issued in 2007, requires state agencies to immediately implement energy saving activities as directed by a 2006 law passed by the state legislature, rather than waiting until the date mandated in the law. Such activities include: developing rules for energy efficiency and conservation standards; designing a life-cycle costing methodology; and implementing a plan for energy-efficient product procurement. The order also directs the Department of Administrative Services to develop a tool that state agencies can use to track and measure energy consumption and to calculate each agency's GHGs.¹ The order directs each state agency to conduct energy audits in its facilities using the tool, to facilitate comparisons between similar state facilities. Following these audits, agencies are directed to reduce energy consumption by 5% within one year and a 15% reduction within four years. The order also creates the position of energy advisor to the governor to be responsible for coordinating the state's energy policy, including the state's LBE activities (Ohio Office of the Governor, 2007).

In 2007, Florida's governor issued Executive Order 07-126, which establishes a goal for state agencies to reduce current levels of GHG emissions by 20% by 2012, 25% by 2017, and 40% by 2025. To help achieve these goals, the order directs state agencies to immediately conduct energy audits of state facilities and prohibits state agencies from entering into new leases for office space that does not meet ENERGY STAR buildings standards. In addition, the order directs the state Department of Management Services to adopt LEED standards for new and existing state facilities and to develop energy efficiency measures and guidelines for state agencies. In 2008, the department issued energy consumption reduction guidelines for facilities managers and employees, and adopted a state facility energy policy (Florida, 2007; Florida, 2008).

- **State Legislature.** Some states have enacted legislation to establish their LBE goals and programs. Legislative authority may also be required when modifying procurement regulations.

EXAMPLES: In Washington, House Bill 2247 requires energy audits at state facilities. If the audits produce energy-saving opportunities, the improvements must be implemented by using performance contracting (Washington, 2006).

¹ In June 2007, the Ohio Department of Administrative Services adopted EPA's ENERGY STAR Portfolio Manager in response to the requirements of Executive Order 2007-02S. For more information on the state's use of the ENERGY STAR Portfolio Manager tool, see <http://www.das.ohio.gov/gsd/oes/auditguide.htm>.

California's Assembly Bill 532 requires the Department of Administration, in consultation with the State Energy Resources Conservation and Development Commission, to install solar energy equipment on all existing state buildings and state parking facilities, where feasible, by January 1, 2009. It defines solar energy to be "feasible" if there is adequate space on the building and the solar energy equipment is cost-effective (CLI, 2008).

- **State Energy Office.** In many states, the energy office develops and administers a range of clean energy programs, including LBE programs, and provides technical assistance and training to state agency staff and facility managers. State energy offices also share their technical expertise with other state agencies, local governments, school districts, and other public organizations to identify clean energy opportunities statewide.

EXAMPLE: In North Carolina, the State Energy Office provides energy information and assistance for all state sectors, including state and local government agencies, state universities, community colleges, and schools. Its Utility Savings Initiative is a comprehensive approach for reducing utility expenditures and resource use in public buildings within all these sectors. The goals of this LBE initiative include developing an agency strategic energy plan, providing training and resources for agency personnel, implementing no- and low-cost operation and maintenance conservation measures, and encouraging investments in energy projects and use of performance contracts and guaranteed energy savings contracts to fund these projects (North Carolina, 2006).

- **State Department of General Services, Facilities Authority, and Department of the Treasury.** One of these agencies typically serves as the custodian of state facilities. They administer state capital construction programs and establish guidelines for construction, operation, and purchasing practices. Consequently, these agencies may become involved in clean energy LBE activities related to state facilities (e.g., developing and implementing energy efficiency measures in new and existing buildings, establishing energy efficiency performance standards, and procuring energy-efficient products).

EXAMPLES: The Georgia Environmental Facilities Authority (GEFA) administers programs that provide financial assistance and protect the state's environment, including energy programs; water, wastewater, and solid waste infrastructure improvements; land conservation; recycling; and fuel storage systems. The Division of Energy Resources serves as the state energy office for Georgia, and in that role promotes energy efficiency, renewable

energy, and energy assistance programs throughout the state. GEFA worked with the Governor's office to issue Executive Order 22806, which directs agencies to "lead by example" by promoting clean energy. The authority also provides information, technical assistance, and other resources to state agencies as they implement the Georgia Governor's Challenge, which commits all state agencies to reduce energy consumption per square foot in state facilities 15 percent below 2007 levels by 2020 (Georgia, 2006; GEFA, 2008).

In Pennsylvania, the Department of General Services administers a performance contracting program for state agencies. The department has established a performance contracting outreach program for local and county governments, K–12 schools, and other government entities (Pennsylvania, 2006).

- **State Housing and Economic Development Offices.** These agencies operate a variety of programs, including low- and moderate-income housing and development programs, state mortgage financing programs, and enterprise zone and brownfield redevelopment initiatives. One way these agencies can become involved in LBE activities is to encourage energy efficiency practices or other clean energy measures in affordable housing developments.

EXAMPLE: For example, two Massachusetts agencies, MassHousing and the Massachusetts Technology Collaborative (MTC), recently joined with the nonprofit Enterprise Foundation to launch the Massachusetts Green Communities Initiative—a \$209-million initiative to build 1,000 energy-efficient, environmentally friendly, affordable homes in the state (Massachusetts, 2006a).

LOCAL GOVERNMENT PARTICIPATION

San Francisco adopted green building standards for affordable housing developments. The first development features energy-efficient systems, daylighting, natural ventilation, low-flow plumbing fixtures, and solar panels that will meet 12% of the building's energy demand (San Francisco, 2005).

SCHOOL PARTICIPATION IN WASHINGTON

Western Washington University adopted an initiative, introduced by the Students for Renewable Energy, to establish a student fee to purchase green power for the campus. At \$1.05 per credit per quarter, the fee is expected to provide enough revenue to supply all 35 million kWh of the school's 2005–2006 electricity demand with clean energy.

Sources: Apollo Alliance, 2005; U.S. EPA, 2006b.

- **Local Governments.** In many cases, local governments have initiated and adopted their own LBE programs. Some states work with local governments to educate local officials about these opportunities and to coordinate, pool, and set common criteria for such initiatives. States can also provide financial assistance, education, training, and technical assistance to local governments.

EXAMPLE: For example, Arizona's Municipal Energy Management Program (MEMP), administered by the state Commerce Department, provides training, tools, technical assistance, and grants to municipal and tribal governments to help implement energy saving projects (Arizona, 2005).

- **School Districts, Colleges, and Universities.** There are many opportunities to improve energy efficiency and purchase or generate clean onsite power at K–12 schools, colleges, and universities. One option is to use efficiency savings in operating budgets to finance new energy projects, thereby freeing up capital budget dollars for other uses. In fact, some colleges and universities have found that investing in energy efficiency projects provides better yields than the market (U.S. EPA, 2006c). In addition, states work with their state school systems to implement clean energy activities within school facilities.

EXAMPLES: An example of a state university investing in clean energy projects is the university-owned and -operated CHP system at the University of North Carolina (UNC) at Chapel Hill. This system provides space heating and cooling, sterilization, domestic hot water, humidification, and cooking for the campus and UNC hospitals (U.S. EPA, 2006a).

On the state level, the Ohio School Facilities Commission administers the state's comprehensive public school construction program, and helps school districts fund, plan, design, and build or renovate schools. In 2007, the Commission adopted the LEED for Schools Green Building rating system as part of its school design standards. Schools in districts that were approved for funding after September 2007 are required to meet at least LEED Silver Certification, with a goal of meeting the LEED Gold level. In July 2008, the Commission approved school construction and renovation projects of more than \$1.9 billion in 40 school districts. The projects will be financed by a combination of state and local funding (OSFC, 2008).

In April 2008, the Wisconsin lieutenant governor issued the Wisconsin ENERGY STAR School Challenge

to encourage 100 Wisconsin public school districts to commit to reducing energy consumption by 10% or more across their building portfolios. In the first two months after issuing the challenge, the number of participating school districts reached 30, including two school districts that had already been recognized as ENERGY STAR Leaders for improving energy efficiency across their building portfolios by 20%. In addition to committing to reducing energy consumption by 10%, participants in the challenge agree to measure and track the energy performance of their buildings using the ENERGY STAR Portfolio Manager, develop and implement energy management plans consistent with the ENERGY STAR Energy Management Guidelines, and educate staff, students, and community members about the benefits of improving energy efficiency (Wisconsin Office of the Lt. Governor, 2008).

- **Utility Energy Programs.** Utilities that administer energy efficiency, demand response, and onsite distributed generation programs can support a state's LBE efforts by providing technical assistance to state facility managers and new facility design teams. In some cases, utilities provide funding and incentives to state agencies for implementing clean energy projects.

EXAMPLE: In California, the state Department of General Services is collaborating with three investor-owned utilities to implement nearly \$17 million worth of energy-saving programs in state facilities and to provide technical resources to ensure that the energy projects deliver cost-effective energy savings according to guidelines established by the California Public Utilities Commission and the California Energy Commission. Administered by the utilities under the auspices of the CPUC, this program includes the state's largest office buildings, prisons, and some smaller state buildings (California, 2006).

- **Energy Service Companies (ESCOs).** ESCOs can perform energy project assessments and/or conduct full energy efficiency projects on a performance contracting basis. In such projects, the state does not provide upfront capital; instead, the ESCO develops and finances the project, verifies energy efficiency savings, and uses these savings to cover the cost of capital. A number of states have established programs to coordinate performance contracts for state agencies.

EXAMPLE: The Texas State Energy Conservation Office (SECO) developed performance contracting guidelines under its State Agencies Program. The agency pays for projects out of savings realized through the program (Texas, 2006).

- **State Treasurers and Public Pension Fund Managers.** Pension fund trustees and state treasurers provide policy direction for fund managers and are increasingly looking for opportunities to enhance the value of their portfolios. Some state treasurers and public pension fund managers invest in clean energy investments and upgrades on state property. This type of investment not only provides an opportunity for fund managers to "green" their portfolios, but also saves money and increases the value of the assets and the overall portfolio.

EXAMPLE: In California, for example, the state treasurer started the Green Wave program to encourage pension fund investment in energy efficiency and renewable energy retrofits and upgrades on state property (California State Treasurer's Office, 2006).

- **Nonprofit Organizations.** Nonprofit organizations can serve a variety of roles. In some states, nonprofit organizations are instrumental in helping to establish the LBE program from "the bottom up" by using their analytical, educational, and/or outreach skills to obtain support for the program. In some cases, nonprofit organizations provide technical assistance, financial incentives, and other support for cost-effective energy-efficient building design, construction, renovation, equipment, lighting, and appliances. Some states establish and work with nonprofit organizations as third party administrators to develop and oversee the LBE programs.

EXAMPLES: For example, Efficiency Vermont was established by the Vermont legislature and Public Service Board as the nation's first statewide energy efficiency utility. Efficiency Vermont provides technical assistance and financial incentives to help Vermonters and their public agencies pay for energy-efficient building design, construction, and renovation (Efficiency Vermont, 2006).

Iowa established the State of Iowa Facilities Improvement Corporation (SIFIC), a nonprofit corporation that helps agencies implement energy efficiency measures (Iowa, 2006).

WORKING WITH ESCOS IN NEW HAMPSHIRE

New Hampshire's Building Energy Conservation Initiative (BECI) uses performance contracting to pay for energy retrofits and building upgrades with the energy savings from the project, rather than depending on funding through capital appropriations. Under this program, a pre-qualified group of ESCOs submits proposals to conduct the work based on a predetermined list of energy conservation measures established by the BECI.

Source: New Hampshire, 2006.

- *Private Sector Firms.* Many states have found that they can achieve significant benefits from partnering with private sector organizations. This can be particularly true in the case of green power purchases and clean energy generation, where consistent cooperation with private utilities can lead to discounted costs.

EXAMPLE: *In Wisconsin, for example, the state partnered with a private energy service provider to construct a 150 MW CHP plant near the University of Wisconsin at Madison that provides steam and water for campus facilities as well as 45 MW of its energy demand. The remaining energy output will be available for residential and commercial uses. The agreement includes a provision that enables the state to obtain fuel discounts that could yield savings approaching \$100 million over 30 years. The utility has also agreed to work with the state to address air quality concerns associated with plant operations. (Wisconsin DOA, 2003).*

- *State- and Municipally-owned Water and Wastewater Entities.* State and municipal water supply, treatment, and distribution operations, as well as wastewater treatment facilities, typically use large amounts of energy. There can be significant opportunities to reduce net energy demand through improvements in energy efficiency and the generation of clean energy at these facilities. Several states work with water and wastewater treatment facility managers to implement LBE activities.

EXAMPLES: *In New York, for example, NYSERDA offers technical and financial assistance, including cost-sharing research, demonstrations, and business development programs, to encourage municipal water, wastewater, and solid waste facilities to adopt energy-efficient technologies (NYSERDA, 2004).*

In California, the State and Consumer Services Agency has worked with municipal water and wastewater utilities to reduce energy consumption by 15%. Facility improvements included adjusting operation schedules, increasing storage capacity, and installing equipment controls (FYP, 2003).

3.4 SET LBE GOALS

Goals are high-level statements that provide the overall context for what the state is trying to accomplish. Setting a goal or series of goals is an important step that specifies the level of clean energy to be attained within the state's facilities, operations, and fleets during

PRESIDENT'S EXECUTIVE ORDER ESTABLISHES FEDERAL LBE GOALS

On January 24, 2007, the President issued an executive order on "Strengthening Federal Environmental, Energy, and Transportation Management" establishing the following LBE goals for state agencies:

- Reducing GHG emissions by 3% annually or by 30% overall, by FY 2016, based on FY 2003 levels.
- Ensuring that 50% of renewable energy consumption comes from new sources, and that on-site renewable energy projects be considered where possible.
- Reducing water consumption intensity by 2% annually or by 16% overall, by FY 2016, based on FY 2007 levels.
- Requiring procurement of sustainable products.
- Ensuring that new construction and major renovation of federal buildings comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings, and that 15% of existing buildings meet these principles by FY 2016.
- Ensuring that agency fleets annually reduce consumption of petroleum by 2% and increase alternative fuel consumption by 10% by FY 2016.
- Ensuring that ENERGY STAR features are enabled on all appropriate office equipment.

Source: White House, 2007.

a stated time period. When establishing these goals, states can consider the benefits, costs, and implementation issues associated with specific LBE activities, as described in Chapter 2, *Lead By Example Activities and Measures*. The following sections provide information on how to establish an LBE goal or goals and present a number of state examples.

3.4.1 ESTABLISH LBE GOALS

Many states have enacted LBE executive orders, legislation, plans, and policies that establish clean energy goals for their facilities and/or fleets. Setting clear LBE goals and targets for state agencies can serve a variety of purposes:

- *Help ensure that all players know the expected outcomes.* This is especially true when the goals are established by the governor or another official; demonstrating high-level commitment to LBE goals can be an effective means of garnering support for an LBE program.
- *Provide for ease of measurement and reporting.* Having quantifiable goals provides a straightforward means of evaluating progress and providing feedback when mid-course corrections are necessary.

- *Demonstrate the feasibility of establishing clean energy initiatives.* Setting LBE goals demonstrates the economic, practical, and political feasibility of establishing an LBE program, and encourages other entities to pursue clean energy strategies.

The process of setting LBE goals involves consideration of past and projected energy consumption, as well as other factors. These factors, and examples of state LBE goals, are described below.

Develop an Energy Consumption Baseline

In order to set LBE goals that are measurable and achievable it is important to use actual data and projections of future consumption. This approach involves collecting data on state energy consumption and establishing reduction goals based on 1) existing, past, and projected consumption and 2) issues that affect energy use, such as climate, the condition of the public facilities, number and square footage of state facilities, fleet size, and current clean energy technologies.

States can collect energy consumption data (e.g., electricity use in kWhs, electricity demand in kW, total fleet mileage, and miles per gallon data) at various levels, including the state (i.e., energy consumption by all state agencies), state agency, facility, or project levels. Data can be obtained in a number of ways, including:

- Sending an energy consumption questionnaire to each state agency or facility.
- Collecting energy provider invoices and utility bills that are paid by each state agency.
- Working with utilities to obtain energy consumption records from the utilities.

Using existing studies, such as state or regional energy potential studies, state energy plans, or facility surveys that have already identified energy consumption data for relevant sectors within the state.

Once annual energy consumption data are collected, some states use commercially available energy accounting software, or contract with a private service and product provider (SPP), to construct a database that enables them to track and analyze energy consumption for all state facilities. Alternatively, state LBE teams can use existing databases to help establish their LBE goals.

EXAMPLE: *For example, the South Carolina Savings Matrix is a spreadsheet tool developed by the South Carolina Energy Office (SCEO) to track energy and cost*

savings from all SCEO-sponsored projects since 1995. Data were grouped by category, including a category for energy efficiency projects in state and local government agencies. The South Carolina Savings Matrix has enabled SCEO to demonstrate the benefits of its energy efficiency activities. Energy office managers have used the matrix to assess the relative benefit of their energy efficiency projects (U.S. DOE, 2007).

In cases where states are severely resource constrained, it is possible to begin estimating baseline energy consumption and potential reductions in consumption with a relatively small effort (i.e., a “pilot program” focusing on a single agency or facility). This effort can then be expanded by collecting baseline data on additional state facilities and/or end-uses as resources allow.

MASSACHUSETTS’ ENERGY AND CO2 INVENTORY

Massachusetts established an Energy and Carbon Dioxide (CO2) Inventory to analyze trends in statewide CO2 emissions from energy consumption, and use the findings to provide guidance on how to further decrease emissions.

The state the Executive Office of Environmental Affairs (EOEA) created an FY 2002 baseline by state agency, and updates this information annually based upon energy consumption reports completed by the state agencies.

Source: Massachusetts, 2004, 2006b.

CALIFORNIA BENCHMARKING INITIATIVE

California Executive Order S-20-04 established an LBE goal of reducing grid-based energy purchases for state-owned buildings by 20% by 2015, compared to a 2003 baseline. The Order and an accompanying Green Building Action Plan directed the California Energy Commission to develop a methodology for establishing an energy-use benchmarking system that is simple, California-specific, and coordinated with the ENERGY SMART benchmarking system.

The CEC established an interagency Green Team to ensure progress toward these goals and hired a contractor to execute the benchmarking effort. The contractor worked with the state and California utilities to create ENERGY STAR Portfolio Manager accounts for each agency and facility (which include data on energy use, square footage, year built, and identification of meters), develop a data release form for all state agencies to sign, allowing utilities to automatically upload energy data to Portfolio Manager, and establish the data base.

California anticipates that by the first quarter of 2008, the 2003 baseline will be completed and that utilities will continue to regularly upload energy consumption data to enable comparison among buildings and tracking building performance over time.

Sources: California 2004, 2004a, 2007; Miller, 2008.

Additional information on how to collect energy consumption data and establish an energy baseline is presented in Section 6.3, *Conducting Energy and Emissions Tracking and Benchmarking*. Information on how to estimate energy reductions resulting from potential clean energy activities, including simple rules of thumb, is provided in Section 4.3, *Estimate Benefits and Costs of Prospective LBE Activities*.

Assess State Context and Other Issues

Other issues to consider when setting goals include:

- *State context.* It is important for LBE goals to be considered in conjunction with other state clean energy programs, and to reflect the state's unique priorities and goals related to the environment, economy, and energy infrastructure.
- *Sequencing.* Some states have set overall goals for state government (e.g., a reduction in state government energy expenditures) and then developed LBE programs to move the state toward these targets. Other states have chosen to assess where LBE programs are cost-effectively achievable, and then set their goals to suit.
- *Scope.* Some states, such as New York, Colorado, and Massachusetts, have enacted comprehensive LBE

NEW YORK'S "GREEN AND CLEAN" STATE BUILDINGS AND VEHICLES

New York's Executive Order 111, adopted in 2001, establishes a comprehensive LBE energy efficiency and renewable program. Applicable to all state agencies and departments, the order sets the following goals:

- Energy consumption in all state-owned, leased, or operated buildings must be reduced by 35% by 2010, relative to 1990 levels
- State agencies must set peak electric demand reduction targets for each facility by 2010
- New state buildings must achieve at least a 20% improvement in energy efficiency performance relative to the state building energy code
- Renovated state buildings must achieve a 10% improvement in energy efficiency performance
- All state entities must ensure that 20% of their annual electricity needs are met by renewable energy sources by 2010
- At least 50% of new light-duty vehicles must be alternative-fueled vehicles by 2005, and 100% of all new light-duty vehicles (with the exception of specialty, police, or emergency vehicles) must be alternative-fuel by 2010

Sources: NYSERDA, 2001, 2002.

programs that include goals for many LBE activities. Other states have established a single goal focusing on a clean energy target for state buildings or fleets.

- *Quantitative versus qualitative goals.* Whenever possible, it is important to establish quantitative goals that can be used to measure the progress of LBE activities.

Goals can be structured in a variety of ways, depending on a state's preferred LBE approach. Clean energy goals typically fall within the following categories:

- *An Overall Energy Savings Goal for All State LBE Activities.* Some states have established an overall energy savings goal, defined in terms of a reduction in energy use or GHG emissions that can be met through clean energy.
- *Energy Savings Goals for Existing State Buildings.* These goals are typically structured as goals to reduce energy consumption in existing state buildings by some stated percentage within a set timeframe, from a specified baseline.
- *Energy Savings Goals for New and Renovated State Buildings.* These goals can require achieving a certain percentage improvement in energy efficiency performance, a specified energy usage per square foot (e.g., an energy budget), energy efficiency design requirements, and/or other performance standards.
- *Energy-Efficient Procurement Goals.* A number of states have elected to purchase ENERGY STAR-labeled products whenever feasible or cost-effective. State governments can require or encourage the use of energy performance contracts that enable them to invest in energy-saving equipment, using future utility cost savings (or avoided costs) to pay for the improvements. Some states have developed cost-effective programs for achieving energy-efficient product purchasing targets by designating a particular government agency as the coordinating facilitator of all state agency purchases.
- *Renewable Energy Goals.* These goals typically take the form of requirements to obtain a certain percentage of electricity usage from renewable energy sources. States can also establish a minimum renewable energy purchase volume (e.g., in megawatt-hours, MWh) by a given date or set targets for on-site generation of clean energy.

- *Energy Savings Goals for State Fleets and Fuel Use.*
These targets include requiring the purchase of a specified percentage of fuel-efficient or alternative-fuel vehicles for state fleets, setting mileage standards, establishing minimum requirements for the use of biofuels, and developing programs to encourage clean energy actions related to commuting.

3.4.2 EXAMPLES OF STATE LBE GOALS

Table 3.4.1, *Examples of LBE Goals and Targets* presents examples of how states have set their LBE goals. Appendix A, *State Executive Orders, Legislation, Policies, and Plans Initiating LBE Programs*, provides a more detailed summary of, and links to, these state actions.

TABLE 3.4.1 EXAMPLES OF LBE GOALS AND TARGETS

State/Title	Goal or Target
Overall LBE Energy Savings and GHG Emission Reductions	
Washington <i>Executive Order 05-01</i>	State agencies must reduce energy purchases by 10% by September 1, 2009 from a fiscal year (FY) 2003 baseline, using all practicable and cost-effective means available, including energy efficiency programs and use of on-site renewable resources.
Massachusetts <i>Executive Order 484</i>	Establishes a goal for GHG emissions from state operations to be reduced by 25% by 2012, 40% by 2020, and 80% by 2050, based on a FY 2002 baseline.
Existing Buildings	
Arizona <i>Arizona Revised Statutes 34-451</i>	State agencies must reduce energy use in buildings by 10% per square foot of floor area by 2008 and 15% per square foot of floor area by 2011, based on FY 2002 levels.
Iowa <i>Executive Order 41</i>	State-owned conditioned facilities must reduce energy consumption per square foot per degree day by an average of 15% from 2000 levels by 2010.
Nevada <i>NRS Title 58, Chapter 701—Energy Policy</i>	The Director of the Office of Energy is directed to prepare a state energy reduction plan to reduce grid-based energy purchases for state-owned buildings by 20% by 2015.
New Hampshire <i>Executive Order 2005-4</i>	The state shall reduce energy consumption in state facilities by 10% in accordance with the ENERGY STAR Challenge.
New and Renovated Buildings	
Maine <i>Title 5 MRSA 1764-A</i>	Statute establishes a target for state-funded new buildings and renovations over 5,000 square feet to exceed state energy efficiency standards in effect for commercial and institutional buildings by at least 20%.
Michigan <i>Executive Directive 2005-04</i>	Requires that all new construction and major renovation of state-owned facilities be consistent with LEED standards and score a minimum of 26 points on the LEED scorecard. Also requires the ENERGY STAR assessment and rating program to be extended to all state buildings.
New Mexico <i>Executive Order 2006-01</i>	New public buildings in excess of 15,000 square feet and/or using over 50 kW peak electrical demand must be designed to meet LEED-Silver standards and must achieve a minimum delivered energy performance standard of 50% of the average consumption for that building type.
	New construction and renovation of existing buildings between 5,000 and 15,000 square feet will achieve a minimum delivered energy performance standard of 50% of the average consumption for that building type.
Oregon <i>OAR 330-130</i>	All renovation and construction projects for state facilities must exceed Oregon's energy conservation building codes by at least 20%.

TABLE 3.4.1 EXAMPLES OF LBE GOALS AND TARGETS (cont.)

State/Title	Goal or Target
Virginia <i>Executive Order 48</i>	Establishes a goal for state agencies to reduce annual energy costs by 20% by 2010, relative to 2006 levels. State-owned facilities over 5,000 square feet and renovations of greater than 50% are required to be designed consistent with LEED and ENERGY STAR rating systems.
Washington, D.C. <i>Green Building Act of 2006</i>	New non-residential public buildings greater than 10,000 square feet must meet LEED-Silver standards, be designed to achieve 75 points on the ENERGY STAR Target Finder rating scale, and be benchmarked annually using ENERGY STAR Portfolio Manager.
Energy-Efficient Procurement	
Maryland <i>Executive Order 01.01.2001.02</i>	State agencies shall purchase ENERGY STAR products when purchasing energy-using products or shall purchase products in the top 25% in energy efficiency for products where ENERGY STAR labeling is not available.
Colorado <i>Executive Order 0012 07</i>	Requires Department of Personnel and Administration to develop policies that require state agencies to purchase equipment that is ENERGY STAR qualified and to ensure that energy-saving features are enabled where ENERGY STAR-qualified equipment is available and cost-effective.
Connecticut <i>Executive Order 17</i>	Requires that all future equipment and appliances purchased by and for executive branch state agencies shall be ENERGY STAR® certified, provided such ENERGY STAR® certified equipment and appliances are commercially available.
Renewable Energy	
Arizona <i>Executive Order 2005-05</i>	State agencies are directed to ensure that all new state-funded buildings derive at least 10% of their energy from renewable sources.
Connecticut <i>Executive Order 32</i>	State governments and universities are directed to replace an increasing share of electricity with renewable energy, toward the goal of increasing Class I renewable purchases to 20% by 2010, 50% by 2020, and 100% by 2050.
Oregon <i>Renewable Energy Plan</i>	Establishes a goal for 100% of the state government's total electricity needs to be met by renewable energy sources by 2010.
Wisconsin <i>Wisconsin Act 141</i>	Requires the Department of Administration to set renewable energy purchase goals for six agencies with an overall goal that renewable energy account for 10% of state energy purchases by 2008 and 20% by 2012.
State Fleets and Fuel Use^a	
Georgia <i>Executive Order 2.28.06.02</i>	State agencies and departments are ordered to permanently increase employee commute miles saved by 20% through compressed work schedules, alternate work schedules, and teleworking, where appropriate as determined at the agency or department level.
Connecticut <i>Executive Order 22</i>	Requires 20% reduction in the overall state fleet by July 1, 2009 and specifies that vehicle purchases of cars and light trucks must be vehicles that are classified by the U.S. EPA as "best in class" for estimated highway gasoline mileage.
Iowa <i>Executive Order 41</i>	Directs agencies to ensure that 100% of non-law enforcement, light-duty vehicles procured by 2010 are alternative-fuel (AFVs) or hybrid-electric.
	All agencies shall ensure that bulk diesel fuel procured by the state contains at least 5% renewable content by 2007, 10% renewable content by 2008, and 20% renewable content by 2010.
Nevada <i>Nevada Administrative Code 486A.160</i>	State fleets containing 10 or more vehicles must acquire AFVs or EPA-certified ultra-low emission vehicles. Beginning in FY 2000, 90% of new vehicles purchased must be either AFVs or low-emission vehicles (LEVs).

TABLE 3.4.1 EXAMPLES OF LBE GOALS AND TARGETS (cont.)

State/Title	Goal or Target
Rhode Island <i>Executive Order 05-13</i>	Order establishes that all new light duty trucks must achieve a minimum of 19 miles per gallon (mpg) and be certified LEVs, and that all new passenger vehicles achieve a minimum of 23 mpg.
Wisconsin <i>Executive Order 141</i>	State agencies are required to reduce petroleum-based gasoline use in state-owned vehicles by 20% by 2010 and 50% by 2015, and to reduce petroleum-based diesel fuel use by 10% by 2010 and by 35% by 2015.

a Examples of state goals for fleets and fuel are presented in this table because many states have adopted these goals. However, this is not one of the clean energy activities described in the LBE Guide.

Source: Appendix A, State Executive Orders, Legislation, Policies, and Plans Initiating LBE Programs.

3.5 INITIATE AN LBE PROGRAM

States have designed their LBE programs based on a variety of models and launched them in different ways. In some cases the LBE team conducts the ground work to encourage a governor, state legislature or other entity to establish LBE goals. In other cases, these goals are initiated by the governor or state legislature, and the LBE team then implements the program. Examples of both approaches are presented below. Mechanisms that states have used to successfully initiate their LBE programs incorporate one or more of the following approaches:

- The state governor issues an *executive order* that establishes clean energy LBE goals and requirements for an LBE program.
- The state legislature enacts *LBE legislation* that establishes clean energy LBE goals and requirements for an LBE program.
- The state government initiates an *LBE program as part of a broader energy plan, climate plan, sustainability plan, or other comprehensive plan or policy*.
- The state energy office or other agency initiates a *clean energy LBE program*.
- *Local governments, universities, or other state or local groups adopt LBE programs* that support state goals and/or influence the state to adopt an LBE program.

States can determine appropriate mechanisms for implementation based on their review of potential LBE activities, described in Chapter 2, *Lead by Example*

Activities and Measures, since some activities might require specific types of enabling authority (e.g., large expenditures on clean energy generation systems may require legislative authority).

Table 3.5.1 provides a summary of the mechanisms that states have used to initiate LBE programs. The table differentiates between mechanisms that 1) have been used to establish quantitative goals or to require a state government to take a specific LBE action and 2) encourage or recommend (but do not require) LBE action. Many states have used a combination of complementary mechanisms to produce an effective, comprehensive LBE program. Appendix A: *State Executive Orders, Legislation, Policies, and Plans Initiating LBE Programs* provides more detailed descriptions of the approaches taken by each state and provides links to sources.

TABLE 3.4.1 SUMMARY OF STATE EXECUTIVE ORDERS, LEGISLATION, POLICIES, AND PLANS INITIATING LBE PROGRAMS (THROUGH APRIL 2008)

Table 3.5.1 Summary of State Executive Orders, Legislation, Policies, and Plans Initiating LBE Programs (Through April 2008)															
Approach				Energy Efficiency in Buildings				Equipment Procurement		Clean Energy Supply		Transportation and Vehicle Procurement Activities			Other LBE Activities
State	Executive Order	Legislation	Plan, Policy, or Other	New Buildings	Existing Buildings	ENERGY STAR Label or Tools	LEED Standards	Energy-Efficient Product Procurement	ENERGY STAR Qualification	Renewable Energy Use	Clean Energy Generation	Fleet Efficiency	Renewable Fuels	Other	Water Efficiency, Recycling, etc.
AL	●			●	●			●	●						
AK	No Activity														
AZ	●	●		●	●		●	●	●	●	●	●	●		○
AR		●		○	○		○								
CA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
CO	●	●		●	●		●	●	●	●	●	●	●	●	●
CT	●	●	●	●	●		●	●	●	●	○	●	●	●	●
DC		●	●	●	●	●	●	●	●				●		
DE	●	●			○			●	●	○					
FL	●	●	●	●	●	●	●	●	○	●	●	●	●		●
GA	●		●		○			○	○	○		●	●	●	
HI	●	●		●	●	●	●	●	●	●	●	●	●	●	●
ID	●				●										
IL	●	●	●	●	●			●	●	●		●	●	●	●
IN	●		●	○	○					●			●		○
IA	●		●	●	●			●		●	●	●	●	○	○
KS	●	●			●			●	●			●	●		
KY	●	●	●	●	●	●		○	○	○	○	●	●		○
LA	●	●		●	○	○		○	○	○	○	○	○	○	○
ME	●	●	●	●	●		●	●		●		●	●	●	●
MD	●	●		●	●	●	●	●	●	●	●		●		●
MA	●		●	●	●		●	●	●	●			●		●
MI	●			●	●	●	●	●	●			●	●		○
MN	●	●		●	●			●		●		●	●	●	●
MS	No Activity														
MO		●		●	●								●		
MT	●	●		○	●		○	○	○	○			●		○
NE	●												●		
NV		●		●	●		●						●		
NH	●		●	●	●	●		●	●			●	○	●	●
NJ	●	●		●	○		●	●	●	●		○	●		●
NM	●	●		●	●		●			●	●	●	●	●	●
NY	●	●	●	●	●	●	●	●	●	●		●	●		
NC	●	●	●	●	●		○	●	●	○		●	●	●	●
ND	No Activity														
OH	●	●		●	●			●				●	●		●
OK	No Activity														
OR	●	●	●	●	●			○		○	●	○	●		○
PA	●		●	○	●		○	●	●	●		○	○		○
RI	●		●	●	●		●			●		●	●	●	
SC		●		●	●			●	○				●		○
SD	No Activity														
TN		●										●	○		
TX	●	●		●	●			●	●	○	○	●	●		●
UT	●	●	●	○	●			●	○	○	○	●	○	●	
VT	●	●	●	●	●	○		●	●	○		●	○	○	●
VA	●		●	●	●	●	●	●	●	○	●	●	●	●	●
WA	●	●		●	●		●			●	○	●	●	●	●
WV		●											●		
WI	●	●		●	●		●	○		●	○	●	○	●	○
WY	No Activity														
Key	●	Directs or requires implementation of LBE action, directs or requires action to be taken toward implementation of LBE action, requires attainment of a specific LBE goal, or otherwise establishes numerical targets for specific LBE activities.													
	○	Promotes --but does not require -- LBE action, recommends LBE action, requires the development of recommendations for LBE action, establishes general or non-numerical goals, or requires pursuit of opportunities to implement LBE activities generally.													
	⌘	Has not been enacted or is currently under consideration													
	No Activity	While states labeled "No Activity" may have individual LBE programs, these programs were not initiated by an LBE goal (i.e., via an executive order, legislation, plan, policy).													

Source: Appendix A, State Executive Orders, Legislation, Policies, and Plans Initiating LBE Programs

3.5.1 GOVERNOR ISSUES AN LBE EXECUTIVE ORDER

Many state governors have issued executive orders establishing LBE goals, programs, and specific requirements for state agencies to follow. Executive orders typically have the following advantages:

- Since it is signed by the governor, an executive order gives the state's clean energy LBE activities an official status.
- Top-level commitment to a coordinated set of clean energy policies is key to ensuring effective follow-through on implementing LBE activities.
- Executive orders are a time-efficient means of establishing clean energy objectives for state governments.
- A series of executive orders can be issued over time to change and/or expand LBE program requirements as technology and information improves (see Massachusetts text box).
- Executive orders can be used to create cabinet-level task forces or similar formal offices to pursue clean energy policy goals (e.g., Delaware Energy Task Force, Iowa Energy Coordinating Council, Florida Energy 2020 Study Commission, New Mexico Solar Power Task Force, Oregon Renewable Energy Action Plan, West Virginia Energy Task Force, and Wisconsin Energy Efficiency and Renewables Task Force).
- Executive orders can be effective as a mechanism for reinforcing a governor's energy plan. In Utah, for example, Executive Order 2006-04 (Utah, 2006a) was used to codify LBE goals set forth in the governor's policy for advancing energy efficiency (Utah, 2006b).

On the other hand, a potential disadvantage associated with executive orders is that they require a governor who is convinced of the value of LBE activities and takes the lead on ensuring the order is implemented. As such, executive orders can be rescinded or go unenforced after a new governor takes office. To be effective and enduring after the issuing governor leaves office, executive orders can be reinforced with complementary legislation or administrative rules that build on the framework provided by an executive order.

MASSACHUSETTS EXECUTIVE ORDER BUILDS ON EARLIER EXECUTIVE ORDER AND ADMINISTRATIVE BULLETINS

In 2002, the Massachusetts governor issued Executive Order 438, which created a Sustainability Coordinating Council with the responsibility of developing and maintaining a State Sustainability Program. The order required state agencies to work with the Council to develop policies to:

- Reduce energy consumption in state facilities.
- Reduce GHG emissions by 25% by 2012 based on 2002 levels.
- Promote environmentally-appropriate facility siting.
- Increase purchase of environmentally preferable products.

Building on the goals of this initiative, the state Executive Office for Administration and Finance issued three administrative bulletins in 2006:

- Bulletin 11 directed the Sustainability Coordinating Council to develop guidance for state agencies to help reduce energy consumption by 15% by 2010.
- Bulletin 12 established the "LEED-Plus" design standard for new construction and major renovations of facilities.
- Bulletin 13 established minimum requirements for use of bio-fuels in state vehicles and buildings by state agencies.

In 2007, the new governor issued Executive Order 484, which incorporated the goals set forth in Executive Order 438 and Bulletins 11 and 12. In addition, Executive Order 484 included the following goals:

- Reduce GHG emissions from state government operations by 40% by 2020 and 80% by 2050, based on 2002 levels.
- Reduce energy consumption per square foot in state buildings by 20% by 2012 and 35% by 2020.
- Obtain 15% of energy demand from renewable sources by 2012, and 30% by 2020.
- Reduce potable water use by 10% by 2012 and 15% by 2020 based on 2006 levels.

Sources: Massachusetts, 2002; 2006c; 2006d; 2006e; 2007.

3.5.2 STATE ENACTS LBE LEGISLATION

A second mechanism for establishing LBE initiatives is to enact state legislation. This can be accomplished via a comprehensive package or through sequential bills targeting individual LBE initiatives. Legislation that mandates a comprehensive package of policies, such as the South Carolina Energy Efficiency Act, can provide a robust framework for an LBE program. In addition, certain aspects of an LBE program may *require* legislation. For example, legislation may be required:

- *If changes to tax codes are necessary*, such as appropriating funds to finance the LBE program.
- *To provide funding sources to establish LBE programs* (e.g., an initial endowment for a revolving loan fund).
- *To modify procurement regulations* such as implementing life-cycle costing for purchasing decisions, releasing state agencies from mandatory low-bid requirements when buying Green Power, or allowing agencies to enter into long-term energy service agreements for performance contracting.

Other uses of legislation are to:

- *Establish key components of state LBE programs.* For example, Montana, Texas, and Iowa have enacted

SOUTH CAROLINA ENERGY EFFICIENCY ACT

South Carolina passed legislation that establishes comprehensive requirements for a state LBE program. The Energy Efficiency Act established requirements for a state energy plan and policy and established the state energy office. The Act includes the following requirements:

- Implementation of energy efficiency standards in state-owned and -leased buildings, including public school buildings, which must provide for life-cycle cost-effectiveness.
- State agency energy conservation planning, metering, and reporting.
- Energy conservation savings requirements, which specified that an agency's budget must not be reduced by the full amount of money saved through energy conservation measures.
- Performance contracting requirements.
- Establishment of a revolving loan fund for energy efficiency.
- Energy-efficient product procurement.
- Lease purchase agreements with energy efficiency product vendors and utility companies.
- Guaranteed energy, water, or wastewater savings contracts for the evaluation, recommendation, and implementation of energy, water, or wastewater conservation measures.

Source: South Carolina Legislature Online, 2005.

legislation to create revolving loan funds that can be used to finance energy efficiency improvements in state facilities. Colorado and Washington have passed bills to facilitate performance contracting in state facilities.

- *Authorize a government department or agency to oversee the implementation and operation of a state's LBE program.* Legislation in Maine, for example, created the Clean Government Initiative (Maine, 2006), which assists state agencies and state-supported institutions of higher learning to incorporate environmentally sustainable practices into all state government functions.

While legislative authority provides a solid foundation for an LBE program, the legislative process can be slow and uncertain, resulting in delays and/or lack of support for the anticipated LBE legislation. States have found that pairing legislation with a high-profile executive order can provide an LBE program with both momentum and longevity.

3.5.3 LBE PROGRAM INITIATED THROUGH THE STATE PLANNING PROCESSES

A third mechanism is to initiate an LBE program as part of a broader state energy plan, climate plan, sustainability initiative, or other comprehensive initiative. States can incorporate LBE policies into these plans and/or use the LBE activities as a key driver for implementing these plans. For example, Connecticut's Climate Change Action Plan is a blueprint for achieving cost-effective GHG reductions within the state. The inclusion of LBE activities played a major role in developing the plan, since the state recognized the importance of adopting clean energy activities within its own operations prior to encouraging other sectors to implement similar programs. (See Section 1.5, *Overview of the LBE Process*, for more detailed information about how Connecticut developed its Climate Change Action Plan.)

Incorporating LBE policies into a related clean energy plan can be an important first step in building support for a comprehensive LBE program. However, such policy and planning decisions often lack the directness of an executive order or legislation. Also, as with executive orders, policy and planning decisions can be revised, dropped, or unenforced when the executive administration changes. Combining these policy initiatives with statutory legislation or with an executive order can provide the reinforcement necessary to ensure effective implementation.

3.5.4 STATE ENERGY (OR OTHER) OFFICE INITIATES PROGRAM

In some states, the energy agency (or other office involved with clean energy, environmental, and/or facilities management issues) initiates the state's LBE program. This state agency may conduct background research and assemble preparatory data (e.g., on the costs and benefits of an LBE program) that can be instrumental in providing information that the governor needs to enact an executive order or that can help spur legislative action.

In New York, for example, NYSEDA prepared a draft executive order on energy efficiency in state buildings and fleets, based on an analysis of federal Executive Order 13123, *Greening the Government through Efficiency Energy Management*, and information on LBE activities obtained from other states. NYSEDA shared the draft order with the governor's office and key state agencies, and worked with these offices to develop support for Executive Order 111, "Green and Clean" State Buildings and Vehicles. (See Section 3.2, *Identify and Obtain High-Level Support*, for additional information on ways to gain policymaker support for clean energy LBE programs.)

3.5.5 LOCAL GOVERNMENTS OR OTHER STATE/PUBLIC ORGANIZATIONS ADOPT PROGRAMS THAT INFLUENCE STATE LBE ACTIONS

Clean energy LBE actions taken at the local level and by nonprofit organizations, regional groups, universities, and other organizations in the state can influence LBE action at the state level by serving as models and by reaching out to actively engage state governments. In both ways, these organizations can assist states by illustrating the potential energy savings and cost savings from clean energy actions.

Local Governments

Many local governments have developed their own LBE and other clean energy initiatives that can serve as models for state activities. In some instances, local governments have also reached out to include state governments in their clean energy LBE activities. States can look toward these local actions to help build a case for their own state LBE program. For example:

- *Salt Lake City's Green initiative* provides an example that can serve as a model for states. This initiative includes numerous LBE activities, such as high-

performance buildings, green power purchases, building energy conservation, water conservation, and recycling. The city also requires new and renovated public buildings to be LEED-Silver certified.

Salt Lake City has significantly reduced its energy costs through this program. The city replaced its city and county buildings' incandescent bulbs with more energy-efficient compact fluorescent bulbs, saving over \$33,000 a year and reducing carbon dioxide (CO₂) emissions by 344 tons per year. The city also saves over \$32,000 a year on its energy costs from the installation of 861 LED traffic signals, an initiative it plans to expand to include all of its 1,630 traffic signals. This expanded measure is expected to save over 500 tons of CO₂ each year with an annual cost savings of \$53,000. The city invested a portion of the savings from these energy conservation measures in renewable energy; it is now the largest purchaser of Blue Sky wind energy in the state (Salt Lake City, 2005).

- *Burlington, Vermont* is a local government that has reached out to include state government in its clean energy LBE activities. Burlington produced a climate action plan in 2000 that established goals for reducing GHG emissions in the city, including emissions from municipal government operations. It formed the Alliance for Climate Action to implement the action plan's recommendations. Part of the Alliance's mission is to expand its activities beyond the city level by involving regional and state entities. The state Department of General Services and the University of Vermont, along with numerous local government agencies, have joined

KING COUNTY, WASHINGTON – MODEL CLEAN ENERGY LBE PROGRAM

In 1989, King County, Washington established an environmental purchasing program that enables county government purchasers to select environmentally preferable office equipment, automotive parts, vehicles, maintenance products, and construction and landscaping materials. Overall, the program saved the county \$675,000 in 2005.

The county also provides guidance to other governments, including a model policy for procuring environmentally preferable products and a description of the program and its benefits.

In 2006, King County was appointed to the Responsible Purchasing Network, an organization of federal, state, and local governments; non-profits; and private firms that assist jurisdictions in designing and implementing environmental purchasing programs.

Source: King County, Washington, 2006.

Burlington as members of the Alliance and are working to implement the *10% Challenge* initiative to reduce GHG emissions by 10% by 2010.

U.S. MAYORS CLIMATE PROTECTION AGREEMENT

Inspired by a challenge from the mayor of Seattle in 2005, an agreement was passed by the U.S. Conference of Mayors pledging to take local action to reduce global warming. The agreement goals are based on the targets outlined in the Kyoto Protocol, and include such actions as purchasing green power, improving energy efficiency in existing buildings, purchasing only ENERGY STAR equipment and appliances for public use, promoting sustainable building practices using LEED standards, increasing fuel efficiency of municipal fleets, improving water conservation and efficiency practices, and educating the public about the need to take action.

Source: U.S. Conference of Mayors, 2005.

Regional Organizations

Regional organizations can also influence and/or provide support for state-level LBE actions. For example:

- *The Puget Sound Clean Air Agency* works in partnership with U.S. Environmental Protection Agency and the Washington State Department of Ecology to protect public health in four counties. By implementing its own clean energy policies at the sub-state level, the agency serves as a bridge between state and local LBE activities (Puget Sound Clean Air Energy, 2006).
- *The Conference of New England Governors and Eastern Canadian Premiers* developed a Climate Change Action Plan in 2001 with the goal of reducing GHG emissions to 1990 levels by 2010, and to 10% below 1990 levels by 2020. One action item was for governments to “lead by example” by reducing emissions within the public sector by 25% by 2012. The plan called on governments to encourage the purchase of fuel-efficient vehicles and sustainable building design, to educate government employees about clean energy opportunities, to create

THE NORTHWEST ENERGY EFFICIENCY ALLIANCE

The Northwest Energy Efficiency Alliance is a non-profit regional organization that brings together state and local governments, electric utilities, public interest groups, and energy efficiency industrial representatives to encourage marketplace adoption of energy-efficient products and services. The alliance supports and creates partnerships with local government associations in Idaho, Montana, Oregon, and Washington, providing a forum for information sharing.

Source: NWEA, 2006.

a market for environmentally preferable products, and to develop a regional clearinghouse of operations and maintenance best practices. The plan has had a significant influence on several state LBE programs, including Connecticut’s Climate Change Action Plan, which includes LBE as a major component (NEG-ECP, 2006).

Nonprofit and Other Organizations

Nonprofit organizations have developed clean energy initiatives and conduct other activities that can provide support for state LBE programs. For example:

- *The Rocky Mountain Climate Organization (RMCO)* started the Colorado Climate Project, which is modeled after several state climate change initiatives. RMCO is a coalition of more than 30 local governments, utilities, businesses, and nonprofit organizations whose goal is to communicate the effects of climate change and provide information on how to address these impacts. The project’s mission is to reduce the state’s contributions and vulnerability to climate change by developing and promoting a Colorado Climate Agenda of actions to reduce the state’s GHG emissions. The recommended agenda will be presented to the state’s governor, legislature, and other policymakers (RMCO, 2006).

THE AMERICAN COUNCIL ON RENEWABLE ENERGY (ACORE) HIGHER EDUCATION COMMITTEE

The ACORE Higher Education Committee (HEC) is an extra-governmental entity that supports and influences state government LBE activities. The HEC aims to demonstrate the potential for a transition to a cleaner, more secure, more reliable, and less expensive energy future, and to develop educational materials and curricula about energy in schools. To achieve these objectives, the committee established goals to encourage 100 U.S. colleges and universities to:

- Purchase 100% renewable energy by 2010.
- Invest at least 10% of their endowments into funds that support renewable energy companies by 2010.
- Create renewable energy courses of study by 2010.

Source: ACORE, 2006.

- *The Northeast Energy Efficiency Partnerships (NEEP)* is a nonprofit organization working to advance energy efficiency in the Northeast. NEEP composed a letter to the governor of Connecticut commenting on recommendations by a working group of representatives from the Department of Public Utility Control, the Office of Consumer Counsel, and the Energy Conservation Management Board in the report *On Energy Efficiency Opportunities at State Facilities*. NEEP voiced support

for the recommendations, suggested six additional opportunities for improving energy efficiency in state facilities, and offered its assistance in implementing these recommendations. (NEEP, 2005; Department of Public Utility Control, 2006).

- *The Association of Washington Cities (AWC)* is a private, nonprofit corporation that represents Washington's cities and towns before the state legislature and other state organizations. Through its Local Government Energy Project, the AWC provides assistance to member governments on energy efficiency and energy policy matters. The association also monitors regional and state energy policy issues and represents its constituent cities in state and federal energy policy development (Association of Washington Cities, 2006).
- *The National Governors Association (NGA)* launched its Securing a Clean Energy Future (SCEF) Initiative in July 2007 with the objective of enlisting all U.S. governors in enacting clean energy policies at the state level. NGA is developing a variety of tools, including guides, reports, regional workshops, and national summits, to help governors understand the specific energy challenges in their states and implement policies to address these challenges. In addition, the SCEF initiative emphasizes the role of public-private partnerships to assist states in achieving their clean energy goals. In one such partnership, Greening State Capitols, the SCEF Initiative has joined with Wal-Mart Stores, Inc. to conduct energy audits of state capitol complexes. A team of Wal-Mart engineering experts will perform energy audits for up to 20 state capitol complexes during 2008 and 2009. The audits, which will be free to the states, will recommend energy efficiency improvements and provide estimates of resulting CO₂ emissions. A second partnership is with the Climate Savers Computing Initiative (CSCA), a nonprofit initiative founded by Google and Intel to encourage the use of more energy-efficient computers and servers in state offices and agencies. Participating states agree to reduce energy consumption from a majority of their computing equipment by: 1) pledging to purchase computer equipment that meets or exceeds ENERGY STAR ratings, 2) optimizing existing computer systems by educating employees about energy efficient computer power management strategies, 3) and over time, purchasing computing equipment with increasing levels of energy efficiency. (NGA, 2008, 2008a, 2007).

Another recent NGA initiative is the *Advanced Energy Strategies for Buildings* Policy Academy, designed to

help states develop an action plan and implementation strategy around improving energy use in buildings. NGA's Center for Best Practices selected seven states to participate in this program. The state teams will work with leading experts to develop action plans that identify cost-effective strategies for reducing energy use in buildings; design new policies, programs, and measures that promote energy efficiency and renewable energy; and develop innovative financing and funding options (NGA, 2008b).

REFERENCES

- **ACORE.** 2006. Higher Education Committee (HEC). Available: <http://www.acore.org/programs/hec/>. Accessed 12/12/2006.
- **Apollo Alliance.** 2005. New Energy for Campuses, Energy Saving Policies for Colleges and Universities. The Apollo Alliance. Available: http://www.energyaction.net/documents/new_energy.pdf. Accessed 12/11/2006.
- **Arizona.** 2005. Arizona Department of Commerce Energy Programs. Available: <http://new.azcommerce.com/Energy/>. Accessed 12/11/2006.
- **Association of Washington Cities.** 2006. Local Government Energy Project Web site. Available: <http://www.awcnet.org/portal/studionew.asp?Mode=b1&WebID=1&UID=&MenuActionTypeID=80&MenuActionParm=100&OriginPage=/portal/studionew.asp&EDate=&ChannelLinkID=1394>. Accessed 3/7/2007.
- **Burlington.** 2006. Alliance for Climate Action 10% Challenge. Available: <http://www.10percentchallenge.org/>. Accessed 4/30/2007.
- **CaLEEP.** 2006. California Local Energy Efficiency Program. Available: <http://www.caleep.com/>. Accessed 12/12/2006.
- **California.** 2004. Executive Order S-20-04, Green Building Initiative. December. Available: <http://gov.ca.gov/executive-order/3360/>. Accessed: 2/26/2008.
- **California.** 2004a. Green Building Action Plan. Available: <http://www.green.ca.gov/GreenBuildingActionPlan/default.htm>. Accessed: 2/26/2008.

TABLE 3.5.2 CHAPTER 3: ESTABLISH THE LE PROGRAM FRAMEWORK: SELECTED RESOURCES

State	Title and Description	URL
Examples of State Plans and Guidance for Implementing LBE Programs		
Connecticut	The Leading by Example report details steps taken by the Connecticut state government to establish framework for developing a Climate Change Action Plan for the state. This report and other links on the Connecticut Climate Change Web site provide information on the process used to develop the plan and current LBE initiatives for implementing the plan.	Report: http://ctclimatechange.com/StateActionPlan.html Web site: http://www.ctclimatechange.com/rbf_rept.html
Maine	Maine's Clean Energy Government Website details the energy-related accomplishments of Maine's Clean Government Initiative – including energy efficiency in state buildings, energy efficiency in fleets, and use of renewable energy.	http://www.maineenergyinfo.org/examples.html
Massachusetts	The Agency Sustainability Planning and Implementation Guide is intended to help state agencies understand the environmental impacts of their day-to-day operations and implement specific actions as part of the broader State Sustainability Program.	http://www.ncprojectgreen.com/Documents/AgencySusGuide.pdf http://www.mass.gov/envir/Sustainable/pdf/ss_guide_web.pdf
New York	NYSERDA has developed "Green and Clean" State Buildings and Vehicles Guidelines to aid state agencies in implementing Executive Order No. 111.	http://www.nyserda.org/programs/State_Government/exorder111guidelines.pdf
State Executive Orders for Initiating LBE Programs		
Massachusetts	Executive Order 484 establishes goals for state agencies for energy consumption reduction, GHG emission reductions, and use of renewable sources.	http://www.mass.gov/Agov3/docs/Executive%20Orders/Leading%20by%20Example%20EO.pdf
Virginia	Executive Order 48 establishes goals for state agencies to reduce annual energy costs.	http://www.governor.virginia.gov/initiatives/ExecutiveOrders/pdf/EO_48.pdf
Resources for Implementing LBE Programs		
California Public Utilities Commission	California's Local Energy Efficiency Program (CALeep) designs and implements energy efficiency strategies for communities—maximizing the use of existing energy efficiency initiatives and resources.	http://www.caleep.org/
National Governors' Association	Securing A Clean Energy Future is an NGA initiative that provides state governments with resources on clean energy opportunities. The Web site provides best practices and state initiatives.	http://www.nga.org/portal/site/nga/menuitem.751b186f65e10b568a278110501010a0/?vgnnextoid=f080dd9ebe318110VgnVCM1000001a01010aRCRD&vgnnextchannel=92ebc7df618a2010VgnVCM1000001a01010aRCRD

- **California.** 2006. California & Utilities Join Forces to Save Energy in State Buildings, State Leads by Example on Energy Conservation; Officials Urge Private Sector to Take Advantage of California Investor-Owned Utilities' Programs & Incentives. Available: <http://www.dgs.ca.gov/Press/06-07/060829.htm>. Accessed 12/11/2006.
- **California.** 2007. Green California Web site. Available: <http://www.green.ca.gov/default.htm>. Accessed: 2/26/2008.
- **California Legislative Information.** 2008. Assembly Bill No. 532 Available: http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_0501-0550/ab_532_bill_20071013_chaptered.pdf. Accessed 7/28/2008.
- **California State Treasurer's Office.** 2006. The "Green Wave" Environmental Investment Initiative. Available: <http://www.treasurer.ca.gov/greenwave/>. Accessed 12/11/2006.
- **Connecticut.** 2002. Leading By Example: Connecticut Collaborates to Reduce Greenhouse Gas Emissions. A report based on a summit held at the Pocantico Conference Center of the Rockefeller Brothers Fund. Pocantico Paper No 6. October 2–4. Available: http://ctclimatechange.com/rbf_rept.html. Accessed 12/6/2006.
- **Connecticut.** 2006. Personal communication with Bryan Garcia, CT Innovations, and John Ruckes, Connecticut Office of Policy Management. June 5, 2006.
- **Department of Public Utility Control.** 2006. Report to Governor M. Jodi Rell on Energy Efficiency Opportunities at State Facilities. Department of Public Utility Control, Office of Consumer Counsel, Energy Conservation Management Board. Available: http://www.neep.org/newsletter/1Q2005/Report_to_Gov_Rell_05.pdf. Accessed 1/12/2007.
- **Efficiency Vermont.** 2006. Residential/Commercial. Available: <http://www.efficiencyvermont.com/pages/>. Accessed 12/11/2006.
- **Florida.** 2007. Executive Order 07-126. Available: http://www.dep.state.fl.us/ClimateChange/files/200707_13_eo_07_126.pdf. Accessed 9/09/2008.
- **Florida.** 2008. Serve to Preserve Summit on Climate Change. Available: http://dms.myflorida.com/other_programs/serve_to_preserve/leading_by_example/executive_orders_partnership_agreements. Accessed 9/09/2008.
- **FYP.** 2003. Water/Wastewater Guide 1: Reduce Energy Use in Water and Wastewater Facilities Through Conservation and Efficiency Measures. Flex Your Power. Available: http://www.fypower.org/pdf/BPG_Water1_Con&Eff.pdf. Accessed 4/4/2007.
- **Georgia.** 2006. Personal communication with Kevin Kelly, Georgia Environmental Facilities Authority. June 8, 2006.
- **Georgia Environmental Facilities Authority.** 2008. Governor's Energy Challenge. Available: <http://www.gefa.org/Index.aspx?page=385> Accessed 7/28/2008.
- **Hawaii.** 2006. Act 96: An Act Relating to Energy. Available: http://www.hawaii.gov/dbedt/info/energy/efficiency/state/Act96_reprint.pdf. Accessed 4/20/2007.
- **Iowa.** 2005. Executive Order Number 41. Available: <http://www.dsireusa.org/documents/Incentives/IA09R.pdf>. Accessed 5/8/2007.
- **Iowa.** 2006. Iowa State Facilities Program. Available: <http://www.iowadnr.com/energy/ebank/sfp.html>. Accessed 12/11/2006.
- **King County, Washington.** 2006. Environmental Purchasing Program. Available: <http://www.metrokc.gov/procure/green/index.htm>. Accessed 12/12/2006.
- **Maine.** 2006. Welcome to Maine Clean Government. Available: <http://www.maine.gov/cleangov/>. Accessed 12/12/2006.
- **Massachusetts.** 2002. Executive Order 438: State Sustainability Program. Available: <http://www.lawlib.state.ma.us/ExecOrders/eo438.txt>. Accessed 4/25/2007.
- **Massachusetts.** 2004. Agency Sustainability Planning and Implementation Guide. Commonwealth of Massachusetts State Sustainability Program. Prepared by the State Sustainability Coordinating Council & State Sustainability Program Staff. Available: http://www.mass.gov/envir/Sustainable/pdf/ss_guide_web.pdf and <http://www.ncprojectgreen.com/Documents/AgencySusGuide.pdf>. Accessed: 4/25/2007, 11/14/2008.
- **Massachusetts.** 2006a. Massachusetts Green Community. Available: <http://www.greencommunitiesonline.org/massachusetts/>. Accessed 12/11/2006.

- **Massachusetts.** 2006b. Personal communication with Eric Friedman and Ian Finalyson, Executive Office of Environmental Affairs. June 1, 2006.
- **Massachusetts.** 2006c. Bulletin 11—Energy Conservation at Executive Agencies. Executive Office for Administration and Finance. Available: http://www.mass.gov/envir/Sustainable/pdf/anf_administrativebulletin11.pdf. Accessed 4/25/2007.
- **Massachusetts.** 2006d. Bulletin 12—Establishment of Minimum Standards for Sustainable Design and Construction of New Buildings and major Renovations by Executive Agencies. Executive Office for Administration and Finance. Available: http://www.mass.gov/envir/Sustainable/pdf/anf_administrativebulletin12.pdf. Accessed 4/25/2007.
- **Massachusetts.** 2006e. Bulletin 13—Establishment of Minimum Requirements for Bio-Fuel Usage in State Vehicles and Buildings by Executive Agencies. Executive Office for Administration and Finance. Available: http://www.mass.gov/envir/Sustainable/pdf/anf_administrativebulletin13.pdf. Accessed 4/25/2007.
- **Massachusetts.** 2007. Executive Order 484: Leading by Example – Clean Energy and Efficient Buildings. Available: http://www.mass.gov/envir/Sustainable/pdf/07_eo484.pdf. Accessed 6/22/2007.
- **Massachusetts.** 2008. Leading by Example. Executive Office of Energy and Environmental Affairs. Available: http://www.mass.gov/?pageID=eoeeamodulechunk&L=1&L0=Home&sid=Eoeea&b=terminalcontent&f=eea_lbe_lbe_program&csid=Eoeea. Accessed: 11/23/2008.
- **Miller, J.** 2008. Memo on California's Building Energy Use Data. February 14.
- **NEEP.** 2005. Letter to Governor Rell, March 22, 2005. Northeast Energy Efficiency Partnerships. Available: http://www.neep.org/policy_and_outreach/letter_Gov_Rell_3.22.05.pdf. Accessed 4/25/2007.
- **NEG-ECP.** 2006. The Conference of New England Governors and Eastern Canadian Premiers Climate Change Action Plan: 2006 Discussion Paper. Available: http://www.neg-ecp-environment.org/newsletters/News_2006_DISCUSSION_PAPER_Climate_Change_Action_Plan.pdf. Accessed 3/7/2007.
- **New Hampshire.** 2006. Building Energy Conservation Initiative. Available: <http://nh.gov/oep/programs/energy/beci.htm>. Accessed 12/11/2006.
- **New Jersey. Undated.** About SmartStart Schools. Available: <http://www.njsmartstartbuildings.com/smartstartschools/about/index.html>. Accessed 6/28/2007.
- **National Governors Association.** 2008. Securing a Clean Energy Future Web site. Available: <http://www.nga.org/ci>. Accessed: 2/26/2008.
- **National Governors Association.** 2008a. Greening State Capitols. February. Available: <http://www.nga.org/Files/pdf/0802GREENCAPITOLS.PDF>. Accessed: 2/26/2008.
- **National Governors Association.** 2008b. News Release: NGA Center to Help States Improve Energy Efficiency and Renewable Energy in Buildings. November. Available: <http://www.nga.org/portal/site/nga/menuitem.6c9a8a9ebc6ae07eee28aca9501010a0/?vgnextoid=42f8293b0669d110VgnVCM1000001a01010aRCRD&vgnextchannel=759b8f2005361010VgnVCM100001a01010aRCRD>. Accessed: 12/01/2008.
- **National Governors Association.** 2007. News Release: Governors Announce Groundbreaking Energy Efficiency Partnership with Climate Savers Computing Initiative. November 7. Available: <http://www.nga.org/portal/site/nga/menuitem.6c9a8a9ebc6ae07eee28aca9501010a0/?vgnextoid=b219f02788a16110VgnVCM100001a01010aRCRD>. Accessed: 2/26/2008.
- **North Carolina.** 2006. Energy Conservation. North Carolina State Energy Office, Department of Conservation. Available: <http://www.energync.net/efficiency/government.html>. Accessed 12/11/2006.
- **NWEA,** 2006. Local Government Associations. Available: <http://www.nwalliance.org/ourwork/projectsummary.aspx?ID=53>. Accessed 4/4/2007.
- **NYSERDA.** 2001. New York State. Executive Order 111 Web site. Available: <http://www.nyserda.org/programs/exorder111.asp>. Accessed 12/12/2006.
- **NYSERDA.** 2002. NYSERDA State Energy Planning Web site. New York State Energy Plan 2002. Available: http://www.nyserda.org/Energy_Information/energy_state_plan.asp. Accessed 12/12/2006.
- **NYSERDA.** 2004. Municipal Water and Wastewater Treatment. Available: <http://www.nyserda.org/Programs/Environment/muniwaterwwt.asp>. Accessed 12/11/2006.

- **NYSERDA.** 2006. Conversation with Brian Henderson, Charl-Pan Dawson, and Matthew Brown of NYSERDA. June 2, 2006.
- **Ohio Office of the Governor.** 2007. Executive Order 2007-02S. Available: <http://www.governor.ohio.gov/Portals/0/Executive%20Orders/Executive%20Order%202007-02S.pdf>. Accessed: 7/29/2008.
- **Ohio School Facilities Commission.** 2008. OSFC's Green Schools Initiative. Available: <http://www.osfc.state.oh.us/>. Accessed 7/28/2008.
- **Pennsylvania.** 2006. Guaranteed Energy Savings. Pennsylvania Department of General Services. Available: <http://www.dgs.state.pa.us/dgs/cwp/view.asp?a=3&q=113676&dgsNav=1>. Accessed 12/11/2006.
- **Pew Center on Global Climate Change.** 2006. State Action Maps. Available: http://www.pewclimate.org/what_s_being_done_in_the_states/state_action_maps.cfm. Accessed 12/7/2006.
- **Puget Sound Clean Air Agency.** 2006. Healthy People, Healthy Places, Healthy Planet. Available: <http://www.pscleanair.org/>. Accessed 12/7/2006.
- **RMCO.** 2006. Rocky Mountain Climate Organization Web site. Available: <http://www.rockymountainclimate.org/index.htm>. Accessed: 12/7/2006.
- **Salt Lake City.** 2005. Energy Conservation, Buildings and Municipal Operations. Available: <http://www.slcgreen.com/pages/energy.htm>. Accessed 12/12/2006.
- **San Francisco.** 2005. San Francisco Becomes First City in the Country to Adopt Green Building Standards. Press Release. Available: http://www.sfgov.org/site/mayor_page.asp?id=33620. Accessed 12/11/2006.
- **South Carolina Legislature Online.** 2005. South Carolina Code of Laws (Unannotated) Current through the End of the 2005 Regular Session. Available: <http://www.scstatehouse.net/code/t48c052.htm>. Accessed 12/12/2006.
- **Texas.** 2006. Performance Contracting Guidelines. Available: http://www.seco.cpa.state.tx.us/sa_pc.htm. Accessed 12/11/2006.
- **U.S. Conference of Mayors.** 2005. Resolution Endorsing the U.S. Mayors Climate Protection Agreement. Available: http://usmayors.org/uscm/resolutions/73rd_conference/en_01.asp. Accessed 3/7/2007.
- **U.S. DOE.** 2006. Buying Green Power. Large Purchasers of Green Power Montgomery County (MD). Available: <http://www.eere.energy.gov/greenpower/buying/customers.shtml?page=1&companyid=327>. Accessed 12/11/2006.
- **U.S. DOE.** 2007. Office of Energy Efficiency and Renewable Energy. South Carolina Savings Matrix Delivers Accountability. November-December. Available: http://www.eere.energy.gov/state_energy_program/feature_detail_info.cfm/start=1/fid=76. Accessed: 2/28/2008.
- **U.S. EPA.** 2006a. CHP Partnership Case Study, The University of North Carolina at Chapel Hill. Available: <http://www.epa.gov/chp/pdf/unc.pdf>. Accessed 12/11/2006.
- **U.S. EPA.** 2006b. Green Power Partnership, Partnership List, Western Washington University. Available: <http://www.epa.gov/greenpower/partners/partners/westernwashingtonuniversity.htm>. Accessed 12/17/2006.
- **U.S. EPA.** 2006c. *Clean Energy-Environment Guide to Action: Policies, Best Practices, and Action Steps for States, Section 3.1: Lead by Example*. April. Available: <http://www.epa.gov/cleanenergy/energy-programs/state-and-local/state-best-practices.html>. Accessed: July 27, 2008.
- **Utah.** 2006a. Executive Order 2006-0004: Improving Energy Efficiency. Available: <http://www.rules.utah.gov/execdcs/2006/ExecDoc113478.htm>. Accessed 12/12/2006.
- **Utah.** 2006b. Utah Policy to Advance Energy Efficiency in the State. Available: http://energy.utah.gov/energy/policy/utah_policy_to_advance_energy_efficiency_in_the_state.html. Accessed 12/12/2006.
- **Washington.** 2006. Energy Savings Performance Contracting: House Bill 2247. Washington State Department of General Administration. Available: <http://www.ga.wa.gov/eas/epc/espc.htm>. Accessed 12/11/2006.

- **White House.** 2007. Executive Order: Strengthening Federal Environmental, Energy, and Transportation Management. January 24, 2007. Available: <http://www.whitehouse.gov/news/releases/2007/01/20070124-2.html>. Accessed 3/21/2007.
- **Wisconsin DOA.** 2003. Doyle Administration Endorses Innovative Co-Generation Power Plant Near UW-Madison Campus. Press Release, May 09, 2003. Wisconsin Department of Administration. Available: http://www.doa.state.wi.us/press_releases_detail.asp?prid=136&divid=4. Accessed 4/4/2007.
- **Wisconsin Office of the Governor.** 2005. Governor Signs 'Green Buildings' Executive Order to Raise Environmental and Energy Efficiency Standards in State Buildings. Available: http://www.wisgov.state.wi.us/journal_media_detail.asp?locid=19&prid=1905. Accessed 12/27/2006.
- **Wisconsin Office of the Governor.** 2006. Executive Order #145. Available: http://www.wisgov.state.wi.us/journal_media_detail.asp?locid=19&prid=1907. Accessed 12/12/2006.
- **Wisconsin Office of the Lieutenant Governor.** 2008. Lt. Governor Lawton's Energy Star School Challenge. April 24. Available: http://ltgov.wisconsin.gov/issues_view.asp?issueid=27&locid=126. Accessed 7/28/2008.

