

An Energy Efficiency Primer for Governors

Executive Summary

Governors are supporting energy efficiency as a way to help consumers lower their energy costs, reduce state energy expenditures, defer the need for new power plant and transmission investments, strengthen system reliability, advance economic development and reduce environmental impacts. Based on those benefits, increasing energy efficiency—lowering energy use while providing the same level of service—is the goal most often cited in states’ energy plans.¹

The United States has made great strides in using energy more efficiently.³ From 1985 to 2004, energy intensity (i.e., energy use relative to economic output) declined 10 percent because of efficiency improvements across the nation, after taking into account shifts in economic activity.⁴ States have been essential to that progress. From 1993 to 2010, because of state policy directives, annual utility spending on electric energy efficiency increased 35 percent, from \$1.3 billion to \$4.6 billion.⁵ That spending supported investments in improving lighting; upgrading appliances; optimizing systems for heating, ventilation, and air conditioning; and other measures. Those investments can also help advance state economic development efforts through increased job creation,

enhanced productivity and reduced energy bills.

In 2012, states collectively took 75 policy actions to advance energy efficiency through measures such as strengthening building codes, enhancing lead-by-example efforts, and establishing financing programs.²

However, several challenges to energy efficiency hinder further progress, including initial investment costs, regulatory barriers, and lack of information and data to quantify environmental and other benefits. As a result, less energy efficiency is being adopted than is economically viable. For instance, a study by the National Academy of Sciences found that building energy efficiency could improve cost-effectively by 25 percent to 30 percent by 2030 if barriers to greater adoption were reduced.^{6,7}

Governors play a critical role in advancing energy efficiency. Although actions vary by state, governors have available a wide variety of tools to deploy energy efficiency. Since 2008, governors have worked with legislators, regulators, and others to develop or advance nearly 300 actions to improve energy efficiency.⁸ Examples of those and other recent state actions include:

¹NASEO.org, An Overview of Statewide Comprehensive Energy Plans, July 23, 2013, http://mojo.naseo.org/Data/Sites/1/naseo_39_state_fi-nal_7-19-13.pdf (accessed on August 10, 2013).

²Amanda Hoey and Sue Gander, *Clean State Energy Actions, 2012 Update*, National Governors Association Center for Best Practices (February 2013), <http://www.nga.org/cms/home/nga-center-for-best-practices/center-publications/page-eet-publications/col2-content/main-content-list/state-clean-energy-actions-2012.html> (accessed May 1, 2013).

³Bill Prindle, *Energy Efficiency: The First Fuel in the Race for Clean Energy*, American Council for an Energy-Efficient Economy, http://www.epa.gov/cleanenergy/documents/suca/ma-apr-07_prindle.pdf (accessed June 4, 2013).

⁴U.S. Department of Energy Research, “Energy Intensity Indicators: Efficiency vs. Intensity, 2012,” http://www1.eere.energy.gov/analysis/eii_total_energy.html (accessed June 19, 2013).

⁵Dan York et al., “Three Decades and Counting: A Historical Review and Current Assessment of Electric Utility Energy Efficiency Activity in the U.S.,” American Council for an Energy-Efficient Economy, June 2012, <http://aceee.org/research-report/u123> (accessed June 4, 2013).

⁶This figure is the net of projected energy intensity improvements.

⁷America’s Energy Future Panel on Energy Efficiency Technologies, *Real Prospects for Energy Efficiency in the United States* (Washington, DC: The National Academies Press, 2010), http://www.nap.edu/openbook.php?record_id=12621&page=R1 (accessed June 18, 2013). This figure is the net of projected energy intensity improvements.

⁸A. Hoey and S. Gander, *Clean State Energy Actions, 2012 Update*.

- **Conducting energy planning and analysis to examine state energy issues, analyze potential energy savings, and explore policy options and best practices.** Thirty-nine states have recently developed state energy plans that examine energy demand, explore policy options, and prioritize best practices. In **Michigan**, Governor Snyder launched a study to develop detailed estimates of energy savings potential throughout the state's economy, with an eye toward affordability, reliability, and environmental protection.
- **Improving energy efficiency rules, standards and goals.** Efforts in this area include advancing energy efficiency resource standards, lead-by-example programs, building benchmarking and energy codes, and appliance standards. Twenty-seven states have set energy efficiency resource standards and 17 states have adopted lead-by-example programs by establishing benchmarking and energy codes and appliance standards. In **Mississippi**, Governor Bryant has focused on stringent energy codes for commercial and state-owned buildings as part of his comprehensive energy strategy. **New York** Governor Cuomo and **Oklahoma** Governor Fallin have set goals for a 20 percent reduction in state building energy use by 2020. New York is analyzing energy data to assign priority to the most cost-effective retrofit projects. Oklahoma is advancing behavior-based approaches identified from a successful Oklahoma State University effort.
- **Incentivizing spending by utilities to provide increased energy efficiency.** Nearly 20 states have created public benefit funds (PBFs), and most states use demand side management (DSM) programs to support energy efficiency

programs. Building on these, 28 states have adopted performance incentives to encourage greater utility investments in energy efficiency.⁹ **Arizona** offers its utilities a performance incentive of 10 percent of the value of the energy cost savings if they exceed 125 percent of the state-set efficiency goals. In 2009, one utility earned a \$2.5 million bonus and saved customers nearly 209,000 megawatt hours of electricity, amounting to a reduction of 1.8 percent of customer demand.¹⁰

- **Supporting innovative financing and repayment mechanisms to increase investment in energy efficiency.** Those programs include on-bill repayment, repayment through property assessments (known as property-assessed clean energy programs), energy infrastructure banks, and clean energy bonds. More than 20 states have created new financing programs that combine private-sector capital with public funds to help drive demand for energy efficiency. **Alaska's** Housing Finance Corporation established a \$250 million revolving loan fund to finance audits and energy efficiency upgrades on more than 1,500 public facilities as part of an effort to address high-energy-use buildings. **Delaware** issued its first tax-exempt bond to fund energy efficiency upgrades in state buildings. **Hawaii**, as outlined in Governor Abercrombie's 2013 State of the State address, is developing an innovative program to enable access to low-cost financing to make energy efficiency and clean energy improvements more affordable and accessible. The state can issue low-cost green infrastructure bonds to fund the program, which will enable consumers to make energy savings improvements and repay the initial costs over time on their utility bill.

⁹ State Electric Efficiency Regulatory Frameworks, Institute of the Edison Foundation Report, July 2013. http://www.edisonfoundation.net/iee/Documents/IEE_StateRegulatoryFrame_0713.pdf (accessed on August 4, 2013).

¹⁰ American Council on an Energy-Efficiency Economy, State Energy Efficiency Policy Database, <http://www.aceee.org/sector/state-policy/arizona> (accessed July 29, 2013).

- **Creating new outreach and education efforts** that use information technology (IT) and social science to spur consumers and businesses to save energy. An increasing number of states have programs that use information technology and social science principles to better inform and motivate consumers and businesses to save energy. Currently, more than one million households in **California** and **Massachusetts** are receiving comparative energy usage reports and utility customers in those states have saved more than \$60 million on their bills. **Kansas** promoted a community-based energy savings challenge that leveraged competition between four regions and helped participants to reduce their energy cost by more than \$2.3 million.
- **Supporting research and development** through partnerships with universities and the private sector to encourage the next generation of energy efficiency initiatives. In **Pennsylvania**, Governor Corbett launched the Center for Building Energy Science, which will showcase energy-saving technologies related to integrated design and construction methods that can reduce building energy use.

This primer describes successful actions governors have taken to further cost-effective energy efficiency. It is intended to share examples for other states to consider as they develop their own efforts to capture the multiple benefits of energy efficiency.¹¹ Table 1 (see page 4) summarizes examples of tools that governors have used, including lead-by-example measures involving state operations. Footnotes to the table include links to federal resources that may help states leverage existing energy efficiency efforts.

Introduction

Energy efficiency is reducing energy use while maintaining the same level of service. Examples of energy efficiency measures include:

- enhancing insulation, improving lighting or upgrading appliances in homes and businesses,
- improving industrial equipment (e.g., industrial fans or motors); or
- optimizing systems for heating, ventilation and air conditioning.

Energy efficiency is distinct from energy conservation which involves undertaking measures to use less energy such as turning down a thermostat to use less heating. While the primer focuses on energy efficiency actions in the electricity and natural gas sectors, it includes examples of successful conservation and demand response measures.

Why Are Governors Pursuing Energy Efficiency?

Governors are pursuing diverse actions on energy efficiency. Although strategies vary, governors are looking to energy efficiency because of the multiple benefits it offers citizens and businesses, including:

- **Cost savings and reliability.** The average cost for utilities to supply energy efficiency is lower than the levelized cost of new generation regardless of fuel source, as seen in Table 2 on page 5.¹² Lowering demand for energy reduces congestion on the transmission grid, thus helping maintain reliability and potentially reducing wholesale electricity costs. Energy efficiency, as part of a diverse supply portfolio, may also help buffer future energy price fluctuations. Some states have cited energy efficiency investments as helping to delay

¹¹ This primer does not include transportation efficiency measures. It should also be noted that many programs aimed at increasing energy efficiency may be coordinated with efforts to increase energy conservation, such as programs to use less of an energy service or demand-response programs that seek to lower the use of energy at specific times of the day or year in response to episodes of high demand that may affect system reliability.

¹² John A. Laitner et al., “The Long-Term Energy Efficiency Potential: What the Evidence Suggests,” American Council for an Energy-Efficient Economy, January 11, 2012, <http://aceee.org/research-report/e121> (accessed May 20, 2013).

Table 1. Gubernatorial Tools to Support Energy Efficiency

Category	State Policy Measures	Examples of Gubernatorial Tools
Statewide Energy Efficiency	Appliance or equipment efficiency standards	<ul style="list-style-type: none"> Propose or endorse legislation to set a standard.
	State building energy codes ^a	<ul style="list-style-type: none"> Propose or endorse legislation to set codes. Nominate members of state building code councils or similar bodies. Appropriate funds or develop incentives to support compliance and enforcement.
	Utility demand-side management (DSM) initiatives ^b	<ul style="list-style-type: none"> Request or direct public utility regulators to examine demand-side management measures. Advance smart grid demonstration projects.
	Utility rate realignment ^c	<ul style="list-style-type: none"> Request or direct public utility regulators to examine rate structures.
	Energy savings targets or energy-efficient resource requirements	<ul style="list-style-type: none"> Propose or endorse legislation to establish targets. Establish energy efficiency goals in state energy plans. Set energy-reduction targets via executive order.
	Public benefit funds (PBFs) for energy efficiency	<ul style="list-style-type: none"> Propose or endorse legislation to establish a fund. Establish a separate, independent organization to collect and distribute energy efficiency funds.
	Financial incentives (loans, rebates, tax credits, tax holidays) ^d	<ul style="list-style-type: none"> Propose or endorse legislation. Create a grant, rebate, or loan program using state agency funds. Issue bonds to provide capital for energy efficiency financing programs. Work with public utility regulators to develop financial incentives to support energy efficiency.
	Nonfinancial incentives	<ul style="list-style-type: none"> Launch an energy efficiency outreach and education program. Create a challenge program for communities or universities to compete to achieve savings.
Lead by Example Energy Efficiency	Energy efficient appliance and equipment for public facilities ^e	<ul style="list-style-type: none"> Issue an executive order setting a goal for appliance and equipment efficiency. Set standards for appliances procured for public facilities, such as ENERGY STAR.
	Energy efficiency performance requirements for new and existing public buildings ^f	<ul style="list-style-type: none"> Issue an executive order setting a goal for energy reductions in public buildings. Create an office charged with government efficiency. Site renewable energy generation at public buildings. Create a challenge program for state agencies to compete to see who can save the most energy. Create a public Web site to track agency energy use.

^a See this link for U.S. DOE assistance on building energy code compliance efforts: <https://www1.eere.energy.gov/buildings/codes.html>

^b See this link for U.S. DOE sponsored smart grid demonstration projects: http://www.smartgrid.gov/recovery_act/overview/smart_grid_demonstration_program

^c See this link for the U.S. DOE/U.S. EPA State Energy Efficiency Action Network, for more information on how states and utilities can implement energy efficiency initiatives: http://www1.eere.energy.gov/seeaction/ratepayer_efficiency.html

^d See this link for U.S. DOE’s financing solutions resources: <http://www1.eere.energy.gov/wip/solutioncenter/financing.html>

^e See this link for Energy Star appliance information: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.&s=mega

^f See this link for U.S. DOE’s Better Buildings Program: <http://energy.gov/better-buildings>

the need for new power plants and associated transmission costs.¹³

Table 2. Average Cost of Energy¹⁴

Resource	Average or Levelized Cost (cents/kilowatt hour [kWh])
Energy efficiency	2.5–4.3
Natural gas (combined cycle)	6.6
Coal (conventional)	9.5
Onshore wind	9.7
Nuclear	11.4
Solar photovoltaic	21.1
Offshore wind	24.3

- **Emissions reductions.** Energy efficiency is a low-cost approach to avoiding emissions from fossil fuel generation, which include nitrogen oxides and other smog-forming pollutants, mercury and other air toxics, and greenhouse gases. The Institute for Electric Efficiency estimates that electric efficiency programs in 2011 avoided the generation of 75 million metric tons of carbon dioxide.¹⁵ Energy efficiency also offsets the need to use water to cool power plants.
- **Economic development benefits.** State energy efficiency initiatives can help advance economic development by creating job opportunities from investments in energy efficiency products

and services and by lowering energy expenses for business and residents who can shift their spending to more productive uses. **New York’s** Energy Smart Program is a statewide program that invests in energy savings measures across all sectors of the economy. The state analyzed the program’s economic impacts over 12 years and found that it increased state economic output by an average of \$270 million annually. Positive economic effects included energy bill savings and direct purchases made by companies that were co-funded by the state’s program.¹⁶

The United States has made great strides in using energy more efficiently.¹⁷ From 1985 to 2004, energy intensity (i.e., energy use relative to economic output) declined 10 percent because of efficiency improvements after taking into account shifts in economic activity. States have been essential to that progress. From 1993 to 2010, because of state policy directives, annual utility spending on electric energy efficiency increased 35 percent, from \$1.3 billion to \$4.6 billion.¹⁸ That spending supported investments in improving lighting; upgrading appliances; optimizing systems for heating, ventilation, and air conditioning; and other measures.

Despite such progress, however, the opportunity exists for even greater energy savings.¹⁹ A study by the National Academy of Sciences found the potential to improve building-sector energy efficiency use by 25

¹³ Devra Wang, “Does Energy Efficiency Avoid the Need for Power Plants in California?” Natural Resources Defense Council Switchboard Blog, entry posted January 24, 2013, http://switchboard.nrdc.org/blogs/dwang/does_energy_efficiency_avoid_t.html.

¹⁴ “Levelized Cost of New Generation Resources in the Annual Energy Outlook 2011,” U.S. Energy Information Administration, http://www.eia.gov/oiaf/aeo/electricity_generation.html (accessed May 1, 2012) and Katherine Friedrich et al., “Saving Energy Cost-Effectively: A National Review of the Cost of Energy Saved Through Utility-Sector Energy Efficiency Programs,” American Council for an Energy-Efficient Economy, <http://www.aceee.org/research-report/u092> (accessed July 16, 2013).

¹⁵ Adam Cooper and Lisa Wood, “Summary of Customer-Funded Electric Efficiency Savings, Expenditures, and Budgets (2011–2012),” IEE Issue Brief (Washington, DC: Institute for Electric Efficiency, March 2013), http://www.edisonfoundation.net/iee/Documents/FINAL_IEE_Whitepaper_2012_US_Energy_Efficiency.pdf (accessed May 11, 2013).

¹⁶ Program Evaluation Report, New York Energy Smart Program. NYSERDA, June 2011 <http://www.nyserdera.org/Energy-Data-and-Prices-Planning-and-Policy/Program-Evaluation/NYES-Evaluation-and-Status-Reports.aspx> (accessed September 16th, 2013).

¹⁷ B. Prindle, Energy Efficiency.

¹⁸ Dan York et al., “Three Decades and Counting: A Historical Review and Current Assessment of Electric Utility Energy Efficiency Activity in the U.S.,” American Council for an Energy-Efficient Economy, June 2012, <http://aceee.org/research-report/u123> (accessed June 4, 2013).

¹⁹ Patrick Kiker, Efficiency Standards Save Consumers, Businesses More Than \$1.1 Trillion, ACEEE Report, March 2012, <http://www.aceee.org/press/2012/03/efficiency-standards-save-consumers-> (accessed May 20, 2013).

percent to 30 percent through 2030 after accounting for projected energy intensity improvements.^{20,21}

What Are the Challenges to Achieving Greater Energy Efficiency?

Despite states' progress in advancing energy efficiency, several barriers to achieving greater results exist. One barrier is the high upfront costs of some energy efficiency investments. Another challenge is the lack of consumer and policymaker awareness of energy efficiency and its benefits. Moreover, traditional utility business models do not offer utilities incentives to encourage their customers to reduce their power use, and utilities do not always consider energy efficiency the same way they consider generation resources in their planning processes.

Energy Efficiency in a Low-Cost Natural Gas World

Lower natural gas prices reduce the cost of gas as a heating fuel and the cost of electricity produced by natural gas–fueled generators. Consequently, investments in energy efficiency can be less attractive. Yet a price change does not change the benefit cost analysis that can provide governors guidance in setting goals to increase energy efficiency and direct appropriate resources. Some states undertaking cost benefit analyses include the effects of using energy more efficiently not only on energy markets but on related markets (e.g., real estate) and on the economy as a whole. They may also include the benefits and cost of energy use that are not included in the prices that consumers and producers pay for energy; for example, the cost

of air pollution associated with burning fossil fuels. Methods to incorporate nonenergy benefits (NEB) into utility or other energy analyses methods are still being explored. One study by the California Public Utility Commission (PUC) examined estimates of NEB savings that ranged from 60 percent to 300 percent of household energy bills.²² States such as **Colorado, Iowa, Oregon, Vermont, and Washington** have adopted a 10 percent energy efficiency “bonus” in their evaluation of energy efficiency costs and benefits to serve as a proxy for NEB from energy efficiency investments.

How Are States Helping to Advance Energy Efficiency?

In 2012, most states took action on energy efficiency. Those actions built on an existing platform of policies, programs, and standards built up over decades, including (according to the National Governors Association database of state clean energy actions) some 300 actions taken since 2008.²³ In 2013, state energy efficiency activity continued apace, with the consideration of more than 430 pieces of energy efficiency legislation.²⁴

Governors play an important role in bringing attention to cost-effective energy efficiency measures and prioritizing appropriate actions for their states. This role includes working alongside regulators and legislators to advance energy efficiency in energy planning and analysis, rules and standards, utility programs and investments, innovative financing and repayment mechanisms, outreach and education efforts, and research and development (R&D).

²⁰ This figure is the net of projected energy intensity improvements.

²¹ America's Energy Future Panel on Energy Efficiency Technologies, *Real Prospects for Energy Efficiency in the United States* (Washington, DC: The National Academies Press, 2010), http://www.nap.edu/openbook.php?record_id=12621&page=R1 (accessed June 18, 2013). This figure is the net of projected energy intensity improvements.

²² California Public Utility Commission Energy Division, “Addressing Non-Energy Benefits in a Cost-Effectiveness Framework,” CPUC and California Institute for Energy and the Environment, 2012, <http://www.cpuc.ca.gov/NR/rdoonlyres/BA1A54CF-AA89-4B80-BD90-0A4D32D11238/0/AddressingNEBsFinal.pdf> (accessed May 26, 2013).

²³ A. Hoey and S. Gander, *Clean State Energy Actions*, 2012 Update.

²⁴ National Council of State Legislatures, *Energy and Environment Legislation Tracking Database*, Updated June 24, 2013, <http://www.ncsl.org/issues-research/energyhome/energy-environment-legislation-tracking-database.aspx> (accessed June 30, 2013).

Conducting State Energy Planning and Analysis

At least 39 states have developed energy plans that assess energy supply and demand challenges, explore opportunities to support economic development, reflect the societal costs and benefits of energy resources, and examine energy policy options.²⁵ Many governors have initiated state energy plans; in other cases, these efforts have been led by a state energy office, another executive agency, or the legislature, often with input from consultants or academia. The goal most frequently cited in state energy plans is energy efficiency.²⁶ Specific elements of these plans often include:

- **Conducting an energy potential study to identify leading opportunities for statewide energy efficiency.** Such exercises involve complex forecasts that can help states understand the size of potential state energy savings. A study that examined the potential energy savings for **Louisiana** estimated that energy efficiency can cost-effectively meet 16 percent of statewide electricity needs by 2030 and 12 percent of total natural gas needs by 2020.²⁷ In **Michigan**, Governor Snyder launched a study to develop detailed estimates of energy savings potential throughout the state's economy, with an eye toward affordability, reliability, and environmental protection.²⁸
- **Setting a goal for energy efficiency.** In 2011, **Oregon** Governor Kitzhaber released a 10-year energy action plan that establishes a goal, informed by an energy efficiency potential analysis, that all new electricity demands through

2020 be met through energy efficiency and conservation. To achieve that goal, the governor's plan calls for the creation of a new state building innovation lab to conduct energy audits, assess savings potential, and identify cost-effective retrofits for state-owned buildings.

- **Identifying key program needs to help achieve energy efficiency.** State energy plans can help identify and assign priority to program areas or sectors for energy efficiency implementation. **Wyoming** Governor Mead's 2013 energy plan calls for energy reductions in the building sector through audits of state buildings to identify cost-effective opportunities for energy savings and an analysis of opportunities to help school districts adopt energy-efficient features.²⁹
- **Developing financing efforts to support program implementation.** State plans may also identify financing mechanisms to help reduce costs and deliver energy savings. **Utah** Governor Herbert's recent state energy plan identified several financial incentives to help encourage building energy efficiency upgrades by residents and businesses.³⁰

Improving Rules, Standards, and Goals

Governors have been instrumental in working with their legislatures, public service commissions, utilities, and others to set statewide energy efficiency targets and, more recently, realign utility rates to provide incentives for utilities to invest in energy efficiency. Governors are also setting goals to reduce energy use in public facilities and collaborating with their legislatures to

²⁵ NASEO.org, An Overview of Statewide Comprehensive Energy Plans, July 23, 2013, http://mojo.naseo.org/Data/Sites/1/naseo_39_state_fi-nal_7-19-13.pdf (accessed on August 10, 2013).

²⁶ Ibid.

²⁷ American Council for an Energy-Efficient Economy, Louisiana's 2030 Energy Efficiency Roadmap: Saving Energy, Lowering Bills, and Creating Jobs, May 2013, <http://www.aceee.org/files/pdf/summary/e13b-summary.pdf> (accessed June 10, 2013).

²⁸ Rebecca Stanfield, "Governor Snyder: Michigan Should Double Down on Energy Efficiency," Natural Resources Defense Council Switchboard Blog, entry posted April 25, 2013, http://switchboard.nrdc.org/blogs/rstanfield/governor_snyder_michigan_shoul.html (accessed May 20, 2013).

²⁹ NASEO.org, Leading the Charge: Wyoming's Action Plan for Energy, Environment and Economy, <http://mojo.naseo.org/stateenergyplans-state?State=WY> (accessed May 15, 2013).

³⁰ NASEO.org, Energy Initiatives and Imperatives: Utah's 10-Year Strategic Energy Plan, <http://www.naseo.org/Data/Sites/1/documents/stateenergy-plans/UT.pdf> (accessed May 20, 2013).

adopt and enforce building benchmarking and energy codes and set energy-saving appliance standards.

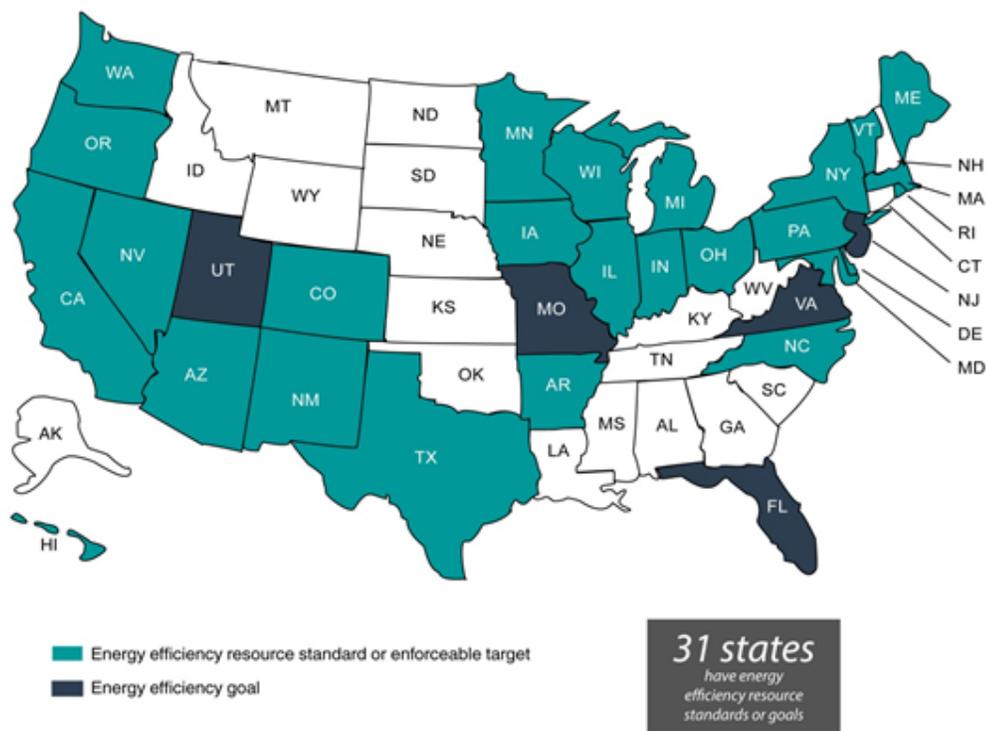
- Energy efficiency savings targets.** Energy efficiency resource standards (EERSs) establish specific, long-term targets for energy savings that utilities or nonutility program administrators must meet. As of September 2012, 31 states had set an energy efficiency savings target. Typically these targets are binding with a few states adopting voluntary savings goals. The percentage for reductions varies among states. **Massachusetts** and **Vermont** have two of the highest standards, with annual energy savings targets of 2.5 percent. Cost savings associated with EERSs can be substantial. A 2013 study in **Ohio** found that utility commitments to meeting Ohio’s energy efficiency standards through 2020 could save residents almost \$5.6 billion in avoided energy expenditures at a cost to utility program administrators of \$2.7 billion, for a

nearly 200 percent return on investment. Figure 1 (below) provides a map of current energy efficiency savings targets.

- Lead by example goals.** Programs to expand energy efficiency in state buildings and facilities have been created in most states, often initiated by governors through an executive order. Between 2008 and 2012, governors in 17 states established energy savings targets for public facilities using executive authority.³¹

New York Governor Cuomo and **Oklahoma** Governor Fallin have each called for a 20 percent reduction in state building energy use by 2020. Launched in December 2012, New York’s Build Energy Smart Program will use state building energy data to prioritize energy efficiency projects. The program has collected energy use information on 210 million square feet of buildings and campuses and launched a website

Figure 1. State Energy Efficiency Savings Targets in 2013



³¹ Andrew Kambour, “Using Executive Orders to Advance Energy Efficiency and Renewable Energy,” Issue Brief (Washington, DC: National Governors Association Center for Best Practices, March 2013), <http://www.nga.org/files/live/sites/NGA/files/pdf/2013/1305UsingExecutiveOrdersIssueBrief.pdf> (accessed May 29, 2013).

to track progress and share case studies.³² In 2012, Oklahoma Governor Fallin developed and signed into law legislation calling for energy audits and benchmarking for state facilities and targeting energy savings through both behavior-based and equipment-retrofit measures. The program was envisioned in her comprehensive energy plan released in 2011 and modeled after a successful effort at Oklahoma State University, which has saved \$22 million in energy costs since 2007. The Oklahoma plan includes both electric and natural gas efficiency programs.

Under an executive order by **Alabama** Governor Bentley, that state has been working to decrease its energy consumption by 30 percent from 2005 levels by 2015. The effort has included each state agency designating an energy officer to study and recommend energy saving procedures and practices. Reductions helped the state save nearly \$3.9 million in fiscal year 2012 alone.

Connecticut Governor Malloy launched an energy savings performance contracting (ESPC) program to help state and municipal governments implement a portfolio of comprehensive energy savings measures with no upfront capital. The ESPC program ensures that energy retrofits costs are covered out of future savings from utility and maintenance budgets. The program also provides technical assistance to participants through preapproved contractors, on-call advisors, and standardized contract templates.

- **Building energy codes.** Building operations consumed \$406 billion worth of energy in 2009, or some 38 percent of total U.S. energy spending. Under the Energy Policy Act of 1992, as each building code is developed (on approximately three-year cycles by international code-making bodies), the U.S. Department of Energy (DOE) is required to make an official determination of whether the most recent codes require more efficient energy use than the previous versions, with states given time to revise their codes and provide a certification back to DOE.

A 2013 analysis by the Institute for Market Transformation found that building code adoption, when coupled with robust compliance efforts, can be a cost-effective energy efficiency measure. Complying with current state codes nationwide would cost \$810 million and yield average annual energy savings up to \$2.7 billion by 2020.³³

In 2012, 25 states set new building codes for the commercial or residential sector or both.³⁴ Because of those code improvements, buyers of new homes will pay almost \$400 less per year in energy costs (in 2012 dollars) than residents of houses built before 1983.

In **Mississippi**, Governor Bryant has focused on building energy codes as part of his comprehensive energy strategy. Under recent legislation, Mississippi increased the energy standard for commercial buildings to meet the nation's

³¹ Andrew Kambour, "Using Executive Orders to Advance Energy Efficiency and Renewable Energy," Issue Brief (Washington, DC: National Governors Association Center for Best Practices, March 2013), <http://www.nga.org/files/live/sites/NGA/files/pdf/2013/1305UsingExecutiveOrdersIssueBrief.pdf> (accessed May 29, 2013).

³² New York State Energy Research and Development Authority, "Governor Cuomo Launches 'BUILD SMART NY' Initiative with Executive Order," Press Release, December 28, 2012, <http://www.nyserda.ny.gov/About/Newsroom/2012-Announcements/2012-12-28-Governor-Cuomo-Launches-Build-SMART-NY-Initiative-With-Executive-Order.aspx> (accessed May 29, 2013).

³³ S. Stellberg, "Assessment of Energy Efficiency Achievable from Improved Compliance with U.S. Building Energy Codes: 2013 – 2030." February 2013, http://www.imt.org/uploads/resources/files/IMT_Report_Code_Compliance_Savings_Potential.pdf (accessed May 29, 2013)

³⁴ Northeast Energy Efficiency Partnerships, "Setting the Record Straight on Appliance Efficiency Standards," http://neep.org/Assets/uploads/files/public-policy/appliance-standards/setting_the_record_straight_on_appliance_efficiency_standards.pdf (accessed May 29, 2013) and Sarah Stellberg, "Assessment of Energy Efficiency Achievable from Improved Compliance with U.S. Building Energy Codes: 2013–2030," http://www.imt.org/uploads/resources/files/IMT_Report_Code_Compliance_Savings_Potential_FINAL_2013-4-15-1.pdf (accessed May 29, 2013).

most stringent code and required all state-owned buildings to meet that code. The governor's support for building codes includes robust state-sponsored analyses, trainings, and compliance assistance.³⁵

Some states adopt "beyond-code" or "reach-code" programs. **California** approved energy efficiency standards for new homes and commercial buildings that are 25 percent more efficient than previous standards for residential construction and 30 percent more efficient for nonresidential construction. The standards, which take effect on January 1, 2014, call for more efficient windows, insulation, lighting, and ventilation systems and other features that reduce energy consumption.

Washington is collaborating on code compliance with builders, Washington State University, and regional advocates to help improve compliance rates, which are estimated at 96 percent or more for regional construction.³⁶ Many utilities are seeking approval from states through their public service commissions to support code compliance. Approved efforts generally allow utilities and other program administrators to support training; loan of testing equipment; staff time for plan review, site inspection, and technical assistance; and outreach efforts to raise awareness of building energy code compliance and the value of energy codes to different stakeholders. **New York's** Public Service Commission approved rate-payer funds for code compliance activities undertaken by the New York State Energy Research Development Authority. **Arizona, California, Oregon, Rhode Island, and Washington** have issued regulations de-

signed to develop methods to quantify and measure savings under such programs.³⁷

- **Appliance and equipment standards.** Appliance, equipment, and lighting standards set minimum energy performance levels and are designed to be cost-effective over the life of the equipment. National standards, which are adopted through a federally led public rulemaking process, have had a significant effect on energy consumption since they were adopted in the 1980s. More than a dozen states have passed legislation that sets appliance, equipment, and lighting standards at levels that exceed federal requirements or apply to items not covered federally.

Collectively, state and federal appliance standards have decreased U.S. energy consumption by 7 percent on an annual basis through 2010. For individuals, this represents a total net savings (from buying new appliances every 15 years) that exceed \$30,000 over a 45-year period. By 2035, appliance standards will have saved consumers and businesses \$1.1 trillion, the equivalent of two years of U.S. energy consumption.³⁸

Since 2009, 16 new or updated state standards have been issued that will increase annual savings by more than 50 percent over the next decade. **California** completed state-level standards for a number of battery chargers that will take effect in 2013 for consumer chargers and 2014 for industrial chargers. In addition, the state authorized the Energy Resources Conservation and Development Commission to establish an administrative enforcement process, providing

³⁵ Mississippi Development Authority, "Energy Works: 2013 Landmark Energy Legislation," <http://www.mississippi.org/energy/energy-works-mississippi-energy-roadmap> (accessed June 1, 2013).

³⁶ Cadmus Group, Washington Residential Energy Code Compliance, Northwest Energy Efficiency Alliance, March 27, 2013, <http://neea.org/docs/default-source/reports/washington-residential-energy-code-compliance.pdf?sfvrsn=11> (accessed May 15, 2013).

³⁷ Harry Misuriello et al., "Building Energy Code Advancement Through Utility Support and Engagement," American Council for an Energy-Efficient Economy, December 2012, <http://www.aceee.org/sites/default/files/publications/researchreports/a126.pdf> (accessed May 20, 2013).

³⁸ P. Kiker, Efficiency Standards Save Consumers, Businesses More Than \$1.1 Trillion.

civil penalties for manufacturers in violation of appliance standards.

Incentivizing spending by utilities to provide increased energy efficiency

Much of the growth in energy efficiency programs over the past few decades has been driven by customer-supported utility programs. These include demand-side management (DSM) programs and public benefit funds (PBFs). Together, those programs provide the majority of state funding for energy efficiency. More recently, state regulators have initiated efforts to incentivize utilities to make energy efficiency investments.

- **Demand-side management.** Utility programs that encourage consumers to modify the timing and level of electricity demand are known as demand-side management. DSM programs—funded by a rider on a customer’s utility bill—have evolved over time. Early programs during the 1970s focused on providing general information. In the 1980s, utilities began to offer audits of homes, office buildings, or factories along with estimates of installation costs and savings for each measure. The 1990s saw the introduction of energy efficiency measures through rebates or low-interest loans. DSM programs averaged in costs from about \$10 per capita and are estimated to have saved 112 million kilowatt hours (kWh) in the United States in 2010.³⁹ Today, leading states such as **California, Connecticut, Iowa, Rhode**

Island, and Vermont are investing as much as \$45 per capita.⁴⁰ State DSM programs have been evolving to include customer engagement, technological innovation, and energy price innovation.⁴¹

- **Public benefit funds.** PBFs, like DSM programs, are rate-payer-supported energy efficiency programs typically adopted through legislation or statute (PBFs are often referred to as system benefit charges). Unlike DSM programs, PBFs are funded through a direct charge to all customers on electricity consumption instead of the more traditional cost-recovery rate case that utilities had previously used to capitalize DSM programs. Many states that restructured their electric utility industry during the 1990s replaced DSM programs with PBFs, although a few states, including **California**, use both approaches.⁴²

Currently, 17 states use PBFs to support rate-payer-supported energy efficiency programs.⁴³ In 2011, utilities and program administrators spent about \$5.7 billion on energy efficiency and, according to researchers at Lawrence Berkeley National Laboratory, such spending is expected double by 2025 because of state energy efficiency policies such as EERSs.^{44,45} An evaluation of Focus on Energy, the **Wisconsin** third-party PBF, found that the program’s energy efficiency investments in 2012 reduced energy

³⁹ Adam Cooper and Lisa Wood, “Summary of Customer-Funded Electric Efficiency Savings, Expenditures, and Budgets (2011–2012),” IEE Issue Brief (Washington, DC: Institute for Electric Efficiency, March 2013), http://www.edisonfoundation.net/iee/Documents/FINAL_IEE_Whitepaper_2012_US_Energy_Efficiency.pdf (accessed May 11, 2013)

⁴⁰ Jim Wontor, “Demand-Side Management (DSM) Programs at APS,” Valley Forward Energy Committee, March 22, 2012, http://www.arizonaforward.org/Issue_Comm_Presentations/March-Energy-Committee-DemandSideManagement-by-Jim-Wonter.pdf (accessed May 15, 2013).

⁴¹ Ahmad Faruqui and Peter Fox-Penner, “Energy Efficiency and Utility Demand-Side Management Programs,” The Brattle Group, 2011, http://www.brattle.com/_documents/UploadLibrary/Upload963.pdf (accessed May 15, 2013).

⁴² Galen Barbose et al., The Future of U.S. Utility Customer-Funded Energy Efficiency Programs: Projected Spending & Savings Through 2025, Lawrence Berkeley National Lab, January 2013, <http://emp.lbl.gov/sites/all/files/lbnl-5803e-brief.pdf> (accessed May 29, 2013).

⁴³ Charles A. Goldman, Interactions Between Energy Efficiency Programs Funded Under the Recovery Act and Utility Customer-Funded Energy Efficiency Programs, Lawrence Berkeley National Lab, <http://eetd.lbl.gov/EA/EMP/reports/lbnl-4322e.pdf> (accessed May 29, 2013).

⁴⁴ Adam Cooper and Lisa Wood, “Summary of Customer-Funded Electric Efficiency Savings, Expenditures, and Budgets (2011–2012),” IEE Issue Brief (Washington, DC: Institute for Electric Efficiency, March 2013), http://www.edisonfoundation.net/iee/Documents/FINAL_IEE_Whitepaper_2012_US_Energy_Efficiency.pdf (accessed May 11, 2013)

⁴⁵ “Doubling Down on Energy Efficiency,” Science Daily, <http://www.sciencedaily.com/releases/2013/01/130117142552.htm> (accessed May 29, 2013).

use in Wisconsin by 650 million kWh (equivalent to one year of electricity for about 92,000 homes) and saved ratepayers more than \$620 million. **New Jersey** is directing more than \$200 million in PBF dollars to increase incentives for high-efficiency appliances and equipment for residents and business affected by Hurricane Sandy.⁴⁶

- **Utility rate realignment.** Because of their ability to raise large amounts of capital and engage customers directly, utilities play an important role in energy efficiency deployment, but traditional regulatory models create a disincentive for utilities to pursue energy efficiency, because such programs result in lower revenues and lost guaranteed profit margins in contrast to capital investments in plants and equipment.

To address historical utility regulatory barriers to energy efficiency, states are exploring ways to provide incentives that allow utilities to benefit from energy efficiency investments using three approaches:

- Decoupling utility revenues from electricity or natural gas sales;
- Allowing utilities to recover costs associated with energy efficiency; and
- Providing financial incentives such as monetary bonuses to meet efficiency goals.⁴⁷

Governors can encourage their state's public service commission to work with utilities to examine and adopt new programs to address utility rate structures. **Arizona** offers its utilities a performance incentive of 10 percent of the value of the energy cost savings if they exceed 125 percent of the state-set efficiency goals. In 2009, one utility earned a \$2.5 million bonus

and saved customers nearly 209,000 megawatt hours of electricity, amounting to a reduction of 1.8 percent of customer demand.⁴⁸

Supporting Innovative Financing and Repayment Mechanisms

Increasingly, governors are seeking to complement traditional energy efficiency funding programs with innovative financing efforts. These efforts seek to combine private-sector capital with state funds to bring energy efficiency to scale. Examples include bonds and revolving loans as well as utility bill repayment, ESPCs, and property-assessed clean energy (PACE) programs. Several states have also created clean energy financing authorities that provide a one-stop shop for energy efficiency financing:

- **Clean energy bonds.** States have traditionally used bonds to invest in infrastructure and economic development, but governors have been increasingly using bonds to invest in energy efficiency. **Washington** issued more than \$250 million in bonds and used the proceeds to fund energy efficiency investments in kindergarten through 12th-grade schools, higher education, local governments, low-income weatherization, and neighborhood-based energy efficiency. The state structured the investment so public facilities will pay back the bondholders using energy savings. In 2011, **Delaware** issued its first tax-exempt energy efficiency bond to support energy upgrades in state buildings. The bond proceeds were combined with state funds to create \$84 million for energy efficiency investments projects that are expected to save more than \$23 million.⁴⁹ In June 2013, **Hawaii** signed into law Act 211, which enables an innovative framework whereby the state can issue low-cost

⁴⁶ "Hurricane Sandy Information," New Jersey Clean Energy Program, <http://www.njcleanenergy.com/sandy> (accessed May 29, 2013).

⁴⁷ Sarah Hayes et al., Carrots for Utilities: Providing Financial Returns for Utility Investments in Energy Efficiency, American Council for an Energy Efficiency Economy, <http://aceee.org/research-report/u111> (accessed May 20, 2013).

⁴⁸ American Council on an Energy-Efficiency Economy, State Energy Efficiency Policy Database, <http://www.aceee.org/sector/state-policy/arizona> (accessed July 29, 2013).

⁴⁹ "Energy Conservation Initiative," University of Delaware, <http://www.udel.edu/udaily/2012/aug/SEU-081911.html> (accessed May 29, 2013).

green infrastructure bonds to finance energy efficiency and clean energy improvements and allow consumers to repay for those improvements on their utility bill. Repayment to bond holders is secured by funds collected from a utility surcharge, providing a secure form of repayment to attract bond investors.

- **Revolving and low-interest loans.** States set aside capital to create revolving loans or reduce interest rates. Revolving loan funds (RLFs) use interest payments on the loan to repay the initial cost of the loan. **Alaska's** Housing Finance Corporation established a \$250 million RLF to finance audits and energy efficiency upgrades on more than 1,500 public facilities as part of an effort to address high-energy-use buildings. In **Michigan**, a nonprofit organization called *Michigan Saves* was created with seed funding from the state to provide financing for energy efficiency and renewable energy improvements. Michigan Saves works with private lenders to offer low-interest financing to residents and businesses to implement energy improvements. A municipal program will be launched in 2013. Michigan Saves provides lenders with a loan loss reserve that mitigates perceived investor risk and makes the financing more accessible and attractive to customers.⁵⁰ The **New Hampshire** Better Buildings program combined low-interest loans and technical assistance to help homeowners and businesses make energy efficiency improvements. A three-year effort yielded energy efficiency renovations for more than 800 homes and 1 million square feet of commercial space.⁵¹
- **Energy saving performance contracting.** Under ESPCs, a state enters into an agreement with a private energy service company that retrofits or outfits government buildings with energy efficiency improvements paid for over time from the financial savings of the project. **Hawaii** is using ESPCs to save more than 48 million kWh of energy a year, paying for the enhancements with the savings from energy bills. The state plans to more than double its energy savings through more private-sector partnerships in ESPCs and expects investments to climb to \$300 million.
- **Property assessed clean energy.** PACE allows commercial, industrial, and multifamily property owners to pay for energy-related improvements to their properties through their property taxes or other existing programs.^{52,53} Twenty-eight states have PACE programs that have been authorized at the state or local level. **Connecticut** authorized a unique statewide PACE program in 2012 that is run by the state's energy financing authority and works directly with municipalities (through a signed agreement between the legislature and the state) whereby participating cities agree to assess, collect, and remit principal repayments from commercial upgrades through property tax payments. Currently, more than 50 municipalities have adopted the program.⁵⁴
- **On-bill repayment (OBR).** Several states have initiated OBR programs, which allow utility customers to invest in energy efficiency upgrades and repay capital investments through the utility bill. Although OBR programs do not require new authorizing authority, states can help by

⁵⁰ Michigan Saves, <http://michigansaves.org/> and "Creating Better Buildings Throughout Michigan," BetterBuildings for Michigan, <http://www.betterbuildingsformichigan.org> (accessed May 29, 2013).

⁵¹ New Hampshire Saves, <http://www.betterbuildingsnh.com/> (accessed July 29, 2013).

⁵² Based on guidance from the Federal Housing Finance Agency, mortgage lenders Fannie Mae and Freddie Mac are no longer underwriting home mortgages with a senior lien to mortgage payments, an element common to early PACE programs. Although this has led to a suspension of most residential PACE programs, states are moving forward with PACE efforts for other sectors.

⁵³ "C-PACE Participating Municipalities," C-PACE, <http://www.c-pace.com/site/page/view/resources-content-participating-municipalities> (accessed May 29, 2013).

⁵⁴ S. Hays et al., Carrots for Utilities and Property Assessed Clean Energy, Connecticut General Assembly, October Session, 2011, <http://www.ctcleanenergy.com/Portals/0/board-materials/DEEP-ENERGY-Commercial%20Clean%20Energy%20Tax%20Exemption.pdf> (accessed May 29, 2013).

providing capital to seed a program through the use of PBFs. In 2008, **Kansas** put in place the How\$mart on-bill program for residential, commercial, and industrial customers. Subsidized low-interest loans were used for more than half of the 750 projects completed. On average, participating customers save \$52 of combined electric, gas, propane, or other fuel costs. In February 2013, the **Hawaii** PUC deemed an on-bill program viable for the state. The program is initially focused on energy cost savings improvements for residential and small commercial customers, in particular reaching underserved markets. Furthermore, under a new law enacted in June 2013, Hawaii can secure low-cost green infrastructure bond funds to enhance access to OBR.⁵⁵

- **Energy financing authority.** In **Connecticut**, the state legislature created the Clean Energy Finance and Investment Authority (CEFIA) with support from Governor Malloy. CEFIA is often called the state's *green bank*, because it invests only in projects aimed to attract and deploy capital to support clean energy projects. Its programs are funded from the state's PBF as well as federal funds and grants and private capital. CEFIA's primary goal is to transition the state's clean energy programs away from grants and rebates toward low-cost financing of energy efficiency and renewable energy. **New York** Governor Cuomo has announced intentions to develop a similar mechanism.

Creating New Outreach and Education Efforts

States are complementing their more traditional energy efficiency programs and policies with new efforts to inform consumers and spur motivation among end users to create further opportunities to advance energy efficiency savings:

- **Improved data and feedback.** States such as **California**, **Massachusetts**, and **Minnesota** have taken steps to develop feedback-based pilot programs. Those programs are designed to provide consumers with both more detail and new types of information than are normally contained in a typical energy bill; for example, information on daily or hourly energy data, a way to compare the consumer's household energy use with that of similar households, or a rating system to clarify that comparison. New services offered by companies such as Opower and Efficiency 2.0 allow consumers to compare their energy use to other households to spur energy savings. An Opower pilot in Sacramento, **California**, recorded reductions in consumers' energy bills between 1.5 percent and 3.5 percent. Customers in an Efficiency 2.0 program in Evanston, **Illinois**, reduced their electricity bills by an average of 5.5 percent.

States are increasingly exploring programs to empower consumers. Currently, more than 1 million households in California and Massachusetts are receiving comparative energy usage reports, and utility customers in those states have saved more than \$60 million on their bills. Rhode Island will deliver energy usage comparison information to all utility customers in 2013 through the Home Energy Report program.

- **Community-based competitions.** The **Kansas** state energy office teamed with a nonprofit organization to promote a community-based energy savings challenge. As part of the TakeCharge! Challenge, communities in four regions of Kansas competed for a \$100,000 grant to fund a renewable energy or energy efficiency project. The program encouraged consumers to

⁵⁵Duane Shimogawa, "Hawaii 'GEMS' Financing Program to Make Getting Solar Easier," Pacific Business News, June 27, 2013, <http://www.bizjournals.com/pacific/news/2013/06/27/hawaii-gems-financing-program-to.html> (accessed May 29, 2013).

adopt a variety of energy efficiency measures, including replacing light bulbs, receiving a home energy audit, and using the state’s on-bill energy efficiency financing program. Towns and cities also received points for holding community events. The outreach campaign included a kickoff message from Governor Sam Brownback. As a result of that competitive dynamic, participants reduced their energy use by 110.2 billion British thermal units, saving more than \$2.3 million.⁵⁶

- **Building energy benchmarking and disclosure.** This is the process of using standard metrics to compare building energy use with established energy saving levels in similar facilities. Although approaches differ for residential and commercial buildings, benchmarking can help building owners manage their buildings better and save energy. Energy use disclosure also has potential to help generate information to better value energy efficiency improvements.

Governors are supporting such efforts through state-initiated partnerships with the federal government and the private sector. Currently, **Alaska** and **Hawaii** require or encourage some form of residential disclosure requirements on utility bills. In Massachusetts, the Building Asset Rating pilot is a collaborative effort between the state and Northeast Energy Efficiency Partnership to develop better methods for energy ratings of commercial office buildings. California requires owners of commercial and institutional buildings to provide a statement of energy performance to the state as well as to prospective buyers, lessees, or lenders prior to any facility transactions.⁵⁷ Iowa is operating

a pilot project to track and benchmark energy data for more than 1,200 of its public buildings and plans to expand it to the private sector.

- **Emerging issues for state energy efficiency.** Information technology advances, including inexpensive computing power, Web-based tools, and real-time data analytics are providing states with an opportunity to create new, cost-effective energy efficiency programs. Key opportunities include:
 - Providing real-time, Web-based monitoring of energy use in public facilities;
 - Supporting companies and nonprofits conducting virtual energy assessments;
 - Leveraging low-cost analytics to enable greater demand response; and
 - Working with utilities to provide open access to energy information for consumers and businesses and to create opportunities for innovation.

Supporting Research and Development

R&D is essential to developing the next generation of energy efficiency programs. Governors can create partnerships with universities and the private sector to advance research, deployment, and demonstration of energy efficiency technologies and support funding for research efforts at public institutions.

Pennsylvania Governor Corbett launched the Center for Building Energy Science (CBES), which will showcase energy-saving technologies related to integrated design and construction methods that can reduce building energy use. The CBES also performs research to develop and integrate materials, technologies, models, and tools to optimize whole-building energy performance.

⁵⁶ Andrew Kambour, “Enhancing State Energy Efficiency Efforts Through Information and Outreach to Consumers,” Issue Brief (Washington, DC: National Governors Association Center for Best Practices, May 30, 2012), <http://www.nga.org/files/live/sites/NGA/files/pdf/1205ENERGY.PAPER.PDF> (accessed May 29, 2013).

⁵⁷ BuildingRating.org, “Policy Brief: State of California,” Policy Brief (Washington, DC: BuildingRating.org), <http://www.buildingrating.org/content/policy-brief-state-california> (accessed on June 10, 2013).

In 2012, **Alabama** established the Public Interest Energy and Fuel Research and Development Grants Program to provide future funding for energy- and fuel-related public-interest energy R&D. Beyond individual efforts, states can often collaborate to share technical and operational information on energy efficiency. The Association of State Energy Research and Technology Transfer Institutions is one organization focused on end-use efficiency and conservation. The Electric Power Research Institute is an organization that works with states and utilities to develop technology-based insights

to help further energy efficiency utility programs.

Conclusion

Energy efficiency offers a cost-effective alternative to new power generation and can provide many other energy, economic, and environmental benefits for states. Governors have played a leading role in the success of state energy efficiency efforts and can continue to work with state partners and the private sector to achieve even greater savings as part of a comprehensive approach to energy.

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