

U.S. Environmental Protection Agency
State Climate and Energy Program Technical Forum
Energy Efficiency Resource Standards
Background and Resources
January 19, 2010

Energy Efficiency Resource Standards (EERS) establish a requirement for utilities (and/or other program administrators) to meet long-term, quantitative energy savings targets through a portfolio of energy efficiency (EE) programs. In doing so, EERS provide long-term clarity to resource planners and the EE marketplace, while allowing utilities (and/or other program administrators) flexibility in the design of the EE programs developed to meet the targets. EERS evolved from earlier processes and policies for determining investment levels in EE programs (i.e., Integrated Resource Planning and public benefits funds), and are now a major driver of rate-payer investment in energy efficiency¹. Although the underlying resources are different, the EERS policy is similar to a renewable electricity standard (RES), which requires utilities to generate a portion of electricity from renewable energy resources. An EERS complements other state EE policies such as building energy codes and weatherization initiatives, and can contribute to the goals of emission reductions and electricity reliability.

As of December 2009, twenty-two states² had adopted an EERS. EERS in the electric sector are more common, but several states have also established an EERS for natural gas. EERS design details vary by state.

EERS have also been proposed³ at the Federal level in the current (111th) Congress, although no EERS proposal has made it out of committee. Energy efficiency is eligible (but not required) to meet a specified portion of the national RES included in both the House-passed energy and climate bill (H.R. 2454) and the Senate Energy & Natural Resources Committee-passed energy bill (S. 1462).

Setting Energy Savings Targets and Schedules

A key design decision is the level and timing of the energy savings targets. In some states (e.g., IL, MI) the targets are defined in EERS legislation, while in others the targets are established by state utility regulators (e.g., CA, MA). In most states the targets are stand-alone, although a few states have included the targets as a separate tier within a Renewable Electricity Standard (RES). The targets are typically informed by detailed, bottom-up assessments of energy efficiency potential⁴. Targets can be established in a number of ways: for energy (e.g., kWh) or demand (e.g., MW); as a percentage of total sales or of sales growth; and on an annual or cumulative basis (e.g., over a ten-year period), typically with annual targets ramping up over time. Finally, targets are often revisited and extended every few years after taking into account updated

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1. Barbose et al
 2. <http://www.aceee.org/energy/national/eers.htm>
 3. Stand-alone EERS proposals include H.R. 2529 (Markey) and S. 548 (Schumer).
 4. For more information on potential studies, see the National Action Plan for Energy Efficiency's *Guide for Conducting Energy Efficiency Potential Studies*
http://www.epa.gov/cleanenergy/documents/potential_guide.pdf

assessments of energy efficiency potential, recent results of the portfolios of EE programs, and changes in policy priorities.

Eligible Resources and Mechanisms

The EERS also must establish the eligible resources and mechanisms that will count towards meeting the targets. While end-use efficiency improvements in the residential, commercial, and industrial sectors represent the bulk of the eligible resources, some states also allow energy savings from combined heat and power (CHP) projects, waste energy projects, and improvements in the electric distribution grid to count. Voluntary EE programs (including incentives, information and technical assistance) are the primary mechanism for delivering the energy savings that count towards the targets; however, some states also allow energy savings from mandatory building energy codes or appliance standards to count.

Funding

The vast majority of EERS are funded by ratepayers. Mechanisms can include a dedicated charge on the bill (e.g., public benefit fund) or through the standard rate which is fed into the utility resource planning process. Some states in the Northeast have recently supplemented this with funding from additional sources, including from organized capacity markets (for payments for the capacity benefits of EE programs) and from the sale of greenhouse gas allowances from the Regional Greenhouse Gas Initiative.

Coordination and Complementary Planning

With the recent, substantial increase in federal funding for energy efficiency programs managed by states (e.g., State Energy Program, Weatherization, and Energy Efficiency and Conservation Block Grants), coordination across the various program administrators (e.g. utilities, state energy office, local governments) will be critical over the next few years to ensure consistency in program offerings and to minimize confusion among customers and program delivery contractors.⁵

State Programs

As of December 2009, twenty-two states have enacted some form of EERS, and additional states are in the process of establishing a standard. The table below⁶, compiled by the American Council for an Energy-Efficient Economy (ACEEE), details some of the variability among state approaches to EERS.

5. Ibid. p. 17.

6. <http://aceee.org/energy/state/State%20EERS%20Summary%20Jan%202010.pdf>

ACEEE: State Energy Efficiency Resource Standard (EERS) Activity

State	EERS Policy
Texas 1999 and 2007	Texas became the first state to establish an EERS in 1999, requiring electric utilities to offset 10% of load growth through end-use energy efficiency. After several years of meeting this goal at low costs, the legislature increased the standard in 2007 to 15% of load growth by 2009, 20% of load growth by 2010.
Vermont 2000	Efficiency Vermont (EV), an independent “efficiency utility” that delivers efficiency programs for the state, is contractually required to achieve energy and demand goals. EV cumulatively met over 7% of Vermont’s electricity requirements by the end of 2007. EV has energy savings goals of 360,000 total annual MWh, 51.2 total summer peak MW, and 54 total winter peak MW. The projected MWh savings amount to 6% of 2008 sales for these three years combined.
California 2004 and 2009	California’s long-term targets for its investor-owned utilities (IOUs) are expected to save over 16,000 GWh and over 4,500 MW between 2012 and 2020. The most recent 2010-2012 program plan sets interim targets of 1,500 MW and 7,000 GWh, which is equivalent to 2.6% of total retail electric sales in California. The plan also establishes natural gas savings targets of 150 million metric therms.
Hawaii 2004 and 2009	The state’s new EEPS sets a goal of 4,300 GWh savings by 2030, approximately 40% of 2007 electricity sales. The PUC must set interim goals and may change the 2030 goal if proven unattainable. It also calls for penalties for non-compliance. Formerly, under the state’s RPS requirements, energy efficiency was allowed to qualify as an eligible resource. As of January 1, 2015, energy efficiency may no longer count towards the state’s renewable goals.
Pennsylvania 2004 and 2008	Energy efficiency is an eligible resource in Tier II of Pennsylvania’s Alternative Energy Portfolio standard, which was established in 2004 as a two-tiered renewable energy standard; however, there was no minimum efficiency target. In 2008, legislation was passed requiring electric distribution companies to meet 1% electricity savings in 2011 and a total of 3% by 2013, as a percent of 2009-2010 electricity sales.
Connecticut 2005	In June 2005, the Connecticut legislature modified its Renewable Portfolio Standard to include efficiency. Starting in 2007, the state’s utilities must procure a minimum 1% of electricity sales from “Class III” resources such as energy efficiency and CHP, with an additional 1% required in 2008, 2009, and 2010. In 2007, the Connecticut legislature added a requirement for utilities to acquire “all cost-effective efficiency” and in 2008, the Department of Utility Control (DPUC) ordered utilities to establish savings goals. The DPUC is now reviewing a combined Conservation and Load Management plan with annual savings goals averaging about 1.5%.
Nevada 2005	The state’s RPS was expanded in 2009 from 20% to 25% of electricity sales. Energy efficiency can meet up to 25% of the total portfolio standard.
Rhode Island 2006	Rhode Island had a legislative requirement enacted in 2007 for electric and gas utilities to acquire all cost-effective energy efficiency that costs less than new energy supply as the first priority resource, placing it first in a utility’s resource “loading order.” Utilities are required to submit 3-year and annual procurement plans with detailed energy efficiency targets. Plans have been approved by the state PUC but do not include any penalties for non-compliance. Since the targets are only for the upcoming year, not long-term, the policy remains pending.
Washington 2006	In 2006, ballot initiative I-937 was approved by the state’s voters, requiring utilities to acquire all cost-effective energy efficiency. The Northwest Power and Conservation Plan is expected to be the basis for setting efficiency targets. The draft Sixth NWPC plan identifies 6,000 average MW of conservation savings in the northwest as being cost-effective and achievable by 2025. By 2010, each qualifying utility shall identify its achievable cost-effective energy efficiency potential through 2019.
Colorado 2007	In April 2007, the Colorado legislature adopted a bill that called on the Colorado Public Utilities Commission (CPUC) to establish energy savings goals and provide financial incentives for electric and natural gas utilities. The CPUC established an energy savings goal of about 11.5% by 2020 for Xcel Energy and sets the same 2011

	targets for Black Hills Energy. Natural gas utilities have individual targets in place as well.
Minnesota 2007	Minnesota must achieve 1.5% annual energy savings of electric and natural gas sales, at least 1% of which must come from energy efficiency. This plan was enacted in legislation in 2007 and requires utilities to meet the annual targets by 2010.
Virginia 2007	Governor Kaine inserted an enactment clause into the March 2007 electricity restructuring legislation stating that the Commonwealth shall have a goal of reducing electricity consumption by 10% (of 2006 consumption) by 2022. Dominion is currently on track to achieve about 3% energy savings by 2022.
Illinois 2007	In July 2007, the Illinois legislature set energy efficiency and demand response program requirements for utilities. Electricity utilities must achieve annual savings goals of 0.2% of energy delivered in 2008, 0.4% in 2009, and so on, rising to 2.0% annually for 2015 and subsequent years. Program implementation began in 2008. The state also passed natural gas savings targets in 2009 providing cumulative savings of 8.6% in 2020. For all programs, there is a rate impact cap of 2% of overall rates over the 3-year reporting period.
North Carolina 2007	In August 2007, the North Carolina legislature enacted a law requiring public electric utilities in the state to obtain renewable energy power and energy efficiency savings of 3% of prior-year electricity sales in 2012, 6% in 2015, 10% in 2018, and 12.5% in 2021 and thereafter. Energy efficiency is capped at 25% of the 2012-2018 targets, and at 40% of the 2021 target.
New York 2008	In June 2008, the New York State Public Service Commission approved a goal to reduce electricity usage 15% by 2015. The Commission currently has an open proceeding working with utilities and NYSEERDA to expand existing programs and develop new ones. Some programs have been approved and others are pending.
New Mexico 2008	Electric and gas utilities must acquire all cost-effective and achievable energy efficiency resources. Investor-owned electric utilities must achieve 5% energy savings from 2005 sales by 2014 and 10% by 2020.
Maryland 2008	In 2008, legislation was enacted that requires the state's electric utilities to reduce per-capita electricity consumption 15% by 2015, relative to 2007 per capita consumption. Utilities must meet 2/3 rd s of the goal and the state must administer programs to reach 1/3 rd of the goal.
Ohio 2008	In 2008, legislation was enacted that requires a gradual ramp-up to a 22% reduction in electricity use by 2025. Starting in 2009, electric distribution utilities must achieve 0.3% savings, which ramps up to 1% per year by 2014, then jumps to 2% a year in 2019 through 2025.
Michigan 2008	Michigan's goals start at 0.3% of electricity sales in 2009 and ramp up to an annual electricity savings requirement of 1% of total sales by 2012, and continue at that level each year thereafter (0.75% for natural gas utilities).
Iowa 2009	In 2008, the Iowa Utilities Board (IUB) issued an order asking investor-owned utilities (IOUs) to submit plans including a scenario to achieve a 1.5% annual electricity and natural gas savings goal. Most recently, in March 2009, the IUB approved MidAmerican Energy Company's Energy Efficiency Plan which calls for 1.5% electricity savings by 2010 and 0.85% natural gas savings by 2013. Although not required by legislation, once the board approves the utility plan, the goals are binding. Also in 2008 the legislature passed a new framework for municipal and cooperative utility efficiency programs requiring these utilities to set energy savings goals, create plans to achieve those goals, and report to the IUB on progress.
Delaware 2009	Legislation enacted in 2009 sets goals for consumption and peak demand for electricity and natural gas utilities. The goals are 15% electricity consumption and peak demand savings and 10% natural gas consumption savings by 2015.

Indiana 2009	Indiana's Commission ordered all jurisdictional electric utilities to begin submitting three-year DSM plans in 2010 indicating their proposals and projected progress in meeting annual savings goals outlined by the Commission. The goals begin at 0.3% annual savings in 2010, increasing to 1.1% in 2014, and leveling at 2% in 2019.
Massachusetts 2009	Massachusetts has a legislative requirement enacted in 2008 for electric and gas utilities to acquire all cost-effective energy efficiency that costs less than new energy supply as the first priority resource. The state and its major utilities have also recently agreed to meet an annual electricity savings target of 2.4% by 2012. The plan, approved by the Energy Efficiency Advisory Council, is expected to be approved by the Department of Public Utilities.
Arizona 2009	On December 18, 2009, the ACC ordered that all investor-owned utilities and rural electric cooperatives achieve 2% annual savings beginning in 2014. By 2020, the state should reach 20% cumulative savings, relative to 2005 sales, along with 2% credit from peak demand reductions from demand response programs. Electric distribution cooperatives are required to meet 75% of the standard in any year.
Utah Pending	Utah's recently passed EERS bill urges the UT PUC to set energy savings goals of at least 1% per year for regulated electric utilities and at least 0.5% per year for gas utilities. The bill does not penalize utilities that do not meet the savings goals, as long as they make good faith efforts. A docket is open that is reviewing a wide range of DSM policies including (but not limited to) the issues addressed in the resolution.
New Jersey Pending	New Jersey's utility efficiency goals, which are still under development, contain two main elements: (1) setting energy and demand goals for the administrator of the Clean Energy Program, at 547 GWh in 2008, or 0.67% of sales and (2) requiring each electricity supplier/provider to meet efficiency goals. As of June 2007, the BPU has been authorized to adopt an electric and a gas energy efficiency portfolio standard, with goals as high as 20% savings by 2020 relative to predicted consumption in 2020. It has yet to implement any targets for utilities.
Florida Pending	The Florida Public Utility Commission is currently determining an appropriate annual energy savings target with input from IOUs and other stakeholders. The most recent Commission staff recommendation proposes IOUs save a total of 2,612 GWh annually, or 1.5% of 2007 sales. The process is ongoing, with a Commission order due in late 2009.

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RESOURCE GUIDE

EPA Tools and Resources – EERS

National Action Plan for Energy Efficiency	<p style="text-align: center;">www.epa.gov/eeactionplan</p> <p>This site summarizes NAPEE’s objectives, structure, and accomplishments, and is also the gateway to many other federal resources on EE.</p>
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US EPA. Clean Energy-Environment Action Plan: Guide to Action	<p style="text-align: center;">http://www.epa.gov/cleanenergy/documents/gta/guide_action_chap2.pdf</p> <p>This document is a chapter of a larger guidance report. It describes the typical steps for establishing a collaborative process, setting clean energy goals, identifying and evaluating clean energy policies, and developing an implementation strategy for a Clean Energy-Environment Action Plan.</p>
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Other National Resources

ACEEE. State Energy Efficiency Resource Standard (EERS) Activity	<p style="text-align: center;">http://aceee.org/energy/state/State%20EERS%20Summary%20Jan%202010.pdf</p> <p>This site contains an up-to-date index of states who have adopted an EERS, when they adopted it, along with reference information.</p>
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Barbose et al (LBNL). The Shifting Landscape of Ratepayer-Funded Energy Efficiency in the U.S.	<p style="text-align: center;">http://eetd.lbl.gov/EA/emp/reports/lbnl-2258e.pdf</p> <p>This document reports recent developments and trends in EERS policies, as well as projected spending for and projected savings through an EERS.</p>
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Database of State Incentives for Renewables & Efficiency (DSIRE)	<p style="text-align: center;">http://www.dsireusa.org/</p> <p>This site is a comprehensive database of state, local, utility, and federal incentives and policies that promote renewable energy and energy efficiency.</p>
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Nadel, Steven (ACEEE). Energy Efficiency Resource Standards: Experience and Recommendations	<p style="text-align: center;">http://aceee.org/pubs/e063.pdf?CFID=3434049&CFTOKEN=25853047</p> <p>This document gives a background on EERS, including efficiency potential, market barriers, recent developments, and federal legislation. It details the states’ progress to date and concludes with recommendations for states and federal government.</p>
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State Resources

MA State Government. Ch. 169 of the Acts of 2008: An Act Relative to Green Communities	<p style="text-align: center;"> http://www.mass.gov/legis/laws/seslaw08/sl080169.htm This site contains the language of the MA state legislation providing for an EERS, enacted in 2008. </p>
Vermont Energy Investment Corporation. MA Energy Efficiency: Project Profile	<p style="text-align: center;"> http://www.veic.org/Consulting/Project_Profiles/StateofMassachusetts.aspx This site provides an analysis of the progression of MA's energy efficiency legislation and implementation. </p>
Southern Alliance for Clean Energy. Utility energy efficiency programs: Florida	<p style="text-align: center;"> http://www.cleanenergy.org/index.php?/Learn-About-Detail.html?form_id=52&item_id=42 This site gives a description of EE efforts in FL, including recent developments. </p>
State of California. Energy Action Plan: 2008 Update	<p style="text-align: center;"> http://www.energy.ca.gov/2008publications/CEC-100-2008-001/CEC-100-2008-001.PDF This state website provides the text for the 2008 update, which includes CA's interim EERS goals for 2010-2012. </p>