



American Council for an Energy-Efficient Economy

Energy Efficiency Resource Standards Around the U.S. and the World

September 2007

United States (listed in alphabetic order)

California: Following California's 2001 electricity crisis, the main state resource agencies worked together along with the state's utilities and other key stakeholders and developed the *California Integrated Energy Policy Report* that includes energy savings goals for the state's investor-owned utilities (IOUs). These goals call for electricity use reductions in 2013 of 30,000 million kWh and peak demand reductions of 7,760 MW from programs operated over the 2004–2013 period. These targets represent 10% of projected 2013 electricity use and 12% of 2013 peak demand. The California Public Utilities Commission, the utilities, and other interested parties then worked together to develop program plans, goals, and budgets for 2006–2008 that put California on the path for meeting its 10-year goals. From 2004 to mid-2007, California's IOUs saved 7,820 million kWh and 1,477 MW.¹ The kWh savings represent about 34% of the IOUs' ten-year goals (municipal utilities also contribute toward the 10-year goals). Savings are up significantly in 2007 relative to 2006, with IOU savings of about 0.7% of sales in just the first 6 months of 2007. A proceeding is just beginning to extend the savings targets, probably to 2020.

Colorado: Colorado is working on two types of savings targets. First, targets are in place for Colorado's largest utility, Xcel Colorado. As part of a settlement of a Least Cost Planning case, Xcel agreed to "use its best efforts to acquire, on average, 40 MW of demand reduction and 100 GWh of energy savings per year from cost-effective Demand-Side Management ('DSM') programs over the period beginning Jan. 1, 2006 and ending Dec. 31, 2013, so that by Jan. 1, 2014 the Company will have achieved a cumulative level of 320 MW of total demand reduction and 800 GWh of annual savings." The company agreed to expend up to \$196 million (2005 dollars) to meet these commitments. The agreement calls for recovering program costs through rates. Based on PSC's 2004 sales, the annual savings goals amount to about 0.38% of sales. Second, in April 2007, the Colorado legislature adopted a bill that calls on the Colorado Public Utilities Commission (CPUC) to establish energy savings goals for electric and gas utilities as well as provide utilities with financial incentives for implementing cost-effective energy-saving programs. The bill sets a minimum energy efficiency spending target of 0.5% of revenues from full-service customers and directs that savings targets be set that are "commensurate with program expenditures." The CPUC will open separate electric and gas dockets to establish targets and incentive mechanisms.

Connecticut: Connecticut established a renewable portfolio standard (RPS) several years ago and in 2005 expanded it. Specifically, in June 2005 the Connecticut legislature adopted

¹ Messenger, Michael. "DSMiou" spreadsheet. Sacramento, CA: California Energy Commission. Also California Public Utility Commission, Energy Efficiency Groupware Application, <http://eega2006.cpuc.ca.gov/Default.aspx>. Visited Aug. 2007.

legislation that, among other provisions, complements the existing RPS by adding new “Class III” requirements covering energy efficiency, combined heat and power (CHP) plants, and energy savings from waste heat recovery (this last item was added under 2007 legislation). Under the new Class III requirements, electricity suppliers must purchase 1% of supply from efficiency and CHP by 2007, and 4% by 2010 (i.e., the targets increase by 1% per year). Distribution utilities and other power distributors are responsible for meeting the goals. Existing energy efficiency programs can be used to help meet the goals, starting with savings achieved in 2006. Third-party providers can also earn savings certificates and sell these to power providers that have Class III obligations. Under the legislation, certificate values can range from \$0.01 to \$0.031 per kWh of savings. Meeting the 2007 target should not be difficult, as savings from both 2006 and 2007 can be applied. For 2008, some increased efficiency efforts will be needed to meet the targets.

Hawaii: Hawaii established a binding RPS via statute in 2004 (Act 95). The law set a renewable resource requirement of 8% of kWh sales in 2005, rising to 20% in 2020. Efficiency qualifies as a resource under these requirements with no cap or set-aside. In 2005, according to a report filed by Hawaii’s dominant utility, renewable energy and energy efficiency resources accounted for about 11.7% of electricity sales, with renewables 65% of these resources and efficiency 35%.²

Illinois: In July 2007, the Illinois legislature passed legislation that includes requirements for energy efficiency and demand response programs. Under the new law, utilities, with help from the Illinois Department of Commerce and Economic Opportunity (IDCEO), are directed to implement cost-effective energy efficiency programs and measures sufficient to achieve the following annual energy savings: 0.2% of energy delivered in 2008; 0.4% in 2009; and so on, rising to 2.0% annually for 2015 and subsequent years. Utility programs will be responsible for 75% of these targets and IDCEO for 25% of these targets. Utilities and IDCEO are instructed to first develop energy efficiency plans. In addition, utilities must implement demand response programs and measures to reduce peak load demand by 0.1% each year between 2008 and 2018 (i.e., 1.1% savings in 2018). For all of these programs, there is a rate impact cap of 0.5% of overall rates in any one year, and 2.0% of overall rates in total (i.e., relative to base rates, rates could increase 0.5% in the first year, 1.0% in the second year, etc. up to a maximum of 2.0%). If the rate impact cap is reached, the energy savings goals will be relaxed to the maximum savings that can be achieved within the rate impact cap. This cap, unless changed, will likely limit the savings to significantly less than the out-year goals.

Minnesota: In May 2007, the Minnesota legislature passed the New Generation Energy Act of 2007. Among its provisions, the Act sets energy-saving goals for utilities in the state of 1.5% of retail sales each year. Included under this goal are savings from energy conservation programs, rate design, energy codes, appliance standards, market transformation programs, programs to change human behavior, improvements to utility infrastructure (e.g., transmission and distribution improvements), and waste heat recovery. The law allows a utility to request a lower target (based on historical experience, an energy conservation potential study, and other factors), but in no case can that be lower than 1% per year. Lower savings can also be justified if the Commissioner of Commerce determines that additional savings are not cost-effective to ratepayers, the utility, participants, and society. Implementation of this new law has not yet

² Hawaiian Electric Co., 2006, “Renewable Portfolio Standard Status Report.”
<http://www.hawaii.gov/budget/puc/dockets/energy.htm>.

begun, but for the most part, the 1.5% per year savings goal represents a significant increase relative to current Minnesota utility programs.

Nevada: In 2001, the Nevada legislature enacted RPS legislation. In 2005, this law was amended to increase the portfolio requirement, but also to allow the utilities to use energy efficiency programs to help meet the requirements. Under the new law, renewable energy and energy efficiency must meet 20% of the state's electricity needs by 2015, of which up to 25% can be met with energy efficiency. There are also gradually rising targets for earlier years. These amendments were agreed to after the utilities had difficulty meeting the renewables-only requirements during the first two years of implementation. In 2006, the utilities were able to meet the revised overall renewable requirements, assuming a sale of credits from one utility to another is approved by the Public Utilities Commission. Nevada's standard also has a solar target, which the utilities did not meet. In 2006, the total requirement was 6% of retail sales from eligible resources. Actual eligible resources were 6.4% of sales. Of the eligible resources, 12% were from efficiency and the other 88% renewable energy. In their filing on 2006 accomplishments, the utilities reported that they have increased energy efficiency budgets substantially and are on track to achieve the maximum 25% of the portfolio from efficiency programs by the end of 2008 for Nevada Power and the end of 2010 for Sierra Pacific.³

New Jersey: New Jersey is working on two sets of energy-saving goals, one similar to the Vermont system (described below) and a second more formal set of energy efficiency resource standard (EERS) requirements for each electrical energy supplier. New Jersey passed electric industry restructuring legislation in 1999, which included a public benefit fund to pay for energy efficiency and renewable energy programs. In 2003, the Board of Public Utilities (BPU) decided to transfer program administration of the public benefit programs from the utilities to the Board directly and to manage the program through independent contractors and not the utilities. A RFP for contractors to run the program was issued and a contractor selected. As part of the contracting process, specific performance goals were set which call for savings from 2007 programs of 257 million kWh and 452 billion Btu's of natural gas. These are about 0.33% and 0.09% respectively of 2004 sales. Incentives are provided for meeting these goals, with greater incentives for achieving 120% and 140% of the goals. In addition, the BPU is pursuing development of a more formal EERS that would require each electricity supplier/provider that sells electricity to retail customers in the state to meet energy efficiency goals. Legislation passed in June 2007 authorizes (but does not require) the BPU 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. Workshops and hearings to develop the details are expected to start in the fall of 2007.

New York: In April 2007, Governor Spitzer set a new policy goal to reduce electricity use in 2015 by 15% ("15 by 15"), relative to projected use in 2015. Shortly thereafter, the New York Public Service Commission established an Energy Portfolio Standard Proceeding to determine the best approach for meeting this target. The Proceeding includes natural gas programs, including setting an appropriate 2015 savings target for these programs. In August 2007, Commission staff released a report suggesting the targets be met through a combination of expanding existing system benefit charge programs run by the New York State Energy Research

³ Nevada Power Company and Sierra Pacific Power Company, 2007, "Portfolio Standard Annual Report, Compliance Year 2006." Docket 07-04005. <http://pucweb1.state.nv.us/PUCN/DktInfo.aspx?Util=Renewable>.

and Development Authority, new and expanded programs and assistance offered by the state's utilities (including both investor-owned utilities as well as the New York and Long Island Power Authorities), expanding the low income weatherization program, and adopting new and strengthened energy codes and standards. The proposal includes a variety of "fast-track" programs to be started in 2008, as well as a planning process beginning in 2008 to develop programs that would start in 2009 and thereafter. There will be a round of comments and collaborative meetings before the Commission issues a final order.

North Carolina: In August 2007 the North Carolina legislature enacted a new law establishing a renewable energy and energy efficiency portfolio standard. The law required 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. There are also slightly different requirements for municipal utilities and electric coops, with the requirement peaking at 10% of prior-year sales in 2018 and containing no restriction on how much efficiency can be included as part of this 10%.

Pennsylvania: The legislature adopted the Alternative Energy Portfolio Standards (AEPS) Act in late 2004. Under the law, renewable energy must account for 8% of the power sold in the state after 15 years of implementation. In addition, "tier 2" "advanced energy resources" must account for an *additional* 10% of power sold in 15 years. "Tier 2" resources include energy efficiency, hydropower, waste coal, and municipal solid waste generation. The legislation also established interim requirements. The Pennsylvania Public Utility Commission developed implementing regulations but little in the way of efficiency savings is expected for many years since enough eligible hydroelectric, waste coal, and municipal solid waste generation is already in place to meet the tier 2 targets through 2016.⁴

Texas: Texas's electricity restructuring law (SB-7-1999, signed into law by then-Governor Bush) established a requirement for electric utilities to offset 10% of their demand growth through end-use energy efficiency programs. Utilities are generally exceeding this goal. For example, in 2006, utility energy efficiency programs reduced demand by 164 MW, exceeding the 129 MW goal by 27%. This was the fourth year in a row the goal was exceeded. The 2006 programs also reduced electricity use by 366 million kWh. Since 1999, the program has reduced peak demand by 756 MW and provided 2,005 million kWh of annual kWh savings.⁵ In 2007, the law was changed to double the savings requirement to 20% of demand growth, direct that incentives be provided to utilities for exceeding the minimum savings goals, and require a study to see whether the target can be increased to 30% of load growth in 2010 and 50% of load growth in 2015.

Vermont: Vermont has had extensive energy efficiency programs since 1990, as part of regulated utilities' least-cost planning obligations, under the jurisdiction of the Vermont Public Service Board (PSB). Originally, programs were run by the state's utilities, but in 1999 the PSB transferred operations to a single, statewide "energy efficiency utility" operating under the name Efficiency Vermont. This in turn is run by a competitively selected contractor, currently the

⁴ Nadel, Steven, 2006, *Energy Efficiency Resource Standards: Experience and Recommendations*. Washington, DC: American Council for an Energy-Efficient Economy. <http://aceee.org/pubs/e063.pdf>.

⁵ Frontier Associates. 2007. *Energy Efficiency Accomplishments of Texas Investor Owned Utilities, Calendar Year 2006*. Austin, Texas.

nonprofit Vermont Energy Investment Corporation, under a performance-based contract with PSB. The contract with the PSB includes specific energy (kWh) and peak demand (kW) savings targets. There is a significant holdback in the compensation received by the contractor, pending confirmation that contractual goals for savings and other performance indicators have been achieved. Efficiency Vermont began operations in 2000 and in 2006 achieved 321 million kWh of annual savings and 33 MW of summer peak demand reduction (these figures include savings in 2006 from measures installed in earlier years). Savings started modestly at first, but cumulatively met over 5% of Vermont's electricity requirements by the end of 2006. In 2006, efficiency savings were about 1% of 2006 sales. In late 2006, an expansion of programs began, targeting four areas of the state with significant transmission and distribution constraints. With these expanded programs, Efficiency Vermont is planning to achieve an additional 214 million kWh of savings and 30 MW of summer peak demand reduction in 2007–2008. These projected kWh amount to 3.5% of 2006 sales.⁶

Virginia: In March 2007 the Virginia legislature passed a bill amending Virginia's earlier electric industry restructuring law. The governor conditionally approved the bill, with one of the conditions being the addition of a section on conservation of energy, including setting a goal of 10% electricity savings by 2022 (with the 10% calculated relative to 2006 sales). The legislature then accepted this condition. Under this provision, the State Corporation Commission (the utility commission in Virginia) is directed to conduct a proceeding to consider whether the 10% goal can be met cost-effectively, determine the mix of programs that should be implemented and their cost, and develop a plan for development and implementation of these programs, including who should deploy and administer these programs. The Commission has begun this proceeding and a variety of working groups has been set up to work on the details. Findings need to be submitted by the Commission to the governor and legislature by Dec. 15, 2007. It is likely that new legislation will be needed to put the programs in place.

Washington: Washington voters approved an initiative in November 2006 that set new requirements for electricity resources, including use of renewable energy and energy conservation. The energy conservation section requires each qualifying utility (those with more than 25,000 customers in Washington) to "pursue all available conservation that is cost-effective, reliable and feasible." "High efficiency cogeneration" is included as part of conservation and the term is defined in the law. By January 1, 2010, utilities are directed to determine their achievable cost-effective conservation potential through 2019, and a set of biennial acquisition targets for acquiring these resources. The law specifies that utilities must use methodologies consistent with those of regional power developed by the Northwest Power and Conservation Counsel (NWPPCC). The most recent NWPPCC plan identified 2700 average MW of conservation savings as being cost-effective and achievable by 2025, amounting to 10.6% of projected needs in that year if additional conservation is not pursued. Available cogeneration resources are not quantified.

International

United Kingdom: The UK established an "Energy Efficiency Commitment" in 2001 that requires electricity and gas suppliers to achieve targets for energy efficiency in the residential

⁶ Vermont Energy Efficiency Investment Corp. 2007. *2006 Preliminary Results and Savings Estimate Report*. Also, *Efficiency Vermont Annual Plan 2007–2008*. Burlington, VT. <http://www.encyvermont.org/pages/Common/AboutUs/AnnualReport/>.

sector. The first commitment period covered spring 2002 to spring 2005 and required savings of 62 billion kWh (or the equivalent amount of natural gas, oil, or coal).⁷ Ultimately, 87 billion kWh of savings were actually achieved, exceeding the goal by 40%. The average cost of these savings was about 0.7 pence per kWh (less than 1.5 U.S. cents). A goal of 130 billion kWh was then established for the 2005–2008 period (second commitment period), and work has begun to consider an appropriate goal for the 2008–2011 period. The 2005–2008 goal amounts to about a 2% reduction in annual UK residential energy use (i.e., savings of nearly 0.7% per year). In the first year of the second commitment period, suppliers achieved about 60% of the three-year target. This figure includes the extra savings from the first commitment period.⁸

Italy: In 2001, the Italian Ministry of Industry established an obligation for gas and electric distribution companies to achieve specific energy savings targets. Implementing details were worked out by the Regulatory Authority and the program began in January 2005. Under the program, electric and gas distribution companies must meet steadily increasing savings targets over the 2005–2009 period. The 2009 targets are 1.6 million metric tonnes of oil equivalent for electric distributors and an additional 1.3 million metric tonnes of oil equivalent for gas distributors. The 2009 targets amount to about 2% each of covered electricity use and covered gas use. Savings targets start at modest levels, but in the final year, the targets envision nearly a 1% reduction in electric and gas energy use. Distribution companies can operate programs themselves or can buy credits from others. There are penalties if they fail to meet the targets. In the initial year of the program, the savings targets were met. A market in savings certificates was also started, with the average selling price about one U.S. cent per kWh saved.⁹

France: The French legislature passed a new energy law that includes energy targets somewhat similar to the program in the United Kingdom. In the French law, a target of 54 billion kWh (or the equivalent for other fuels) is established for lifetime savings for measures implemented in 2006–2008. The target is on the order of 1% of covered French energy use. Implementation began July 1, 2006. Results from the first year are not yet available.

⁷ This goal is for lifetime savings achieved over the three-year commitment period.

⁸ Office of Gas and Electricity Markets, April 2005, *Energy Efficiency Commitment Update*, Issue 12, London, England. Also, Hamrin, Jan, Ed Vine, and Amber Sharick, 2007, *The Potential for Energy Savings Certificates as a Major Greenhouse Gas Reduction Tool*. San Francisco, CA: Center for Resource Solutions.

⁹ Nadel 2006 (see note 4). Hamrin et al. 2007 (see note 8).