

## Energy Efficiency Resource Standards: In Practice

### *What is an EERS?*

An Energy Efficiency Resource Standard (EERS) is a requirement for utilities to save a certain amount of energy every year. To do this, utilities implement energy efficiency programs to help their customers save energy in their homes and businesses. In H.R. 889, the energy savings achieved in a certain year are compared to the utilities' average energy sales from the prior 2 years, the base quantity, to determine the percentage of actual energy savings. The percentage of required savings slowly increases over time to achieve greater energy savings in subsequent years.

The utility reports the energy savings from each energy efficiency program to the state Public Utilities Commission, the regulatory authority in each state that oversees the utilities. Savings are measured using standardized methods which DOE will establish based primarily on protocols now used at the state level (see H.R. 889, Sec. 610 (f)).

### *How does it work?*

Utilities operate a variety of energy efficiency programs depending on their location, their budgets, and their types of customers. One common program is the use of rebates. Rebates give customers money back for purchasing and installing highly energy-efficient equipment. For example, Pacific Gas and Electric (PG&E) offers a \$400 rebate to customers who test and seal heating and air conditioning (HVAC) ducts, a \$300 rebate for a installing a high efficiency furnace, and \$50 for a installing a high efficiency dishwasher.

Another common program consists of audits and incentives. An energy audit of the customer's home or business identifies areas where energy efficiency can be improved. If the customer chooses to install some of the recommended energy efficiency measures, the utility will give the customer an incentive which covers a portion of the cost for the energy efficiency measures.

A utility may also pay an incentive to a retail distributor to stock only high efficiency products or to mark down the price of a certain piece of equipment. The latter example is often seen with CFL bulb programs. A utility will pay a distributor, Home Depot, for example, to offer CFL bulbs at a discounted price. The utility can advertise the reduced cost light bulbs through its website and on customers' bills to encourage customers to go to Home Depot and buy CFL bulbs and learn about energy efficiency.

A utility's energy efficiency programs will eventually target all of the utility's customer classes. Not every customer participates right away though, and not every customer achieves the same amount of energy savings. However, the savings of all individual customers will add up to total energy savings, helping the utility meet the required energy savings target for a certain year. Over time, the utility can expand its programs to reach more customers, in more sectors, increasing customers' energy savings, and making reaching the higher targets in subsequent years achievable.

### *State Action*

States that have had experience implementing energy efficiency programs, conducting evaluations along these lines, include California, Texas, Vermont, Connecticut, and Nevada.

In Texas, for example, utilities pay incentives to commercial and industrial businesses to install new measures or improve part of their process to reduce energy use. Typical projects include installing highly-efficient chillers or lighting and industrial process retrofits. For residential and small commercial programs utilities provides incentives for installation of a wide range of energy efficiency equipment that reduce the customer's energy consumption and energy costs. In Texas, utilities pay incentives to Energy Efficiency Service Providers and customers, with incentives based on deemed energy savings when available. Deemed savings estimates are predetermined and verified estimates of energy savings for specific energy efficiency measures. For example, if a highly-efficient dishwasher was known to save, on average, 100 kWh per year, and the utility gave out

1,000 dishwasher rebates in a given year, the utility can claim 100,000 kWh saved from its dishwasher efficiency program. These estimates are periodically updated.

If deemed energy savings values are not available, maybe for a new or custom program, Energy Efficiency Service Providers and utilities must follow the measurement and verification procedures adopted by the Public Utilities Commission of Texas. The commission hires an independent evaluation expert to help with review of program evaluation reports.

#### Illustrative Example: Electric Utility Company X

	2009	2010	2011	2012	2013
<b>Electricity Sales (million kWh)</b>					
Estimated Electricity Sales	11,000,000	11,055,000	11,110,275	11,128,906	11,147,248
Base Quantity for 2011 (average of 2 prior years' sales)	<b>11,027,500</b>				
Base Quantity for 2012 (average of 2 prior years' sales)		<b>11,082,638</b>			
Base Quantity for 2013 (average of 2 prior years' sales)			<b>11,119,591</b>		
<b>Savings from Programs* (million kWh)</b>					
Existing Residential and Small Commercial			6,500	13,100	19,500
Residential New Construction			390	786	1,170
Commercial and Industrial			18,850	37,990	56,550
Efficient Products Program			8,320	16,768	24,960
Low-Income Retrofits			2,860	5,764	8,580
<b>Total Energy Savings from Programs</b>			<b>36,920</b>	<b>74,408</b>	<b>110,760</b>
<b>Savings (million kWh)</b>					
Savings (as a % of base quantity)			<b>0.33%</b>	<b>0.67%</b>	<b>1.00%</b>
Total Cumulative Energy Savings ** (including savings from measures installed in previous years)			36,920	111,328	222,088
Total Cumulative Energy Savings (as a % of base quantity)			0.33%	1.00%	2.00%

\* Program values are estimates based on similar programs, and associated savings, operated in Texas and Vermont.

\*\* Savings are cumulative because measures installed in prior years continue to save energy for the full life of the measure.