

*State Policy Series: Impacting
Industrial Energy Efficiency*

Energy Efficiency Resource Standards: Setting and Meeting State Goals

As of April 2010, twenty-four states had designed and implemented an Energy Efficiency Resource Standard (EERS), with three others seriously considering it. An EERS is a market-based means of promoting more efficient generation, transmission, and use of electricity and natural gas. Having a state EERS policy in place ensures uniform energy efficiency goals across the state and provides a mechanism to create support programs that lead to reduced energy use. As energy consumption and accompanying carbon emissions become increasingly high impact issues, states can benefit from tracking their performance against specific goals.

Creation

EERS policies are adopted by state legislatures and implemented and managed by utilities within the state. An EERS requires electricity and natural gas utilities to offer programs and incentives to encourage their customers to reduce energy use by a specified amount each year, based on a percentage of total energy sales.



Key Elements

An EERS policy is a long-term strategy to achieve energy savings and realize the financial and environmental benefits of those savings over time. The savings goals for new programs typically range from 0.25 percent savings annually to 1.25 percent annually and increase over time. EERS programs can offer utilities the flexibility to utilize a market-based trading system to reach their set targets, and they provide support and incentives for utilities to successfully manage their own and their customers' energy use.

Utilities can reach state-mandated energy savings targets by providing their customers energy audits, training and informational materials on better energy use practices, and incentives for equipment and appliance retrofits. Utilities can also increase efficiency within their own distribution system, improve industrial processes, provide incentives for suppliers to stock high-efficiency products and encourage more stringent building codes. Some of the most common sources of financing for these programs come from Public Goods Charges (a small charge per kWh added to energy bills), utilizing Public Benefit Funds (PBF), and through utility funding.

Assessing Various State EERS Goal Savings Method

Savings Calculation	Pros	Cons
% of kWh Sales	Goals can be used for many years without needing to be reset since they automatically adjust to changes in energy sales.	Some uncertainty as to the exact goal.
% of Load Growth	Allows for aggressive goals.	Most uncertain, as growth rates can vary substantially from year to year.
Absolute kWh	Immediate transparency in terms of what savings are needed.	Targets will need to be adjusted periodically.

Source: American Council for an Energy-Efficient Economy, Energy Efficiency Resource Standards: Experience and Recommendations, March 2006, <http://aceee.org/pubs/e063.pdf?CFID=4689843&CFTOKEN=83737750>.

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Penalties for non-compliance vary by state. They are assessed by the secretary of that state with minimum charges typically set higher than the market-based trade value to incentivize electric and natural gas distributors to make every effort to meet the required savings goals. Many EERS policies restrict utilities from recovering any of the penalty fees through rate increases, surcharges, or other mechanisms. Any penalty funds collected by the state are reinvested in additional energy efficiency programs.

Benefits & Challenges

Energy efficiency is a least-cost resource, which means that increasing the amount of available energy by using it more efficiently is less expensive than increasing energy production. Studies show that large energy efficiency opportunities are available in all states, with estimates that some states could achieve 20–30 percent more energy efficiency.

EERS programs can yield significant benefits to states, utilities, and residential, commercial, and industrial customers, including:

- Reduced variable costs for utilities
- Job creation due to new energy efficiency implementation needs
- Reduced or eliminated need to construct new conventional carbon dioxide emitting power plants
- Lower energy bills for residential, commercial, and industrial customers through reduced energy consumption
- Reduced GHG emissions from energy production and consumption.

Despite the positive impacts, there can be challenges for states looking to implement an EERS policy. For instance, the impacts of energy efficiency are not as tangible or immediate as some other state programs. As a result, stakeholders and investors may not see the benefits of saving energy as clearly as they do that of other programs competing for approval and funding. State policy makers must also address knowledge barriers that affect investment decisions, including the fear of unknown impacts and requirements of new programs and the perceived risk involved with implementation of new technologies.

Picking the Right Model:

The State of **Vermont** has instituted a unique energy efficiency program called “Efficiency Vermont” which is coordinated by the Vermont Public Service Commission and operated by a private nonprofit organization called the Vermont Energy Investment Corp. (VEIC). This statewide provider of energy efficiency services has achieved energy savings that are among the highest of any program in the United States, and is funded through ratepayer contributions collected through small charges on electric bills.

The Efficiency Vermont model benefits from excellent management and staffing, having access to a substantial budget, a good working relationship with regulators, and the fact that its programs are offered statewide. Oregon has a variation of this model which also works well; however, it may not be the most effective for all states.

For example, **Delaware**, a state with a limited budget and a lesser level of in-state organization has not been successful in modeling the Vermont program. Each state has different resources that should help guide the type of EERS policy they implement. Connecticut, Iowa, Massachusetts, and Rhode Island designed utility-run programs that have been extremely successful. In contrast, New York has a partially independent state agency that runs their efficiency program.

One of the main ingredients that each of these states utilizes to achieve their energy savings are program operators that manage the programs well and who believe in what they are doing. Other important components include employing effective in-state staff, having strong budgets in place for multiple years, not being impeded by too many bureaucratic rules, and having superior regulatory support. It is more important for a state to have these criteria than it is for them to follow a specific model.

An EERS also requires that the state partner with utilities in crafting staffing plans to up skill existing workers to implement and manage energy efficiency measures. To overcome this, most states have included cost-caps and other control mechanisms to ensure that the spending and expectations are reasonable; particularly for states that don't have an existing EERS framework and must account for a ramp-up period to ensure success.

Although penalties might cause concern to utilities, the market-based nature of the program helps alleviate some of that burden. Some states, and the proposed federal legislation, also favor an approach that allows over-performing utilities to accrue extra savings in the early years of an EERS program that can be applied in later years.

Industrial Stakeholder Considerations
As the peak energy users in the economy and the sector with the most efficiency potential, industrial customers may feel the greatest pressure from utilities striving to meet EERS goals, and may be apprehensive about supporting the institution of a state EERS.

Energy efficiency improvements can occur in three primary ways in the industrial sector, as shown above:

States looking to institute an EERS policy must address concerns from industry leaders. The three most common challenges are that state mandated energy efficiency goals may cause a core business conflict for many industrial customers who do not recognize the profit potential and other benefits that an EERS program can yield. In addition, factory managers may object to the

Method	Financial Investment
Energy management measures such as designating in-house energy managers, data collection and verification, and review of operational efficiency.	Moderate
Replacing existing equipment with more energy efficient models through waste heat recovery, combustion control of furnaces, and improved heat exchanges.	Minimal to Significant
Manufacturing processes evaluation & modification including installation of advanced process controls, gas pressure recovery generators, or waste heat recovery generators.	Moderate to Significant

loss of productivity during the initial evaluation of processes and equipment to determine the areas of greatest energy efficiency potential within a plant. Finally, industrial plant assessors must recommend efficiency programs with short return on investment periods if action is to be expected by the industrial community.

EERS in the States

An analysis of the four U.S. Census regions indicates that the South has the fewest states with an EERS policy in

place. However, a December 2009 U.S. Department of Energy report, [*Energy Efficiency as a Resource: South Region*](#), found that the South also has the highest potential for lowering industrial energy intensity. The Northeast had the smallest potential for industrial energy intensity improvement, with more than one-half of those states already having an EERS in place.

