



Description of integrated pilots/demonstrations/field tests/existing practices

1. Name of the case:

Energy Efficiency Resource Standards: Experience and Recommendations

2. What is integrated with DSM

- | | |
|-------------------------|-------------------------------------|
| DG | <input checked="" type="checkbox"/> |
| Energy storage | <input type="checkbox"/> |
| Smart grid technologies | <input type="checkbox"/> |

3. What is the level of commercialization

- | | |
|-------------------|-------------------------------------|
| Research project | <input type="checkbox"/> |
| Demonstration | <input type="checkbox"/> |
| Field test | <input type="checkbox"/> |
| Existing practice | <input checked="" type="checkbox"/> |

4. Where to find more information?

- Contact person: Steven Nadel
- Company: American Council for an Energy-Efficient Economy
- web-site: <http://aceee.org>

5. Objectives of the case

The study focuses on the practices of energy efficiency resource standards in place in eight U.S. states and four European countries. Energy Efficiency Resource Standards (EERS) are simple, market-based mechanisms designed to encourage more efficient use of electricity (and natural gas). An EERS consists of electric and gas energy savings targets for utilities and include end-user energy saving improvements aided by utilities or other program operators. Sometimes included in EERS are combined heat and power systems and distribution system efficiency improvements.

6. Business rationale/model

Demand for electricity (and natural gas) is increasing in the U.S. at a level outstripping the means of production and delivery. Energy efficiency programs have had a

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significant impact in the U.S. since the early 1970s, of which improvements have been estimated to save 90 quadrillion Btu's in 2004 alone. Energy efficiency improvements have been called our country's largest energy source. Existing programs are evaluated in this study and a case for implementing further EERS in the U.S. is clarified.

7. Technologies used

There are many energy efficiency measures that are covered in the 10 states covered in this study. There are three categories of technologies discussed in this report.

- End-use efficiency measures at customer facilities (traditional DSM). Hundreds of utilities in the U.S. offer program measures that range from efficient residential appliances, to compact fluorescent light bulbs, to efficient commercial lighting systems, motors, and more efficient industrial processes.
- Transmission and distribution improvements that improve efficiency, such as high-efficiency transformers and next-generation transmission conductors.
- Distributed generation efficiency measures at end-user sites such as fuel cells, CHP, and recycled energy technologies.

8. Short description of the case

While the study offers significant empirical data on past programs and existing programs and goals, it also focuses on EERS targets that should be implemented at the state and federal levels. The recommended levels of energy reduction utilizing EERS are approximately 1% annually, which is a cumulative savings over the course of a program that may last 10-15 years. There are a number of methods of achieving the goals which include existing utility programs, independent efficiency providers, and tradable credits. Monitoring and verification of energy savings is an important part of an EERS program, and provide the necessary credibility, transparency, and consistency needed to meet program goals.

9. Achieved/expected results (operational savings, CO₂, efficiency enhancement)

If implemented nationally, EERS savings would amount to about one-quarter of the currently projected growth in U.S. electric sales over the 2007-2020 period (and about half of the projected growth in natural gas sales over the same period). A national EERS (based on an average 0.75% in annual energy savings) would reduce U.S. energy use in 2020 by about 5.6 quadrillion Btu ("quads"), which represent about 4.6% of projected U.S. energy use for that year. Such a program would reduce peak electric demand by about 124,000 MW in 2020 (equivalent to more than 400 power plants of 300-MW each).



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10. Lessons learned

This report examines past and present programs in eight U.S. States and four European countries. It concludes with recommendations that both states and the federal government adopt an EERS. These programs have proven to be successful and accepted by end-use customers who participate.

Due to the success of EERS programs in the eight states studied in the U.S., it is recommended that the EERS be expanded.

A strong EERS policy would;

- Save consumers and businesses money;
- Change the energy supply and demand balance and put downward pressure on energy prices;
- Decrease reliance on energy imports (particularly LNG);
- Help with economic development as savings from energy efficiency creates jobs; and
- Reduce carbon emissions, helping to moderate growth in the gases that contribute to global climate change.

And finally, the report concludes that a national EERS would produce significantly more savings (than the Energy Policy Act of 2005 calls for) and would be one of the most significant actions the U.S. could take to reduce U.S. energy use.