# CHAPTER 1: The business case for energy efficiency

## Introduction

Why does promoting energy efficiency make business sense for public power utilities? Given that community-owned utilities are in the business of serving customers, keeping rates low and making contributions to the city's general fund, it may seem counterintuitive that a local utility would want to encourage customers to use less of the product they are selling.

Utilities are accustomed to assessing the cost of meeting future energy demand by building a new power plant or purchasing power in the market. Similarly, energy efficiency can be viewed as a resource for meeting future energy needs by reducing customer demand. The cost-effectiveness of energy efficiency resources can be evaluated using the same tests that are used to evaluate new supply-side resources. The reality is that new power plants are expensive. The costs of building and operating plants only increase with the likelihood of new federal regulations limiting carbon emissions. The least expensive way to control costs over the long term is to reduce waste by building energy efficiency resources.

By acquiring energy efficiency resources, utilities can reduce fuel costs, defer capacity investments, increase system reliability, demonstrate environmental stewardship and reduce regulatory risk. In addition, by reducing customer energy bills and creating business opportunities around energy efficient products and services, energy efficiency programs keep dollars in the community, supporting job creation and other local economic development benefits. Research has also shown customer satisfaction increasing as the utility becomes a trusted source of information on how to save energy.

What about benefits for utility customers? The National Action Plan for Energy Efficiency [1] analyzed eight business case scenarios for utility investment in energy efficiency, and demonstrated customer bill reductions of between two and nine percent over the ten- to 15-year timeline of the analysis. As noted in the study, "Even though the efficiency investment and decreased sales drives rates slightly higher, this increase is more than offset in average customer bills due to a reduction in energy usage."

Customers will also benefit from improved system reliability and spillover effects such as increased retail stocking of energy efficient products, and contractors and home builders who incorporate energy efficiency services into their business models. Many customers derive personal satisfaction from taking action to reduce energy use and protect the environment.

## Meeting revenue requirements

In order for energy efficiency to represent a successful business proposition, it is important to ensure that the utility is not financially harmed by the reduced energy sales that result from energy efficiency initiatives. Utility revenue requirements are comprised of variable costs and fixed costs. Variable costs, such as fuel, decrease when sales decline. However, fixed costs such as infrastructure, administrative expenses, and payments in lieu of taxes do not decline with reductions in sales. To the extent that fixed costs are recovered through per-kWh and per-therm charges, declining sales will cause a greater reduction in revenues than costs. In light of this issue, steps can be taken to ensure that energy efficiency initiatives do not have a negative impact on the utility's financial health.

An article in the July/August 2009 edition of the American Public Power Association's (APPA) *Public Power* magazine summarizes actions that utilities with successful energy efficiency initiatives have taken to ensure that energy efficiency programs do not cause a negative impact on their bottom line. The most critical factor is to make timely rate adjustments to ensure cost recovery and address potential revenue shortfalls. Public power

utilities that are regulated by local governing bodies generally have an advantage over investor-owned utilities in terms of having greater flexibility to adjust rates as needed. To accomplish this objective, the APPA article sets forth the following recommendations:

- Educate governing boards on long-term financial benefits of energy efficiency to the utility and the customer. Key selling points include the fact that in the long run, energy efficiency costs less than supply-side investments, and reduces the risks associated with future climate-related regulations. It is also important to emphasize the local economic development benefits associated with energy efficiency.
- Educate customers about the benefits of utility investments in energy efficiency, such as lower long-term costs, environmental benefits, and economic development benefits. Emphasize the distinction between rates and bills, and point out that energy efficiency programs represent a small portion of rates in comparison with supply-side costs.
- Track the impact of energy efficiency programs. It is particularly important to distinguish between the energy efficiency-related impacts on revenue and the impacts of other factors affecting sales such as weather and economic conditions. Other sections of this Guidebook address best practices for energy efficiency program evaluation and tracking program results.
- Ensure that load forecasts and revenue projections take energy efficiency-related impacts into account. Some public power utilities adjust financial forecasts annually (or even more frequently) to incorporate the effects of energy efficiency programs.
- Provide regular updates to the governing board on the status of energy efficiency program activities, and associated impacts on revenue requirements. Request rate adjustments on a timely basis to address revenue shortfalls.

## Business case analysis tools

Demonstrating a compelling business case for energy efficiency investments is valuable from a customer relations perspective, and also useful in requesting budgetary approval from city officials and utility governing boards. In addition to presenting compelling arguments for local economic development, civic pride, environmental responsibility, and energy independence, the rationale for investing in energy efficiency often comes down to numbers-in effect, demonstrating that over the long term, energy efficiency investments cost less than supply-side alternatives.

An early leader in the energy efficiency arena was Waverly Light and Power (WLP)-a municipally owned utility in Waverly, Iowa, serving around 5000 meters. WLP's 17-year track record in delivering energy efficiency programs demonstrates the business case for energy efficiency. In his presentation Energy Efficiency and Ethics, former WLP general manager, Glenn Cannon, describes the value of energy efficiency in today's utility business climate and summarizes results from WLP programs. WLP's Conservation Analysis spreadsheet is a straightforward tool that tracks the utility's energy efficiency program results and cost-effectiveness over the 17 years that programs have been offered. A blank Conservation Analysis template is also provided. Utilities can conduct their own business case analysis by adapting this tool to reflect their own energy efficiency program offerings, costs, and results.

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## Resources

- *Energy Efficiency and Ethics presentation*
- Waverly Light & Power's Conservation Analysis spreadsheet
- Conservation Analysis template
- American Public Power Association: A New View on Energy Efficiency for Public Power Utilities
- American Public Power Association: The Effect of Energy Efficiency Programs on Electric Utility Revenue

Requirements

- American Public Power Association: Reconciling Energy Efficiency Programs and Revenue Adequacy
- American Public Power Association: When More is Less
- National Action Plan for Energy Efficiency Report (Chapter 4)
- National Action Plan for Energy Efficiency: Energy Efficiency Benefits Calculator
- National Action Plan for Energy Efficiency: Business Case for Energy Efficiency Presentation

# ENERGY EFFICIENCY GUIDEBOOK FOR PUBLIC POWER COMMUNITIES

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Energy Center of Wisconsin
455 Science Drive, Suite 200, Madison WI 53711
608.238.4601
www.ecw.org