

Is it Time to Start Running Energy Efficiency as a Business?

The New York REV Context

New York's "Reforming the Energy Vision" or "REV" seeks a great many changes to the way utilities do business and how distribution systems and the buildings connected to them work. Thus far, most of the discussion of REV in the literature has focused on utility earnings incentives and treatment of energy efficiency (EE) as any other distributed energy resource (DER) for the purpose of avoiding distribution system investments.

Recently under REV, one of the more interesting changes involving EE has emerged whereby EE will evolve from a regulatory compliance exercise with dedicated cost recovery mechanisms to a core element of the utility's business and a part of base rates. The challenge here is: How do utilities analyze EE investment options to fit within their business planning, budgeting and ratemaking processes and simultaneously address their state EE regulatory requirements?

One Clue: Sales & Marketing in a Competitive Environment

As utilities evolve, proceedings like REV will have them open their distribution systems to access and use by third parties, embrace behind the meter renewable energy, and accelerate control of energy usage behind the meter ("smart buildings") through third-party or utility-provided internet of things services. For all intents and purposes, this will have the effect of making utilities become more and more like competitive businesses. At the same time, however, they will still function subject to regulation and determine costs and benefits of EE according to regulatory constructs like the total resource and societal tests using regulatory tools like technical reference manuals.

MCR has been taking a look at utility EE from a new strategic perspective that yields some insights for New York, other states with REV-like processes, and nationally.

MCR proposes viewing EE dollars as customer acquisition and retention costs rather than regulatory compliance expenditures. In a typical competitive business, there is a cost to both acquiring and retaining customers. These customer acquisition and customer retention costs are viewed as investments that provide a long-term revenue stream from the customer. This is a new way of thinking about EE expenditures as dollars invested in the context of the lifecycle value of a customer in terms of revenue and earnings.

What this means for a utility is targeting EE programs to help acquire new loads and retain existing ones even while optimizing the distribution system as REV and REV-like processes require. This approach has two important implications:

- Adding New Customers and Load: Utilities should consider expenditures to make new potential loads more financially attractive than other fuel sources as a cost of acquiring new load; utilities should value the acquisition cost vs. the revenue or margin value of the new load.
- Retaining Existing Loads: Utilities should consider the reduction in load due to an EE program to be the retention cost of keeping the remaining load; utilities should value the retained load vs. the cost of the reduction associated with EE.

It is critical to keep in mind that this new application of EE expenditures is made in the context of benefit for all customers – that is, the acquisition and retention costs create or retain load to the benefit of all

customers by optimizing all aspects of the utility system (supply, transmission and distribution) while also providing new, value-added products and services that customers can take advantage of.

Residential Water Heating Examples

Consider the example of water heater rebate programs from a customer acquisition or customer retention perspective.

An existing customer with a typical 94% efficient electric water heater uses approximately 2,745 kWh¹ of electricity per year to operate that water heater. If they are tempted to replace the water heater with a competing technology, an electric utility rebate would likely induce the customer to stay with electricity and purchase, for example, a new 200% efficient heat pump water heater consuming 1,290 kWh per year. This yields savings of 1,455 kWh on water heating plus 91 kWh of cooling savings due to the heat pump's dehumidification benefits. The combined 1,546 kWh per year in savings is, in reality, the utility's customer retention cost to preserve 1,199 kWh of load (1,290 kWh water heating less 91 kWh cooling savings), rather than lose the whole 2,745 kWh associated with the existing water heater, whose useful and expected life is partially expired anyway.


On the gas side, at the time of new construction, providers of competing energy sources offer customers choices and likely a variety of incentive packages. A modest gas utility rebate to induce selection of a 0.67 EF high efficiency gas water heater rather than a baseline 0.62 EF unit would result in savings of 11 therms per year to the consumer. For the gas utility, this 11 therms per year

could be viewed as the acquisition cost to gain 135 therms of new load each year rather than lose the customer and the potential for 146 annual baseline water heater therms of load to another fuel.

This type of analysis and logic can be applied to virtually any fuel, end-use technology, or market sector to fully develop data on EE savings as acquisition and retention costs at the customer, end-use and burner-tip or circuit level.

The Strategic Approach to EE

This new perspective on EE strongly suggests the need for a more strategic approach to EE planning. To develop a portfolio of energy efficiency programs as an element of the core business and in rates starts with a clear objective, a strategy and a business case from the utility (not the regulatory) perspective. Elements of the strategy and business case should include identification of the right types of customers and the right end-uses to pursue or protect; the most desirable geographic locations for particular loads given their load profiles; and the costs and benefits for the utility, its customers and its investors.

In MCR's experience working with utilities, success with this new approach requires analysis in conjunction with alignment across many functional areas of the company, including energy efficiency, strategic planning, finance, regulatory, sales and marketing, load forecasting, and distribution planning. Many utilities may choose to stay the course and view EE as a necessary response to a regulatory requirement that reduces load. Forward thinking utilities are running EE as a business that seeks investment opportunities to preserve and grow load to increase sales, revenue and earnings in the face of competition from other fuels. 

¹ All consumption-related calculations are derived from the 2016 Northeast Energy Efficiency Partnerships Mid-Atlantic Technical Reference Manual, pp. 187-198.

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