

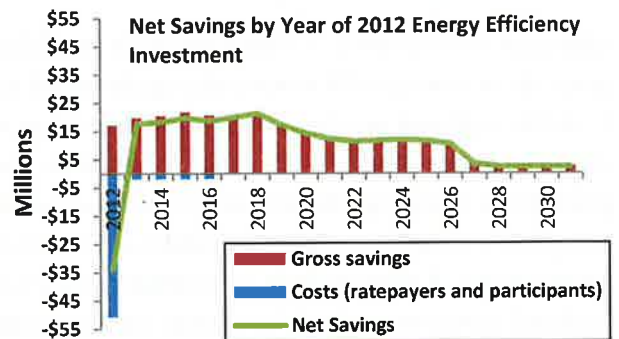
Vermont's Electric Energy Efficiency Services: Continuing to Provide Significant Benefits to Vermont

Electric utilities have long been required by 30 V.S.A. §218c to include “comprehensive energy efficiency programs” as part of their responsibility to deliver electricity to their customers at least cost. Funding for these comprehensive efficiency programs was incorporated into customer rates and funded through their bills. Although some utilities achieved success with early energy efficiency programs, the Public Service Board, after authorization by the General Assembly (30 V.S.A. §209), in 2000 approved the creation of Efficiency Vermont to deliver comprehensive and cohesive core efficiency programs to most Vermont ratepayers, funded through a separately stated Energy Efficiency Charge on ratepayers' bills. BED continues to deliver energy efficiency services in its territory.

Electric Energy Efficiency Investments Benefit Vermont's Economy

Energy Efficiency Investments result in a significant positive net impact on Vermont's economy. **For every \$1 million of public electric efficiency investment in 2012, \$4.6 million of present value benefit is returned to the state.** For that same \$1million, 46 job-years (46 jobs for one year, or 1 job for 46 years) will be created.¹

These impacts accrue from the direct and indirect effects of energy efficiency investments. The energy savings from the efficiency investment over the life of the measure result in significant savings to the participant and the utility system as a whole. In addition, the economic impacts of direct spending on goods and services associated with the efficiency investment, the spending on supporting goods and services by firms providing direct activity, and the re-spending of workers of their wages or disposable income from savings to households all lead to greater economic activity in the state. These positive impacts more than offset any negative economic impacts of the energy efficiency charge and participant costs associated with the efficiency measure installation.



Electric Energy Efficiency Services are Cheaper than Electric Generation

Efficiency Vermont and Burlington Electric Department are expected to deliver efficiency services in 2012-14 at a cost to ratepayers of approximately \$.037/ kWh over the lifetime of installed measures.² While this is slightly higher than in years past (in part due to an increase in requested measures such as participation in code development and other tasks that lead to market transformation but not attributable kWh savings), it is still much cheaper than generation, estimated to cost \$.067 in the absence of Energy Efficiency.³

In addition to avoiding the cost of generation, efficiency reduces the need for ISO-NE to retain generating reserves and other ancillary services. Finally, energy efficiency lowers the market clearing price for electricity that is applied to all kWh sold in the region.

Electric Energy Efficiency Services Avoid Significant Transmission and Distribution Costs

In addition to avoiding generation, energy efficiency savings at the time of peak demand significantly reduces costs associated with the delivery of electric service. Local transmission and distribution costs may be deferred or avoided – and Efficiency Vermont has been directed to target constrained areas to do just that.

Perhaps more importantly, efficiency investments reduce Vermont's share of the Regional Network Service charge. The New England states share the benefits and costs of reliability transmission projects completed in the region. These costs are significant, especially in the near term—in-progress, permitted, or planned transmission projects are projected to cost approximately **\$5 billion** regionally (in addition to the more than \$4 billion of investment Vermont ratepayers are already funding).⁴ Vermont pays these costs based on its contribution to the peak New England load. Investments in energy efficiency serve to reduce Vermont's share of the peak. Even small reductions in Vermont's load at the time of the New England peak create significant benefits for Vermont ratepayers. For 2012, avoided RNS costs are expected to be approximately \$.015 per kWh saved, increasing to \$.021 by 2016.

Electric Energy Efficiency Services Avoid Greenhouse Gas Emissions and Abatement Costs

Although Vermont has a relatively clean portfolio of electricity generation, energy efficiency reduces the need to purchase electricity from the regional market. Generating units that run to deliver kWh required at the time of peak usage, often from natural gas or oil-fired generation, have significant emissions associated with them. In 2009, every kWh saved prevented 0.828 lbs of Carbon from flowing into the atmosphere. A recent study commissioned by each of the six New England states estimated the cost to society to abate carbon equivalent emissions from the atmosphere at \$80/ton, a small portion of which is already internalized into utility costs through the Regional Greenhouse Gas Initiative. The remainder, approximately \$76/ton CO₂e, equates to approximately \$0.038 per kWh of avoided greenhouse gas abatement costs.

Energy Efficiency Services: More than just Rebates

It is often argued that both business and residential ratepayers would do energy efficiency in the absence of the incentives provided through efficiency programs. However, efficiency programs do more than simply cut checks. General awareness and marketing programs are delivered. For utilities, efficiency load forecasting input is enhanced. Technical Assistance, from identification of opportunities to potential savings and cash flow analysis to facilitation of financing incentives is provided. Efficiency Vermont and Burlington Electric Department offer far more than simple incentives.

Other Benefits of Energy Efficiency

Energy Efficiency Investments not only save energy and peak capacity costs, they provide non-energy related benefits to both the participating customer and the electric utility system. These hard to quantify non-energy benefits can include (but are not limited to) reduced operations and maintenance costs, increased productivity, increased health and safety, reduced utility disconnections, and reduced need for other public services (such as fuel assistance programs). These benefits, not quantified elsewhere, are a real benefit of electric programs. In addition, electric efficiency investments generate a revenue stream from participation in the Forward Capacity Market that is directed to provide Heating and Process Fuel efficiency measures.

¹ "Economic Impacts of Energy Efficiency Investments in Vermont – Final Report", prepared by Optimal Energy, Inc and Synapse Energy Economics, Inc for the Vermont Department of Public Service, August 17, 2011.

² This figure includes all service costs for both EVT and BED, the performance award for operation of Efficiency Vermont, and all approved evaluation costs. Efficiency measure life estimated to last 10 years.

³ "Avoided Energy Supply Costs in New England: 2011 Report" Synapse Energy Economics, Inc. 10 year levelized cost of electricity, simple average across peak and off-peak costing periods.

⁴ ISO-NE Regional System Plan Transmission Projects April 2011 Update, presentation, April 14, 2011.

General background on the EEC budget and EEC-setting process and history

Electric utilities have long been required by 30 V.S.A. §218c to include “comprehensive energy efficiency programs” as part of their responsibility to deliver electricity to their customers at least cost. Funding for these comprehensive efficiency programs was incorporated into customer rates and funded through their bills. It is required by statute for the electric energy efficiency charge to be a separately stated charge on all customers’ electric bills. This facilitates transparency and because the charge is based on the volume of consumption may also encourage customers to conserve electric usage.

Some power distribution utilities achieved early success offering energy efficiency programs. In Vermont the Public Service Board, after authorization by the General Assembly (30 V.S.A. §209) in 2000, approved the creation of Efficiency Vermont to deliver comprehensive efficiency programs to most Vermont ratepayers. Today, Efficiency Vermont delivers energy efficiency programs to the state and The City of Burlington Electric Department delivers energy efficiency services in its territory.

Various Public Service Board Orders and established screening methodologies show that the investments made by Efficiency Vermont are cost effective (meaning that they cost less to implement than it would cost to generate and deliver the actual electricity). These savings accrue directly to participants of Efficiency Vermont by lowering electricity bills.

In order to benefit directly from paying the charge, it is recommended that customers participate in the programs offered. The programs are designed to put efficient equipment, appliances, lighting and materials within financial reach of interested customers. While financial incentives may vary by program, they are intended to motivate customers to invest in more energy efficient hardware for their homes and businesses.

In aggregate, the total energy savings acquired by Efficiency Vermont statewide also has the indirect effect of keeping rates stable and lowering customer bills. A more energy efficient “grid” reduces the need to purchase power as well as the need for costly transmission and distribution upgrades which are often associated with increasing customer demand.

There are also economic benefits associated with reducing energy use. For example a recent Vermont study showed that every \$1 million of electric efficiency investment resulted in creation of 46 job-years and \$4.5 million positive impact on Gross State Product. These are real economic impacts.

Some of the above mentioned savings considerations are long term in nature and are difficult to see when a customer struggles to pay their monthly bill. The Public Service Board balances rate impacts with a number of other legislatively directed considerations such as the need to mitigate transmission and distribution upgrades and consideration of greenhouse gases when they determine the three year budget for Efficiency Vermont. They last set a three year budget in 2011, covering the 2012-14 period;

Energy Efficiency Charge

Budgets for energy efficiency programs are set on the legislative directive to acquire all reasonably achievable energy efficiency potential. Energy efficiency is the first priority resource because it is the least-cost resource compared to all other resources of power generation. An investment in energy efficiency is also an investment in power that otherwise does not need to be produced in the first place.

The following is a summary of the energy efficiency charge collected by utility for 2011, 2012 and expected collections for 2013. Additional and complete reporting of how the funds are spent can be found in Efficiency Vermont's annual reports found on their website at the link below (note that annual reporting on spending may differ from collections).

http://www.encyvermont.com/docs/about_ency_vermont/annual_reports/Efficiency-Vermont-Annual-Report-2012.pdf

EEC Collections by Utility (Electric only)

	2011	2012	2013
Efficiency Vermont	\$37.7	\$38.3	\$41.7
Burlington Electric Dept.	\$2.1	\$2.1	\$2.3
Total	\$39.8	\$40.4	\$44.0

Ways to get value in return for contributing to the EEC (general advice)

Active participation in energy efficiency programs is the best way to get value in return for contributing the energy efficiency charge. Low hanging fruit (like lighting) is often an avenue for quick return for among first time participants. Efficiency Vermont can also provide technical assistance with planning and investment payback scenarios. More about the services of Efficiency Vermont can be found at this link <http://www.encyvermont.com/Index.aspx>