



# Efficiency Vermont

## ANNUAL PLAN 2012

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A decorative graphic at the bottom of the page consisting of layered, wavy shapes in shades of green and white, representing a landscape or mountains.

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### 1. Introduction

Since 2000, Efficiency Vermont has worked hard to provide all Vermonters energy efficiency solutions that deliver meaningful results. Efficiency Vermont continues to be a national leader, and in 2012, it will deliver on its mission as defined by the Vermont Public Service Board:

*“Design and implement demand-side services and initiatives to comprehensively address cost-effective opportunities associated with electric and Heating-and-Process-Fuels energy efficiency.”<sup>1</sup>*

Efficiency Vermont will fulfill this mission by offering comprehensive energy efficiency services including financial incentives and technical assistance to all Vermont families and businesses. These services will enable Vermonters to save money and energy by helping them use electricity and heating fuels more efficiently.

The Board specifies a number of areas of focus for Efficiency Vermont to achieve its mission, which include the following:

- Provide energy solutions to all customers to help them achieve high levels of savings through both electric and thermal efficiency.
- Enable Vermonters to optimize their investments in energy efficiency by developing and promoting financing tools and analysis targeted to their specific needs.
- Collaborate with partners such as weatherization assistance programs, fuel dealers, and others, to maximize efficiency benefits for all Vermonters.
- Make continuous and proportional progress toward meeting Vermont’s statutory building efficiency goals to improve the energy efficiency of 80,000 Vermont homes by 2020.
- Design and implement programs that can be scaled to meet statutory building efficiency goals in the future.
- Maximize ratepayer benefits by continuous improvement in Efficiency Vermont operations that deliver programs and services to all Vermonters.

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<sup>1</sup> “Order of Appointment for Vermont Energy Investment Corporation.” Docket 7466, December 20, 2010, page 4. Vermont Energy Investment Corporation is a nonprofit corporation authorized by the Vermont Public Service Board to operate Efficiency Vermont.

The Efficiency Vermont 2012 Annual Plan describes its approach to addressing these areas of focus, as well as the specific performance goals adopted by the Board for the 2012–2014 performance period.

### **1.1 Comprehensive Strategies to Help Vermont Families and Businesses Save Money and Energy**

With efficiency at its core, the Annual Plan features a heightened emphasis on the major customer-focused strategies that provide opportunities for all Vermonters to save money and overcome financial and practical barriers to improving the efficiency of Vermont’s homes and businesses. These strategies include:

- **Engage Customers:** Help as many business and residential customers as possible become active, ongoing participants in Efficiency Vermont energy solutions.
- **Collaborate with Partners:** Work with trade allies, community groups, and others to leverage resources and support shared objectives while ultimately maximizing the value of Efficiency Vermont services for its customers.
- **Deliver Comprehensive Approaches:** Continue to develop a successful model for customers to meet all of their energy efficiency needs, whether electric or thermal, in the simplest, most efficient manner possible, from initial scoping to completion.
- **Promote Key Technologies:** Continue to be a national leader in the provision of cutting-edge technical assistance and expertise to help customers take advantage of new and existing technologies that are high-performing, are cost-effective, and will help them meet their personal or business needs as energy efficiently as possible.
- **Provide Financing and Financial Incentives:** Increase efforts to help residential and business customers access the resources they need to invest in energy efficiency with financing products that are simple and attractive.

Each of these strategies is described in detail in the Annual Plan, both generally and in relation to Efficiency Vermont’s specific reporting categories.

### **1.2 Transforming the Market**

Efficiency Vermont strives to transform markets over time so that energy efficiency becomes “business as usual.” Efficiency Vermont does this through a thorough understanding of customer motivations and barriers. This approach allows Efficiency Vermont to design programs that deliver customer value and incorporate market research, best practices, and technology innovations. By working with both customers and the full range of the supply chain, Efficiency

Vermont can help realize substantial cost-effective energy savings and long-term market transformation.

### 1.3 Energy Savings Goals and Budgets

The year 2012 marks the first year of a new, three-year performance period. The Public Service Board has adopted robust budgets for the 2012–2014 period that will make possible a level of savings and benefits to Vermont homes and businesses that will continue to lead the nation. In doing so, the Board cited the significant economic benefits (both direct and indirect) that energy efficiency investments provide to Vermont families and businesses.

These budgets, which include both electric and heating and process fuels components, were adopted through the newly developed Demand Resources Plan, an extensive, public and transparent process.

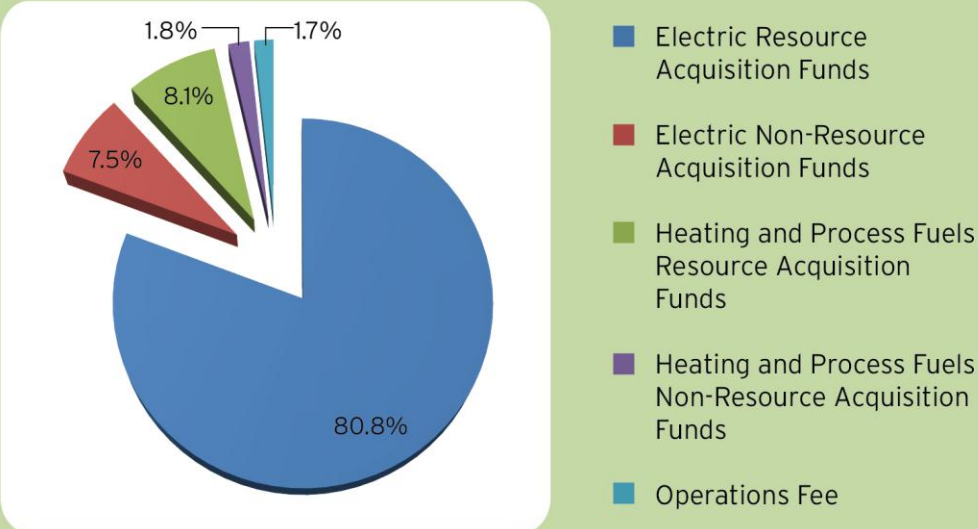
Importantly, Efficiency Vermont’s goals (referred to in the Demand Resources Plan as “Quantifiable Performance Indicators”) are not limited to maximizing energy savings or peak demand reduction. Although those goals are centrally important, they are established within a context that also requires attention to other public policy priorities such as investment in benefits for residential ratepayers; geographic equity to ensure all Vermonters benefit; and efforts to ensure that low-income Vermonters benefit. As in past years, Efficiency Vermont will operate under a performance-based model that gives significant weight to the degree to which these goals are achieved.

The Appendix includes a comprehensive list of each of the 2012–2014 goals for Efficiency Vermont as established by the Public Service Board.

The funding sources for electric and heating and process fuels for Efficiency Vermont energy solutions are separate and distinct. Electric services are funded through the energy efficiency charge; heating and process fuels services are funded by Vermont’s Regional Greenhouse Gas Initiative revenues and revenues that are generated by Efficiency Vermont’s bidding of energy capacity savings into the regional ISO New England Forward Capacity Market. However, Efficiency Vermont strives to ensure that from the customer perspective, there is no such distinction, and that provision of services is seamless, regardless of the funding source.

The diagram below provides an overview of the Efficiency Vermont 2012–2014 budget, as adopted by the Public Service Board. Detailed budget information is provided in the Appendix.

### 2012 BUDGET SUMMARY<sup>1</sup>



(1) Budget Summary 2012 (See Appendix Table 1 for source data).

Figure 1: Budget Summary 2012 (see Appendix Table 1 for source)



### **2. Resource Acquisition Programs and Services**

Efficiency Vermont's 2012–2014 energy efficiency programs and services are designed to help Vermonters across all markets save energy and overcome barriers to taking energy-saving actions. These resource acquisition activities will be targeted to end users in existing and new residential, business, and municipal buildings, as well as private and public institutional facilities throughout Vermont. To optimally serve these diverse markets, Efficiency Vermont will continually strive to adopt new ideas and practices through collaboration with partners and participation in state, regional, and national forums and conferences.

Planned strategies include working with customers and partners to improve building and process efficiencies, collaborating with supply chain actors to help ensure the availability of efficient products and equipment, and supporting the training and education of area contractors. Comprehensive approaches include a combination of information, technical assistance, and financial assistance. Depending on customer needs, Efficiency Vermont will aid with solutions for efficient use of electric and thermal technologies such as lighting; heating, ventilation, and air conditioning; pumps and motors; refrigeration; and building shell and insulation.

#### **2.1 Major Strategies for 2012-2014**

Efficiency Vermont plans to use the following major strategies to meet the energy-policy goals and savings targets established by State law and the Vermont Public Service Board:

- Customer Engagement
- Collaboration with Partners
- Comprehensive Approaches
- Key Technologies
- Financing and Financial Incentives

These strategies will be key to the implementation of Efficiency Vermont programs and services. Throughout the following section, symbols will indicate the particular areas of implementation associated with a given strategy.<sup>2</sup> These areas and their icons are described in the key below.



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*Given the myriad of challenges facing today's small businesses, Efficiency Vermont will work to make program participation simple, easy and informative through a variety of approaches.*

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## 2.1.1 CUSTOMER ENGAGEMENT

Customer decision making is central to energy savings, whether the decisions involve purchasing efficient products, investing in efficient facilities, or making a commitment to reduce energy consumption. Efficiency Vermont's services and programs aim to engage customers at these critical decision-making moments.

### Business Customers

Approximately 65% of Vermont's electricity usage is attributable to the more than 40,000 businesses across the state. The largest opportunity for savings in business energy use is in existing buildings. Efficiency Vermont's services to businesses are designed to reduce energy use in this critical sector by motivating efficient approaches to the use of technologies that have significant demand. Since lighting and HVAC systems are needed in all buildings, they account for much of the energy used by Vermont's businesses. Industrial systems and equipment also add substantially to the business energy load.

Service offerings will be established to deliver value and meet the needs of Efficiency Vermont's customers. Often, a customer's interest

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<sup>2</sup> Vermont Public Service Board, *Process and Administration of an Energy Efficiency Utility Order of Appointment*, Appendix B, (December 20, 2010): 35.

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in a non-energy benefit (such as increased product output or employee comfort) provides the motivation for implementing an energy-saving project. Efficiency improvements also provide an effective way to increase profit margins for business customers, helping them stay competitive in challenging economic conditions and fostering opportunity for economic development within the state.

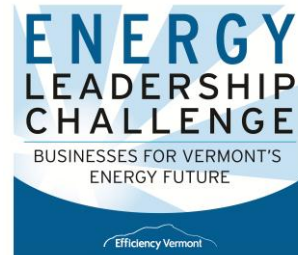


**Small Business Support.** The majority of businesses across Vermont are small businesses. Small business owners often want to save energy and money, but have neither the time nor the information to know the best ways to do that. Given the myriad of challenges facing today's small businesses, Efficiency Vermont will work to make program participation simple and effective through a variety of approaches:

*Outreach* — Customer education is key to empowering business owners to reduce their energy use. Efficiency Vermont will expand its efforts to raise customer awareness of the programs available across the state and the value of energy efficiency in general. Efficiency Vermont will use articles and advertisements in trade publications, contributions to industry e-newsletters, participation in trade association activities, participation in social media, and targeted direct response outreach to communicate with Vermont's small businesses.

**NEW!** *Customer Service Support* — In 2012, Efficiency Vermont will supplement its current customer service support with small business specialists who will be available to assist customers over the phone with identifying and prioritizing opportunities, solutions, and programs. These staff members will also help customers identify contractors and complete rebate forms.

*Rebate Programs* — Efficiency Vermont is committed to making program participation easy. The standard rebate program will continue offering preset rebate amounts for efficiency improvements common among small businesses, such as those addressing lighting, heating, air conditioning, ventilation, and refrigeration. The standard rebate program also includes specialized rebate opportunities for



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*The Energy Leadership Challenge will continue to engage the top 300 commercial energy users in Vermont.\* Businesses are challenged to commit to taking action to achieve 7.5% energy savings at their facilities over a two-year timeframe. The challenge creates a framework for providing enhanced services to businesses that demonstrate their own greater commitment to efficiency.*

*\* Exclusive of IBM and OMYA territory*

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targeted subsets of business owners, such as farmers, rental property owners, and even users of compressed air systems.



**Account Management for Vermont’s Largest Business Customers.** Developing customized energy solutions for Vermont’s largest commercial, industrial, and institutional businesses<sup>3</sup> continues to be an important strategy for achieving energy savings. Efficiency Vermont will continue to establish itself as a strategic partner for these business customers to help create a comprehensive portfolio of opportunities, including technical and financial analysis, that address their specific needs. These tools can then be incorporated into their planning cycles and processes. Continuing in 2012, there will be an emphasis on long-term efficiency opportunities and comprehensiveness of projects, including energy and demand savings as well as electric and heating and process fuels efficiency.

The Energy Leadership Challenge that was launched in 2011 will continue in 2012. The program provides a framework for companies to pursue aggressive savings targets and be recognized as leaders within the state.



**Target Market Initiatives.** Efficiency Vermont will continue to implement initiatives for overcoming barriers to efficiency improvements that exist within specific customer-based markets, such as colleges and universities, retail establishments, farms, grocery stores, hospitals and health-care organizations, K–12 schools, the hospitality field, ski areas, state buildings, and others. Because markets are dynamic and evolving, understanding them is not a one-time task but a continuous undertaking. Technology options, consumer demand, information levels, common practice, and costs are continually changing.

By understanding a market’s common characteristics and decision-making drivers, targeted strategies can be put forward that effectively deliver value and overcome barriers to investment in energy efficiency projects. In this way, greater market penetration can be achieved than if activities occurred only at individual project levels. Efficiency Vermont strives to identify such markets and match the most effective approaches and technologies to each market’s particular needs. For

<sup>3</sup> Defined as businesses with electricity usage greater than 500 MWh each.

**GET STARTED TODAY!** 

There are many ways for agriculture and farms to save money and energy. Start with:

- Agricultural Lighting
- Agricultural & Dairy Equipment
- Refrigeration

[SEE ALL](#)

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instance, a school superintendent in Washington County may face budget challenges similar to those faced by a superintendent in Windsor County. By establishing services that specifically address the common challenges facing schools, Efficiency Vermont enables more projects to be implemented.

### Residential Customers

Efficiency Vermont will achieve its goals for comprehensiveness, geographic equity, and services to low-income households, as well as Vermont's Act 62 State Energy Plan goals, by providing all Vermonters with access to electric and thermal efficiency services.

The residential sector is a significant user of energy, purchasing 39% of the state's electricity in 2009 and consuming 29% of the state's energy needs overall.<sup>4</sup> To reach the state's comprehensive energy goals and help Vermonters reduce their energy use and cost, Efficiency Vermont will build on its successful strategies to serve residential customers. It will make a focused effort to provide all Vermonters access to electric and thermal efficiency services, serving all regions of the state.



**Home Performance with ENERGY STAR®.** To reach the State's statutory goal of retrofitting 80,000 Vermont homes by 2020, the Home Performance with ENERGY STAR program is critical. In 2012, Efficiency Vermont will continue to optimize marketing and outreach resources in order to increase demand for home retrofits and boost the conversion rate from home energy audits to completed projects. Activities will include collaborations with community and volunteer partners, and leveraging non-energy-related building upgrades as a way to bring customers into the program, such as HVAC system upgrades or roof and siding replacements.



**Services for Low-Income Vermonters.** In partnership with the Vermont weatherization agencies and nonprofit affordable housing providers, Efficiency Vermont will continue its existing services to benefit income-eligible Vermonters. Low-income Vermonters spend a larger percentage of their incomes on utility costs than do Vermonters with higher incomes. Thus, it is a priority for Efficiency Vermont

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<sup>4</sup> Vermont Department of Public Service. *Utility Facts 2011* (March 2011): E-1.. <http://publicservice.vermont.gov/planning/2011%20Utility%20Facts.pdf>

services to help customers make significant reductions on their utility bills.

**NEW!** Efficiency Vermont will look for new opportunities to address barriers to low-income households' participation. One major barrier to investment in efficiency for multifamily and low-income Vermonters is what is referred to as the "split incentive," in which the up-front cost to implement an efficiency project is made by property owners, yet the savings are realized by the tenants. Property owners do not realize a payback on their investments, and renters are not motivated to implement improvements to a property that they do not own. New customer engagement approaches will be developed to specifically address this issue.

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*"Our partnership with Efficiency Vermont just makes sense. Our neighbors struggling with hunger might not be thinking about energy efficiency, but any savings on monthly bills makes a big difference. Distributing efficiency products along with food assistance feeds our neighbors today and helps them feed themselves tomorrow."*

John Sayles, Vermont Foodbank CEO

Efficiency Vermont will continue to promote efficient products to low-income Vermonters through a partnership with the Vermont Foodbank begun in 2009. This innovative relationship was the first of its kind in the nation and has since been replicated in Massachusetts and other states. Through this partnership, Efficiency Vermont makes products such as compact fluorescent lightbulbs (CFLs) and advanced power strips available to low-income households, which are unlikely to purchase these products at retail.

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**NEW!**



In 2012–2014, Efficiency Vermont will expand the Foodbank initiative by enlisting additional partners, increasing product volumes for existing offerings such as ENERGY STAR qualified CFL bulbs and LED desk lamps and advanced power strips, and by introducing new products such as ENERGY STAR qualified screw-base LED lighting and water conservation products.



**Retail Efficient Products.** The largest number of transactions for individual residential customers occurs through Efficiency Vermont's offering of retail efficient products, including lighting products, appliances, and consumer electronics.



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The ENERGY STAR brand will continue to serve as a cornerstone approach for raising consumer awareness and confidence in energy-efficient products, with special promotions of higher-performing ENERGY STAR appliances where possible.



**Top Ten USA.** In order to promote high-efficiency products that exceed ENERGY STAR standards, Efficiency Vermont will continue to be a sponsor of Top Ten USA, an organization that promotes the best-of-the-best ways for consumers to save energy. Efficiency Vermont was the first energy efficiency program to become a sponsor of Top Ten USA and will again be among the leaders in the country when Top Ten USA and / or ENERGY STAR Most Efficient labels are incorporated into its appliance promotions in 2012.



### 2.1.2 COLLABORATION WITH PARTNERS

Achieving Efficiency Vermont's savings goals necessitates continued efforts to establish, maintain, and grow effective working relationships with key partners and stakeholders such as supply chain actors (installers, suppliers, distributors, and manufacturers), design professionals, national efficiency organizations, and professional or trade associations. Efficiency Vermont engages with partners by coordinating planning efforts, creating innovative programs, sharing information, training, providing financial incentives, creating cooperative marketing opportunities, and making other efforts that deliver value to partners while also promoting greater participation in efficiency activities.

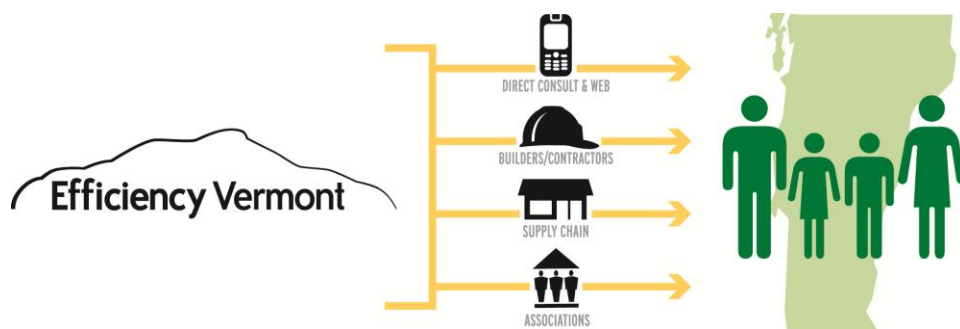


Figure 2: Connecting with Customers Every Way Possible



## Enhanced Supply Chain

**Partnerships.** As products move along the supply chain — from manufacture to distribution, sale, installation, and service — Efficiency Vermont recognizes the critical importance that partners along the supply chain have on the ultimate selection of efficient equipment and services. “Upstream” supply chain partners such as manufacturers and distributors play a key role in ensuring that the latest and most efficient technology is readily available and that knowledgeable contractors are accessible to customers.

Efficiency Vermont will strengthen and expand partnerships with those that influence Vermonters’ energy-related decisions. The strength of these partnerships will be important to increasing customer demand for energy-efficient products, services, and information. Supply chain efforts include partner incentives, outreach, education, and training in the promotion of new energy-efficient technologies. Efficiency Vermont will work with manufacturers and suppliers to ensure product availability and to reduce lead times for ordering efficient products, as well as with contractors and installers to encourage adoption of new efficient technologies and approaches.

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*Consumer electronic products are proliferating, and the combined active and standby energy use of these products can account for between 10% and 20% of the energy use in a typical home. Incentives will be provided to retailers to stock and advertise energy-efficient products.*

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Efficiency Vermont will provide a mix of efficient equipment buy-downs, promotional incentives, contractor sales incentives, and other mechanisms that lower initial-cost barriers for consumers and engage the marketplace as an ally to promote energy efficiency improvements. Efficiency Vermont will employ this strategy across technologies such as lighting and HVAC, which are relevant in nearly every business in the state, especially small businesses. There is potential to expand this approach across additional technologies, such as refrigeration and compressed air, which have relevance to many customer segments, such as grocery stores, restaurants, and manufacturing.

Efficiency Vermont will continue as a national leader in the promotion and sale of efficient products by partnering with retailers and manufacturers to provide incentives at the point of sale as well as upstream markdowns and buy-downs that reduce the retail cost of efficient products.





### **Business and Consumer Electronics Program.**

Consumer electronics products are proliferating and the combined active and standby energy use of these products now account for 10–20% of the energy use in a typical home. These plug loads (i.e., any electrical equipment that is plugged into a wall outlet or electrical plug) threaten to negate the efficiency gains that have been made with energy-efficient household appliances and lighting. Efficiency Vermont will address this challenge by expanding the business and consumer electronics program by working to enroll new stores and online retailers to increase energy-efficient products sales volumes and to increase the number of product categories in the program. In the 2012–2014 period, Efficiency Vermont will work with supply chain partners to promote a variety of new product categories, including LEDs, consumer electronics, heat pump water heaters, and super-efficient clothes dryers.



### **Partnerships with Design**

**Professionals.** Design professionals include qualified and licensed practitioners of architectural, engineering, and specialty design services. Their contributions to energy efficiency are vital on both the individual project level and the overall market level. For many projects, especially those that are larger and more complex, property owners rely heavily on design experts for advice in making energy-related decisions. Efficiency Vermont will continue to work closely with design professionals to assist them in going “beyond code” — that is, stretching beyond current energy standards and embracing high-performance building practices.

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*Working closely with design professionals such as architects, engineers, and designers, the emphasis will be to go “beyond code” — that is, stretch beyond energy standards — in order to achieve greater savings.*

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Methods of supporting partnerships with design professionals include technical assistance, analytical tool development, outreach via workshops and meetings, training, and financial assistance through design incentives. Particular attention will focus on encouraging participation by historically non-participating design professionals, especially small to mid-sized firms, by raising awareness of the benefits of energy efficiency and the services provided by Efficiency Vermont.

Efficiency Vermont will also continue efforts to strengthen relationships and raise energy efficiency awareness through support of

professional associations, such as the local chapters of the American Institute of Architects (AIA) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Activities may include membership, joint sponsorship of events, promotional campaigns, newsletter articles, or development of technical materials.



**Customer Advisory Groups.**

Efficiency Vermont will bring together select groups of customers in as customer advisory groups. The group will meet twice a year to provide critical feedback on Efficiency Vermont’s programs and services and indispensable insight into industry trends and needs. Working with this group will ensure that Efficiency Vermont maximizes the value it delivers to this important segment and the savings it brings to the ratepayers of Vermont.

Active Partnerships include:

- Vermont Ski Areas Association*
- Vermont Grocers Association*
- Vermont Retailers Association*
- Vermont Superintendents Association*
- Vermont Apartment Owners Association*
- Homebuilders and Remodelers of Vermont*
- Vermont Association of Hospitals and Health Systems*
- Vermont Convention Bureau*
- Vermont Hospitality Council*
- Vermont Fuel Dealers Association*
- American Institute of Architects, Vermont Chapter*
- Building Safety Association of Vermont*
- ASHRAE*
- Vermont Green Building Network*



**State, Regional, and National Partnerships.**

Achieving the State’s energy goals requires a comprehensive and collaborative approach, leveraging expertise and resources of key partners. Efficiency Vermont will continue to collaborate with key stakeholders such as the High Meadows Fund and NeighborWorks of Western Vermont to help Vermonters save money.

On a regional level, Efficiency Vermont will continue to partner with other energy efficiency program sponsors, such as the Northeast Energy Efficiency Partnership, the New Buildings Institute, the Consortium for Energy Efficiency, and the American Council for an Energy-Efficient Economy, working to establish uniform product eligibility criteria and program designs. Efficiency Vermont’s participation in regional and national organizations allows Vermont to benefit from the collective work done by these organizations and member groups in support of regional and national codes and standards, new construction initiatives, and best

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practice research. Regional and national standards make it easier for national retail chains and manufacturers to participate in efficiency programs.



### **Professional and Trade Associations.**

Efficiency Vermont partners with more than 75 professional and trade member organizations representing a wide variety of constituents, leveraging association networks and mechanisms to further engage customers. Associations are motivated to deliver value to their membership; Efficiency Vermont can help them do this. By sharing information and best practices in newsletter articles, providing event support, and promoting the benefits of efficiency upgrades, Efficiency Vermont informs customers and partners about the value of efficiency in a way that will resonate with their needs, and concerns.



### **Low-income Electrical Efficiency Partnership (LEEP).**

Income-eligible Vermonters will continue to be able to obtain low- or no-cost efficient lighting and water conservation products through LEEP. This partnership teams Efficiency Vermont with the state's five community-based weatherization agencies to provide services to income-eligible Vermonters. LEEP also supports early replacement of inefficient major appliances, including refrigerators, freezers, and clothes washers, as well as conversion of electric water- and space-heating equipment to less-costly natural gas systems, where available.

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*The long-standing commitment to community-based energy-saving projects will continue, providing support and assistance to town-energy committees and non-profit organizations.*

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Efficiency Vermont also will continue to serve low-income Vermonters who are not participants in the weatherization agency process through ongoing promotion of LEEP's Major Appliance Retrofit Service (MARS), which targets replacement of inefficient refrigerators, freezers, and clothes washers with ENERGY STAR models.



**Vermont Fuel Efficiency Partnership (VFEP).** VFEP is designed to increase the efficiency of apartment buildings that house income-qualified tenants. In 2012–2014, Efficiency Vermont will continue to support VFEP through funding for thermal and electric measures. VFEP is a partnership among Efficiency Vermont, the Central Vermont Community Action Council, the State's

Weatherization Assistance Program, the Vermont Housing and Conservation Board, and the Vermont Housing Finance Agency.



**Partnering with Communities.** Efficiency Vermont will continue its long-standing commitment to supporting community-based energy-saving projects and events designed to achieve savings in residential, small business, and municipal facilities. Throughout the state, Efficiency Vermont will provide support and assistance to town energy committees and nonprofit organizations interested in leading energy-saving efforts. This assistance may include planning guidance, promotions, educational materials, volunteer training, and the contribution of efficient lightbulbs and water-saving devices.

**NEW!** The focus for 2012–2014 will be to implement strategies that provide an efficient and coordinated approach among community partners. Efficiency Vermont will work with a broad range of local partners – employers, energy committees, business associations, and congregations, among others. For example, Efficiency Vermont will continue its collaboration with the Vermont Energy and Climate Action Network — a network of more than 150 town energy committees and coordinators — to implement a broad range of community-based programs. Efficiency Vermont will establish a suite of turnkey energy efficiency programs that local partners can implement, with Efficiency Vermont providing guidance, training, and funding. These turnkey programs will be designed to empower local organizations and committees to take action while minimizing the need for additional resources from Efficiency Vermont or others.

### **2.1.3 COMPREHENSIVE APPROACHES**

To best serve business and residential customers and maximize opportunities for energy savings, Efficiency Vermont uses a “whole building” comprehensive approach that integrates heating and process fuels services with its existing electric efficiency services, as well as those offered by partners. Close coordination with the Green Mountain Power Energy Efficiency Fund, Burlington Electric Department, and Vermont Gas Systems service delivery is particularly important. Efficiency Vermont provides comprehensive electrical and thermal efficiency services to residential and business new construction projects, and strives to capture electric savings opportunities in thermal retrofit projects.

## Business Customers



**Support for High-Efficiency, High-Performance New Construction.** Approximately 500 new commercial and industrial buildings in Vermont are constructed or undergo major renovation every year. This represents more than 6 million square feet of floor space and an annual investment of more than \$600 million. Almost half of these new buildings are small (less than 5,000 square feet); only about 10% are bigger than 25,000 square feet. Efficiency Vermont's activities include helping Vermont's design and construction community maximize the energy savings potential in each completed new building.

In the 2012–2014 performance period, Efficiency Vermont will continue to offer both customized services and streamlined approaches to encourage and support energy-efficient design in commercial new construction projects. Allowing different mechanisms for program participation will promote maximum market penetration. Key aspects of new construction efforts:

- **Continuing partnerships** with national and regional organizations, such as the New Buildings Institute, to promote building to Core Performance criteria as a method for achieving high performance in commercial new construction buildings.
- **Leveraging customer interest** in green rating systems such as LEED (Leadership in Energy and Environmental Design), to achieve superior building energy efficiency.
- **Monitoring business new construction market activity** to ensure optimal early project enrollment, which will allow for fully integrated design and present the greatest potential for energy savings.
- **Sharing Commercial Building Energy Code information** to educate and inform design professionals, municipalities, and contractors about the State's new standards.
- **Updating the Multifamily Comprehensive Track** for nonprofit affordable housing providers based on the updated Residential Building Energy Standard (RBES) and the ENERGY STAR Version 3 specification.



**Building Performance for Small Business and Multifamily Buildings.**

In 2010, Efficiency Vermont began offering incentives to owners of small businesses, rental properties, and mixed-use buildings for improving the thermal energy efficiency and comfort of their buildings. This work is coordinated and integrated with electric efficiency activities to maximize customer benefits. Conceptually, Building Performance offers an extension of the Home Performance with ENERGY STAR service. Home Performance with ENERGY STAR contractors must undergo additional training targeted to business and multifamily building conditions so that they provide competent and comprehensive assistance to customers. Energy audits and improvements must be performed by a contractor certified by the Building Performance Institute. In 2012, Efficiency Vermont will continue to expand this service by increasing the contractor pool and by offering training and marketing support to contractors.

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*Vermont's small businesses are an engine for job growth in the state, and energy costs can have a significant impact on their bottom line.*

*Energy efficiency programs such as the Building Performance program provide small (and large businesses) with solutions to increasing energy efficiency and reducing energy costs.*

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*Enhance operational efficiency.* In the commercial and industrial sector, Efficiency Vermont will focus on industrial process improvements, exploring ways to leverage energy efficiency and lean manufacturing practices in tandem. For many companies, the electrical use associated with industrial process applications is far greater than that associated with building system energy use. Achieving significant reductions in electricity

consumption requires projects targeted at systems such as compressed air, process pumping and motor loads, snowmaking, and process heating and cooling. Further efficiencies for large commercial and industrial customers can also be accomplished via HVAC operational improvements, including retro-commissioning, building retuning<sup>5</sup>, and continuous monitoring to optimize energy use over time. New approaches for large commercial and industrial customers will be piloted within the structure of the Energy Leadership Challenge.

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<sup>5</sup> Retuning is a systematic, automated process to detect, diagnose, and correct operational problems with building systems and their controls.



## Residential Customers



**Support for High-Efficiency, High-Performance New Construction.** The Vermont ENERGY STAR Home program, Efficiency Vermont's award-winning residential new construction initiative, has long promoted comprehensive attention to electric and thermal efficiency through technical assistance, home energy ratings, and financial incentives. Efficiency Vermont will continue to promote the Vermont ENERGY STAR Home as a standard of quality and performance in residential single-family and multifamily new construction.

Efficiency Vermont, the national *ENERGY STAR Partner of the Year* in 2011, has helped Vermont attain one of the highest penetrations of ENERGY STAR new homes of any state in the country. Over the 2012–2014 period, Efficiency Vermont will work toward increasing program participation market share to 40% in the residential new construction program. Efficiency Vermont will also continue to provide educational workshops and training to builders, real estate brokers, architects, and others focusing on building science, energy code, and ENERGY STAR Homes.

Efficiency Vermont will assist the residential market in meeting and exceeding the State's Residential Building Energy Standard codes, and will promote low-load and net-zero building practices. Efficiency Vermont supports transformation of the residential new construction market with innovative program design that is structured to support both leading and lagging builders. The program offers three distinct service tiers that create an on-ramp by which lagging builders can meet energy code and a pathway by which leading builders can go deeper:

- **Base Tier: Energy Code Plus.** Vermont's Residential Building Energy Standards were updated in 2011 to bring the state into compliance with the 2009 International Energy Conservation Code. The Energy Code Plus service provides builders with free technical assistance so they can meet or exceed all code requirements, as well as a Home Energy Rating Certificate, a Residential Building Energy Standards Certificate, and the opportunity for financial incentives.



- **Middle Tier: ENERGY STAR Homes.** A new federal ENERGY STAR Homes specification — ENERGY STAR Version 3 — was launched in 2011–2012. This specification expands on the Version 2 requirements to provide increased energy efficiency, durability, and comfort to homeowners. The new specification includes detailed criteria addressing high-quality insulation and air-sealing details, efficient lights and appliances, HVAC design and installation, and building durability. Efficiency Vermont helps Vermont builders earn the ENERGY STAR Homes label by offering free technical assistance and home energy ratings. Builders participating in the ENERGY STAR tier also have additional opportunities for incentives based on the Home Energy Rating Score, and receive a Home Energy Rating Certificate, Residential Building Energy Standards Certificate, and ENERGY STAR Home label when qualifications are met.
- **Highest Tier: Net-Zero-Ready.** The highest-tier service is under development and will launch in 2013 to support builders in reaching a Passive House or net-zero-ready level of performance. Efficiency Vermont will continue to investigate best practices for low-load homes in cold climates to inform the design of this service tier, including evaluation of demonstration and monitoring projects.



Figure 3: Passive House Design Used for Green Mountain Habitat for Humanity, Charlotte, VT



### Market Building for Comprehensive Retrofits of Existing Homes.

Although projected Forward Capacity Market and Regional Greenhouse Gas Initiative revenues alone are not sufficient to meet the goal of 25% savings in 80,000 housing units by 2020, Efficiency Vermont’s heating and process fuels services are designed to, in the words of Act 92, “make continuous and proportional progress toward attaining the overall state building efficiency goals.”



**Home Performance with ENERGY STAR.** For existing homes, Home Performance with ENERGY STAR helps homeowners make comprehensive energy efficiency home improvements through a network of private independent contractors who are certified by the Building Performance Institute. Efficiency Vermont will continue to provide contractor training, technical assistance, and quality



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assurance, as well as offering customer incentives and producing a statewide marketing campaign. Home Performance with ENERGY STAR is supported by a combination of heating and process fuels funds, the Green Mountain Power Energy Efficiency Fund, and Energy Efficiency Charge funds.

**NEW!** In the 2012–2014 period, as Efficiency Vermont strives to increase program participation, homeowners will be encouraged to include both thermal and electric measures in their retrofit projects. In order to achieve these goals, Efficiency Vermont will make program enhancements that are focused on expanding education and information. Efficiency upgrades such as those related to water heating and solar hot water will be promoted as a way to encourage comprehensive building improvements.



**Services for Low-Income Vermonters.** Continuing services will include, at a minimum, direct installation of electric and water efficiency measures, early replacements of major appliances, and custom support to increase the efficiency and affordability of Vermont’s single-family and multifamily housing stock through new construction, renovation, and retrofit projects.

**Behavioral Approaches.** Efficiency Vermont will seek to quantify savings from residential, commercial, and industrial behavioral approaches. Efficiency Vermont will seek collaboration with utilities associated with feedback strategies such as in-home displays, web portals, and energy reports comparing energy usage to that of peers. Efficiency Vermont’s work in this area may lay the foundation for bringing greater intelligence to customers’ use of energy from the high-resolution interval data that will soon be available from Vermont’s Advanced Metering Infrastructure (i.e., smart grid meters) implementation.

### 2.1.4 [KEY TECHNOLOGIES](#)

Energy efficiency technologies enable business and residential customers to reduce energy use, thereby saving money, these technologies can increase non-energy benefits such as comfort, safety, and affordability. Efficiency Vermont is committed to promoting cost-effective energy efficiency technologies and will continue to support key categories such as lighting, building systems, industrial processes, and efficient products. As the majority of Vermont’s utilities

implement smart grid meters, Efficiency Vermont will be exploring ways to use interval data to drive increased efficiency savings. In 2012–2014, Efficiency Vermont will continue to promote sub-metering, in which critical business processes are individually metered.

**NEW!** Taking a comprehensive approach, Efficiency Vermont will focus on system-wide technology applications and enhancements based on the metering level data.



**Lighting.** Lighting has the broadest application across all types of buildings and will continue to be a significant contributor to Efficiency Vermont’s electrical savings during the 2012–2014 period. To increase market penetration of efficient lighting technologies, Efficiency Vermont will continue promoting retail sales of compact fluorescent lighting, including specialty globes, reflectors, three-way bulbs, candelabras, dimmable bulbs, and CFLs shaped like traditional lightbulbs.





In the commercial lighting market, Efficiency Vermont will continue to leverage routine customer interactions with supply chain partners such as suppliers and contractors to increase adoption of efficient lighting technologies. Efficiency Vermont will continue to encourage businesses to replace their existing T12 lighting systems with newer, more efficient technologies.

**NEW!** In addition, greater emphasis will be placed on the use of lighting controls to maximize lighting savings opportunities. Lighting controls are often cost-effective, but have been underutilized in commercial applications.

Efficiency Vermont will increasingly promote light-emitting diode (LED) products for both residential and commercial applications, as commercially available products become more numerous, technology improves, and prices drop. Beyond specific technologies, particular applications for technologies will be explored and promoted when cost-effective. For instance, large-scale statewide promotion of LED lighting for street lighting applications will continue to be pursued. Other solid-state lighting will be monitored and evaluated to see how best to promote advanced lighting technologies in the state.



**Building Systems.** After lighting, the technologies with broadest applicability across commercial and residential buildings in Vermont are heating, ventilation, air conditioning, and refrigeration (HVAC-R).

**NEW!**   **Whole-Building HVAC Performance.** Although Efficiency Vermont will continue to emphasize the importance of high efficiency levels from individual pieces of equipment, additional focus will be placed on optimizing the whole-building performance of HVAC systems. A key component of successful energy management is measuring and evaluating how a building is being operated and whether its systems are performing as intended. Over the 2012–2014 period, Efficiency Vermont will continue to stress the value of ongoing system monitoring and management and will begin incorporating monitoring-based commissioning into its efficiency offerings. In particular, a range of options and recommendations for midsized buildings will be developed. A whole-building approach includes activities such as building retuning, building retro-commissioning, benchmarking, and energy management system optimizing. The size, complexity, and age of existing buildings and their systems drive the type and complexity of energy solutions that are most appropriate. Having a range of options is important, as one “size” will not “fit all.”

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*A whole-building approach includes activities such as building retuning, building retro-commissioning, benchmarking, and energy management system optimization.*

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  **Space Heating and Water Heating.** Efficiency Vermont will continue technical and financial support for oil, propane, and wood biomass boiler and furnace improvements in residential and commercial applications, coordinating with Vermont Gas Systems for natural gas system improvements.

**NEW!** In 2012, Efficiency Vermont will offer financial incentives for residential and commercial water heating systems, including wood biomass systems. Additional technology options for residential and commercial space heating using wood biomass (e.g., pellet stoves) will be evaluated for possible program expansion.

**NEW!** Another new technology being evaluated for possible introduction in 2012 is use of commercial ozone laundry washing, as a way to reduce water heating needs by cleaning clothes with ozone in cold water rather than with chemicals and hot water. This technology

would be very relevant to lodging establishments, along with other facilities that have large laundry loads, such as fitness centers.



**Refrigeration.** For certain commercial and industrial customers, such as retail establishments, supermarkets, and restaurants, refrigeration systems are a major contributor to electric energy use, and thus operating expense. Refrigeration efficiency can also play an important role in reducing peak power demand during the hot summer months. Efficiency Vermont will continue to support increased refrigeration efficiency through installation of efficient equipment. Efficiency Vermont will also place greater attention on system-wide optimization and control strategies.

**NEW!** Beginning in 2012, refrigeration compressor eligibility will be based on the technical performance of the piece of equipment, rather than simply on the type of compressor.

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*Improving the efficiency of industrial processes can provide great energy savings, increase production output, product quality, and improve a firm's bottom line.*

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**Industrial Processes.** When a business has specialized industrial processing applications, the energy usage and demand associated with those processes can dwarf the energy usage and demand associated with lighting and other building systems. Such situations can provide great savings opportunities, and improving the efficiency of industrial processes can increase production output, quality, and profit margins. Efficiency Vermont will continue to work with manufacturing and other industrial customers to ensure energy efficiency projects match production needs and save money.

Areas of particular interest include motors and motor controls (e.g., variable frequency drives), compressed air systems, specialized pumping and aeration technologies, and efficient snow gun equipment. Process improvements of these technologies typically require custom technical analyses that include equipment metering or additional testing.

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Given the range of industrial technologies that may be encountered, Efficiency Vermont provides a wide range of options to support efficient process implementation:

- Technical assistance
- Cost sharing of engineering analyses
- Pilot technology testing
- Site visits to locations using a proposed technology
- Financial assistance with analysis or equipment purchase

Efficiency Vermont will strive to provide the level and type of assistance needed to overcome project barriers and motivate a customer to action. Technologies may be electrically driven or fossil fuel-driven, providing savings in electricity or heating and process fuels.



**Efficient Products.** Efficiency Vermont will promote the most efficient appliances within the ENERGY STAR qualifying product lines, including refrigerators, clothes washers, dehumidifiers, and two-speed and variable-speed pool pumps.

**NEW!** Efficiency Vermont will also begin pilot promotions of heat pump water heaters in 2012 and super-efficient clothes dryers in 2013–2014. ENERGY STAR efficient commercial kitchen equipment will be promoted to restaurants, convenience stores, and others as an easy way to save on energy bills, whether equipment is driven by electricity or fossil fuels.

### **2.1.5 FINANCING AND FINANCIAL INCENTIVES**

The initial capital investment required for energy efficiency projects in homes and businesses in Vermont is typically high — and it constitutes a major barrier to Vermont’s statutory goal of reducing energy use by 25% in 80,000 buildings by 2020. Efficiency Vermont has developed a financing strategy to help reduce these initial costs.

Compared to the total costs of new construction or new equipment purchases, energy efficiency investments are usually small. Further, financing mechanisms are typically in place for new construction projects, so that financing efficiency measures on such projects are relatively straightforward. However, implementing energy efficiency measures on retrofit projects can represent most or all of the work — and the cost. Financing options are fewer, and the costs are often viewed as an additional expense to the project, instead of as an investment in the building with a real rate of return. In fact, as many as half of homeowners and small business owners who need loans (that is, those without the ability to pay cash) might not qualify for building improvement loans without some kind of enhanced assurance of repayment. Clearly, no single financing mechanism will work across all markets and situations.

An effective approach for both homeowners and small business owners requires direct funding support (for example, rebates or incentives) as well as a financing strategy (loans) to spur energy efficiency investment in new construction, retrofits of existing buildings, and efficient equipment purchases. Given the investment necessary to capitalize Vermont’s energy efficiency needs in the context of the State’s energy use goals by 2020, financing support is a critical component of Efficiency Vermont’s programs and services.

Efficiency Vermont’s finance strategy activity is funded three ways:

1. Resource acquisition work (when financing projects leads to savings).
2. Non-resource acquisition (for research and development of programs and services).
3. Grants.

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The following initiatives will be active in 2012:

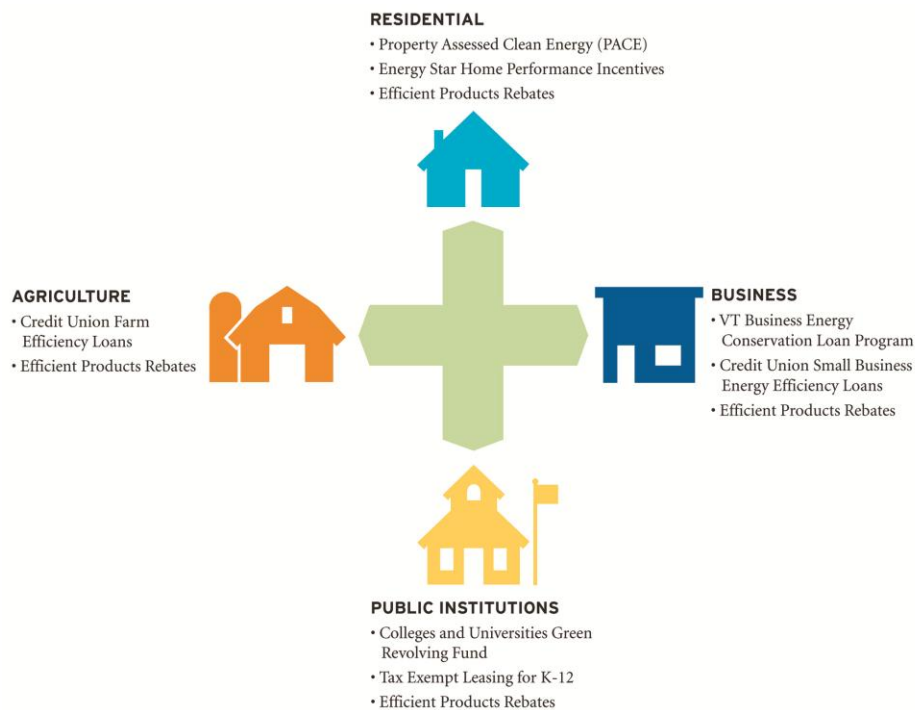


Figure 4: Incentives, Information and Financing Offerings



**Loan Loss Reserve for Commercial Retrofits.** In October 2011, the State Energy Program received a grant of nearly \$1 million from the U.S. Department of Energy for a two-year project to open private capital markets and leverage qualified tax credit bonds to stimulate commercial-sector demand for energy efficiency retrofits.<sup>6</sup> The Vermont Energy Investment Corporation (VEIC), Efficiency Vermont's administrator, will design and manage this pilot project; Efficiency Vermont will provide its programs and services for business retrofits.

The project will use existing partnerships among regulators, efficiency experts, lenders, and the business community to employ private capital and federal bonds. The goal is to create a self-sustaining, larger market for significant retrofits of commercial buildings. A loan loss reserve of \$500,000 is included in the project structure. Vermont is well positioned to systematically address and overcome known barriers in the lending community and commercial sector, and thus to make the energy efficiency retrofit market an even smarter

<sup>6</sup> The grant title is Sustainable Vermont: Putting Private Capital Markets to Work in a Model Retrofit Policy for Businesses.



investment than what has been achieved with rebates, incentives, and targeted programs.



**Property Assessed Clean Energy.** Programs such as Property Assessed Clean Energy (PACE) offer alternatives for sectors of the Vermont economy that cannot or choose not to make use of traditional bank or credit union products. The fundamental element of this mechanism is that the repayment obligation is met through an assessment fee and is secured by a lien on the property rather than by the income potential of the property owner. If the property is sold, the lien becomes an obligation of new owners until it is paid off. A properly developed program built on municipal financing could provide an important funding channel for energy efficiency, especially in the residential sector.

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*Programs such as Property Assessed Clean Energy (PACE) offer alternatives for sectors of the Vermont economy that cannot or choose not to make use of traditional bank or credit union products.*

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The program is secured by two loan loss reserve accounts — one funded by participating property owners and managed by Efficiency Vermont, and the other funded by proceeds from Regional Greenhouse Gas Initiative auctions and managed by the state treasurer. By leveraging these loan loss reserve accounts, PACE will support up to \$20 million in PACE financing, or enough for 2,000 homes. Efficiency Vermont will also provide comprehensive administrative support for municipal PACE programs, including screening proposed projects for eligibility, determining loan tenors necessary to produce positive cash flow, and informing customers of the availability of the loan program.



**Green Revolving Fund.** With financial support from the High Meadows Fund, Efficiency Vermont is working with the Sustainable Endowments Institute to encourage colleges, universities, and other nonprofit institutions to invest in self-managed revolving funds that finance energy efficiency projects and are repaid from energy savings. Efficiency Vermont and the Institute will work one-on-one with colleges to help develop their funds. Thus far, Middlebury College, Green Mountain College, and Burlington College have committed to starting green revolving funds.





**Municipal Tax-Exempt Leasing.** Efficiency Vermont will continue to support a 2011 campaign promoting tax-exempt municipal leasing to finance energy efficiency projects in K–12 schools. Municipal leasing enables schools to pursue cash-flow-positive energy efficiency projects that reduce their energy bills from Day One, with no up-front capital investment.



**Credit and bank financing.** One major barrier to wide-scale financing of energy improvements is the inability of many homeowners to qualify for conventional loans. Efficiency Vermont can take into consideration the cost savings from reduced energy use when assessing a customer's ability to repay an energy efficiency loan. Efficiency Vermont will continue partnerships with lending institutions such as Opportunities Credit Union that enables low-interest loans for efficiency projects for individuals and businesses, including farms. Efficiency Vermont will also continue to support partnerships such as the Vermont Business Energy Conservation Loan Program, a cooperative effort of the Vermont Economic Development Authority and Efficiency Vermont that assists companies with energy efficiency and demand reduction projects. The program offers loans of up to \$150,000. Efficiency Vermont ensures that energy efficiency projects meet cost-effectiveness requirements.

**Education and Information.** Providing easily accessible and understandable information helps customer optimize the use of financing for energy efficiency projects. Efficiency Vermont will provide easily accessible information about financing and incentives in marketing materials, including the Efficiency Vermont website, continue to train staff in financing concepts, and develop financial analysis tools in order to provide support for customers in making financing decisions.



In 2012, Efficiency Vermont will develop for homeowners financing summaries of proposed projects, their total costs, anticipated incentives, and expected savings. Beyond the educational efforts aimed at both lenders and potential borrowers, it is important to develop a track record of financing energy improvements so that a higher level of comfort with lenders is possible.



### **Standard Rebates and Prescriptive**

**Savings.** To encourage the purchase and installation of efficient equipment, selected efficiency measures are eligible for fixed financial incentives (“prescriptive” measures). Current offerings include rebates for lighting, HVAC equipment, economizers, small refrigeration systems, and compressed air systems, as well as energy-efficient products targeted to rental property owners and farmers. Typically, standard rebates provide an easy way for Efficiency Vermont’s partner contractors and suppliers to identify and promote opportunities, and for Efficiency Vermont to serve customers and achieve savings at lower overall cost than custom projects, through gains in administrative efficiency.

**NEW!** In 2012, an increased emphasis on the use of prescriptive rebates will help engage customers and thereby increase market penetration levels.

To make efficient products affordable and available at retail stores around the state, Efficiency Vermont will primarily use negotiated cooperative promotions (“product buy-downs” or “markdowns”) that provide incentives to manufacturers and retailers to reduce the retail costs of efficient products for consumers.

**NEW!** Efficiency Vermont will pilot such buy-down models with “big box” retailers. Cooperative promotions provide both a highly effective means of overcoming the initial-cost barrier for consumers and a greater role in product selection for Efficiency Vermont. This approach also allows Efficiency Vermont to promote specific types of lighting products that have a history of high-quality performance in reducing energy use.



### **Public Purpose Energy Service Company.**

VEIC has begun to develop the concept of the Public Purpose Energy Service Company, PPESCO. Traditional energy service company projects are designed to lower building operating costs through efficiency improvements. These companies (ESCOs) generally arrange financing and assume performance risk. They avoid the need for up-front capital and present little or no financial risk. A PPESCO would implement all cost-effective measures, rather than following the traditional ESCO model of limiting measures to those that achieve the greatest return on investment. The High Meadows Fund is supporting VEIC in the

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development of this model by providing seed funding for a pilot project aimed at helping public- and private-sector buildings achieve deep energy retrofits, using a shared-savings structure. In this model, Efficiency Vermont will conduct technical assessments and provide recommendations and incentives.



### **3. Non-Resource Acquisition Activities**

Efficiency Vermont engages in non-resource acquisition activities to administer and promote the long-term adoption of efficiency measures. Non-resource acquisition activities are those that do not directly achieve immediate energy savings. Although these activities do not generate direct energy savings, as resource acquisition programs do, non-resource acquisition activities provide services essential and critical to the operation and administration of Efficiency Vermont and to the long-term success of future efficiency savings and innovation. Functions related to non-resource acquisition include planning and reporting, research and development, evaluation, quality management, and participation in the ISO New England Forward Capacity Market. The budget for these activities is detailed in the Appendix.

#### **3.1 Education**

Educating Vermonters about energy efficiency builds awareness, which, in turn, leads individuals to take action to reduce energy use through efficiency. Efficiency Vermont provides education to a broad spectrum of constituents — builders and contractors, real estate professionals, town administrators, K–12 students, and the general public. The primary categories in which Efficiency Vermont provides education are described below.

#### **Codes & Standards Support**

Efficiency Vermont provides energy codes and standards training and education to Vermont's building community, with a goal of supporting the American Recovery and Reinvestment Act (Recovery Act) requirement of 90% energy code compliance by 2017. Efficiency Vermont provides training on construction practices to not only meet, but exceed energy efficiency levels required by code. These guidelines are generally updated every three years.

Efficiency Vermont supports and promotes education and training in a myriad of ways. Some examples:

1. Residential and Commercial specialist staffing at the Energy Code Assistance Center and a hotline for general and technical code inquiries
2. Distribution of code books to the building community
3. Through outreach and consulting, encouragement of builders, designers, and market partners (real estate professionals,

mortgage lenders, appraisers, attorneys) to exceed existing code for efficiency standards

4. Education on residential codes through trainings and direct outreach to town clerks and zoning administrators
5. Code development support provided to the Department of Public Service

### EVT Energy Literacy Project

The Efficiency Vermont Energy Literacy Project works through partnerships with Vermont teachers, schools, K–12 associations, and existing educational programs to promote responsible energy efficiency behaviors in K–12 students that will last a lifetime. The

Energy Literacy Project also promotes increases in the overall levels of participation in Efficiency Vermont programs and initiatives, with a goal of transforming the culture of energy use in schools.



Figure 5: Bicycle Powered Lights in the Classroom

The project will include in-class energy literacy presentations at the middle and high school levels, energy efficiency service-learning projects in high schools, in-service teacher professional development, and goal-driven “whole schools” projects that would integrate all of the above with specific school energy improvements or challenges. Where appropriate, these approaches would be tied to curriculum and state education standards.

### General Public Education

General Public Education builds overall awareness of energy efficiency and the services of Efficiency Vermont. Efficiency Vermont will continue to provide technical training to other organizations through such activities as:

- Development and distribution of general consumer educational materials, such as seasonal energy-saving tips
- Participation in public events such as home shows and trade shows

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- Technical training for workforce development partners, trade allies, real estate professionals, town officials, and others

### Better Buildings by Design Conference

Efficiency Vermont annually presents a comprehensive conference on home-performance and commercial construction to support and benefit Vermont building and design professionals and support market transformation. This gathering of the region's top construction and design professionals is viewed as a key information resource on innovations in energy efficiency, superior building performance, and best practices in design, construction, and renovation. The 2012 Better Buildings by Design Conference scheduled for February 8 and 9, is expected to draw more than 1,000 building and design professionals and include over 35 workshops and 50 exhibits centered on building envelope, integrated design, lighting, and mechanical systems.

### Customer Support and Development

Efficiency Vermont's customer support and development department is a knowledge-based resource with highly trained staff ready to respond to Vermont ratepayers' inquiries through the Efficiency Vermont toll-free call center. The Contact Center provides valuable frontline consultative services for both electrical and heating and process fuel usage questions and offers general efficiency guidance. Customer support and development activities include:

- Providing education for customers on a variety of energy-related topics, including energy usage patterns to facilitate behavioral, building envelope, and equipment modifications, and new energy technologies
- Directing customers to additional resources such as the Renewable Energy Resource Center or Vermont's weatherization services
- Collaborating with utility partners on customer-related training and communications regarding energy efficiency information and resources
- Responding to general questions about residential and commercial energy codes and referring callers to the Energy Code Assistance Center hotline
- Delivering proactive customer support for Vermont's smart grid implementation
- Staffing home shows, energy fairs, and community events

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*"I always learn a lot from the Better Buildings by Design conference, not only from the workshops, but also from the vendors and other attendees."*

2011 conference attendee

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Historically, approximately 30% of the calls are not program-specific, and do not result in a referral to a specific Efficiency Vermont program. Those calls are therefore considered non-resource acquisition activities.

### 3.2 Applied Research and Development

Efficiency Vermont collaborates with others to leverage R&D funding in order to maximize the potential impact and success of these projects for Vermont's ratepayers. These activities are critical for Efficiency Vermont in its effort to provide high-quality services to consumers in an industry that sees continuous technology change.

#### Smart Grid and Advanced Metering Infrastructure

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*“Everything we do is focused on giving Vermonters’ information and solutions about the use of energy. Smart grid is simply a word for a set of tools and technology that gives rate payers and EVT the potential to take what we do now to the next level.”*

Kate Hunter, Efficiency Vermont Director of Account Management

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Over the next two years, new advanced meters (i.e., smart meters) will be installed in up to 80% of Vermont's homes and businesses. The implementation of smart meters will provide a platform to support new tools that could help ratepayers better understand their energy use. This category provides resources to explore the different types of smart grid-enabled tools that support energy efficiency, and determine which ones are most useful to customers and most cost-effective for Vermonters. The funding in this category is anticipated to support the following initiatives:

**Utility Collaboration.** Efficiency Vermont will collaborate with utilities to minimize or eliminate areas of overlap and provide a seamless customer experience between utility programs and services and those of Efficiency Vermont. Specific areas for collaboration:

- **Smart grid web portal.** Integration of Efficiency Vermont's content into utility smart grid web portals to ensure consistency and coordination with Efficiency Vermont's own web content
- **Customer call centers.** Coordination and collaboration between utility and Efficiency Vermont call centers to ensure a seamless customer experience
- **Data management.** Efficiency Vermont will seek to leverage utilities' meter data management systems (MDMS) for data storage to avoid data storage redundancies.



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**Data Analysis.** The funding in this category will also support research into analytical tools.

**Consumer Behavior Studies.** Efficiency Vermont is implementing two separate, concurrent Recovery Act-funded consumer behavior studies, one under the U.S. Department of Energy (DOE) Smart Grid Investment Grant and the other under the DOE Weatherization Innovation Pilot Project Grant. These projects will study the potential benefits of smart grid technology for residential customers, including low-income populations. The results will be analyzed in partnership with academic researchers, and will help to determine which technologies can most cost-effectively deliver energy savings to Vermonters.

### General Applied R&D

Applied R&D funding supports applied research, development, and demonstrations designed to optimize the creation of cost-effective solutions for meeting Efficiency Vermont's long-term resource acquisition goals and to enhance customer value. Efficiency Vermont will plan these activities in collaboration with others, to advance the goals of sound product and program design over time, focused on three areas:

1. Field-testing new implementation strategies
2. Technology demonstrations
3. Research on emerging technologies and innovative efficiency implementation strategies

### 3.3 Planning and Reporting

Efficiency Vermont submits monthly, quarterly, and annual reports and an Annual Plan to the Public Service Board.

**Annual Plan.** Efficiency Vermont prepares and submits an Annual Plan to the Public Service Board by November 1 prior to the Annual Plan year. This document includes a summary of all planned service delivery strategies and service offerings, market initiatives, and any other planned implementation activities for the coming year.

**Participation in the ISO New England Forward Capacity Market.** As the implementer of the State's Energy Efficiency Utility, VEIC will continue to represent the interests of Vermont ratepayers by participating in the ISO New England Forward Capacity Market,

the region's wholesale energy capacity market. This activity includes submission of bids and claims for capacity savings and reporting to ISO New England and Vermont stakeholders. VEIC will continue to participate in rule-making processes established by ISO New England regarding the establishment and operation of the Forward Capacity Market and other responsibilities associated with being a New England Power Pool (NEPOOL) member. ISO New England membership and participation fees are also included in this category.

**Demand Resource Plan and Demand Resources Plan Proceedings.** The Demand Resources Plan is a set of annual values for Energy Efficiency Utility demand-side electricity resource and non-resource acquisition budgets for a 20-year period (2012–2031), and for heating and process fuels acquisition budgets for a 10-year period (2012–2021). These plans are reviewed and approved by the Public Service Board. A variety of stakeholders, including the Vermont System Planning Committee, VEIC, and the Department of Public Service, will continue to meet to develop a proposal for selection of areas, budgets, and energy savings goals in Geographic Targeting areas. Activities in 2013 and 2014 will include adopting a 2015–2034 Demand Resources Plan.

**Vermont System Planning Committee (VSPC).** The Vermont System Planning Committee (VSPC) seeks to collaboratively address reliability issues in Vermont's electric transmission system. The VSPC, created by Public Service Board order, is a collaboration that includes representatives from Vermont's transmission and distribution utilities, and members of the public from the residential, commercial and industrial, and environmental protection sectors. VEIC participates as a non-voting member, attending meetings and participating in subcommittee work. In addition, VEIC will provide the Public Service Board, the Department of Public Service, and Vermont's utilities with 20-year projections ("Forecast 20") of electric energy efficiency savings expected to be achieved from system-wide programs in 2014 and every third year thereafter. It should be noted that on November 21, 2011, the VSPC filed a proposed amendment to the Public Service Board that would change VEIC's status to a voting member.

**Reporting.** Efficiency Vermont routinely provides required regulatory reports associated with Efficiency Vermont activity to the Public Service Board and the Department of Public Service. These reports include:

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1. Annual Savings Claim — submitted each spring
2. “Success Stories” brochure — submitted each spring
3. Annual Report — submitted each fall
4. Efficiency Vermont Monthly and Quarterly Reports
5. Customer complaint reports — submitted quarterly
6. Service Quality and Reliability Plan Report — submitted annually

### 3.4 Evaluation

Evaluation of Efficiency Vermont’s programs is fundamental in determining the accuracy of savings claims, and ensuring that Efficiency Vermont maintains an exemplary level of quality when providing services to the ratepayers of Vermont. This approach ensures that Efficiency Vermont is continually improving its programs through findings identified in its evaluation activities. This category consists of five core activities.

**Annual Savings Verification.** Efficiency Vermont Technical Services works with the Department of Public Service to prepare and review the initial savings claim.

**Technical Advisory Group.** Efficiency Vermont and the Department of Public Service, Burlington Electric Department, and other stakeholders collaborate in the Technical Advisory Group to resolve issues that may arise from annual savings verifications and to serve as a proactive mechanism for developing energy characterization and savings calculations.

**Technical Reference Manual.** The Technical Reference Manual characterizes energy-saving measures on the basis of several parameters: annual electric savings; annual coincident peak savings; annual fossil fuel energy savings; other resource savings where applicable, such as water savings and operational and maintenance costs; and incremental costs and measure lives.

**ISO New England Measurement & Verification.** VEIC's performance as a NEPOOL market participant in the ISO New England Forward Capacity Market is measured via an annual sampling plan for small, medium, and large Efficiency Vermont custom business projects. The ISO New England measurement and evaluation process includes four activities: 1) measurement and verification implementation; 2) measurement review; 3) measurement and verification finalization; and 4) equipment calibration.

**Quality Management.** Quality Management activities align with the Efficiency Vermont Administrative Efficiency Quantifiable Performance Indicator (Admin QPI) Plan and the Efficiency Vermont Service Quality and Reliability Plan (SQRP).

To ensure appropriate balance of program effectiveness and administrative efficiency concerns, the Admin QPI plan establishes performance indicators under two main categories: Management Span of Control and Key Process Improvements. Span of Control is intended to optimize efficiencies while ensuring continued market impact and effectiveness. Key Process Improvements will be managed by VEIC's Performance Excellence Team, and results will be reported to the Department of Public Service quarterly and in the annual report.

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*The Technical Reference Manual characterizes energy saving measures based on several parameters such as annual electric savings, annual fossil fuel energy savings, and other resource savings such as water savings and operational and maintenance costs.*

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The SQRP establishes performance standards and reporting requirements for key customer service categories: General Customer Satisfaction; Project Customer Satisfaction; Incoming Call Responsiveness; and Complaint Rate & Resolution. Satisfaction and performance data will serve as key drivers of continuous improvement activities undertaken by the Performance Excellence Team. Performance metrics are reported quarterly, with an annual cumulative report and summary.

### 3.5 Policy and Public Affairs

#### Public Affairs

Efficiency Vermont Public Affairs strives to communicate the value of Efficiency Vermont and its services in a wide variety of contexts to a variety of audiences, such as policymakers, the general public, and the media. Public Affairs works to keep all stakeholders well-informed of Efficiency Vermont activities, as well as the value of Efficiency

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Vermont programs and services. In addition, Public Affairs works to advance State policies that enhance these programs and services. Public Affairs will continue to support development and implementation of relevant portions of the State's Comprehensive Energy Plan.

### Regulatory Affairs

Efficiency Vermont Regulatory Affairs provides resources and expertise for Efficiency Vermont's participation in Public Service Board proceedings. Efficiency Vermont expects that, under the new Order of Appointment structure, there will be additional needs for regulatory interactions with the Public Service Board, the Department of Public Service, and other parties.

### Financing

Financing work supports the development and implementation of financial policies and products relevant to supporting investment in energy efficiency. Ongoing discussions with financial institutions in the state ensure that energy efficiency financing program developments meet the needs of Vermont homeowners as well as businesses, and that Vermont financial institutions see the opportunities for business in this sector. Development of new and useful financing products helps stretch public investment farther by leveraging private investment.

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*In 2012, leveraging public and private funding opportunities will help to deliver higher levels of benefits to Vermonters without additional investment from Vermont's ratepayers.*

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### Leveraging Funds

As authorized by the Public Service Board, VEIC is encouraged to seek non-Efficiency Vermont funds as a strategy for leveraging ratepayer funds from the Energy Efficiency Charge to achieve higher levels of energy savings and ratepayer benefit. Recent examples of this work include the low-income smart grid consumer study described in the Smart Grid and AMI section, and a two-year pilot project to open private capital markets and leverage qualified tax credit bonds to stimulate commercial-sector demand for energy efficiency retrofits. In both cases, these projects used a modest amount of Efficiency Vermont funds to draw down significantly higher amounts of federal funds and / or private capital.

In 2012, VEIC will continue to pursue leveraging opportunities, by actively seeking out and responding to public and private funding opportunities that will deliver higher levels of ratepayer benefit without additional Vermont ratepayer investment.

### **3.6 Information Technology**

Information technology (IT) efforts support a wide range of services critical to both Efficiency Vermont's day-to-day operations and long-term strategic efforts. Tools and systems developed and maintained by the IT department allow for the collection, processing, and reporting of the entire life cycle of all Efficiency Vermont projects, including information related to project participants, workflows, locations, energy usage, and energy savings claims. This information enables the successful delivery of service to ratepayers as well as the delivery of operational reporting and regulatory claims to utilities, the Department of Public Service, and ISO New England.

IT provides a variety of baseline activities supporting Efficiency Vermont efforts funded through its established non-resource acquisition budget. Baseline activities are conducted each year and are critical to the basic delivery of services to ratepayers. These activities include:

- Efforts to enhance security and protect confidential customer data
- Maintenance of databases and efforts to ensure high levels of data quality, enabling the delivery of accurate and timely reporting
- Implementation of energy savings calculations in tools that allow for the tracking of savings claims

Planned efforts for 2012 include work to improve the efficiency of entry and maintenance of Technical Resource Manual data. The scope of work includes infrastructure development to integrate new smart grid interval data delivered by utilities into Efficiency Vermont systems.

### **3.7 Administration**

Administration contains costs not captured in the other categories, but otherwise incurred by staff in their daily management of Efficiency Vermont. Examples of activities in Administration: costs of preparing for and administering general staff meetings; coordination of program implementation across different functions; and the management, monitoring, and internal communication of overall performance and spending.

## 4. APPENDIX

Table 1

<b>RESOURCE ACQUISITION</b>	
Total Efficiency Vermont Electric Funds <sup>1</sup>	\$32,482,600
Total Efficiency Vermont Heating and Process Fuels Funds <sup>2</sup>	\$3,276,300
<b>Total Resource Acquisition Budget</b>	<b>\$35,758,900</b>
<b>NON-RESOURCE ACQUISITION</b>	
Total Efficiency Vermont Electric Funds	\$3,032,000
Total Efficiency Vermont Heating and Process Fuels Funds	\$741,700
<b>Total Non-Resource Acquisition Budget</b>	<b>\$3,773,700</b>
Operations Fee	\$675,860
<b>Sub-Total Prior to Performance-Based Fee</b>	<b>\$40,208,460</b>

(1) Efficiency Vermont Resource Acquisition Electric Funds include Geographic Targeting budgets.

(2) Heating and Process Fuels budget as submitted in January 2011.



Table 2a

**EFFICIENCY VERMONT ELECTRIC EFFICIENCY PERFORMANCE GOALS 2012-2014 <sup>1</sup>**

PERFORMANCE INDICATOR <sup>2</sup>	METRIC (3-YEAR TOTALS)	DESCRIPTION
<b>Electric Efficiency Savings - Total annual MWh savings</b>	320,000 MWh	These are savings that reduce Vermont's electric supply requirements
<b>Total Resource Benefits (TRB) (2011\$) <sup>3</sup></b>	\$271,088,000	TRB are the estimated lifetime values of economic benefits that result from the avoided costs of electricity, fossil fuels, and water usage.
<b>Summer peak kW savings</b>	60,800 kW	These are reductions in summer peak electricity capacity needs. By reducing peak electric demand, the reliability of Vermont's electric supply system increases and the supply costs decrease.
<b>Summer peak kW savings in specific Geographic Targeting areas</b>	To be determined <sup>4</sup>	Geographic Targeting focuses resources on specific areas in Vermont to help avoid or delay expensive electric systems.
<b>Business Comprehensiveness</b>	To be determined <sup>5</sup>	The Comprehensiveness indicator is intended to ensure that Efficiency Vermont utilizes a comprehensive approach in business program delivery.
<b>Market Transformation Residential <sup>6</sup></b>	40%	Market transformation indicators encourage Efficiency Vermont to design and implement programs that maximize the long-term effect on the building and equipment stock in Vermont.
<b>Market Transformation Business <sup>7</sup></b>	7,360	

(1) As of this publication, final performance goals have not been approved by the Public Service Board.  
 (2) 2012-14 Performance Goals for Annual MWh, TRB and Total summer peak kW savings are exclusive of Geographic Targeting.  
 (3) TRB represents the present value of electricity, fossil fuel, wood, and water savings over the estimated lifetimes of all measures installed during the contract period, valued at avoided cost projections approved by the Board and applied by Efficiency Vermont in 2011, and calculated at a real discount rate of 5.6%.  
 (4) As of this plan's publication date, determination of Geographic Targeting areas and goals are currently under consideration by the Vermont Systems Planning Committee.  
 (5) Business Comprehensiveness QPI currently being developed by the Department of Public Service and VEIC.  
 (6) Market Transformation Residential reflects the 2014 % market share of Efficiency Vermont program participation compared to a total residential new construction 1-4 unit building permits in 2013.  
 (7) Market Transformation Business reflects reported instances where an energy efficiency measure suppl chain partner is attached to a completed business project.

Table 2b

## EFFICIENCY VERMONT ELECTRIC EFFICIENCY PERFORMANCE GOALS 2012-2014

MINIMUM PERFORMANCE REQUIREMENT	MINIMUM STANDARD TO BE MET	DESCRIPTION
Factor of gross electric benefits-to-spending	1.2	Compares ratepayer economic benefits to Energy Efficiency Charge collected.
2012-2014 spending for residential customers	\$22,000,000	Ensures a minimum amount of spending will be focused on Vermont residential customers
2012-2014 spending for low-income customers	\$7,500,000	Ensures a minimum amount of spending will be focused on low-income Vermonters.
Number of small business customers served.	1,950	Ensures small business customers will be equitably served.
Geographic Equity	Specific minimums for each county in Table 3	The Geographic Equity QPI is structured to ensure that energy efficiency benefits are geographically distributed across the state.
Administrative Efficiency - Management Span of Control	Maintaining a supervisor-to-staff FTE ratio of 8.5-to-1 or greater	These indicators ensure VEIC will continually assess operations and service delivery in order to delivery maximum value to Vermont's ratepayers.
Administrative Efficiency - Key Process Improvements	Meet all pre-determined milestones on schedule.	

Table 3

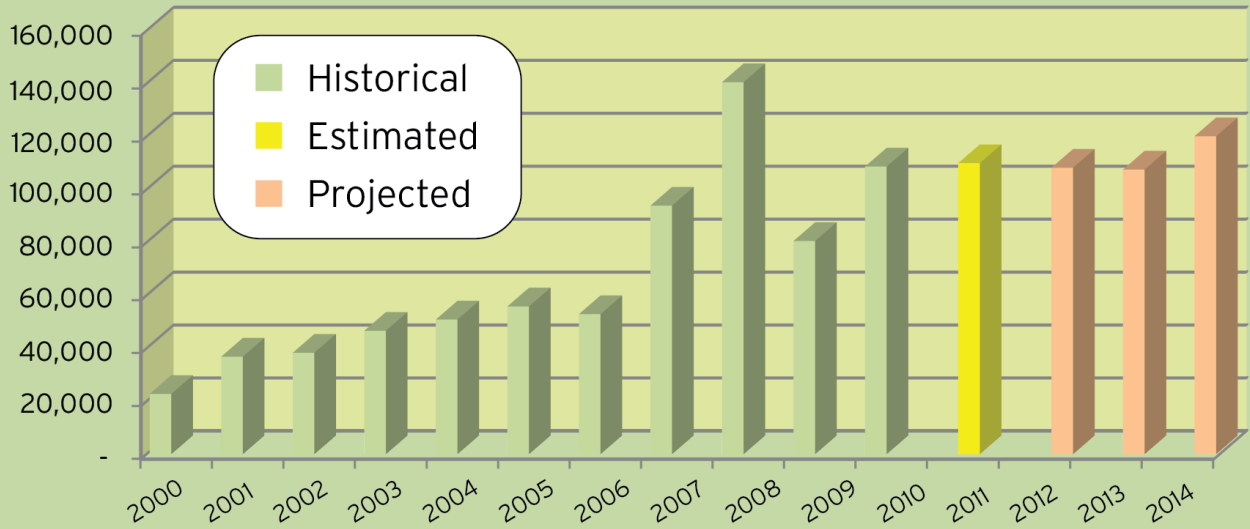
**GEOGRAPHIC EQUITY<sup>1</sup>**

<b>GEOGRAPHIC AREA</b>	<b>REQUIRED TRB PER GEOGRAPHIC AREA</b>
Addison	\$8,691,999
Bennington	\$8,763,762
Caledonia	\$7,371,474
Chittenden	\$26,941,161
Essex/Orleans	\$7,916,775
Franklin	\$11,270,965
Grand Isle	\$1,645,345
Lamoille	\$5,777,591
Orange	\$6,830,659
Rutland	\$14,551,267
Washington	\$14,053,651
Windham	\$10,507,780
Windsor	\$13,377,572

(1) To determine the Total Resource Benefits (TRB) per county, the total statewide minimum TRB was multiplied by the percent population by county to establish the minimum by county. Consistent with the prior performance periods, Essex and Orleans counties are combined.

Table 4

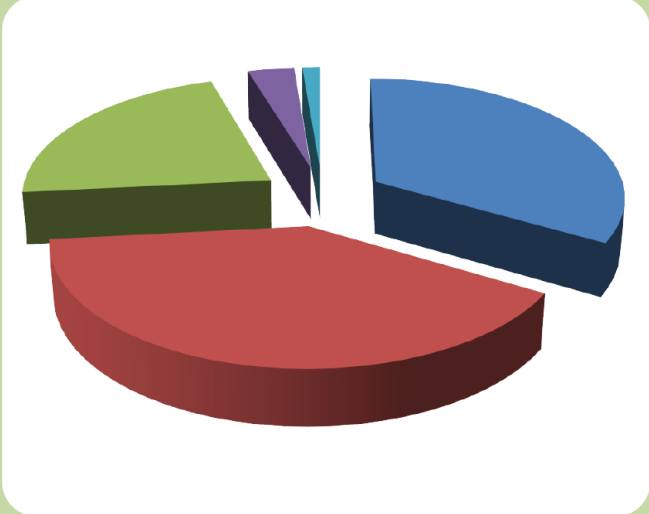
### EFFICIENCY VERMONT ANNUAL MWh SAVINGS<sup>1</sup>



(1) Projected savings include geographic targeting projections, which have not yet been approved by the Public Service Board.

Table 5

### MWh BY MAJOR MARKET FOR 2012-2014<sup>1</sup>



- Retail Efficient Products
- Business New Construction
- Business Existing Facilities
- Residential Existing Homes
- Residential New Construction

{1} Projected savings include geographic targeting projections, which have not yet been approved by the Public Service Board.

Table 6

**EFFICIENCY VERMONT HEATING AND PROCESS FUELS <sup>1</sup>  
EFFICIENCY PERFORMANCE GOALS 2012-2014**

<b>PERFORMANCE INDICATOR</b>	<b>METRIC (3-YEAR TOTALS)</b>
Thermal & Mechanical Energy Efficiency Savings - Incremental net MMBtu Savings	140,000 (proposed)
Residential Single Family Comprehensiveness:	
a. Average air leakage reduction per project	34% (proposed)
b. Percent of projects with square feet of insulation added equivalent to at least 50% of the home's finished square feet of floor area	44% (proposed)
c. Percent of projects with both shell measures and heating system measures installed	16% (proposed)
<b>MINIMUM PERFORMANCE REQUIREMENT</b>	<b>MINIMUM STANDARD TO BE MET</b>
Participation by residential customers	62.5% of expenditures <sup>2</sup> (proposed)
Spending for low income customers <sup>3</sup>	17% of expenditures <sup>4</sup> (proposed)

(1) As of this publication, final performance goals have not been approved by the Public Service Board.

(2) The minimum level of expenditures dedicated to residential customers.

(3) This performance indicator is contingent upon the Department and VEIC agreeing to the definition of "low-income."

(4) The minimum level of expenditures dedicated to low-income customers.

Table 7

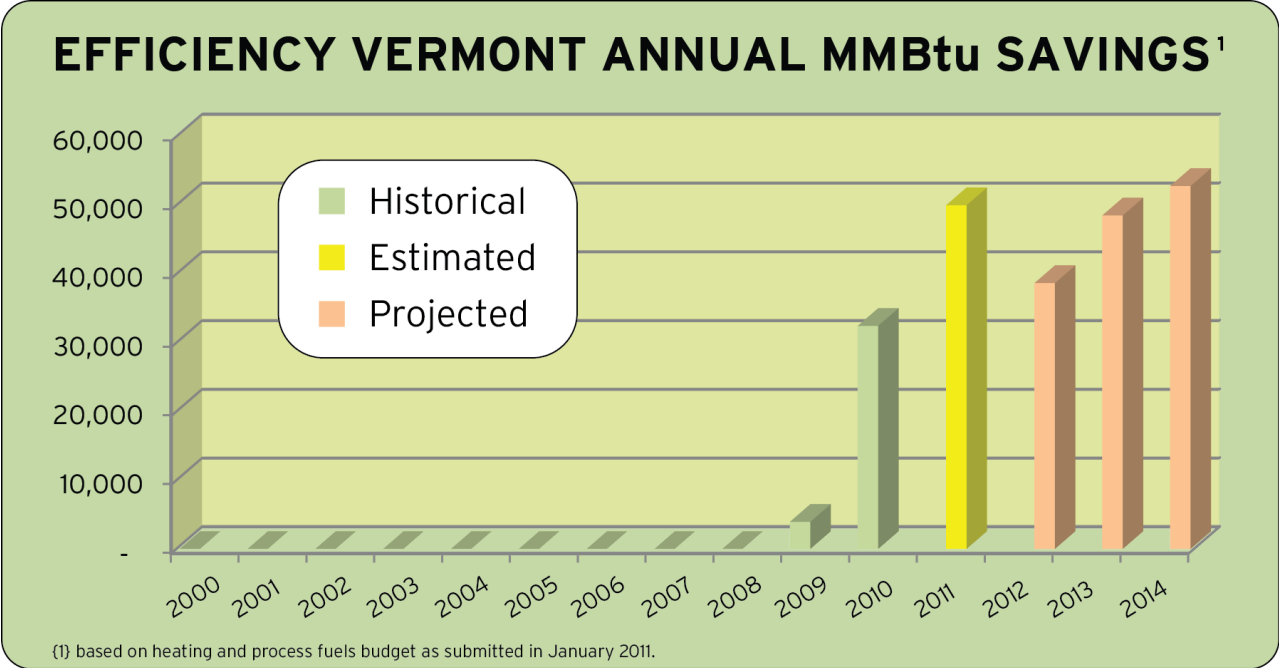
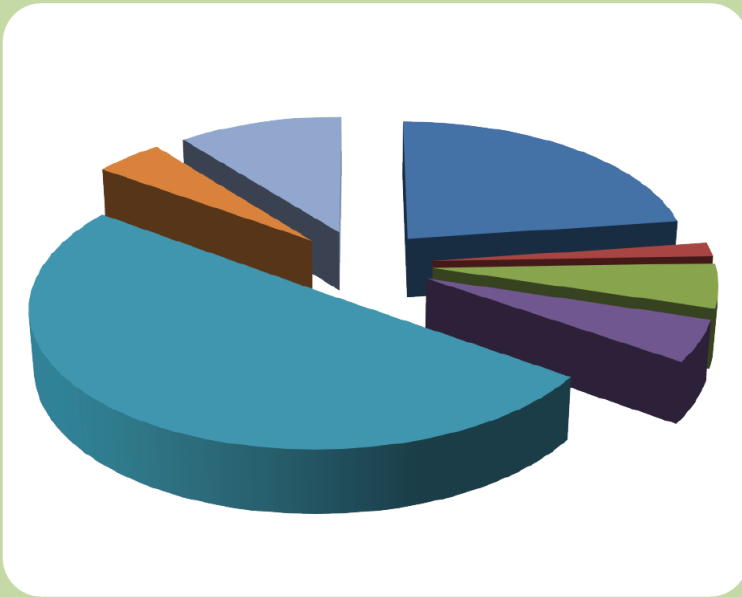




Table 8

## MMBtu BY MAJOR MARKET FOR 2012-2014 <sup>1</sup>



- Commercial Heating
- Dairy Farms
- Building Performance - Business
- Custom Commercial
- Home Performance with ENERGY STAR
- Multi-Family Low-Income
- Building Performance - Multi-Family

{1} Based on heating and process fuels budget as submitted in January 2011.

Table 9

**SOCIETAL BENEFITS AND COSTS OF ELECTRIC ENERGY EFFICIENCY PROJECTED FOR 2012-2014**

MAJOR MARKET	PRESENT VALUE OF BENEFITS	PRESENT VALUE OF COSTS	PRESENT VALUE OF NET BENEFITS	BENEFIT/COST RATIO
Retail Efficient Products	\$66,360,407	\$(6,410,737) <sup>1</sup>	\$72,771,144	n/m
Business New Construction	\$39,735,090	\$12,689,597	\$27,045,494	3.13
Business Existing Facilities	\$213,158,054	\$66,655,110	\$146,502,944	3.20
Residential Existing Homes	\$17,597,032	\$7,101,012	10,496,020	2.48
Residential New Construction	\$21,569,475	\$9,141,840	12,427,635	2.36
Core Support Services	-	\$9,595,023	\$(9,595,023)	-
<b>TOTAL</b>	<b>\$358,420,058</b>	<b>\$98,771,845</b>	<b>\$259,648,213</b>	<b>3.63</b>

(1) Avoided Operations and Maintenance costs over the lifetime of the installed measures are greater than costs of the measures. Therefore, the Benefit/Cost Ratio is not meaningful.

Table 10

## EFFICIENCY VERMONT BUDGET

For the Period January 1, 2012 through December 31, 2014<sup>1</sup>

	ESTIMATE YEAR 2012	ESTIMATE YEAR 2013	ESTIMATE YEAR 2014	YEARS 2012-2014
<b>RESOURCE ACQUISITION</b>				
ELECTRIC EFFICIENCY FUNDS ACTIVITIES				
Business Sector	\$22,799,520	\$24,360,500	\$25,418,240	\$72,578,260
Residential Sector	9,683,080	10,346,040	11,967,660	31,996,780
<b>Total Electric Efficiency Funds Activities</b>	<b>\$32,482,600</b>	<b>\$34,705,540</b>	<b>\$37,385,900</b>	<b>\$104,575,040</b>
HEATING AND PROCESS FUELS FUNDS ACTIVITIES <sup>2</sup>				
Business Sector	\$819,100	\$911,700	\$1,042,975	\$2,773,775
Residential Sector	2,457,200	2,735,200	3,117,625	8,310,025
<b>Total Heating and Process Fuels Funds Activities</b>	<b>\$3,276,300</b>	<b>\$3,646,900</b>	<b>\$4,160,600</b>	<b>\$11,083,800</b>
<b>TOTAL RESOURCE ACQUISITION</b>	<b>\$35,758,900</b>	<b>\$38,353,440</b>	<b>\$41,546,500</b>	<b>\$115,658,840</b>
<b>NON-RESOURCE ACQUISITION</b>				
Education and Training	\$794,133	\$810,210	\$878,567	\$2,482,910
Applied Research and Development	478,280	404,220	423,560	1,306,060
Planning and Reporting	284,430	483,620	555,160	1,323,210
Evaluation	819,317	848,230	889,673	2,557,220
Policy and Public Affairs	338,506	350,440	367,614	1,056,560
Information Technology	815,017	843,800	885,043	2,543,860
General Administration	244,017	252,640	265,013	761,670
<b>TOTAL NON-RESOURCE ACQUISITION</b>	<b>\$3,773,700</b>	<b>\$3,993,160</b>	<b>\$4,264,630</b>	<b>\$12,031,490</b>
Operations Fee	\$675,860	\$724,170	\$783,420	\$2,183,650
<b>Sub-Total Prior to Performance-Based Fee</b>	<b>\$40,208,460</b>	<b>\$43,070,770</b>	<b>\$46,594,550</b>	<b>\$129,873,980</b>
Performance-Based Fee	\$1,014,240	\$1,087,310	\$1,173,860	\$3,275,410
<b>TOTAL ESTIMATED COSTS INCLUDING PERFORMANCE-BASED FEE</b>	<b>\$41,222,700</b>	<b>\$44,158,080</b>	<b>\$47,768,410</b>	<b>\$133,149,390</b>

{1} Pursuant to VEIC's Order of Appointment, annual budget components are provided for information purposes only.

{2} Based on heating and process fuels budget as submitted in January 2011.

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