



# **Efficiency Vermont**

**ANNUAL PLAN  
2010–2011**

**Prepared for the Vermont Public Service Board  
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## Efficiency Vermont Annual Plan 2010-2011

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# 1. Executive Summary

## 1.1 Introduction

This Annual Plan is submitted by the Vermont Energy Investment Corporation (VEIC) to the Vermont Public Service Board (the Board), pursuant to VEIC's contract with the Board for delivery of energy efficiency utility services under the name "Efficiency Vermont." The Plan covers activity for 2010 through 2011 and describes:

- Strategies for achieving a high level of electric energy and demand savings throughout Vermont, as well as strategies for targeting geographic areas designated by the Board for concentrated acquisition of electrical demand savings
- Initiatives directed at achieving energy savings and greenhouse gas reductions through greater efficiency of buildings and systems that use unregulated fuels
- Other significant initiatives anticipated by Efficiency Vermont for 2010
- Contingency planning for significant resource shifts, as needed
- An estimate of the Efficiency Vermont budget for 2009–2011
- An estimate of the societal benefits and costs associated with successful implementation of the Plan.

## 1.2 Context of the Plan

This Plan responds to the objectives established by Board orders, as well as to those contained in the scope of work described in the Contract for Personal Services as Energy Efficiency Utility (Efficiency Vermont contract), amended February 5, 2009. The Plan also responds to the Efficiency Vermont contract's budget and performance targets.

As of this writing, the Efficiency Vermont contract will be amended in the fourth quarter of 2009 to include the following changes:

- New funding of approximately \$4.1 million for 2010 and 2011 from the Regional Greenhouse Gas Initiative (RGGI), as specified by Vermont Law [V.S.A. Title 30, Chapter 5, §255 (a)(8) and V.S.A. Title 30, Chapter 5, §255 (d)] to deliver fossil fuel energy efficiency services to unregulated fuels customers and achieve related savings
- Performance targets for unregulated fuel energy efficiency
- Potential adjustment to budgets and performance targets due to the Self-Administered Energy Efficiency Program, authorized under V.S.A. Title 30, §209(d)(4)(h)
- Carryover of \$1.1 million from the 2008 budget with associated performance goal adjustments.

The new initiatives to address the first two items above, related to unregulated fuels, are not included in this Plan because they involve ongoing development that may not be complete until the end of 2009. Upon completion of that process, Efficiency Vermont will issue an addendum to this Plan to the Board that will include these items.

In addition, this Plan is being presented prior to Board decisions regarding the restructuring of the energy efficiency utility, as well as prior to decisions regarding implementation of the Energy Savings Account (ESA) mechanism. Further, the American Recovery and Reinvestment Act of 2009 (ARRA, or Recovery Act) provides funding for state-run rebate programs for consumer purchases of new ENERGY STAR® qualified home appliances. Efficiency Vermont and the Vermont Department of Public Service (Department) are developing plans to apply for these funds during the fourth quarter of 2009. Because of the emerging nature of these initiatives, this Plan does not address potential changes in the structure, scope, performance goals, or funding that could result from the initiatives' adoption and implementation. Additionally, it is anticipated that the Board will adopt in late 2009 new avoided costs that will go into effect January 1, 2010. The performance goal changes associated with the adoption of new avoided costs are not included in this Plan, but will be reflected in any addendum to this Plan.

Although called an “Annual Plan” for Efficiency Vermont, this document addresses activity for the contract period 2010–2011. It incorporates feedback and recommendations from several sources, including:

- The Department, which conducted market assessments, evaluations, and savings verification
- Efficiency Vermont's quality assurance management systems, particularly participant satisfaction and feedback reports
- Business, professional, and trade associations; trade allies; and other groups with which Efficiency Vermont interacts.

This Plan is presented for public review and comment, and serves as a draft plan until the Board holds workshops on it in early 2010. The Plan will be updated in November 2010 for calendar year 2011.

The strategies and plans for energy efficiency described in this document are primarily a continuation of the plans established in 2009, but will continue to evolve in response to changing market conditions.

## 1.3 Summary of the Plan

**1.3.1 Performance objectives.** The overarching objective for 2009–2011 is to achieve 100% of the Efficiency Vermont performance goals. Performance objectives and minimum performance requirements for these goals are presented in Table 1 and Table 2.

**Table 1. Efficiency Vermont Performance Objectives for 2009–2011<sup>1</sup>**

Objective	2009–2011 Performance Goal
Total annual MWh savings	364,054
Total resource benefits <sup>2</sup> (TRB) (2006 \$)	\$342,062,348
Total summer peak kW savings	51,613
Total winter peak kW savings	54,435
Summer peak kW savings in specific Geographic Targeting areas	8,169
Winter peak kW savings in specific Geographic Targeting area	2,423

The following minimum performance requirements are to be met or exceeded by December 31, 2011:

**Table 2. Minimum Performance Requirements**

Minimum Performance Requirement	Standard to Be Met
Ratio of gross electric benefits to spending	1.2
2009–2011 spending for residential customers	\$19,700,000
2009–2011 spending for low-income customers	\$6,307,000
Number of small business customers served	700
Total resource benefits received by each county in Vermont	Specific minimums for each county <sup>3</sup>

<sup>1</sup> Values in Table 1 are estimates based on the changes identified in Section 1.2 and will be finalized in an amendment to the Efficiency Vermont contract.

<sup>2</sup> TRB at 2006 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 2008, and calculated at a real discount rate of 5.7%.

<sup>3</sup> Values will be recalculated based on changes identified in Section 1.2.

These objectives are to be met within the context of Board-approved Efficiency Vermont budgets of \$35.8 million for 2010 and \$36.7 million for 2011.<sup>4</sup>

**1.3.2 Geographic Targeting (GT).** Efficiency Vermont will continue its efforts to achieve significantly higher levels of efficiency in specific geographic regions of the state where the peak demand reduction can help relieve electricity distribution constraints and improve system reliability. As specified by the Board, these areas are:

- St. Albans area — summer peak constrained
- Northern Chittenden County — summer peak constrained
- Rutland area — summer peak constrained
- Southern Loop (specific areas between Brattleboro and Bennington) — winter peak constrained.

Efficiency Vermont will continue to enhance energy efficiency in these areas relative to standard statewide offerings through higher financial incentives, special targeting and promotion initiatives, community energy events, and commercial direct installation services.

**1.3.3 Strategic approaches.**<sup>5</sup> In general, Efficiency Vermont will continue using market-based approaches to take advantage of opportunities for installing efficiency measures when decisions regarding residential or commercial buildings or equipment would normally be made. We will also continue our emphasis on retrofit opportunities — that is, the early replacement or modification of building systems and equipment.

Efficiency Vermont has developed five major strategies for achieving the resource acquisition and targeting objectives established by the Board:

- **Account Management.** Customized solutions for the specific business needs of large and midsized businesses. Efficiency Vermont will proactively help identify efficiency opportunities and, with financing options and Efficiency Vermont incentives, leverage the market resources of design professionals, vendors, and trade allies. This strategy includes both retrofit and market opportunities approaches.
- **High-performance partners.** Influencing the availability of energy efficiency services and equipment by deepening relationships with wholesale suppliers, vendors, and other professionals operating upstream from end-use customers. Efficiency Vermont will seek a mix of efficient equipment buy-downs, promotional incentives, energy-efficient design incentives, and other mechanisms that lower initial cost barriers for consumers and engage the business marketplace as allies to promote the benefits of energy efficiency improvements. This strategy emphasizes the market opportunities approach.
- **Community energy initiatives.** Expanding relationships with community and local business leaders, civic and religious organizations, and schools, to turn public awareness

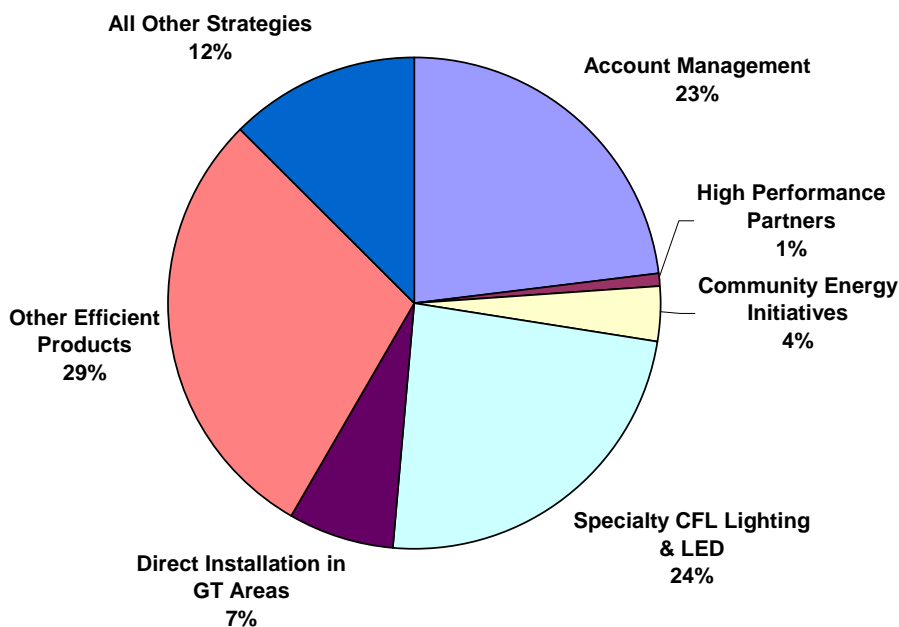
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<sup>4</sup> “Subtotal prior to performance-based fee” budget line.

<sup>5</sup> Major strategic approaches are described in detail in Appendix A of the *Efficiency Vermont 2009-2011 Annual Plan*.

of energy efficiency into action. This strategy includes both retrofit and market opportunities approaches.

- **Transition to specialty compact fluorescent lightbulbs (CFLs) and light-emitting diode (LED) products.** Energy-efficient lighting products and technologies will continue to evolve and provide a significant contribution to energy and demand savings in 2010–2011. While continuing to support the widespread adoption of standard spiral CFLs, Efficiency Vermont will work to expand retail sale of specialty CFLs, as well as LED products to reach higher penetrations of efficient lighting in Vermont homes and businesses.
- **Direct installation of efficiency measures in GT areas.** This strategy provides cost-effective energy efficiency measures at significantly reduced cost, as well as simplified, turnkey project implementation to qualified business and residential customers in GT areas. It emphasizes retrofit opportunities for both early retirement of existing inefficient equipment (such as lighting fixtures) and installation of supplemental measures (such as controls). A Vermont-licensed general contractor will manage and implement direct installation services. The contractor will also continue to retain qualified Vermont service contractors to install prescriptive, qualified lighting, HVAC, refrigeration, and other efficiency measures, as well as custom measures where feasible.



**Figure 1. Projected Share of 2009–2011 MWh Savings, by Strategy**

In total, the above five major strategies will contribute 59% of Efficiency Vermont’s performance targets. Other retail energy-efficient products and all other strategies are projected to account for 41% of the annual MWh savings for 2009–2011.



**1.3.4 Other activities.** For Efficiency Vermont to achieve its performance and resource acquisition objectives, it will need to expand and deepen its existing efforts to build partnerships with trade allies, design professionals, vendors, and other partners that influence energy efficiency decisions. We will continue to raise public awareness about the value of energy efficiency through: 1) the Better Buildings by Design conference held each year in February; 2) the promotion of ENERGY STAR products and services; 3) trainings for building professionals, including technical support for the Residential Energy Code and Commercial Energy Codes; and 4) public education campaigns. We will also continue our participation with major regional and national partnerships for energy efficiency (for example, USDA Rural Development, the U.S. Environmental Protection Agency’s ENERGY STAR, and the American Council for an Energy-Efficient Economy). We will continue to provide the technical resources necessary to ensure and enhance the reliability of the energy efficiency savings that we report to the Board and to ISO New England (ISO-NE, the region’s transmission organization). Finally, Efficiency Vermont will continue to participate with the Vermont System Planning Committee and will begin work for the second 20-year forecast of economically achievable demand-side energy and demand savings, to be used in the next Vermont load forecast by the Vermont System Planning Committee.

## 2. Market Initiatives and Services for 2010-2011

Efficiency Vermont will continue to serve all the core markets identified in the Board Order in Docket 5980 and in its associated Memorandum of Understanding. Below, we provide a description of current approaches that will continue in 2010 and a description of new approaches in 2010 for:

- Retail efficient products
- Business new construction
- Residential new construction
- Business existing facilities
- Existing homes

Table 3 presents projected annual MWh savings by each market, by funding objective, for 2009–2011.

**Table 3. Annual MWh Savings, by Market and Funding Objective, for 2009-2011<sup>6</sup>**

Market	Sector & Geographic Equity	Geographic Targeting	Most Cost-Effective Markets	Total
Retail Efficient Products	153,000	13,000	28,000	194,000
Business New Construction	14,000	4,000	0	18,000
Residential New Construction	3,000	2,000	0	5,000
Business Existing Facilities	54,000	43,500	38,500	136,000
Existing Homes	8,000	3,000	0	11,000
<b>Total</b>	<b>232,000</b>	<b>65,500</b>	<b>66,500</b>	<b>364,000</b>

## 2.1 Retail Efficient Products

**2.1.1 Continuing approaches for 2010–2011.** A focus on providing incentives at the point of sale and upstream markdowns and buy-downs that reduce the retail cost of efficient products have proven to be an effective method for influencing buying decisions for energy-efficient products. Today, Efficiency Vermont has an established network of more than 440 retail partner stores. The cornerstone of Efficiency Vermont’s approach will continue to be using the ENERGY STAR brand as a way of raising consumer awareness and confidence in energy-efficient products, with special promotions of higher-performing ENERGY STAR appliances where possible. Specifically, we will continue to offer:

- **Negotiated cooperative promotions** (NCPs, also referred to as “product buy-downs” or “markdowns”), in which manufacturers and retailers reduce the retail costs of efficient products for consumers, will continue to be the primary mechanism for promoting efficient lighting products. NCPs provide both a highly effective means of overcoming the first-cost barrier for consumers and a greater role in product selection for Efficiency Vermont. This allows Efficiency Vermont a better opportunity to promote specialty CFLs and lighting products that have a history of high-quality performance.
- **Instant rebate coupons** for energy-efficient lighting products not covered by NCPs in more retail locations statewide, as well as special coupons for residential and business customers in Geographic Targeting areas.
- **Mail-in rebates** for appliances that are at the upper end of efficiency within the ENERGY STAR qualifying product lines, including room air conditioners, refrigerators / freezers, dehumidifiers, and clothes washers available in more than 100 retail locations statewide.

<sup>6</sup> The values in Table 3 are estimates and may be revised based on final amendment of the Efficiency Vermont contract.

These approaches reduce first-cost barriers, and Efficiency Vermont will also continue to support the manufacturer–distributor–retailer supply chain by providing:

- Consumer education on energy-efficient products
- High-visibility point of purchase advertising and displays of energy-efficient products in retail locations
- Cooperative advertising with retail partners
- Promotional incentives
- Special targeting for underserved portions of the market
- Active participation in and support for national efforts to improve energy-efficient product quality, particularly CFLs.

Efficiency Vermont will continue to promote a wide range of efficient lighting products, including specialty CFLs with dimming, special use, and outdoor capabilities, as well as solid-state lighting (LED lighting).

**2.1.2 Key changes for 2010–2011.** In 2010, Efficiency Vermont will enhance the offerings in the retail efficient products market through the following initiatives:

- Build upon the successful 2009 pilot program for a second-refrigerator turn-in program by launching the service statewide in the spring of 2010. This service provides an incentive payment for customers who request pickup and recycling of their operating second refrigerators.
- Efficiency Vermont will work with pool and spa suppliers and contractors to promote the use of energy-efficient pumps at the time of replacement. The program will provide financial incentives to pool owners who upgrade the efficiency of their pool pumps.
- Efficiency Vermont will expand promotion and incentives for efficient consumer electronics at the retail point of sale. New product promotions to be introduced in 2010 include those for efficient power strips (power outlets that reduce electricity use when electronics are in the “off” mode), computer monitors, data servers, televisions, and home entertainment equipment. Consumer electronics promotions will likely follow the successful NCP model for cost-effective upstream promotion of these products.

## **2.2 Business New Construction**

**2.2.1 Continuing approaches for 2009–2011.** Efficiency Vermont will continue to offer both customized services and streamlined approaches to encourage and support energy-efficient design in commercial new construction projects. We will work closely with design professionals to incorporate comprehensive energy efficiency and will continue the following mechanisms for overcoming barriers to efficiency in new construction:

- **Comprehensive attention to all end uses**, including electric and non-electric end uses, such as space heating, water heating, building shell, ventilation, and non-electric processes.

- **Use of the Core Performance methodology** that provides streamlined approaches for designers and builders of commercial property.
- **Monitoring of new construction activity to ensure optimal early project enrollment**, when opportunities to influence design are most robust.
- **Technical assistance to design professionals**, supplementing their knowledge of energy-efficient practices and technologies through workshops, luncheons, distribution of *the High Performance Design Guide, Building Owner's Guide, Commissioning Guide, and Core Performance Guide—Vermont Edition*, and opportunities for continuing education credits at the annual Better Buildings by Design conference.
- **Financial incentives** to reduce the incremental costs associated with using energy-efficient technologies.

**2.2.2 Key changes for 2010–2011.** To achieve the increased objectives for this market, Efficiency Vermont will:

- **Increase promotional activity and technical assistance** for small to medium-sized design / build firms and other design professionals to introduce non-participating firms to benefits and services provided by Efficiency Vermont.
- **Increase the adoption of energy-efficient design strategies** by developing a Vermont-specific version of the energy modeling tool eQUEST<sup>®</sup>,<sup>7</sup> and introducing it to firms that do not currently model the impacts of various design strategies on building energy use. The tool will link to our *Core Performance Guide* efficiency guidelines and make cost-effectiveness analyses of the comprehensive efficiency upgrades easier to execute.
- **Collaborate with the Department on the update to the Commercial Building Energy Code.** The American Recovery and Reinvestment Act (ARRA) required states to update their commercial building energy codes as one of the conditions for receipt of additional State Energy Program funding. Efficiency Vermont will work with the Department and stakeholders to make the changes necessary to comply with this requirement.

## 2.3 Residential New Construction

**2.3.1 Continuing approaches for 2010–2011.** Efficiency Vermont will continue to promote Vermont ENERGY STAR Homes as a standard of quality and performance in residential new construction. We will also continue to work with our building partners to:

- **Promote comprehensive attention to all end uses**, including those that are electric and non-electric, such as space heating, water heating, ventilation, and other non-electric end uses.

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<sup>7</sup> eQUEST<sup>®</sup> is freeware software based on DOE-2 software and was developed by James J. Hirsch & Associates (JJH) in collaboration with Lawrence Berkeley National Laboratory (LBNL), with LBNL DOE-2 work performed mostly with funding from the United States Department of Energy and other work performed mostly with funding from a wide range of industry organizations. Information at <http://www.doe2.com/>.

- **Provide financial incentives for overcoming barriers** to the adoption of energy-efficient technologies and practices.
- **Offer technical assistance** with plan review, recommendations, testing, and inspections.
- **Provide technical assistance and documentation** that allow builders to easily certify compliance with the Vermont Residential Building Energy Code.
- **Certify qualification for federal tax credits.**
- **Offer ongoing building science training** at special workshops and at the Better Buildings by Design conference.

**2.3.2 Key changes for 2010-2011.** Building on the foundation of its current approaches, Efficiency Vermont will seek to provide greater value to residential builders by:

- **Launching a revised new-homes service for 2011**, raising the bar for builders wishing to build high-efficiency homes and coordinating with the anticipated revised national ENERGY STAR 2011 specification.
- **Rolling out Zero Energy Challenge** or a similar demonstration project for super-high-efficiency homes, to support leading-edge efficient builders. The project will build on growing interest in “green” certifications, such as LEED for Homes and the National Association of Home Builders’ National Green Building Standard rating system, and provide models for new levels of electric and thermal efficiency in residential new construction.
- **Collaborating with the Department and stakeholders on the update to the Residential Building Energy Code.** ARRA required states to update their residential building energy codes as a condition of receiving additional State Energy Program funding. The Department is undertaking a facilitated process with a wide group of stakeholders, including Efficiency Vermont, to complete this process.

## 2.4 Business Existing Facilities

**2.4.1 Continuing approaches for 2010-2011.** In the existing business sector, Efficiency Vermont will continue to employ the following strategies for achieving energy savings.<sup>8</sup>

- **Account Management.** Customized solutions geared to the specific business needs of midsized and large businesses. The solutions include providing energy efficiency information, assessment of energy efficiency opportunities, technical assistance, and financial incentives, as well as partnering with specialized service providers design assistance and financing packages.

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<sup>8</sup> In addition to these basic strategies in existing business markets, Efficiency Vermont will continue to implement initiatives that are designed to overcome barriers to specific markets, such as colleges and universities; commercial leased space; building commissioning; compressed air; convenience stores; data centers / communications; farms; grocery stores; hospitals / health-care organizations; K-12 schools; large commercial and industrial customers; lodging; restaurants; retail store chains; ski areas; state buildings; and water / wastewater facilities.

- **Prescriptive measures.** Standardized efficiency measures with standard financial incentives. Prescriptive measures include lighting, motors, unitary HVAC equipment, economizers, vending machine controls, LED traffic signals, small refrigeration systems, and transformers. Typically prescriptive measures and rebates best serve the needs of small business customers.
- **High-performance partners.** Working with upstream partners in the supply chain to ensure that efficiency equipment and energy efficiency services are readily available to end-use customers. These efforts include incentives, outreach, education, and training in the promotion of new energy-efficient technologies. Efficiency Vermont works with manufacturers and suppliers to ensure product availability and reduce lead times for ordering efficient products. Two major markets targeted by this strategy are lighting and HVAC / Refrigeration (HVAC / R) markets. For commercial lighting, Efficiency Vermont provides incentives to wholesalers and distributors to stock and sell such advanced lighting products as halogen infrared lamps, reduced-wattage T-8 fluorescent lamps, and high-performance T-8 fluorescent lamps. Similarly, in HVAC / R markets, we promote stocking of high-efficiency air-conditioning equipment, economizer controls, water source heat pumps, and furnaces with efficient fan motors.
- **General information and assistance.** Provision of support to business customers, with industry-specific technical briefs, *The Commissioning Guide*, facility walk-throughs for qualified business customers, and distribution of energy savings calculators for motors and other electrical equipment.
- **Increased services and incentives for qualified customers in GT areas.** Encouraging deeper savings and higher participation in GT areas by providing greater levels of technical assistance, financing assistance, or financial incentives, particularly in the area of early replacement of HVAC equipment.
- **Direct installation.** Building on the success of the commercial direct installation program known as Lighting Plus. This program provides site assessments for electrical energy efficiency opportunities at no charge to qualified customers, and arranges for the installation of efficiency measures. The program is targeted to commercial customers in GT areas. The program offers financing options as well as direct financial incentives to assist customers with measure costs.
- **An emphasis on non-lighting end uses.** Promoting efficiency in end uses other than lighting for existing businesses. The end uses with the greatest potential are air conditioning, refrigeration, motors and drives, and processes that rely on compressed air. For 2009–2011, Efficiency Vermont will seek to increase savings in these end uses by 15%, compared to 2008 performance.

#### 2.4.2 Key changes for 2010–2011

- **Increase the availability of specialized, industry-specific, technical expertise** to advance long-term energy efficiency planning with key customers; industries for focus will include hospitals and other health-care facilities; specific types of industrial processes; and ski areas and other recreational facilities. Efforts will also focus on increasing the availability of third-party technology experts for customers in the areas of compressed air, lighting design, and other specialized fields.

- **Provide higher levels of value to large commercial customers.** The new Key Account Management service will build on the successful Account Management model to further support the unique needs of our large commercial customers (defined as individual users of more than 500 MWh annually, representing in total approximately 80% of statewide business-sector energy consumption). Key Account Management staff will bring additional value to these customers through high levels of skill in areas such as finance and business, as well as the advanced technical expertise required to address complex projects and challenges.
- **Explore new energy efficiency technologies that are relevant for the business sector,** including thermal storage cooling, energy-efficient refrigeration condenser-only replacement strategies, LED and other solid-state lighting, and specialized pumping and aeration technologies.

## 2.5 Existing Homes

**2.5.1 Continuing approaches for 2010-2011.** Efficiency Vermont will build upon its successful strategies to serve the different submarkets within the residential existing homes market. Efficiency Vermont will emphasize this market to support the spending requirements of the EEC (energy efficiency charge)-funded portion of the Efficiency Vermont contract to achieve goals for geographic equity, residential services, and services to low-income households. Existing services will also be expanded to provide comprehensive services for unregulated fuels efficiency.

The major approaches in the existing homes market are:

- **Home Performance with ENERGY STAR.** We will continue the effort to build the infrastructure of certified contractors providing comprehensive diagnostic and retrofit services to improve the energy efficiency and quality (indoor air, durability, comfort, etc.) of residential buildings. This initiative will comprehensively address electric and unregulated fuel savings opportunities for a broad spectrum of residential customers. We will help develop this network of contractors by:
  - Providing contractor training and certification
  - Offering financial incentives for customers with cost-effective improvement opportunities
  - Providing marketing and advertising support for qualified contractors
  - Reimbursing contractor costs for direct installation measures completed during the project
  - Completing at least 550 Home Performance with ENERGY STAR projects per year.<sup>9</sup>

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<sup>9</sup> This value represents the project completions for EEC, FCM, and Green Mountain Power Energy Efficiency Fund sources. It does not include completions due to the additional RGGI funding.

- **Multifamily residential dwellings.** We will continue our successful Account Management approach with property owners of market-rate and subsidized housing. This approach has encouraged comprehensive treatment and has leveraged substantial owner investment in energy efficiency by property owners. In this market, Efficiency Vermont will:
  - Provide technical assistance to identify cost-effective measures
  - Create financial incentives toward the cost of energy-efficient measures
  - Provide direct installation of energy-efficient lighting and water conservation measures, at no cost to the owners
  - Enable selective replacement of refrigerators and freezers with ENERGY STAR qualified models
  - Promote advanced technologies and comprehensive approaches
  - Increase by 50%, compared to 2008 levels, the number of projects with private, non-subsidized building owners.
- **Low-income single-family residential customers.** In this ongoing initiative, Efficiency Vermont will continue its relationship with the five community-based Weatherization agencies to provide maximum cost-effective electric efficiency measures, at low or no cost to participants, including:
  - Direct installation of energy-efficient lighting and water conservation products
  - Replacement of inefficient refrigerators and freezers with ENERGY STAR models, where determined to be cost-effective
  - Conversion of electric water and space heating equipment to less-costly fossil fuel systems. This measure provides added value because of its consumer and societal benefits.
- **Information for residential customers.** Efficiency Vermont maintains a reputation for providing trusted energy efficiency expertise to all Vermonters via its toll-free phone, e-mail, and web site. Because the most frequent residential inquiry concerns the causes of high energy bills, we will continue to provide information and tools to help people analyze and lower electricity usage, including:
  - Simple, plug-in energy consumption meters lent at no cost to the customer
  - A home energy use survey with telephone technical assistance
  - A CD, or online software, that enables residents to conduct their own home energy audits
  - The [www.encyvermont.com](http://www.encyvermont.com) web site, providing extensive information, guidance, tips, links, and resources, including listings of providers of energy-efficient products and services throughout the state
  - Useful printed information for residential energy consumers to help them understand, and reduce, their energy consumption
  - A designated, specially trained technical customer service representative who answers more in-depth and technical questions by phone and e-mail
  - Our “Ask the Home Team” advice column, featuring our technical customer service representative answering Vermonters’ questions about residential energy use.



### 2.5.2 Key changes for 2010–2011

- **Launching an integrated marketing plan in the residential sector.** The new integrated residential marketing plan will utilize new techniques of social marketing, and will promote community involvement and volunteer efforts to harness an important influencer of residential consumer behavior — “word-of-mouth referral.” This new technique will include:
  - **Open-house tours of energy-efficient homes**, presenting opportunities for the public to see what works in homes retrofit to reduce energy consumption; the focus will be on both electrical and thermal efficiency.
  - **Promotional materials** to refer prospects to the Home Performance with ENERGY STAR contractor network.
  - **Promotion of our web site and other links to energy efficiency activities** such as community energy campaigns, educational workshops, and special in-store promotions.
  - **A retail product rebate book** for distribution by contractors and trained volunteers, along with a direct installation package of measures to save electricity.
  - **Restructuring and development of new early replacement rebates for appliances** (refrigerators, clothes washers, etc.) to allow for easy delivery by contractors and community volunteers.
- **Workforce development and training** to increase the capacity of participating Home Performance with ENERGY STAR contractors so they can complete more jobs, in response to legislative goals and funding directives. Our secondary focus will be to partner with other Vermont-based training organizations such as Vermont Technical College to broaden the knowledge base and support a growing contractor infrastructure for energy efficiency services.
- **Strengthening the market for comprehensive home energy retrofit.** We will explore options to inform the launch of efforts to increase the number of homes that make comprehensive energy retrofit improvements. These efforts are expected to include:
  - Increased incentive levels
  - New financing options, especially for middle-income consumers
  - A streamlined incentive structure based on prescriptive rebates
  - A new partnership with NeighborWorks® HomeOwnership Centers to reach moderate-income Vermonters
  - Developing a streamlined reporting process for Home Performance with ENERGY STAR contractors, using a new online reporting tool
  - Helping expand the market for more multifamily retrofit projects for Home Performance with ENERGY STAR contractors.

We will provide details on new unregulated fuels initiatives in the residential markets in the addendum to this annual plan (see **Section 3.0**).

## 2.6 Self-Managed Programs

Efficiency Vermont foresees activity in three programs that allow for varying levels of customer self-management in 2010: Customer Credit, Energy Savings Accounts (ESAs), and the Self-Managed Energy Efficiency Program (SMEEP). Customer Credit is an existing program. ESAs and SMEEP are new options that are expected to become available to customers in 2010. At this time, final Board orders have not been entered regarding implementation details of ESAs or SMEEP. Efficiency Vermont is tentatively planning as follows for each program:

**2.6.1 Customer Credit.** Currently, IBM is the only customer participating in this program. That company self-manages 90% of its EEC funds for use in electric efficiency projects. We expect IBM to discontinue participation in this program in 2010, and enroll instead in SMEEP. Operationally, this change should have little impact. If Customer Credit has no participating customers for an extended period of time, it may become desirable at some point to review the EEU reporting requirements related to this program in areas such as the Annual Report.

**2.6.2 Energy Savings Accounts.** This program provides the option for customers with an annual EEC of at least \$5,000 to self-manage a portion of these funds to undertake energy efficiency projects. The Department has proposed that the portion initially be 70%, with the potential to increase it to as much as 90%. The EEU claims any savings from such projects. As proposed by the Department, the EEU would retain significant involvement with these customers in screening projects and providing input as to whether a project can be classified as retrofit or market opportunity. Efficiency Vermont will develop administrative processes for these and other ESA-related responsibilities, based on the final program design as specified by the Board. This Annual Plan assumes the ESA program will be in place beginning in 2010.

**2.6.3 Self-Managed Energy Efficiency Program.** This is a three-year pilot program, enacted by the Legislature in 2009 with expected implementation in 2010. It provides that customers who meet certain conditions, including payment of at least \$1.5 million per year in energy efficiency charges, may cease paying those charges and entirely self-administer their own energy efficiency programs. Only one customer currently meets the qualifications for this program. This program falls outside the scope of the Efficiency Vermont contract.

## 3. Unregulated Fuel Activities

In the final quarter of 2008 and in 2009, Efficiency Vermont launched several initiatives designed to address the efficiency of unregulated fossil fuels. These initiatives are funded by revenues created by electrical demand capacity auctioned to ISO-NE in the Forward Capacity Market (FCM) (see **Section 4.3**). In the residential sector, the funding was used primarily to increase financial incentives for comprehensive home retrofit of thermal and mechanical systems to higher levels of efficiency. It was also used: (per style sheet)1) to promote community awareness of whole-house approaches to energy efficiency through direct community door-to door initiatives; and 2) to support workshops on the topic. This funding also supported the training of Home Performance with ENERGY STAR contractors.

In the business sector, the funding was used to provide incentives for the purchase of energy-efficient commercial heating equipment at the time of replacement. This was an upstream initiative in which Efficiency Vermont worked with equipment suppliers and contractors to promote qualified products to business customers.

In 2009, the Legislature directed Efficiency Vermont to use proceeds from the Regional Greenhouse Gas Initiative (RGGI) to acquire energy efficiency in buildings that use unregulated fuels. Efficiency Vermont, in conjunction with the Department and the Contract Administrator, is currently developing plans for the appropriate use of these funds. Consequently, Efficiency Vermont will issue an addendum to this Plan that will provide a description of the goals, strategies, services, and budgets associated with unregulated fuel funding for 2010 and 2011. This addendum will address initiatives supported by funding from both FCM and RGGI.

## **4. Other Major Initiatives**

### **4.1 Better Buildings by Design Conference**

Efficiency Vermont annually presents a comprehensive conference on high-performance residential and commercial new construction. The 2010 Better Buildings by Design conference will expand on the success of the 11 previous conferences. This gathering of the top construction and design professionals who affect how buildings are built in Vermont is viewed as a key resource for information about innovations in energy efficiency; superior building performance; and best practices in design, construction, renovation, and improvement. The conference is also a key component of our positioning strategy in this market, establishing us as a trusted technical resource and supporter of existing market actors on whom we rely to drive energy efficiency in this market. The event is expected to draw more than 1,000 building and design professionals. The 2010 conference will include nationally renowned speakers and workshop leaders and more than 40 presentations on building envelope, integrated design, lighting, and mechanical systems. Featuring more than 50 exhibits of energy-efficient products and services, the event also provides exceptional visibility for vendors and service providers.

### **4.2 Financing Initiatives**

Efficiency Vermont has identified the lack of effective financing vehicles as a significant barrier to investments in energy efficiency. In 2010, Efficiency Vermont will seek to develop integrated financial mechanisms that will increase market penetration and ratepayer participation. These initiatives will help Efficiency Vermont obtain higher levels of energy savings per ratepayer dollar, through a combination of higher project completion rates and reduced incentives per project.

Specific objectives in this area for 2010 are:

- Continuing to provide a single Efficiency Vermont point of contact related to financing options for external stakeholders, including banks, credit unions, public-sector lenders, and other financial partners
- Developing streamlined financing products to support the Lighting Plus initiative
- Establishing contacts with all existing financial partners, as well as establishing potential new relationships, and maintaining regular contact as appropriate for each relationship

- Supporting Efficiency Vermont operations staff to maximize the use of financing by customers for energy efficiency projects, including support for project managers in closing deals with customers
- Developing financial analysis tools and presentation materials that support Efficiency Vermont operations.

In addition, Efficiency Vermont will carry out its legislatively directed responsibilities related to the Clean Energy Assessment District (CEAD) financing mechanism. In 2009, the Legislature enacted the CEAD mechanism, in which individual communities are now enabled to choose to participate. It is Vermont's version of Property Assessed Clean Energy (PACE), a mechanism under which homeowners or businesses finance energy efficiency or renewable energy improvements through their municipality, and repay that obligation as an assessment on their property.

The Vermont legislation specifies that the eligible energy efficiency measures for CEAD will be developed and made annually available by the energy efficiency utilities. It further specifies that final approval of all CEAD projects will be conducted by the EEUs. Towns may begin voting to opt in to the program as soon as March 2010, with implementation to follow thereafter.

### **4.3 New England Regional Capacity Market**

As the state's Energy Efficiency Utility contractor, VEIC will continue to participate in the regional energy capacity market conducted by ISO New England. As directed by the Vermont Public Service Board, VEIC will continue to represent the interests of Vermont ratepayers in the ISO-NE Forward Capacity Market. Under the rules of the current transition period, VEIC will continue to file with ISO-NE monthly reports of capacity savings from Efficiency Vermont investments, and receive payment from ISO-NE for these savings claims, through May 2010. VEIC has already prepared and submitted bids to provide Efficiency Vermont capacity savings as a demand resource in annual Forward Capacity Market auctions for capacity commitments beginning in June 2010, June 2011, and June 2012. In cooperation with the Board, the Department of Public Service, and Burlington Electric Department, VEIC has developed and is implementing required measurement and verification plans for capacity savings claims. VEIC will also continue to perform all necessary administrative and fiscal activities associated with these responsibilities.

Further, VEIC will continue to participate in rule-making processes established by ISO-NE regarding the establishment and operation of the Forward Capacity Market and other responsibilities associated with being a NEPOOL market participant.

### **4.4 Energy Code Support**

Efficiency Vermont will continue to provide information services to support the Residential Energy Code. These services include a toll-free hotline, technical assistance, information, and certification of homes that meet the Residential Energy Code. Efficiency Vermont will also continue to support the Commercial Energy Code by providing technical assistance and copies of Commercial Guidelines to design professionals and commercial customers. We will also

collaborate with the Department to update the Commercial and Residential Building Energy Codes, as required by the American Recovery and Reinvestment Act.

## 4.5 Regional and National Partnerships

Through ongoing collaboration with entities both outside and within the state, Efficiency Vermont will continue to bring state, regional, and national resources to Vermont while ensuring that greater consistency within energy efficiency resources and service delivery is available to Vermonters. Key partners for 2010 will be:

- Northeast Energy Efficiency Partnerships (NEEP): Participation with regional lighting and HVAC initiatives
- Lighting for Tomorrow (Consortium for Energy Efficiency / American Lighting Association / U.S. Department of Energy): Annual competition for the next generation of CFL fixtures and LED technology
- Product Stewardship Institute: End-of-product-life issues, with Chittenden Solid Waste District; mercury-free lighting alternatives; and disposal
- Consortium for Energy Efficiency
- The ENERGY STAR program of the U.S. Environmental Protection Agency and the U.S. Department of Energy: CFL awareness campaign
- New Buildings Institute
- Building Performance Institute.

Services stemming from these partnerships will include statewide delivery of ENERGY STAR qualified residential products and services. Vermont businesses will be served through our ongoing participation in such events and services as:

- The Compressed Air Challenge
- Incentives for ENERGY STAR qualified equipment
- Building operator certification training
- Training and certification by the Building Performance Institute for residential retrofit contractors.

## 4.6 Twenty-year DSM Forecast

In December 2009, Efficiency Vermont will present a 20-year forecast of economically achievable demand side management (DSM) costs and savings (“Forecast 20”). The forecast will serve as a basis for the Vermont System Planning Committee (VSPC) to integrate DSM planning with the peak load forecasting for Vermont. In the third quarter of 2010, VSPC and VELCO will embark on a new 20-year load forecast to be completed in 2011. Efficiency Vermont will update the DSM forecast to integrate with the next Vermont load forecast.

## 5. Economic Downturn, Year-to-date Results, and Contingency Planning

As of this writing, Efficiency Vermont is monitoring performance to acquire efficiency savings across all of Vermont's residential, commercial, and industrial markets. Throughout the latter half of 2008 and in 2009, Vermont has experienced firsthand the significant impacts of the global economic downturn, including business closings, curtailed production, rising unemployment, declining retail sales, and tight capital markets. The general economic conditions affect the level of investment that business and residential consumers make in all areas, including energy efficiency. As of the end of August 2009, overall electrical energy efficiency savings are down 32% relative to our targets for the year. Business markets are 11% below our projected targets, and residential markets are 45% below our projected targets for this point in the year. The largest impact is felt in Retail Efficient Products where performance is 46% below projections, primarily owing to the downturn in sales of CFLs at retail locations through the state. Similar phenomena are occurring throughout the country in a trend that matches the general decline of retail sales. In September 2009, the DOE held a national summit on this topic to explore the recent decline in CFL sales.<sup>10</sup>

Efficiency Vermont remains confident that there is still significant energy efficiency to be acquired through the promotion of energy-efficient lighting at the retail point of sale. Even in the face of new national lighting standards that will take effect in 2012, a significant number of lighting sockets in Vermont homes and businesses still use inefficient incandescent technology. As part of our strategy to realize deeper penetrations of efficient lighting products through retail channels, we made the following enhancements to the fall 2009 campaign:

- Increased the number of Vermont retail locations that sell compact fluorescent lighting by 100 (a 30% increase), recruiting convenience stores and small grocery stores to participate in Negotiated Cooperative Promotions
- Ran special promotions of CFL and LED specialty products to highlight their flexibility for use in unique lighting applications
- Launched a major media campaign in print, radio, and television to promote specialty products and increased use of efficient lighting products
- Instituted short-term, higher financial incentives for efficient lighting products in order to jump-start the market.

The results of these efforts will not be known until late January 2010. It is possible that they may not entirely close the gap between Efficiency Vermont's performance and its targets for this sector. In the event that Retail Efficient Products continue to underperform, we stand prepared to make adjustments in the first quarter of 2010 to shift emphasis from Retail Efficient Products to Existing Business Markets. In this latter market, there is still significant, cost-effective, available efficiency potential, provided that there is a shift of resources (marketing, incentives, and technical assistance) to address the needs of this market. We refer to this shift of resources as "Plan B," and are developing contingencies for shifting to this strategy. The magnitude of the shift will depend on actual 2009 performance, as well as updated forecasts for the economy.

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<sup>10</sup> Broydo Vestel, Leora, "As C.F.L. Sales Fall, More Incentives Urged," *Energy and the Environment*, *New York Times*, September 28, 2009.

The Energy Efficiency Utility was initially structured as a performance contract with the flexibility to respond to changing market conditions within the guidelines of Board policy. These potential resource shifts would be designed to ensure that Efficiency Vermont continued to meet its responsibilities both in achieving its three-year minimum performance requirements and performance objectives and in complying with Board policy objectives.

We will keep the Contract Administrator, Public Service Board, Department of Public Service, and general public apprised of our contingency plans. Efficiency Vermont will provide the details of Plan B in this Annual Plan's addendum, which will be available in December 2009.

## 6. Budget

### BUDGET

For the Period January 1, 2009 through December 31, 2011

	<u>Estimate Year 2009</u>	<u>Estimate Year 2010</u>	<u>Estimate Year 2011</u>	<u>Three-Year Budget</u>
<b><u>Services and Initiatives Supported by Contractor</u></b>				
<b><u>Electric EEU Funds</u></b>				
Business Sector	\$17,096,000	\$18,025,600	\$19,401,500	\$54,523,100
Residential Sector	\$10,211,900	\$11,599,800	\$12,531,400	\$34,343,100
<b>Total Electric EEU Funds Services and Initiatives</b>	<b><u>\$27,307,900</u></b>	<b><u>\$29,625,400</u></b>	<b><u>\$31,932,900</u></b>	<b><u>\$88,866,200</u></b>
<b><u>Services and Initiatives Supported by Contractor</u></b>				
<b><u>Unregulated Fuel Funds</u></b>				
Business Sector	\$292,600	\$1,102,200	\$740,100	\$2,134,900
Residential Sector	\$877,800	\$3,306,700	\$2,220,508	\$6,405,008
<b>Total Unregulated Fuel Funds Services and Initiatives</b>	<b><u>\$1,170,400</u></b>	<b><u>\$4,408,900</u></b>	<b><u>\$2,960,608</u></b>	<b><u>\$8,539,908</u></b>
<b>TOTAL SERVICES AND INITIATIVES</b>	<b><u>\$28,478,300</u></b>	<b><u>\$34,034,300</u></b>	<b><u>\$34,893,508</u></b>	<b><u>\$97,406,108</u></b>
<b><u>Contractor Electric EEU Funds Supporting Services</u></b>				
General Administration	\$233,700	\$255,600	\$270,200	\$759,500
ISO-NE Regional Capacity Activities	\$413,100	\$399,200	\$389,500	\$1,201,800
Vermont System Planning Committee Participation	\$49,300	\$3,100	\$4,800	\$57,200
Information Technology	\$737,100	\$819,100	\$862,300	\$2,418,500
<b>Total Supporting Services</b>	<b><u>\$1,433,200</u></b>	<b><u>\$1,477,000</u></b>	<b><u>\$1,526,800</u></b>	<b><u>\$4,437,000</u></b>
Operations Fee	\$238,970	\$321,450	\$310,698	\$871,118
<b>Sub-Total Prior to Performance-Based Fee</b>	<b><u>\$30,150,470</u></b>	<b><u>\$35,832,750</u></b>	<b><u>\$36,731,006</u></b>	<b><u>\$102,714,226</u></b>
Performance-Based Fee	\$761,000	\$871,400	\$999,600	\$2,632,000
<b>TOTAL ESTIMATED COSTS INCLUDING PERFORMANCE-BASED FEE</b>	<b><u>\$30,911,470</u></b>	<b><u>\$36,704,150</u></b>	<b><u>\$37,730,606</u></b>	<b><u>\$105,346,226</u></b>

Note 1: Annual budget components are provided for information purposes only. It is agreed by the parties that the Contractor will operate under a total three-year budget for each of the above line items.



## 7. Projected Benefits and Costs for 2009–2011

### 7.1 Societal Benefits and Costs Test

Table 4 presents the results of a societal test analysis to determine the projected benefits and costs for new energy and demand resource acquisition from 2009 through 2011, for each of the major markets served by Efficiency Vermont. The values displayed are lifetime values for the efficiency measures that will be installed (approximately 9.25 years on average). The net benefits are positive for each major market. Overall, the energy and demand savings acquired through 2011 are projected to achieve more than \$230 million in net benefits and will provide a benefit–cost ratio of 2.88 for the entire portfolio.

It should be noted that values in Table 4 were calculated with avoided costs adopted in 2008 and with the budgets and performance targets established at the end of 2008. This table will be updated in the addendum to this Plan to reflect new targets and new avoided costs that will be established by upcoming Efficiency Vermont contract amendments.

Table 4. Societal Benefits and Costs of Energy Efficiency, Projected for 2009–2011.<sup>11</sup>

Major Market	Present Value of Benefits	Present Value of Costs	Present Value of Net Benefits	Benefit-Cost Ratio
Business Existing Facilities	\$158,303,189	\$51,904,566	\$106,398,622	3.05
Business New Construction	\$27,655,439	\$10,535,468	\$17,119,971	2.62
Retail Efficient Products	\$136,775,520	\$33,227,195	\$103,548,325	4.12
Existing Homes	\$19,286,057	\$14,461,661	\$4,824,396	1.33
Residential New Construction	\$11,437,472	\$7,834,137	\$3,603,335	1.46
Non-market-specific Efficiency Vermont costs		\$4,747,649	(\$4,747,649)	
<b>TOTAL</b>	<b>\$353,457,677</b>	<b>\$122,710,676</b>	<b>\$230,747,001</b>	<b>2.88</b>

<sup>11</sup> Analysis used 2.6% inflation rate and 5.7% discount rate. Values are expressed in 2009 \$.