



Efficiency Vermont

UNREGULATED FUEL SERVICES

DRAFT ADDENDUM TO

**ANNUAL PLAN
2010–2011**

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

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1. Executive Summary

1.1 Introduction

This draft Addendum to the 2010-2011 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 Addendum covers services to promote energy efficiency for unregulated fuels (URF) for 2010 through 2011 and describes:

- Strategies for achieving a high level of URF energy savings throughout Vermont in the residential and business sectors
- Specific initiatives to achieve these strategies
- An estimate of the Efficiency Vermont budget for URF activities

Due to the proposed addition of new URF funding in late September 2009, Efficiency Vermont was unable to incorporate URF planning into the Annual Plan submitted to the Board on November 2, 2009. This Addendum updates the Annual Plan with these activities.

As of this writing, minimum performance requirements and performance indicators have not yet been finalized for URF. As a result, the information provided in this Addendum regarding minimum performance requirements, performance indicators, and related data such as number of units to be served and program budgets is tentative and subject to change. Efficiency Vermont will provide a revised version of this Addendum, and also provide an estimate of the societal benefits and costs associated with successful implementation of the Addendum no later than January, 2010, contingent upon final approval of minimum performance requirements and performance indicators for URF.

The draft Annual Plan also described contingency planning that Efficiency Vermont was undertaking in response to the national economic downturn, and potential program changes that might be proposed as a result. The Annual Plan suggested Efficiency Vermont would provide more information regarding this planning as part of this Addendum. At this time, our analysis of market performance for 2009 is not yet complete. We now expect to complete our review of 2009 results in early 2010, and will provide the Board with an update at that time.

1.2 Context of the Addendum

Unregulated fuels (URF) is defined by all heating and process fuels, except those whose providers are regulated by the Board. Funds for unregulated fuels are composed of expected net revenues from:

- Approximately \$4.6 million from VEIC's participation in the ISO-New England Forward Capacity Market (FCM), net of participation expenses.

- Approximately \$4.1 million for 2010 and 2011 from Vermont’s participation in the Regional Greenhouse Gas Initiative (RGGI), net of participation expenses, as specified in V.S.A. Title 30, Chapter 5, §255 (a)(8) and V.S.A. Title 30, Chapter 5, §255 (d)].

The initiatives and services described in this addendum are to be supported through the combined funds from these sources. URF performance targets for the 2009-2011 period will be established based on combined URF funds, instead of setting separate performance targets for each funding source.

The strategies and initiatives described in this addendum build upon existing initiatives established in 2009 with FCM funding, both expanding those initial activities and introducing specific new initiatives.

As with the Annual Plan, this Addendum is presented for public review and comment, and serves as a draft plan until the Board holds workshops on the Efficiency Vermont Annual Plan. URF strategies and initiatives will be fully incorporated in the next Annual Plan, which will be updated in November 2010 for calendar year 2011.

1.3 Summary of the Addendum

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

Table 1. Efficiency Vermont URF Performance Objectives for 2009-2011¹

Energy Savings Objective	2009-2011 Performance Goal
Total annual MMBTU savings	58,000

Comprehensiveness Objective		2009-2011 Performance Goal
Home Performance with ENERGY STAR Single Family	Average % air leakage reduction per project	34%
	% of projects with at least 1,500 total square feet of insulation added	44%
	% of projects with both shell measures and heating system measures installed	16%

¹ Values in Table 1 are estimates based on the revenues identified in Section 1.2 and will be finalized in an amendment to the Efficiency Vermont contract.

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

Table 2. Minimum URF Performance Requirements

Minimum URF Performance Requirement	Standard to Be Met
2009-2011 spending for residential customers	\$5,000,000
2009-2011 spending for low-income customers	\$1,000,000

These objectives are to be met within the context of projected Efficiency Vermont URF budgets estimated to be \$2.7 million for 2010 and \$5.1 million for 2011.²

1.3.2 Strategic approaches. With limited URF funds relative to funds received via the Energy Efficiency Charge (EEC) and to the magnitude of the opportunities for URF savings, Efficiency Vermont necessarily needs to target efforts at certain selected markets. In general, Efficiency Vermont will use market-based approaches to focus on highest-priority opportunities to increase URF energy efficiency when and where decisions regarding residential or commercial buildings or equipment efficiency would normally be made. We will also focus on selected retrofit opportunities—that is, the early replacement or modification of building systems and equipment.

Efficiency Vermont will use URF funding resources primarily to increase the comprehensiveness of energy efficiency treatment of buildings. These resources will enable us to pursue deeper levels of URF efficiency than would otherwise have been possible with resources focused primarily on electric efficiency measures. Performance indicators for URF resources will include measures of comprehensiveness that support the state’s statutory building efficiency goals. Integrated, all-fuels service delivery, regardless of funding source, will be pursued. Efficiency Vermont will coordinate with Vermont Gas Systems, as appropriate.

URF funding resources will be allocated 25% to the business sector and 75% to the residential sector, reflecting the approximate respective portions of unregulated fuel consumption in each sector.

Efficiency Vermont has developed four major strategies to serve Vermont markets for unregulated fuel efficiency:

- **Build a robust market for comprehensive, all-fuels retrofit services through Home Performance with ENERGY STAR®.** Improving thermal and mechanical efficiency of Vermont’s residential dwellings and small business and municipal facilities is essential to achieving long-term URF savings in Vermont. A key component to making successful energy efficiency improvements is a qualified network of contractors who understand and make improvements based on best practices in building science, so that improvements are appropriate, safe, and cost-effective. URF funding will be used to build on and expand the

² See “Subtotal prior to performance-based fee” line in budget.

existing Vermont network of approximately 50 contractors certified by the Building Performance Institute. URF resources will also be used to build demand for retrofit services through increased customer incentives, streamlined processes, and enhanced marketing. Efficiency Vermont will pursue expansion of the contractor network, as well as of the markets in which contractors are qualified. This strategy will enable us to provide a consistent approach to single-family, multifamily, small business, municipal, and mixed-use buildings. New and expanding markets are summarized below.

- **Existing Single-Family Homes (non-low-income).** Efficiency Vermont plans to increase the number of annual energy efficiency projects from approximately 300 to an estimated 525³ by the end of 2011. This increase is expected to occur through higher financial incentives, increased availability of attractive financing, statewide marketing support, and ongoing Home Performance with ENERGY STAR contractor training and development.
- **Market Rate Multifamily Dwellings (non-low-income).** Efficiency Vermont will expand the successful Home Performance with ENERGY STAR model to larger multifamily buildings, promoting energy efficiency in rental dwellings. This is a market that faces significant market barriers to making energy efficiency improvements. These barriers include split incentives (tenants responsible for fuel costs, while owners are responsible for improvements), a lack of qualified contractors to make improvements in multi-unit buildings, and the need for more effective financial incentive and financing approaches for this market. Efficiency Vermont plans to serve more than 308 units in 62 projects by the end of 2011, through marketing, workforce development and with incentives designed to overcome market barriers.
- **Small Commercial Facilities and Municipal Building Retrofit.** Similar to market-rate multifamily dwellings, this market experiences significant barriers to achieving building shell thermal efficiency, due to the complexities of the buildings, lack of capital, split incentives, and the lack of a knowledgeable workforce to make improvements. Efficiency Vermont will address the barriers in this market by expanding opportunities for the Home Performance with ENERGY STAR contractor network to provide audits and improvement services, and by use of financing and customized financial incentives to overcome initial cost barriers.
- **Commercial Heating System Efficiency Improvements.** This strategy will promote high-efficiency heating systems at the time of replacement through incentives for end-users and promotion by suppliers and contractors / installers. Approximately only 50% of commercial heating equipment currently sold meets high-efficiency standards; this low rate is due to high incremental costs, and a lack of knowledge of the technical options and their corresponding financial benefits. This initiative anticipates installation of 280 high-efficiency commercial boilers and furnaces by the end of 2011.
- **Dairy Farm Fossil Fuel Heat Recovery Units.** Energy to heat hot water for dairy farms is a large user of fossil fuel energy. Dairy farms also use energy to refrigerate milk products, but in many cases the waste heat from the refrigeration process is released into the

³ This value is based on the Home Performance with ENERGY STAR allocation method, where Efficiency Vermont and Green Mountain Power share the costs and benefits of the program. The allocation methods have been approved by the Department of Public Service and Energy Efficiency Utility Contract Administrator.

atmosphere because heat recovery technology has not been adopted, or because older heat recovery devices are not replaced when they fail. This heat recovery unit strategy is designed to overcome the barriers dairy farmers have in adopting and continuing to use this technology. First cost of new equipment is the primary barrier for this efficiency measure. Efficiency Vermont will reduce first costs by offering significant incentives that will result in an approximate one-year payback, and by providing incentives for vendors to promote the heat recovery equipment. Efficiency Vermont plans to achieve 45 installations of this heat recovery equipment by the end of 2011.

- **Partner with the Vermont Fuel Efficiency Partnership (VFEP) for Deeper Savings in Low-Income Multifamily Dwellings.** Efficiency Vermont will coordinate with the state's Weatherization providers, housing agencies and owners of private rental property, and other entities to evaluate and retrofit multi-family buildings, with a focus on going significantly deeper than the existing Weatherization program allows. The barriers in this market include limits on efficiency investments established by weatherization guidelines in multifamily markets (typically dwellings with five or more units per building), the difficulties of aligning programs and incentives in mixed residential and commercial buildings, and the general challenges of coordinating multiple programs and funding sources. These limits include a cost-share requirement for the building owner, the Weatherization program's screening thresholds for measuring cost-effectiveness, and program investment limits. Efficiency Vermont will work with the VFEP to develop customized advanced efficiency approaches, and customized financial incentives for building owners to invest in efficiency that saves fossil fuel. We expect this initiative to serve more than 435 units in 44 buildings by the end of 2011.

1.3.3 Coordination with EEC-funded Activities. In general, URF services will be delivered seamlessly to customers in conjunction with the delivery of electrical efficiency services. Wherever possible and appropriate, URF measures will be bundled with electric-efficiency measures for the customer, in order to maximize comprehensiveness of treatment. Customers will continue to have one Efficiency Vermont contact for both URF- and EEC-funded services. Incentive payments will be bundled together. Where possible, marketing and outreach efforts will leverage both URF- and EEC-funded activities. From a customer perspective, we plan to provide services that will be seen as a single, one-stop, comprehensive service for energy efficiency. However, all URF-funded activities will be tracked and reported separately from EEC-funded activities.

2. URF Market Initiatives and Services for 2010-2011

The following descriptions provide details of the proposed URF initiatives.

2.1 Home Performance with ENERGY STAR - Single-Family

Market sector Residential existing single-family homes whose owners have incomes greater than 80% of median income

New or expanded service This is an expansion of existing services that have been provided by Efficiency Vermont since 2004

Size of market	65,000 homes with significant potential for thermal and mechanical efficiency improvements
Barriers to efficiency	<ol style="list-style-type: none">1) Lack of accurate information about building shell and heating system retrofit opportunities2) High first cost for improvements3) Lack of ability to find contractors who focus on solving building problems comprehensively, rather than on selling individual products
How will barriers be addressed	<ol style="list-style-type: none">1) Increase incentives for qualifying measures to an average of \$2,000 per retrofit project2) Streamline the project review process3) Encourage comprehensive measure installations through incentive structures4) Continue to train and certify contractors to Building Performance Institute standards5) Expand statewide marketing for Home Performance with ENERGY STAR services6) Develop and make available new, attractive financing sources and mechanisms
Retrofit or market opportunity	This is fundamentally a retrofit service, but increased URF support can also be seen as addressing a lost opportunity by allowing these retrofit projects to be deeper and more comprehensive.
Prescriptive or custom efficiency measures	Efficiency Vermont will provide prescriptive incentives for heating system improvements, insulation, and air sealing measures completed as part of a comprehensive project by a participating Home Performance with ENERGY STAR contractor. Savings will be calculated for projects on a custom basis.
Marketing and outreach	Efficiency Vermont will launch a statewide marketing campaign to promote home efficiency improvements. The campaign will use social marketing techniques and community involvement to strengthen the demand for home efficiency improvement services.
Target participation	1,002 completed projects by the end of 2011.

2.2 Home Performance with ENERGY STAR - Market Rate Multifamily

Market sector	Market rate (non-subsided) rental housing, typically buildings with five units or more; can include mixed-use buildings with commercial rental co-existing with residential dwellings
New or expanded service	New service in this market
Size of market	4.2 million MMBTU annually in more than 68,000 dwelling units ⁴
Barriers to efficiency	<ol style="list-style-type: none">1) Split incentives for energy improvements (tenants pay energy bills; owners pay for energy improvements).2) The complexity of approaches for effectively improving building shells for cost-effective efficiency; and a lack of knowledge about optimal timing for improving heating systems efficiency3) Lack of capital / funding4) Difficulty for owners in finding qualified contractors for this work5) Service gap: existing programs do not address market rate rental and Home Performance with ENERGY STAR contractors currently concentrating their work on single-family dwellings

⁴ VHFA properties include 735 buildings with 5,624 units averaging 62 MMBTU / housing unit. Total market estimate is derived by extrapolating across all 68,600 Vermont rental housing units

Source: <http://www.housingawareness.org/publications/housing-wages-2009.pdf>

How will barriers be addressed	Efficiency Vermont will: <ol style="list-style-type: none"> 1) Provide workforce training for Home Performance with ENERGY STAR contractors, focusing specifically on multifamily dwellings; 2) Offer an incentive structure consistent with the single-family program that contractors and owners find to be reliable; 3) Streamline project review procedures; 4) Offer incentives to contractors who report savings in this market; 5) Structure incentives so that they are attractive to owners who won't gain the benefit of lower energy bills; and 6) Develop and make available new, attractive financing sources and mechanisms
Retrofit or market opportunity	Retrofit
Prescriptive or custom efficiency measures	Combination of custom and prescriptive measures and savings, by building
Marketing and outreach	Overall coordination and outreach to Home Performance with ENERGY STAR contractors; special outreach to property owner associations, resort associations, and other rental housing channels
Target participation	308 apartments in 62 projects completed by the end of 2011

2.3 Home Performance with ENERGY STAR - Small Commercial and Municipal Facilities

Market sector	Small commercial and municipal buildings (one- to three-story buildings) having characteristics similar to single-family dwellings. These might include mixed-use buildings with commercial rental co-existing with residential dwellings.
New or expanded service	New service
Size of market	This market has not been fully characterized, but is estimated to contain several thousand buildings. The market will be characterized in more detail in early 2010.

- Barriers to efficiency**
- 1) Split incentives exist for energy improvements (tenants pay energy bills; owners pay for energy improvements)
 - 2) Numerous, complex approaches are needed to improve building shells for cost-effective efficiency; there is a lack of knowledge about when heating systems efficiency should be improved
 - 3) Lack of capital / funding
 - 4) Inconvenience for owners to find qualified contractors for this work
 - 5) Service gap: Existing programs do not address this market, and Home Performance with ENERGY STAR contractors tend to concentrate on single-family dwellings.

- How will barriers be addressed** Efficiency Vermont will:
- 1) Provide workforce training for Home Performance with ENERGY STAR contractors, specifically focusing on providing audits and installations on small commercial and municipal buildings;
 - 2) Offer incentives to contractors who report savings in this market;
 - 3) Streamline project review procedures;
 - 4) Structure incentives so that they are attractive to owners who won't gain the benefit of lower energy bills; and
 - 5) Develop and make available new, attractive financing sources and mechanisms

Retrofit or market opportunity Retrofit

Prescriptive or custom efficiency measures Combination of custom and prescriptive measures and incentives

Marketing and outreach Overall coordination and outreach to Home Performance with ENERGY STAR contractors; special outreach to small business trade associations, chambers of commerce, town energy committees

Target participation 152 units in 80 projects complete by the end of 2011

2.4 Collaboration with Vermont Fuel Efficiency Partnership

Market sector Low-income⁵ multifamily buildings (typically with five or more units) served by Vermont’s Weatherization agencies.

New or expanded service Builds upon the Vermont Fuel Efficiency Partnership, an existing relationship between state’s Weatherization providers, state housing agencies, and Efficiency Vermont. The Partnership currently implements services to this market under a contract between the Central Vermont Community Action Council and the Department of Public Service.

Size of market Approximately 6,000 units⁶

Barriers to efficiency

- 1) Split incentives exist for energy improvements (tenants pay energy bills; owners pay for energy improvements)
- 2) There is a complexity of approaches needed to improve building shell for cost-effective efficiency. In addition, there is a lack of knowledge about when heating systems efficiency should be improved, and unfamiliarity with methods of implementing higher efficiency standards.
- 3) Lack of capital / funding.
- 4) Complications are encountered in mixed residential and commercial properties.
- 5) Multiple programs and funding sources need to be coordinated.
- 6) Inconvenience to owners, who must find qualified contractors for this work
- 7) Weatherization program funding alone cannot always provide the level of investment needed to make truly long-term affordable housing possible.
- 8) Building owners do not have project management capability to manage specification writing, requests for proposals, bid documents, multiple contractors, etc.

⁵ Less than 80% of median income

⁶ This market is composed of public and private housing units. At least 6,000 units are in the public sector alone. Though the market has not been fully characterized by Efficiency Vermont, it is estimated that it could be two or three times the size of the public housing sector.

How will barriers be addressed	Efficiency Vermont will: 1) Provide incentives to promote efficiency measures beyond the normal limits of weatherization programs 2) Provide incentives at a level to persuade property owners to increase investment for energy efficiency in their property; weatherization might provide approximately 66% ⁷ of project costs 3) Develop and make available new, attractive financing sources and mechanisms
Retrofit or market opportunity	Retrofit
Prescriptive or custom efficiency measures	Combination of custom and prescriptive measures and incentives
Marketing and outreach	Outreach to Vermont housing organizations, special outreach to property owner associations, other rental housing channels
Target participation	435 units completed in 44 buildings by the end of 2011

2.5 Dairy Farm Heat Recovery

Market sector	Vermont dairy farmers
New or expanded service	Builds on a previously funded grant program to encourage heat recovery from refrigeration process to reduce fossil fuels needed for water heating
Size of market	225 dairy farms that have not yet adopted heat recovery measures, or where older units have failed but have not been replaced
Barriers to efficiency	1) High first cost and lack of available funding for efficiency improvements

⁷ As of the date of this report, it is not known what the contributions by funding source will be in this initiative. This is an estimate of the percentage of total contributions which may be attributable to the state's Weatherization program.

How will barriers be addressed	Efficiency Vermont will: <ol style="list-style-type: none"> 1) Offer incentives equal to 80% of measure cost; 2) Offer interest rate buydowns to 0% or 2% for farmers' share of the improvement cost; 3) Offer incentives to farm equipment vendors who supply information to Efficiency Vermont; and 4) Provide savings estimates to farmers.
Retrofit or market opportunity	Retrofit
Prescriptive or custom efficiency measures	Custom measures and incentives
Marketing and outreach	Advertising in <i>Agrimview</i> and other local farm publications; outreach to equipment vendors
Target participation	45 completed projects by the end of 2011

2.6 Commercial Heating System Efficiency

Market sector	Large commercial and industrial facilities replacing equipment at the normal time of replacement
New or expanded service	Builds upon service design initiated in 2009
Size of market	50% of commercial boilers / furnaces sold could be higher efficiency
Barriers to efficiency	<ol style="list-style-type: none"> 1) High incremental cost to high efficiency 2) Lack of customer understanding of high efficiency options and associated benefits
How will barriers be addressed	<ol style="list-style-type: none"> 1) Incentives to cover the incremental cost of high efficiency equipment 2) Promotion of high efficiency equipment with vendors / suppliers / contractors / end users
Retrofit or market opportunity	Market opportunity
Prescriptive or custom efficiency measures	Primarily prescriptive measures and incentives
Marketing and outreach	Promotion to vendors / suppliers/ contractors; web site prescriptive forms and referral through customer service and account management.
Target participation	280 projects by the end of 2011

3. 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>
<u>Services and Initiatives Supported by Contractor</u>				
<u>Electric EEU Funds</u>				
Business Sector	\$17,104,000	\$17,873,000	\$19,250,200	\$54,227,200
Residential Sector	<u>\$10,244,400</u>	<u>\$11,710,500</u>	<u>\$12,602,900</u>	<u>\$34,557,800</u>
Total Electric EEU Funds Services and Initiatives	<u>\$27,348,400</u>	<u>\$29,583,500</u>	<u>\$31,853,100</u>	<u>\$88,785,000</u>
<u>Services and Initiatives Supported by Contractor</u>				
<u>Unregulated Fuel Funds</u>				
Business Sector	\$42,700	\$685,000	\$1,366,400	\$2,094,100
Residential Sector	<u>\$606,300</u>	<u>\$1,980,600</u>	<u>\$3,697,400</u>	<u>\$6,284,300</u>
Total Unregulated Fuel Funds Services and Initiatives	<u>\$649,000</u>	<u>\$2,665,600</u>	<u>\$5,063,800</u>	<u>\$8,378,400</u>
TOTAL SERVICES AND INITIATIVES	<u>\$27,997,400</u>	<u>\$32,249,100</u>	<u>\$36,916,900</u>	<u>\$97,163,400</u>
<u>Contractor Electric EEU Funds Supporting Services</u>				
General Administration	\$233,700	\$255,500	\$270,100	\$759,300
ISO-NE Regional Capacity Activities	\$413,100	\$399,100	\$389,400	\$1,201,600
Vermont System Planning Committee Participation	\$49,300	\$3,100	\$4,800	\$57,200
Information Technology	<u>\$736,200</u>	<u>\$818,800</u>	<u>\$862,000</u>	<u>\$2,417,000</u>
Total Supporting Services	<u>\$1,432,300</u>	<u>\$1,476,500</u>	<u>\$1,526,300</u>	<u>\$4,435,100</u>
Operations Fee	<u>\$228,840</u>	<u>\$286,260</u>	<u>\$352,158</u>	<u>\$867,258</u>
Sub-Total Prior to Performance-Based Fee	<u>\$29,658,540</u>	<u>\$34,011,860</u>	<u>\$38,795,358</u>	<u>\$102,465,758</u>
Performance-Based Fee	<u>\$782,000</u>	<u>\$892,400</u>	<u>\$1,022,600</u>	<u>\$2,697,000</u>
TOTAL ESTIMATED COSTS INCLUDING PERFORMANCE-BASED FEE	<u>\$30,440,540</u>	<u>\$34,904,260</u>	<u>\$39,817,958</u>	<u>\$105,162,758</u>

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.