

**Vermont Department of Public Service
Electric Energy Efficiency Evaluation
Plan
2012-2014**

April 1, 2011

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Introduction

Vermont law, 30 V.S.A. §209 requires that the Public Service Board (“PSB” or “Board”) “[p]rovide for the independent evaluation of programs delivered” by an Energy Efficiency Utility (“EEU”) funded through an Energy Efficiency Charge (“EEC”). The Department of Public Service (“Department” or “DPS”) has been identified as the entity who would carry out this role since the EEU’s inception, first in Docket 5980,¹ and more recently in the “Process and Administration of an Order of Appointment” approved by the Board 12/20/2010. This Evaluation Plan (“Plan”), provided in the context of the Demand Resources Plan (“DRP”) Proceeding, outlines the Department’s plans to evaluate the EEU’s and Vermont’s efficiency markets for the 2012-2014 three-year performance cycle.

This evaluation plan is applicable to Vermont’s EEU’s - Efficiency Vermont (“EVT”) and Burlington Electric Department (“BED”). The Plan focuses on measurement, verification and evaluation activities of EEU programs intended to acquire both electric energy efficiency (funded by the Energy Efficiency Charge on electric ratepayer bills) and Heating and Process Fuel (“HPF”) efficiency (funded by the revenues from the Regional Greenhouse Gas Initiative and participation in the Forward Capacity Market). In addition, this Evaluation Plan describes the Department’s proposal to continue to perform the evaluation activities associated with participation in the ISO-New England Forward Capacity Market (“FCM”). The Plan also briefly describes other evaluation activities undertaken by the Department but not specifically funded by the EEC or HPF funds. These other activities are important in that energy efficiency evaluation work does not happen in isolation, rather the multitude of activities undertaken by the Department in this area leverage and inform one another.

Evaluation necessitates cooperation from other entities however; primary responsibility for the evaluation described herein remains with the DPS. For the 2012-2014 performance cycle, the Department proposes an EEC-funded evaluation budget of \$2,846,900, a HPF-funded evaluation budget of \$376,300, and a FCM-funded evaluation budget of \$1,804,400. The process and specific program and evaluation budgets are discussed in more detail below, and detailed description of the assumptions used to develop the budgets can be found in Appendix A. The Department will submit an annual plan for each upcoming evaluation year describing activities and anticipated budget for that year.

During the 2009-2011 performance cycle, the Board approved the usage of the EEC to fund the equivalent of two full-time evaluation staff. The Department proposes to retain two full-time evaluation staff within this plan. The Department expects that resources will result in more timely and effective evaluation as well as the development of more robust in house evaluation systems. Further, we expect that these resources will result in

¹ In its Order of 9/30/99 in Docket 5980, the Board approved a Memorandum of Understanding between parties that identified the Department of Public Service (“DPS” or “Department”) as the entity to “provide for formal evaluation of the Core Programs and any other System-wide programs approved by the Board for EEU implementation.”

a net savings associated with funds that otherwise would have been spent securing outside evaluation contractors. It is important to note that in addition to these savings, the Department is also able to *increase* the amount of activity conducted under this plan, better informing our understanding of efficiency markets and initiatives, leading to sound policy choices based upon the best available information.

Finally, the Department has been discussing a structural modification to its energy efficiency evaluation framework with stakeholders. This change would leverage the evaluation and verification work conducted in the context of the Forward Capacity Market with the annual savings claim verification. Discussions thus far have highlighted a number of diverging opinions related to the practicality and value of any potential change. The Department is interested in the potential for increased confidence in savings claims, increased administrative efficiency, and reduced total costs that may be realized by this change. However, differences in evaluation purpose, timing, and impact requirements make a merging of the Forward Capacity Market and annual savings verification process complex. It is necessary to proceed with caution to ensure that there are no unintended consequences from such a change in evaluation structure. Throughout 2011 and the 2012-2014 evaluation cycle, the Department plans to continue discussions with stakeholders and evaluation experts in an effort to identify and further explore the areas where practical synergies present themselves. This evaluation Plan does not present a merging of savings verification and FCM evaluation for all EEUs, however, the intention is to leave ample room for taking steps towards this end within the 2012-2014 evaluation cycle, as appropriate. This evaluation plan continues to consider the annual savings verification process and the FCM evaluation as independent efforts.

Evaluation Goals and Objectives

The goal of the proposed evaluation under this plan is to provide ratepayers and the Board with an independent evaluation of EEU programs, pursuant to statutory obligations under § 209(e)(10) and under the Board's direction under the Order of Appointment. In addition to the key task of verifying the direct impacts of the EEU's activities², the implementation of this plan should enable the Department, the Board, and various stakeholders to improve and update their understanding of Vermont's dynamic energy efficiency markets, and continue to advance Vermont's ability to capture energy efficiency savings. Toward those ends, this plan has the following overall objectives:

1. Verify the annual savings claims made by EEUs relative to performance targets, including but not limited to annual energy and coincident peak capacity savings, and total resource benefit (TRB), mmBtu;
2. Provide evaluation activities necessary to meet the requirements of participation in the FCM;

² It should be noted that evaluation activities to verify EVT and BED savings are independent but often evaluation efforts overlap. The Plan and budget do not separate EVT and BED evaluation activities.

3. Perform evaluation activities necessary to evaluate “geotargeting” efforts, to the extent that the initiative continues;
4. Perform evaluation of select “Non-Resource Acquisition” activities
5. Conduct market studies to characterize and assess current conditions in discrete energy efficiency markets identified in prior evaluation studies and reports, and in any new markets as may be identified by stakeholders;
6. Benchmark the scope and results of Vermont energy efficiency portfolios and initiatives relative to other programs in the nation;
7. Support the development and understanding of changing baselines and measure characterizations through participation in the Technical Advisory Group, including measures or initiatives where significant uncertainty exists and/or where the potential savings contribution is large, such as behavioral modification initiatives.
8. Maximize the value of evaluation expenditures by retaining in-house resources and partnering with other New England evaluation efforts where possible and appropriate;

This plan considers DPS energy efficiency evaluation in the context of the EEU’s Demand Resources Plan (“DRP”)³, incorporates a variety of funding sources⁴ and includes diverse mix of evaluation activities. The plan’s goals will be met through a variety of evaluation techniques, including impact assessments, market characterizations and assessments, process evaluations, and research. Some activities will be carried out via independent contractors⁵ and others will be performed by in-house staff in order to reduce the proportion of contracted efforts relative to past evaluation cycles and continue to build the Departments expertise and in house evaluation management systems.

Budget

Vermont’s structure of efficiency delivery and its mix of energy efficiency funding sources is somewhat different than in past years. The 2012-2014 Plan is being developed within the context of several new factors, including the presence of the DRP, a longer term EEU appointment, and designated DPS staff devoted to evaluation activities. As a result, it is important to note an improvement in the way the Plan and budget have been developed.

In the past, the Plan and budget were built from the top down using a fixed percentage of the EEU’s three year budget. This fixed dollar amount was used to frame the scope of all

3 Required as part of a longer term EEU Order of Appointment, the Demand Resources Plan (DRP) will be a statewide plan that identifies short- and long-term energy efficiency budgets and savings goals, as well as other compensation matters related to the delivery of energy efficiency services by Vermont’s EEU’s.

4 Evaluation plan funding sources include but are not limited to the Energy Efficiency Charge (EEC), Forward Capacity Market (FCM) and Regional Greenhouse Gas Initiative (RGGI).

5 Competitive bids for specific identified objectives will be sought through the state approved request for proposals (“RFP”) process.

evaluation activities. For the 2012-2014 cycle the Department has built the evaluation budget from the ground up, effectively enabling the Department to plan both in-house and contracted evaluation activities, as well as categorize evaluation activities by funding source with appropriate cost-shares. This process provides a holistic view of all energy efficiency evaluation activities and the most accurate allocation of costs to date. Finally, this plan reflects activities the Department believes it needs in order to provide comprehensive evaluation without substantially increasing the evaluation budget compared to past years. This is a significant accomplishment, given the increased scope and complexity of the State's energy efficiency programs. The Department views this approach as advantageous and the preferred model for the future.

The Department views the three-year evaluation cycle holistically – costs and staff time for the activities described herein may not be equal in each year within the three-year cycle. For example, market characterizations that require a large portion of the allocated evaluation budget only occur once within a cycle. Consistent with EEC collections in the past, the Department proposes that collections for these evaluation efforts be made gradually, so as to mitigate any volatile rate impacts due to evaluation activities.

For the 2012-2014 performance cycle, the Department proposes an EEC-funded evaluation budget of \$2,827,700⁶, a HPF-funded evaluation budget of \$378,400, and a FCM-funded evaluation budget of \$1,804,400. Considerable cost savings are expected through the reduction of funds allocated to outside contractors, who generally charge at a higher cost than in-house employees. In addition, in-house resources allow the Department to conduct additional evaluation activities in a timely and cost-effective manner, for example annual benchmarking and an evaluation of potential behavior modification based measures. The Plan's budget (found in Attachment A) illustrates each evaluation activity, funding source/ cost-share mix and in-house/ contractor labor mix (associated evaluation budget savings estimated from use of in house resources is available upon request).

The following sections describe core evaluation activities specifically plus evaluation support activities related to planning, management, professional development, expert services, regional evaluation coordination and other evaluation activities.

Evaluation Activities

Accurate and reliable savings estimates are a vital component of the statewide energy efficiency programs operated within Vermont. Impact evaluation is an industry standard that determines program-specific induced benefits which include reductions in energy and demand usage such as (such as kWh, kW) and the other Total Resource Benefits⁷ that can be directly attributed to energy efficiency.

⁶ Historically, BED's contribution to the evaluation budget has been a percentage based upon the territory's percent of total kWh sales. The Department proposes that this process to allocate EEC evaluation costs remains in place.

⁷ Total Resource Benefit includes gross electric benefits, fossil fuel savings, and water savings.

The narrative below specifies the primary evaluation type; it should be noted that impact evaluation is typically associated with *programs* and measurement and verification with *projects*. In addition, it is not uncommon to mix these and other evaluation types in order to maximize results. Attachment A contains additional budget detail for each evaluation activity.

The Department proposes that it should retain the ability to prioritize any of the below assessments, or other as yet unidentified assessments to focus on what is most beneficial to Vermont's energy efficiency initiatives and assessment relative to performance targets. Further, costs associated with any one of the assessments in this plan are the Department's best estimate, and may be subject to change.

Core Energy Efficiency Charge Evaluation Activities

The following activities are central to the Department's effort to assess the impacts of Vermont's energy efficiency programs.

Annual Savings Verification

Pursuant to the statutory requirements identified above and the VEIC and BED Order of Appointments, the DPS is responsible for the annual verification of energy and capacity savings and total resource benefits claims relative to performance targets. To carry out these responsibilities, the Department will conduct an intensive review of the overall EVT savings and TRB claim. A comprehensive review of the database of prescriptive measures will be undertaken to ensure agreed upon values are applied correctly. The high cost of individual project verification usually necessitates the design and implementation of a random sample of business custom projects for review. For selected projects, the Department will complete a comprehensive review, examining all files associated with these custom projects, including billing history, savings analysis tools, and measure level savings claims. Once savings adjustments are finalized for sampled projects, a realization rate is applied to adjust the remainder of custom projects. The above activities will be summarized in a report and recommendations as to energy efficiency savings claims and TRB will be made to the Public Service Board in accordance with the schedule outlined in each EEU's Order of Appointment.

In the recent past, all project review has been conducted by external contractors. This plan contemplates a significant amount of the review being conducted internally. In addition, the Department proposes to increase the amount of site visits conducted during the annual savings verification process. Site visits had been limited in the past; however they will allow the Department gain a better understanding of project circumstances and savings.

Evaluation Budget: \$473,600

Evaluation Type: *Measurement & Verification*

Source: *Energy Efficiency Charge*⁸

Geotargeting

In August of 2006, pursuant to 30 V.S.A. § 248(b)(2), the Public Service Board modified the 2006-2008 EVT contract to direct a portion of the state's energy efficiency investments to areas where there was a potential for an energy efficiency alternative to a transmission and distribution ("T&D") upgrade.⁹ "Geotargeting" ("GT") was implemented for 2007-2008 within the service territories of Central Vermont Public Service, Green Mountain Power, and the Vermont Electric Cooperative. The Board requested that the Department of Public Service "work with Efficiency Vermont and the Vermont electric utilities to develop evaluation measurements that will verify that geographically targeted energy-efficiency can achieve the intended result of deferring transmission and distribution upgrades."

An evaluation of Geotargeting was completed at the end of 2010. Results concluded that Geotargeting is a technique that appears to work in reducing load in areas with T&D constraints. However, GT evaluation results are complex and multi-faceted. While GT efforts can reduce load, GT's cost effectiveness in deferring T&D upgrades depends on a number of dynamic and conditional factors unique to any particular GT area.

It is unknown at the time of this filing whether GT efforts will continue for the 2012-2014 evaluation cycle. However, the Department includes resources to evaluate future GT initiatives in this evaluation budget. The goal of future GT evaluation is to continue to assess the electric energy savings impact and to attempt verify whether intensive energy efficiency efforts are delivering electric energy efficiency savings a rate fast enough to cost effectively defer a planned T&D upgrade. In addition, the evaluation will continue to examine the target area selection process and the program delivery mechanisms.

It is important to note that this evaluation will not attempt to forecast or evaluate when T&D investments are needed, ultimately this is the decision of distribution utilities, VELCO and the Public Service Board. Rather, this evaluation will aid parties in determining under what conditions GT remains an effective option for deferring or avoiding T&D projects and/or to what degree GT alleviates system stress.

GT evaluation is tentatively planned for 2013 in order to include sufficient time for programs to continue and/or develop while allowing evaluation results to be available to inform policy decisions related to GT programs in the next (2015-2017) performance cycle. It is intended that GT evaluation results will help to guide future decisions to refine, expand, retarget, or terminate GT efforts.

⁸ Funding for Annual Savings Verification is proposed to be supplemented by funding from the Green Mountain Power Energy Efficiency Fund, as described in the relevant section below.

⁹ Public Service Board Order Re Geographic Targeting of EEU Funds, p.3. January 8, 2007. See: publicservice.vermont.gov/energy-efficiency/orderregeographictargetingoriginal.pdf

GT evaluation will primarily be performed by outside contractors. In-house resources will assist with the development of evaluation instruments, some reporting and overall management.

Evaluation Budget: \$166,000

Evaluation Type: *Impact Evaluation and Process Evaluation*

Source: *Energy Efficiency Charge*

Technical Advisory Group and Technical Reference Manual Review

An ongoing Technical Advisory Group (TAG) reviews EVT's Technical Reference Manual (TRM) additions and revisions, follows up on Department findings in its verification processes, and provides a valuable forum for other issues related to EVT's savings estimate procedures. In the past the Department has relied heavily on outside contractors; in the 2012-2014 evaluation cycle the Department's TAG participation will use some contractor support to provide advice and recommendations to the Department throughout the process. However, internal staff resources will primarily lead the effort.

The activities associated with this ex ante evaluation activity are expected to increase significantly in the 2012-2014 time period. Stakeholders have recently implemented steps to systematically update every TRM measure characterization, which will require the Department's review of an increased amount of characterizations. Thus, overall costs associated with this activity have increased relative to recent years.

Evaluation Budget: \$108,700

Evaluation Type: *Supports Impact Evaluation and Measurement & Verification*

Source: *Energy Efficiency Charge*

Market Characterizations & Assessments

Market studies document saturation of efficient buildings, equipment, lighting, and other appliances and can identify areas with remaining energy efficiency potential. Market studies establish the most current energy efficiency market "baselines" which can illuminate market segments with remaining opportunities and be useful in program design. Further, after a decade of program implementation experience in Vermont, these assessments conducted at standard intervals will begin to provide an indication of market transformation in certain areas. As in past performance cycles, the Department intends to conduct market assessment and baseline studies. For this cycle, the Department will place increased emphasis on collecting reliable market share and electric measure saturation data. In addition, the scope will assess adherence to building codes, building shell characteristics, natural gas and heating and cooling fuel type distributions¹⁰.

A series of four studies will be conducted as described below:

- *Residential Existing Facilities*. Conduct a large scale on-site assessment of existing single family homes to:
 - Document lighting and appliance saturation

¹⁰ Additional funding sources may be available to assist with some or all of these portions of the scope

- Document home overall efficiency levels
- *Residential New Construction.* Conduct an on-site assessment of newly constructed homes to:
 - Determine saturation of efficient homes and appliances in those homes
 - Document compliance with Residential Building Energy Standards
- *Business Existing Facilities.* Conduct a large scale on-site assessment of existing commercial and industrial facilities to:
 - Document building, lighting and equipment status and efficient equipment saturations
 - Document building overall efficiency levels
- *Business New Construction.* Conduct an on-site assessment of newly constructed buildings to:
 - Document compliance with Commercial Building Energy Standards
 - Determine saturation of above code buildings and efficient equipment

The Department will primarily use contractors to conduct market characterization studies. However, in-house evaluation staff will assist with the development of evaluation instruments and overall management, including increased data collection quality control. Staff will also create systems that frame market characterization data so it can be analyzed for trends from one three year cycle to the next.

Evaluation Budget: \$1,164,000

Evaluation Type: *Market Characterization and Baseline Creation*

Source: *Energy Efficiency Charge(88%) HPF (12%) cost-share¹¹*

Benchmarking of Vermont Energy Efficiency efforts

Past cycles of evaluation and verification activities have provided a detailed review of EEU savings claims. However, these studies have not sought to determine Vermont's standing relative to its peers regarding overall energy efficiency investment portfolio and program results. The Department conducted a benchmarking study in 2010 that was a valuable starting point for data and comparisons across the country. That benchmarking effort itself identified areas of uncertainty and differences between reporting in various jurisdictions. The DPS will conduct a benchmarking effort that seeks to compare Vermont's energy efficiency programs with other jurisdictions, maintaining attention to differences in program maturity, state demographics, economic conditions, and energy rates (electric, natural gas and heating & process fuels), as well as the above mentioned reporting distinctions. Benchmarking may also consider how other states are supplementing core programs with pilot projects and innovative financing mechanisms. The Department will issue one three year study, however it plans to collect and update data annually throughout the performance period.

The Department's internal evaluation staff will be the primary benchmarking evaluator.

Evaluation Budget: \$35,400

¹¹ EEC/ HPF cost-sharing calculations can be referenced in the Budget. This cost-share is based on EEC and HPF % share of the total combined EEC & HPF three year budgets.

Evaluation Type: *Regional and National Program Comparison*
Source: *Energy Efficiency Charge*

Supporting Energy Efficiency Charge Evaluation Activities

This section describes activities that are related to the Core Activities outlined above that support and further enhance understanding of Vermont’s energy efficiency markets and reliability of savings claims. It includes the evaluation of particular markets or initiatives that have been identified to further information or assessment, support of regional initiatives, and the allocation of funds to address unpredictable circumstances where additional information is needed to properly verify savings claims.

Non-Resource Acquisition Initiatives

As part of the Order of Appointment Structure, EEU’s have proposed “Non-resource acquisition” (“NRA”) initiatives for approval by the Board. These initiatives are those that do not directly contribute to resource acquisition, but are nonetheless important to be undertaken by an EEU, such as supporting the advancement of building codes or energy education programs. The Department has allocated evaluation resources to assess some select non-resource acquisition initiatives. Specific evaluation activities will be proposed in annual plans. These evaluations are expected to be conducted with primarily internal resources, however some contractor funding is allocated to supplement.

Evaluation Budget: \$56,900
Evaluation Type: *Process Evaluation*
Source: *Energy Efficiency Charge (88%) HPF (12%) cost-share*

Administrative Efficiency

As part of the Order of Appointment Structure and the DRP proceeding, quantitative administrative efficiency metrics will be developed for the EEU’s. The Department will be responsible for evaluating performance relative to these metrics. Specific evaluation activities will likely be developed in conjunction with the development of the metrics. This plan allocates resources to hire an independent contractor to evaluate administrative efficiency.

Evaluation Budget: \$257,300
Evaluation Type: *Management Audit/ Deep Process Evaluation*
Source: *Energy Efficiency Charge (88%) HPF (12%) cost-share*

Residential Custom Measures

Savings from residential custom measures are difficult to quantify and difficult to measure. Claims for these custom measures have historically been verified only through a paper review of submitted projects, as annual metering and on-site visits to verify savings for these types of projects are cost-prohibitive. A review of EVT and BED’s program tracking databases highlighting the extent and variety of residential custom measures being claimed will frame measures that need to be further assessed, and the Department proposes a one-time project to conduct primary and secondary research

including literature reviews, outreach to other states, billing and metering to better understand the savings acquired in this market.

Evaluation Budget: \$108,600

Evaluation Type: *Impact Evaluation and Measurement & Verification*

Source: *Energy Efficiency Charge*

Energy Savings Accounts & Customer Credit Program

Some large business customers have expressed a desire to implement electrical energy efficiency measures independently from their EEU. For these customers the Vermont General Assembly passed legislation requiring the Department to develop an Energy Savings Account (“ESA”) option that would allow customers that have both the interest and capability to self-administer their own energy efficiency efforts to do so. Customers who choose to self-administer using the ESA option will be subject to the same savings verification oversight as an EEU.

Participation in this program has been minimal to date. The Department plans to assess the program design and barriers to entry in the upcoming evaluation cycle. The budget estimates two customers will enroll in the ESA program during this evaluation cycle. The Department’s in house evaluation staff will facilitate program re-design (as appropriate) and be the primary evaluator of ESA participants. A small role for contractor assistance with metering of larger ESA projects is planned if needed.

The Customer Credit Program (“CCP”), created as part of the Memorandum of Understanding between parties in Docket 5980, and later approved by the Board, allows commercial and industrial customers who meet eligibility criteria to use a portion of the funds they have paid to the EEC to invest in energy efficiency projects independent of EVT. While there are currently no customers in the program, the Department anticipates that one customer will enroll in the CCP program during this evaluation cycle. The Department’s internal evaluation staff will be the primary evaluators of the CCP. Similar to the ESA evaluation proposal, a small role for contractor assistance with metering of larger CCP projects is planned if needed.

Evaluation Budget: \$31,000

Evaluation Type: *Impact Evaluation and Measurement & Verification*

Source: *Energy Efficiency Charge*

Regional Evaluation Coordination

Vermont’s relatively small evaluation budget creates challenges for effectively monitoring and verifying energy efficiency programs. Impact and Market assessments quickly become expensive activities. The underlying goal of this DPS evaluation plan is to accomplish sound and reliable estimates of energy efficiency impacts at a reasonable cost. To maximize available funds, the DPS plans to where appropriate, partner with other New England and Northeastern jurisdictions for evaluation studies.

Northeast Energy Efficiency Partnerships has created the Northeast Evaluation, Measurement and Verification Forum to “serve Northeast states and interested

stakeholders to develop and use common regional protocols to estimate, evaluate, track and report energy-related savings, costs and emission reductions from demand-side resources.”¹² The Department of Public Service, along with EVT and the Public Service Board, has participated in the Forum. The Department proposes to continue to fund some of the forum’s operational costs, along with jointly funded evaluation studies. Examples of the studies conducted by the forum include research regarding load shapes for particular measures, estimating the potential for claiming savings from codes and standards, and other work that may be cost prohibitive to perform in isolation.¹³ As this forum was created, in part, as a response to the ISO-NE Forward Capacity Market (FCM), the Department proposes that half of the costs associated with forum participation be funded through the revenues from FCM participation. The other half should be funded through the EEU Evaluation Budget.

The Department plans to take a more active role in the NEEP forum over the next performance period. Thus, a small amount of internal resources are allocated to these efforts.

In addition, the Department is a member of the Consortium for Energy Efficiency, an association of energy efficiency program administrators who work together on common approaches to advancing energy efficiency. A small amount of budget is allocated to membership dues and cost sharing for specific studies that are relevant to Vermont energy efficiency programs.

Evaluation Budget: \$181,100

Source: *Energy Efficiency Charge (75%) & Forward Capacity Market (25%) cost-share*

Behavioral Evaluation Activities

The Department expects that behavior-change focused initiatives aimed at reducing energy use will be introduced by the State’s EEUs during (or even prior to) the 2012-2014 performance cycle. These behavior based measures could include direct feedback programs such as those expected to be enabled by Advanced Metering Infrastructure, or could be indirect such as monthly informational communications comparing performance of one customer with the average. Estimates of the amount of savings (and their persistence) associated with behavior type measures vary within the industry, but are at this point relatively uncertain. The Department has allocated funds to participate in the efforts described by VEIC related to Smart Grid implementation, and to perform a significant evaluation of behavioral programs during the 2012-2014 timeframe. The evaluation will be completed by outside contractors, with in-house resources contributing significantly to evaluation design and management of the study.

Evaluation Budget: \$207,900

Evaluation Type: *Impact Evaluation and Market Assessment*

Source: *Energy Efficiency Charge*

¹² “Northeast Evaluation, Measurement and Verification Forum for Demand-Side Resources Three Year Plan” April 28, 2008. Northeast Energy Efficiency Partnerships, Inc.

¹³ More information on the Forum can be found at <http://neep.org/emv-forum>

Contingency Evaluation Funds

Other currently unforeseeable evaluation needs may develop as this performance cycle progresses. For example, the Department intends to leverage the 2011 commercial market assessment by adding an analysis of the distribution of compact fluorescent bulbs purchased through the Efficient Products Program to residential and/or commercial customers, and the hours of use associated with those purchased bulbs. This area has a high level of savings and also a high level of uncertainty, and warrants specific attention.

Further, all evaluation costs are the Department's best estimates, with various cost and resource allocation assumptions that could easily vary depending on any number of circumstances. Thus, the Department finds it appropriate to allocate some contingency funds to directly supplement appropriate evaluations as needed. These funds amount to 5% of the total EEC funded evaluation budget.

Evaluation Budget: \$128,400
Evaluation Type: *Contingency*
Source: *Energy Efficiency Charge*

Heating and Process Fuels Initiatives Evaluation Activities

The Department has, in the context of the DRP, submitted proposals for budgets and services to be delivered for Heating and Process Fuel (HPF) efficiency initiatives jointly with each of the EEU's. These programs leverage the programs already in place to deliver electric efficiency to the greatest extent possible. As a result, programs overlap significantly. As illustrated above EEC/HPF cost-share has been applied to some specific evaluation activities (conducting HPF specific evaluations such as market and building type assessments would be duplicative and thus are not necessary). TAG issues, including TRM development, are likely to be minimal in comparison to the electric sector. An annual review of all prescriptive HPF measures will be conducted in conjunction with the annual review for the electric sector.

The Department will continue to monitor the cost-share practice and propose any changes to this methodology in its annual plans if costs associated with HPF activities begin to take a larger share of activities.

Other EEU HPF services, however, do require some dedicated evaluation. Those are described in more detail below.

Home Performance with Energy Star Evaluation

Nearly half of the funding associated with HPF programs is allocated to funding the Home Performance with Energy Star program for residential energy efficiency retrofits in single-family homes. This program is also being leveraged to provide services to small businesses. While some of the measures implemented under this program acquire electric efficiency, the bulk of the measures are directed toward acquisition of heating

and process fuel efficiency savings. This program, while offered for some time in Vermont, has not had an in-depth impact evaluation. The Department proposes such an evaluation to be completed in 2012. This evaluation will be completed mostly by outside contractors, with internal resources contributing to evaluation instruments.

Evaluation Budget: \$63,200 (HPF only portion)
Evaluation Type: *Impact and Process Evaluation*
Source: *FCM & RGGI Revenues*¹⁴

Vermont Fuel Efficiency Partnership

EVT is coordinating via the Vermont Fuel Efficiency Partnership to deliver services to multi-family low income customers. Approximately 20% of the HPF budget is dedicated to this service. The Department proposes to provide both a process and impact evaluation for this service during the 2012-14 timeframe.

Evaluation Budget: \$82,800
Evaluation Type: *Impact and Process Evaluation*
Source: *FCM & RGGI Revenues*

HPF Contingency

Similar to the EEC funded evaluation activities, the Department proposes that some funding be allocated for unforeseen HPF evaluation needs, and potential variation in actual costs from those estimated here.

Evaluation Budget: \$32,300
Evaluation Type: *Contingency*
Source: *FCM & RGGI Revenues*

Forward Capacity Market Evaluation

The Independent System Operator of the New England electric grid (ISO-NE) created a Forward Capacity Market to ensure that the region has sufficient capacity to meet its peak demand needs. This market-based initiative allows for demand resources, including energy efficiency, to compete directly with generation resources to provide capacity. In order to participate in the market, providers of energy efficiency resources must demonstrate that their efficiency savings are verified in compliance with the ISO-NE standards established for this purpose. Efficiency Vermont (EVT) and Burlington Electric Department (BED) have bid their respective efficiency program portfolios into the FCM, and submitted detailed measurement and verification (M&V) plans that delineated how the evaluation process in Vermont will comply with ISO-NE standards. The original M&V Plans identified the Department of Public Service as the entity who would conduct the independent evaluation required. Subsequent plans filed have not

¹⁴ HPF funding is proposed to be supplemented by funding from the Green Mountain Power Energy Efficiency Fund (GMP EEF). The Fund supports incremental projects in GMP's service territory.

explicitly identified the Department as fulfilling this role. This plan proposes that that the Department remains best suited to conduct and manage such evaluation.¹⁵

The budget below includes the estimated costs associated with both contractor and in-house resources to conduct the Forward Capacity Market evaluation. This includes the development of a sample and sampling plan (these costs are already shared between the annual savings verification and the FCM processes), the development of metering plans for all selected projects, the metering (including purchase or lease of meter equipment) of small and medium sized projects (under the current process, EEU's meters large projects and provides unanalyzed meter data to the DPS for review), the analysis of all sized projects, reporting and costs associated with planning and management.

Evaluation Budget: \$1,759,100
Evaluation Type: *Impact Assessment*
Source: *FCM Revenues*

Planning and Management

This section describes activities related to the planning and management of evaluation activities. Budgeted costs are shared between EEC and HPF at a 88% - 12% ratio. FCM Planning and Management are included in the FCM budget above. This category includes general evaluation planning, technical assistance, professional development, and other direct costs associated with implementation of this plan. The Department notes that not all costs associated with planning are funded via the energy efficiency fund – other funding sources such as federal grants are leveraged where possible. Those costs are not included here.

Evaluation Planning & Administration

The Department has estimated general costs associated with development of its annual evaluation plan, annual reporting on results, and its three year plan. A small amount of administrative costs are included for tasks that are not particular to any one set of evaluations. Annual plans will be submitted to the Public Service Board by November 1st of each year.

Planning costs associated with the Forward Capacity Market evaluations are included as a part of those total costs as described in the above FCM budget.

Evaluation Budget: \$33,900
Source: *Energy Efficiency Charge (88%) and HPF (12%) cost-share*

¹⁵ VEIC, in its Non-Resource Acquisition track filing of January 31st, proposed that it complete evaluation activities related to the Forward Capacity Market. The Department proposes here that it continue to perform these evaluation activities. At the time of the filing of this plan, the Department continues to collaborate with EEU's to reach a consensus on this issue. The Department expects to further discuss this issue at the workshop regarding this plan.

Expert Technical Assistance

The Department proposes that further evaluation support will continue through the 2012-2014 period through a contract for expert energy program evaluation services, including evaluation design and technical quality control. These services provide a regional and national perspective on Vermont's activities, help the Department reduce costs and obtain the highest possible value from evaluation contractors, and provide a breadth of policy and evaluation design experience to the Department. As this technical assistance is relevant to electrical and HPF energy efficiency programs, this budget is proposed to be cost-shared.

Evaluation Budget: \$90,000

Source: *Energy Efficiency Charge (88%) and HPF (12%) cost-share*

Survey House

The Department expects to evaluate the practicability of hiring its own survey house (via RFP process) to conduct phone surveys completed as a part of a number of the above described studies. The Department believes that cost reductions could be achieved by managing survey firms in house, rather than have them as a subcontractor to other hired consultant firms on a project by project basis. The Department will investigate this possibility over the course of 2011 through a request for qualifications and other relevant means. In its 2012 annual evaluation plan, the Department will provide an update on the status of this evaluation management methodology. This methodology has no budget associated with it here – if adopted it should serve to reduce the costs associated with other evaluations.

DPS Staff Evaluation Training

Consistent with past evaluation plans and performance cycles, the DPS has allocated funds to support staff training, including attendance at various industry conferences.

Training costs associated with the Forward Capacity Market are included as a part of those total costs as described in the above FCM budget.

Evaluation Budget: \$41,900

Source: *Energy Efficiency Charge(88%) and HPF (12%) cost-share*

Other Direct Costs

Other Direct Costs (“ODCs”) consist of travel, equipment, and other expenses incurred by in-house resources that are associated with the above mentioned evaluation activities. Historically, ODCs have occasionally been funded via the energy efficiency charge. This plan proposes to improve tracking of such costs, and allocate them to the appropriate funding source. ODCs do not include travel or expenses associated with the Staff evaluation training described above.

Other direct costs associated with the Forward Capacity Market evaluations are included as a part of those total costs as described in the above FCM budget.

Evaluation Budget: \$5,500

Source: *Energy Efficiency Charge (88%) and HPF (12%) cost-share*

Other Evaluation Activities

This section briefly describes some other known evaluation activities that will be undertaken by the Department during the 2012-14 timeframe. The Department endeavors to find synergies and leverage all evaluation activities to reduce total costs associated with our activities, while maintaining appropriate levels of oversight across activities. These evaluation categories have their own budget and are not included in the total evaluation budgets provided in this Plan.

Green Mountain Power Energy Efficiency Fund Evaluation Cost-share

Green Mountain Power Corporation (“GMP”), pursuant to a PSB Order in Docket 7213, established an Energy Efficiency Fund (“EEF”) to invest in energy efficiency projects to deliver significant and incremental benefits to GMP ratepayers.

The DPS, under the GMP EEF Evaluation plan, will continue to conduct evaluation activities as necessary to document impacts and improve the implementation and delivery of programs. The Original 5- year evaluation plan contemplated a total evaluation budget of \$351,000 to evaluate the programs of the GMP EEF. The GMP EEF has matured as a mechanism to increase the amount of EEU projects in GMP’s territory given limited funding, and thus in many cases evaluation efforts that would have occurred but for the GMP EEF are able to provide sufficient evaluation of the GMP EEF’s programs. In other cases, the Department proposes cost sharing between the GMP EEF Evaluation budget and the EEC-Funded Evaluation budget.

The Department’s proposed annual verification of electric efficiency savings claims and Home Performance with Energy Star (HPwES) evaluation both consider programs that are partially funded by GMP via the ‘mutual fund’ model. The Department proposes that the same approach be used for allocating evaluation costs. For 2011, the GMP EEF program is expected to contribute 25% of the cost to GMP projects (which are 35% of the total number of projects). Thus, the Department proposes that the EEF evaluation budget fund approximately 9% (25% of 35%) of the annual verification for those years, or approximately \$32,000 (\$16,000 in both 2012 and 2013). To allocate the costs of the HPwES program, the Department used the ratio of incremental jobs expected to be funded by GMP EEF (347) in 2011 relative to the total amount of EVT plus GMP jobs (947) to propose that approximately 37% of costs be funded by the GMP EEF.

In addition, the Department expects that the GMP EEF streetlighting program pilot be evaluated in 2012. The Department recognizes that this scope of evaluation will likely leave some funds from the GMP EEF Evaluation budget unallocated. The Department suggests that it should work with GMP to reallocate those funds to programs that will deliver benefits to ratepayers in 2012. The Department suggests that it will file an update to the GMP Energy Efficiency Fund Evaluation Plan by July 15, 2011.

Self Managed Energy Efficiency Program – SMEEP Participants

The Vermont General Assembly, in Act 45 of 2009, mandated that the Department propose a 3-year pilot program called the Self Managed Energy Efficiency Program (SMEEP). The Board's 12/28/2009 Order approving the SMEEP allows a customer the option to self manage energy efficiency – electricity and other fuels – efforts in their own facility. The program calls for DPS savings verification, which will be funded directly by SMEEP participants. Internal staff will be the primary evaluators that verify the savings from SMEEP. Currently one customer is enrolled in the program.

Energy Efficiency Potential Study

The Department anticipates it will require additional planning and management services in the fall of 2013-14 to prepare a DPS report identifying remaining technical, economic, and maximum achievable energy efficiency potential, and costs to achieve such potential. This study will inform a recommendation to the Board concerning the 2015-2018 EEU Budget. Under the MOU associated with Docket 5980, costs for preparation of such potential studies may be allocated directly to the State's distribution utilities. These costs are recoverable in accordance with traditional cost recovery mechanisms.¹⁶

Natural Gas EEU Evaluation

Docket 7676 is currently considering the appointment of an entity to serve as a Natural Gas Energy Efficiency Utility under an Order of Appointment. The Department, in the course of this docket, expects to be the entity to evaluate the performance of the Natural Gas EEU. The Department expects that funding for this evaluation will come from the Natural Gas EEU. A plan for Natural Gas evaluation will be developed in parallel with Natural Gas Order of Appointment structure documents, as appropriate. Any synergies and/or overlap with activities conducted under this plan will be highlighted in the Department's annual evaluation plan.

¹⁶ Docket 5980, Paragraph 11 of the Memorandum of Understanding approved by the Board 9/30/99.