

**Vermont Public Service Department  
Energy Efficiency Evaluation Plan  
2021-2023**

**February 21, 2020**

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## Introduction

30 V.S.A. §209 requires that the Public Utility Commission (PUC or Commission) “[p]rovide for the independent evaluation of programs delivered” by an Energy Efficiency Utility (EEU) funded through an Energy Efficiency Charge (EEC). The Public Service Department (Department or PSD) has been identified as the entity who would carry out this role since the EEU’s inception, first in Docket 5980,<sup>1</sup>. 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 2021-2023 three-year performance cycle.

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

Evaluation necessitates cooperation from other entities; however, the primary responsibility for the evaluation described herein remains with the PSD. As shown in the table below, for the 2021-2023 performance cycle, the Department proposes an electric EEC-funded evaluation budget of \$2,851,100, natural gas EEC-funded evaluation budget of \$660,800, a TEPF-funded evaluation budget of \$428,100, and a FCM-funded evaluation budget of \$1,452,600. The process used to develop the plan and specific program and evaluation budgets are discussed in more detail below, and detailed description of the assumptions used to develop the budgets are available upon request.

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

2021-2023 Period	Summary of Budget			
PSD Evaluation Category	2021	2022	2023	Total 2021-23
Ratepayer Funded through the Energy Efficiency Charge				
Electric EEC EVT	\$1,103,248	\$1,018,53	\$605,203	\$2,726,982
Electric EEC BED	\$61,921	\$61,975	\$20,194	\$124,090
Natural Gas EEC VGS	\$260,700	\$257,930	\$124,120	\$660,750
Total Ratepayer Funding				\$3,511,822
TEPF Funded through State Participation in ISO-NE FCM and RGGI Markets				
Forward Capacity Market (EVT)	\$462,738	\$355,211	\$355,690	\$1,173,640
Forward Capacity Market (BED)	\$110,285	\$84,753	\$84,873	\$279,910
Regional Greenhouse Gas Initiative (EVT)	\$206,438	\$201,016	\$130,868	\$407,822
Regional Greenhouse Gas Initiative (BED)	\$13,177	\$12,831	\$8,353	\$26,031
Total TEPF Funding				\$1,887,403

## Evaluation Goals and Objectives

The goal of the proposed evaluation under this plan is to provide ratepayers and the Commission with an independent evaluation of EEU programs, pursuant to statutory obligations under § 209(f)(10) and under the Commission’s direction under the Order of Appointment. In addition to the key task of verifying the direct impacts of the EEU’s activities<sup>2</sup>, the implementation of this plan should enable the Department, the Commission, and others to improve and update their understanding of Vermont’s dynamic energy efficiency markets, and continue to advance Vermont’s ability to capture cost-effective 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, total resource benefit (TRB), and MMBtu;
2. Provide evaluation activities necessary to meet the ISO-NE M-MVDR<sup>3</sup> requirements of participation in the FCM;
3. Perform evaluation of select “Development Support Services ” activities as needed
4. 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;

<sup>2</sup> It should be noted that evaluation activities to verify EVT and BED savings are independent but often evaluation efforts overlap. The Plan descriptions do not always separate EVT and BED evaluation activities however the budget does.

<sup>3</sup> [https://www.iso-ne.com/static-assets/documents/2018/10/manual\\_mvdr\\_measurement\\_and\\_verification\\_of\\_onpeak\\_and\\_seasonal\\_peak\\_demand\\_resources\\_rev07\\_20181004.pdf](https://www.iso-ne.com/static-assets/documents/2018/10/manual_mvdr_measurement_and_verification_of_onpeak_and_seasonal_peak_demand_resources_rev07_20181004.pdf)

5. Benchmark the scope and results of Vermont energy efficiency portfolios and initiatives relative to other programs in North America;
6. 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 the use of AMI data in program development and to optimize advanced measurement and verification platforms to reduce costs while maintaining high quality evaluation results;
7. 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 PSD energy efficiency evaluation in the context of the DRP proceeding<sup>4</sup>, incorporates a variety of funding sources<sup>5</sup> and includes a 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 contractors<sup>6</sup> and others will be performed by in-house staff in order to manage costs by reduce the proportion of contracted efforts relative to past evaluation cycles while continuing to build the Departments expertise and in-house evaluation management systems.

## **Budget**

For the 2021-2023 cycle the Department has constructed an evaluation budget to effectively enable 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 high-level overview 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 to perform in order to provide comprehensive evaluation of EEU programs. Given the scope and complexity of the State's energy efficiency programs this budget represents the Department best estimate of costs.

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

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4 Required as part of an EEU Order of Appointment, the Demand Resources Plan (DRP) is 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.

5 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).

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

cycle. For example, certain studies may require a large portion of the allocated evaluation budget but only occur once within a cycle.

For the 2021-2023 performance cycle, the Department proposes an electric EEC-funded evaluation budget of \$2,851,100, natural gas EEC-funded evaluation budget of \$660,800, a TEPF-funded evaluation budget of \$428,100, and a FCM-funded evaluation budget of \$1,453,600. In-house resources, which are included in the above budgets, allow the Department to conduct additional evaluation activities in a timely and cost-effective manner. Where reasonable, the Department will utilize in-house resources to conduct certain evaluation activities.

For electric EEC activities where benefits accrue to both electric and thermal goals the default assumption of an 84.5% / 15.5%<sup>78</sup> split is assumed between EEC / TEPF sources. However, there are evaluation activities where this split is not the assumed default such as the Home Performance with Energy Star (HPwES) program. Similarly, for electric EEC funded programs, where both electric EEU's participate, a split of 94% / 6% (EVT / BED) is the default split applied based upon BED's 6% share of statewide electrical sales.

The following sections describe core evaluation activities and evaluation support activities related to planning, management, professional development, expert services and other evaluation activities. This budget represents an overall reduction in costs across all funding sources and a total budget reduction of approximately 12.3% when compared to the 2018-2020 budget.

## Evaluation Activities

Accurate and reliable savings estimates are a vital component of the statewide energy efficiency programs operated within Vermont. Impact evaluation, done to industry standards, verifies program-specific induced benefits which include reductions in energy and demand usage (such as kWh, kW & MCF) and the other Total Resource Benefits<sup>9</sup> that can be directly attributed to energy efficiency.

The narrative below specifies the primary evaluation type; it should be noted that the term '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.

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.

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<sup>7</sup> Based upon the proposed 2021-2023 EVT/BED EEC/TEPF RA budgets

<sup>8</sup> *Dependent upon the EEU budgets ordered by the PUC the costs presented in this document to be revised based upon a different resource split.*

<sup>9</sup> Total Resource Benefit includes gross electric benefits, fossil fuel savings, and water savings.

Further, costs associated with any one of the assessments in this plan are the Department's best estimate and may be subject to change.

The rest of this plan is separated into the following sections.

- Core Energy Efficiency Charge Evaluation Activities
- Supporting Energy Efficiency Charge Evaluation Activities
- Thermal Energy and Process Fuels Initiatives Evaluation Activities
- Forward Capacity Market Evaluation
- Planning and Management
- Other Evaluation Activities

## **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 for electrical and natural gas funded programs.

### *Annual Savings Verification*

Pursuant to the statutory requirement within 30 V.S.A. §209, PUC Docket 5980<sup>10</sup>, and the VEIC, BED, and VGS Order of Appointments, the PSD has been appointed the entity responsible for the annual verification of claims relative to performance targets, such as annual energy and capacity savings and total resource benefits. To carry out these responsibilities, the Department will conduct a thorough engineering review of the overall EVT, BED and VGS savings and TRB claims. For EVT and VGS 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 statistical 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 Utilities Commission in accordance with the schedule outlined in each EEU's Order of Appointment. A similar process is carried out for BED but is done in concert with their Forward Capacity Market evaluation, this allows on-site visits and metering to substantiate the project files reviewed as part of the process.

Evaluation Budget: \$ 826,600

Evaluation Type: *Measurement & Verification*

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<sup>10</sup> In its Order of 9/30/99 in Docket 5980, the Commission approved a Memorandum of Understanding between parties that identified the Department of Public Service (PSD or Department) as the entity to "provide for formal evaluation of the Core Programs and any other System-wide programs approved by the Commission for EEU implementation."

Funding Source: *EVT EEC (\$496,900) BED EEC (\$17,300)*  
*EVT TEPF (\$105,000) BED TEPF (\$6,700)*  
*Natural Gas EEC (\$197,700)*

#### *Technical Advisory Group and Technical Reference Manual Review*

An ongoing Technical Advisory Group (TAG) reviews the Technical Reference Manual (TRM) additions and revisions, follows up on Department findings in its evaluation and verification processes, and provides a valuable forum for other issues related to the EEU's savings estimate procedures. The TRM is created and used by both the electric EEUs and thermal EEU; as there are many crossover measures between the thermal programs operated by the electric EEUs and the thermal EEU, co-ordination on measure characteristics is important. Where appropriate individual natural gas measures have been created and will be updated. Appropriate cost-sharing between all of the EEUs has been estimated in this plan to ensure equity.

EEUs continue to systematically propose updates to every TRM measure characterization as well as new characterizations to be included in the TRM, which continues to require the Department's review of an increased amount of characterizations. However, overall costs associated with this activity have been maintained relative to previous years.

Evaluation Budget: *\$118,100*  
Evaluation Type: *Supports Impact Evaluation and Measurement & Verification*  
Funding Source: *EVT EEC (\$72,800) BED EEC (\$5,100)*  
*Natural Gas EEC (\$40,200)*

#### *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 identify market segments with remaining opportunities and be useful in program design and planning. Further, after more than a decade of program implementation experience in Vermont, these assessments conducted at standard intervals provide an assessment of market transformation in certain areas. As in past performance cycles, the Department intends to conduct market assessment and baseline studies. This cycle, the Department will continue to place in emphasis on collecting reliable market share data, as well as electric and natural gas measure saturation data. In addition, the scope will assess adherence to building codes, building shell characteristics, natural gas and heating and cooling fuel type distributions<sup>11</sup>.

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 and multifamily homes less than four stories to:

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<sup>11</sup> Additional funding sources may be available to assist with some or all of these portions of the scope.

- Document home overall efficiency levels
- Document lighting and appliance saturation
- *Residential New Construction.* Conduct an on-site assessment of newly constructed single family and multifamily homes less than three stories 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, as well as multifamily buildings four stories or more 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 and multifamily buildings four stories or more 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 modification of existing evaluation instruments and overall management, including increased data collection quality control. The studies will frame market characterization data so it can be analyzed for trends from one three-year cycle to the next.

PSD anticipates a completed residential and commercial market assessment by mid-2021. The competitive RFP was issued early 2020 for these studies. As a result, the PSD has only included a portion of the overall estimated costs for this work in the 2021-2023 period.

Evaluation Budget: \$ 870,300

Evaluation Type: *Market Characterization and Baseline Creation*

Funding Source: *EVT EEC (\$646,000) BED EEC (\$41,400)*

*EVT TEPF (\$119,200) BED TEPF (\$7,600)*

*Natural Gas EEC (\$56,100)*

### *Benchmarking of Vermont Energy Efficiency Efforts*

In 2017, the Department conducted a benchmarking study that sought to determine Vermont's standing relative to its peers regarding overall energy efficiency investment portfolio. This was the third such study undertaken by the Department, this time looking at performance in 2014-2015. This benchmarking compared 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. Consistent with the current



requirements in the P&A Document<sup>12</sup> the Department proposes to complete a fourth study in the 2021-2023 period.

Evaluation Budget: \$89,900  
Evaluation Type: *Regional and National Program Comparison*  
Funding Source: *EVT EEC (\$54,000) BED EEC (\$4,000)*  
*Natural Gas EEC (\$31,900)*

## **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 in need of further assessment, support of regional initiatives, and the allocation of funds to address unpredictable circumstances where additional information is needed to properly verify savings claims.

### *Development Support Services Initiatives*

As part of the Order of Appointment Structure, EEUs have “Development and Support Services” (“DSS”) initiatives. 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. This evaluation is expected to be conducted with internal resources.

Evaluation Budget: \$21,600  
Evaluation Type: *Process Evaluation*  
Funding Source: *EVT EEC (\$15,200) BED EEC (\$1,000)*  
*EVT TEPF (\$2,500) BED TEPF (\$200)*  
*Natural Gas EEC (\$2,700)*

### *Administrative Efficiency*

The Department is responsible for evaluating performance relative to the EEUs’ quantitative administrative efficiency metrics. The Commission approved an Administrative Efficiency minimum performance requirement (MPR) for the EEUs (EEU 2016-03 order entered July 7, 2017). [The Departments current proposal includes this as a QPI.](#) The Department anticipates this administrative efficiency evaluation will support this [MPR-QPI](#) to develop a set of administrative efficiency metrics to be applied to the performance period starting in 2021.

Evaluation Budget: \$116,500  
Evaluation Type: *Management Audit/ Process Evaluation*  
Funding Source: *EVT EEC (\$68,800) BED EEC (\$4,800)*

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*EVT TEPF (\$16,500) BED TEPF (\$1,100)  
Natural Gas EEC (\$25,300)*

*Home Performance with Energy Star & Building Performance Evaluation (including VGS Retrofit Program)*

The Home Performance with Energy Star (HPwES) program focuses on providing residential energy efficiency retrofits in single-family homes. The program is also being leveraged to provide energy efficiency retrofit services to small businesses through the Building Performance program. An increasing number of measures implemented under this program acquire electric efficiency savings, however the bulk of the measures are directed toward acquisition of thermal and process fuel efficiency savings.

The Department completed its third review of this program in 2019. The primary purpose of the evaluation is to verify the impact of the HPwES and Building Performance programs, as well as the thermal and electric energy savings attributable to these programs. The goal of the impact evaluation is to develop independent estimates of program savings and to compare those evaluation results with internal program savings projections, as well as to provide suggested mechanisms for adjusting future savings projections as necessary. The Department will also conduct a process evaluation to identify recommendations for increasing participation rates and average savings per participant.

This evaluation will be completed mostly by outside contractors, with internal resources providing oversight and contributing to the evaluation where possible.

Evaluation Budget: *\$219,500*  
Evaluation Type: *Impact and Process Evaluation*  
Funding Source: *EVT EEC (\$87,400) BED EEC (\$6,500)*  
*EVT TEPF (\$74,900) BED TEPF (\$4,800)*  
*Natural Gas EEC (\$45,900)*

*Overall Performance Assessment*

An Overall Performance Assessment (OPA) will be conducted by the PUC to determine whether probable net benefits would result from additional proceedings considering alternate implementation entities other than the incumbent EEU(s). The OPA is a public performance review process that includes consideration of the performance record of the appointed entity or entities for the past two performance cycles. The Department will carry out portions of this review in concert with evaluation activities already included in this Plan.

The following evaluation criteria will be assessed:

Performance with respect to acquisition of energy and demand savings, and achieved Total Resource Benefit, performance with respect to broad policy goals, and qualitative performance regarding specific policy initiatives. Performance regarding administrative functions necessary to carry out duties will be assessed through administrative efficiency;

customer service with respect to energy efficiency services provided to prospective and participant customers; organizational qualifications of incumbents; financial stewardship of ratepayer dollars; and performance benchmarked in relation to other energy efficiency providers.

The OPA review process will also include consideration of any other market information that may be useful in comparing the performance of the appointed EEU(s) to what might be available from an alternate entity, for example, bids made for comparable resources in the FCM.

This process is intended to make full use of existing staff resources, however costs associated with hiring a contractor have been included to supplement staff efforts for this important review.

Evaluation Budget: *\$159,000*

Evaluation Type: *Impact and Process Evaluation*

Funding Source: *EVT EEC (\$70,900) BED EEC (\$4,500)*

*EVT TEPF (\$18,700) BED TEPF (\$1,200)*

*Natural Gas EEC (\$63,700)*

#### *Behavioral Evaluation Activities*

##### *Continuous Energy Improvement (CEI)*

The CEI program is a commercial focused behavior program developed by EVT during the 2015-2017 cycle and continued in the 2018-2020 cycle. Behavior energy savings hold the promise of cost-efficient scalable, energy savings, however they have proven to be problematic to implement in Vermont. The CEI program has been successful however is working closely with select commercial customers to create savings. The Department has worked closely with EVT in this area to develop this program. As a result of this involvement the Department is scaling back its review to a yearly methodological review and a larger three-year evaluation rather than doing one each year. This evaluation will be completed by outside contractors, with in-house resources contributing significantly to the management of the study. The scope of this evaluation has been refocused to evaluate this program every three years instead of every year to ensure continued reliability, cost-effectiveness, impact and persistence of this behavioral program.

##### *Residential High Use Program*

The exact nature of the delivery mechanism of this proposed program are currently unknown to the Department. Based upon prior experience with programs of this nature run by EVT and the estimated program costs and savings, the Department intends to start evaluating the program impacts soon after the completion of the first year of this program.

Both evaluations described above will mostly be conducted by outside contractors.

Evaluation Budget: *(\$113,900)*

Evaluation Type: *Impact Evaluation*

Funding Source: *EVT EEC (\$113,900)*

*Efficiency Vermont's Flexible Load Management Pilot*

The Flexible Load Management Pilot program, which is newly proposed for the 2021 – 2013 performance period, focuses on development of capacity of controllable loads that can be used to reduce loads during the monthly Vermont transmission peaks, and annual ISO capacity peaks. The evaluation will consider the overall impact of the effort to participants and non-participants alike and recommend process improvements and provide comment as to whether the Pilot should continue as a comprehensive program.

Evaluation Budget: *(\$233,100)*  
Evaluation Type: *Impact Evaluation*  
Funding Source: *EVT EEC (\$233,100)*

*Efficiency Vermont's Refrigeration Management Pilot*

The Refrigerant Management Pilot program combines existing elements of EVT's refrigerant leak reduction and management program with a refrigerant replacement program aimed at reducing energy losses and greenhouse gas emissions from existing systems. The scope of this evaluation will be focused on cost-effectiveness of the delivery of these savings and the verified impacts resulting from the program as well as the methodology used for calculating these savings. This evaluation will make full use of existing staff resources, however associated reasonable costs associated with hiring a contractor have been included.

Evaluation Budget: *(\$117,100)*  
Evaluation Type: *Impact Evaluation*  
Funding Source: *EVT EEC (\$117,100)*

*Time Value of Efficiency*

This evaluation is intended to be the first effort in Vermont to investigate if the creation of an efficiency 'load shape' that enables quantification of the value of a MWh saved due to efficiency practices in Vermont in every hour of the year is technically feasible. If the results are positive then it is expected that it could impact program planning, indicating whether adjustments are warranted that better align efficiency savings with high cost times. In addition, if the use of AMI data is promising, then this could serve to, in the long term, streamline Departmental evaluation efforts, including coordination of FCM evaluation and annual verification processes. Finally, results could be shared regionally to better promote the value of efficiency in the capacity market, proving value in all hours of the year rather than just on-peak periods. This evaluation will make full use of existing staff resources, however associated reasonable costs associated with hiring a contractor have been included.

Evaluation Budget: *(\$261,600)*  
Evaluation Type: *Impact Evaluation*  
Funding Source: *EVT EEC (\$242,800) BED EEC (\$18,800)*

### *Contingency Evaluation Funds for EEC and Thermal Evaluation*

Given the flexibility afforded to EEU's in developing new programs other currently unforeseeable evaluation needs may develop as this performance cycle progresses. 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 suggests that it is appropriate to allocate some contingency funds to directly supplement appropriate evaluations as needed. These funds amount to 3% of the funded EEC and TEPF evaluation budgets applied only to core EEC evaluation activities and supporting EEC evaluation and not to the planning and management portions of the budget.

Evaluation Budget: \$83,500  
Evaluation Type: *Contingency*  
Funding Source: *EVT EEC (\$61,300) BED EEC (\$2,500)*  
*EVT TEPF (\$7,800) BED TEPF (\$500)*  
*Natural Gas EEC (\$11,500)*

### *Energy Savings Guarantee*

These funds are allocated to evaluate the pilot energy savings guarantee expected to be offered by VGS for Residential Retrofit customers. This pilot is to test the relative effectiveness of a savings guarantee in encouraging residential customers with moderate usage to participate in energy efficiency projects. As related objectives, the pilot may also track the effectiveness of a savings guarantee in encouraging deeper energy efficiency projects and/or accelerating the energy efficiency sales cycle in the residential market, and increase understanding of the data that can and should be collected to effectuate the next phases of the initiative.

Evaluation Budget: *(\$63,100)*  
Evaluation Type: *Impact Evaluation*  
Funding Source: *Natural Gas EEC (\$63,100)*

## **Thermal Energy and Process Fuels Initiatives Evaluation Activities**

The EEU's have, in the context of the DRP, submitted proposals for budgets and services to be delivered for Thermal Energy and Process Fuel (TEPF) efficiency initiatives by EVT and BED. 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/TEPF cost-share has been applied to some specific evaluation activities (conducting TEPF 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 due to the relative size of the overall budgets. An annual review of all prescriptive TEPF 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 if costs associated with TEPF activities begin to take a larger share of activities.

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

## **Forward Capacity Market Evaluation**

### *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. EVT and 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 Public Service Department as the entity who would conduct the independent evaluation required. Subsequent plans filed have not explicitly identified the Department as fulfilling this role. This plan proposes that the Department remains best suited to conduct and manage such evaluation.

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 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, EEUs meters large projects and provides unanalyzed meter data to the PSD for review), the analysis of all sized projects, reporting and costs associated with planning and management. This budget represents a significant reduction in cost compared to the previous period due to a continual focus on contractor cost containment and application of long-term contracts to leverage lower costs.

As indicated above, the Time value of Efficiency evaluation could have implications in the long-term for the FCM evaluation costs. However, those impacts, if they prove to be feasible, are likely to happen over an extended timeframe not covered in this plan.

Evaluation Budget: *\$1,453,500*  
Evaluation Type: *Impact Assessment*

Funding Source: *EVT TEPF (\$1,173,600) BED TEPF (\$279,900)*

## **Planning and Management**

This section describes activities related to the planning and management of evaluation activities. Budgeted costs are mostly shared between EEC and TEPF at an 84.5% - 15.5% 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 evaluation plan, reporting of results, its three-year plan as well as staff time and other associated costs for involvement in the demand resources planning procedure (DRP). These costs include staff time for preparing and issuance of legal and administrative filings, co-ordination of filings, appearance at workshops and hearings as well as general evaluation-related administrative and reporting tasks carried out by the PSD as required by the PUC. These costs are included for tasks that are not particular to any one set of evaluations. 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: *\$338,600*

Funding Source: *EVT EEC (\$195,900) BED EEC (\$12,500)*  
*EVT TEPF (\$40,600) BED TEPF (\$2,600)*  
*Natural Gas EEC (\$87,000)*

### *Expert Technical Assistance*

The Department proposes that further evaluation support will continue through the 2021-2023 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 TEPF energy efficiency programs, this budget is proposed to be cost-shared.

Evaluation Budget: *\$89,700*

Funding Source: *EVT EEC (\$49,600) BED EEC (\$3,500)*  
*EVT TEPF (\$16,700) BED TEPF (\$1,100)*  
*Natural Gas EEC (\$18,800)*

### *PSD Staff Evaluation Training & Development*

Consistent with past evaluation plans and performance cycles, the PSD has allocated funds to support staff training, including attendance and participation 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: *\$48,200*

Funding Source: *EVT EEC (\$26,500) BED EEC (\$1,800)*  
*EVT TEPF (\$5,000) BED TEPF (\$300)*  
*Natural Gas EEC (\$14,600)*

#### *Other Direct Costs*

Other Direct Costs (ODCs) consist of equipment, and other expenses incurred by in-house resources that are associated with the above-mentioned evaluation activities. Historically, ODCs associated with evaluation have occasionally been funded via the energy efficiency charge. 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: *\$10,100*

Funding Source: *EVT EEC (\$6,800) BED EEC (\$400)*  
*EVT TEPF (\$500) BED TEPF (\$30)*  
*Natural Gas EEC (\$2,400)*

## **Other Evaluation Activities**

This section briefly describes some other known evaluation activities that will be undertaken by the Department during the 2021-2023 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.

#### *Self-Managed Energy Efficiency Program – SMEEP Participants*

In 2011 the SMEEP pilot was established as a permanent program in compliance with Section 4 of the Vermont Energy Act of 2011. The program calls for PSD savings verification, which will be funded directly by SMEEP participants. Internal staff will be the primary evaluators that verify the savings from SMEEP and on a three yearly basis a comprehensive review of the program and savings shall take place.

#### *Energy Efficiency Potential Study*

The Department anticipates it will require additional planning and management services in the fall of 2022 and in 2023 to prepare a PSD 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 Commission concerning the 2024-2026 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.<sup>13</sup> Separate potential studies shall take place for the different EEU territories to better reflect the different markets involved. These studies will be synchronized so that a state wide potential can be created from the individual results.

*Energy Savings Account – Pilot*

In May 2018 per case 19-0302-INV established the ESA – Pilot program which enables selected participants to use the EEC they paid for up to 100% of the cost of electrical and thermal efficiency projects as detailed in the establishment order. The PSD has been tasked with evaluating this program with the costs associated with the evaluation recoverable from the ESA-Pilot program participants. The Department expects to begin work on this evaluation starting in 2020; the work will likely carryover throughout the pilot's life.

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<sup>13</sup> Docket 5980, Paragraph 11 of the Memorandum of Understanding approved by the Board 9/30/99.