VERMONT
DEPARTMENT OF PUBLIC SERVICE

BURLINGTON Electric DEPARTMENT

Efficiency Vermont

A Comprehensive Guide for Energy Savings Accounts

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Introduction

The Energy Savings Account (ESA) program recognizes that certain large business customers already may be committed to, and possess considerable expertise regarding energy efficiency. The ESA allows eligible business customers the option to self-administer their own energy efficiency efforts instead of participating in the statewide services and initiatives provided by the State's Energy Efficiency Utilities (EEUs).

Through the ESA program, customers have access to a portion of their Energy Efficiency Charge (EEC) paid through their electric bills. Access to ESA funds, and the amount which can be obtained, is determined by various factors which are outlined further in this document.

Benefits of Energy Savings Accounts

The ESA provides the following benefits to participating customers:

- Access to a portion of their EEC payments
- Greater ability to manage the scope and timing of energy efficiency efforts
- Expands the definition of project expenses incurred by the customer to include costs for electric efficiency measure identification, analysis, design, and installation (labor and materials).

ESA Procedures and Standards

Procedures and standards have been established for the ESA option by the Vermont Public Utility Commission (PUC). These procedures and standards are intended to ensure that electric ratepayer dollars spent on electrical energy efficiency are cost-effective and reliable; a resource like any other in Vermont's power supply mix. Like a power plant, the benefits of electrical energy efficiency accrue to all customers on the system. And also like a power plant, standards of reliability associated with efficiency measures must be maintained. In a self-administered ESA, customers assume some of the responsibility to provide the benefits of reliable electrical efficiency to Vermont and the wider electric grid. These system-wide benefits come in addition to the customer-specific savings that result from investment in cost-effective energy efficiency projects.

This guide does not replace or supplant the PUC official ESA program design.

Glossary of Terms

Available Funds – the balance of an ESA customer's portion of EEC that is available to the customer for reimbursement for qualified expenses. 69.3% of the ESA participant's EEC payment will be deposited into the ESA for this purpose.

Baseline Efficiency (market-driven) – current minimum efficiency standards and practices applied to the design and installation of new equipment or buildings. Savings are derived when equipment is replaced at the end of its useful life with new equipment or buildings which exceed the standard or practices in place at time of replacement.

Baseline Efficiency (retrofit) – the efficiency of existing equipment or building components. Savings are derived when equipment or building components are replaced or upgraded before the end of its useful life with new energy efficient equipment or building components.

Cost-effective (or cost-effective screening) – A project is cost-effective if it achieves a benefit \ cost ratio of 1.0 or greater, as determined by the current state approved cost-effectiveness screening tool. The tool is used to analyze the monetary benefits and costs of electrical energy savings over the lifetime of the projects. All efficiency projects under ESA must pass the same cost-effectiveness screening requirements set by the PUC for the EEU and the state's electric utilities.

Department of Public Service (DPS) - is an agency within the executive branch of Vermont state government. Its charge is to represent the public interest in matters regarding energy, telecommunications, water and wastewater. DPS is responsible for the annual verification of energy efficiency project benefits and costs.

Electrical Efficiency Project – a facility project in which an electrical efficiency improvement or a collection of electrical efficiency improvements will be specified, purchased and installed within a specified timeframe.

Electric Utility - is the organization which supplies electric service to the ESA customer

Energy Efficiency Charge (EEC) – means the volumetric charge to Vermont electric distribution utility customers for the support of energy efficiency programs pursuant to 30 V.S.A Section 209(d)(3). The EEC rates are established by the Commission annually.

Energy Efficiency Utility (EEU) – a term that describes Efficiency Vermont and Burlington Electric Department. Efficiency Vermont administers energy efficiency programs throughout the state, except in Burlington where the programs are administered by Burlington Electric Department.

ESA Start Date – Upon approval of enrollment by the PUC, the ESA accounting will commence with the first ESA customer electric bill issued on or after April 1 or October 1, which ever is first after the date of approval. These are the only times annually that ESA accounting may commence.

Fiscal Agent – means the person or entity selected and retained by the Public Utility Commission to receive the EEU Funds and to disburse those funds under the direction of the Commission.

Market-Driven Efficiency Project - an electrical energy efficiency upgrade to an existing piece of equipment, system or building component that occurs at the normal time of replacement, during

substantial renovation or new construction, or when new equipment, systems or components are added.

Net Present Value of Electrical Benefits - the portion of the lifetime monetary benefits (expressed as a net present value over the life of the electrical efficiency project) derived from the state screening tool (see Cost-Effective) that represents the marginal cost of electricity that is avoided by the electrical efficiency project.

Public Utility Commission (PUC) - is a quasi-judicial commission that supervises the rates, quality of service, and overall financial management of Vermont's public utilities: cable television, electric, gas, telecommunications, water and large wastewater companies.

Qualified Expense - an expenditure for a cost-effective electrical efficiency improvement at facilities where the ESA is in effect which may be partially or fully reimbursable. The reimbursement of a qualified expense is dependent on whether the electrical efficiency project is classified as “market-driven” or “retrofit” (see Table page 5).

Retrofit Efficiency Project - an electrical efficiency improvement that occurs well before the end of life of the existing equipment, system or building component.

State Screening Tool - a spreadsheet analysis tool developed for the DPS and used by the EEU to analyze the cost-effectiveness of electrical efficiency projects. The tool calculates the lifetime benefits and costs of electrical efficiency projects expressed as net present values. It also produces a benefit \ cost ratio.

Customer Eligibility

Customers are eligible for the ESA option if they have made payments to the EEC of at least $5,000 in the 12 months preceding the customer's request to participate.

1. A single business (a single legal entity) with more than one electric account may combine the EEC amounts paid on multiple accounts to determine this eligibility.

2. Alternatively, a business may be deemed eligible if the preceding three-year average EEC amount paid proceeding the customer's application is equal to or greater than $5,000.

3. A customer in a new building (with an active electric account) may be deemed eligible to participate if by mutual agreement of the DPS and the EEU the projected EEC payment will be equal to or greater than $5,000.

Application and Enrollment Requirements

The process by which customers may apply to self-administer energy efficiency through the ESA option is defined below:

1. Eligible customers who desire to participate in the ESA option must submit a written request to the PUC, DPS, and the EEU. This request may be made at any time. Failure to submit such a request will preclude the customer from receiving ESA funds. In its written request, the customer must:

    a. Provide documentation of the EEC paid that demonstrates eligibility for the ESA option.

    b. Identify the premises and electric utility accounts that will be subject of the ESA.

    c. Describe the general strategy for acquiring energy efficiency resources in the customer's facility or facilities.

    d. Agree to the policies and procedures of the ESA option as specified herein and in any other PUC Order or Rule[1].

2. Within 60 days of receipt of a customer's written request to utilize the ESA option, the Department will verify that the customer meets the eligibility criteria and recommend to the Public Utility Commission to certify a start date as appropriate. The Public Utility Commission shall inform the customer, the affected EEU, the DPS, the customer's Electric Utility, and the Fiscal Agent of the start date if the application is approved.

3. Following receipt of written request and certification of eligibility the start date determined by the PUC shall be the first customer bill on or after either the beginning of the 2nd calendar quarter (April 1st) or the 4th calendar quarter (October 1st), whichever is first.

[1] As part of the policies and procedures the customer must agree to allow the Department of Public Service and/or its consultants, subject to appropriate confidentiality agreements, the right to review all project data, and to perform onsite inspections and/or metering, as necessary, to verify measure installation and performance, operating parameters, and cost documentation.

Performance Responsibilities

ESA customers are expected to demonstrate their ability to successfully administer their electrical energy efficiency efforts over time. ESA customer performance will be measured in the following areas of self-administration:

1. Participating ESA customers must complete cost-effective energy efficiency projects

2. Participating ESA customers must submit requests for reimbursement of qualified expenses, thereby utilizing available funds within 24 months of being deposited into their ESA account, or risk forfeiture of funds due to insufficient activity.

3. Participating ESA customers must achieve an average net present value of electric benefits per dollar of "available funds" used that is equal to or greater than analogous EEU initiative for the most recent rolling three year average for completed projects.

4. Participating ESA customers must renew its demonstration of compliance with eligibility criteria every three years.

5. Participating ESA customers must provide monthly documentation of their EEC and payment to the EEU and DPS.

Technical Assistance

ESA customers have chosen to self-administer their energy efficiency efforts. As a result, ESA customers may want to assume responsibility for identifying and evaluating their electric energy efficiency options and may wish to receive limited technical support from the EEU. However, since there are common goals that are shared by customers and the EEU, technical assistance will continue to be available to ESA customers. The level of assistance requested by the customer is often dependent on the following factors:

1. the quantity and scope of electric energy savings opportunities
2. the customer's interest in electric energy efficiency investment
3. the customer's interest in maximizing their electric energy savings

Appendix A of this document outlines many of the tasks involved in developing and completing an ESA energy efficiency project. These conditions may vary in Burlington Electric Department territory.

Fiscal Responsibilities

1. ESA customers:
    a. must continue to make their EEC payments to their electric utility
    b. must provide documentation of their EEC and payment to the EEU and DPS on a monthly basis
    c. may request reimbursements from the ESA for "qualified expenses", as specified in the PUC order and in the Qualified Expenses section above

d. may be reimbursed for qualified expenses up to the available funds balance on a first in, first out accounting basis[2]. When qualified expenses are greater than ESA customer's available funds, reimbursements will be paid out monthly as the ESA customer's available funds accrue until the qualified expense has been fully reimbursed.
e. must utilize funds within 24 months of being held in their ESA account, or risk forfeiture of funds due to insufficient activity. The ESA customer may request a waiver of this requirement from the PUC.

2. Fiscal Agent:
    a. will hold ESA available fund balances[3] in the EEU fund
    b. will track the ESA available fund balances and withdrawals[4]
    c. will reimburse the EEU for ESA qualified expenses

3. EEU:
    a. will track ESA customer's available funds balances
    b. will report available funds balances to ESA customers on a monthly basis.
    c. will review and approve or reject requests for reimbursements of qualified expenses.
    d. will reimburse the ESA customer for approved qualified expenses

4. Electric Utility:
    a. will bill EEC to and collect payments from the ESA customer
    b. will report ESA customers monthly EEC costs and payments to the EEU

Qualified Expenses

A "Qualified Expense" is a reimbursable expenditure for a cost-effective electrical efficiency improvement at facilities where the ESA is in effect. The expenditure is reviewed by the EEU. When expenditures are deemed as "qualified", the EEU will reimburse the ESA customer for those qualified expenses and credit the ESA[5].

The definition of qualified expense varies depending upon whether the expense is associated with a market-driven efficiency project or a retrofit efficiency project. (see Glossary of Terms)

- For **market driven projects**, expenses that are incremental to the costs incurred to achieve the baseline efficiency will be considered qualified, to the extent detailed in the table below. Incremental costs are the difference between the actual cost of the project (to achieve high efficiency) and the cost if the project had only met standard practice and/or current construction energy efficiency levels (also known as the baseline cost)

- For **retrofit projects**, expenses specific to the project are considered qualified.

[2] Reimbursements to the customer will be in an amount not to exceed that which is currently available in the customer's ESA. See Attachment A of the ESA Order for more details.

[3] The Fiscal Agent will allocate 69.3% of ESA customers EEC payments for identified accounts to the available fund balance. The fund balance will not earn interest for ESA customers. Following the successful completion and verification of at least four projects and at least two three year periods, a customer may apply to the PUC to increase the rate of EEC funds available for qualified expenses.

[4] The EEU Fiscal Agent will separately track each participant's ESA funds.

[5] Expenses submitted for reimbursement must meet all the requirements of "qualified expenses"; failure to do so may result in a reduction in the reimbursement.

Types of expenses and the extent to which they are considered qualified and reimbursable are detailed in the tables below.

Qualified Expenses by Project Type

<table>
<tr><th rowspan="2">Qualified Expense Type</th><th rowspan="2">Eligible Cost Limits</th><th colspan="2">Costs by Project Type</th></tr>
<tr><th>Market Driven</th><th>Retrofit</th></tr>
<tr><td>Labor costs associated with efficiency project identification, analysis, or design (ESA customer employees, consultants, or contractors)</td><td>100% of eligible costs up to 25% of total project cost</td><td rowspan="3">Incremental costs only</td><td rowspan="3">All project costs considered</td></tr>
<tr><td>Labor costs associated with the installation of efficient measures (ESA customer employees or contractors)</td><td rowspan="2">Up to 100% of eligible costs</td></tr>
<tr><td>Materials costs associated with the installation of efficient measures</td></tr>
</table>

Limitations on Reimbursements for Qualified Expenses

Limitation Type	Detailed Description of Limitation	Apply to Project?	
		Market Driven	Retrofit
Present Value of Gross Electric Benefits	Reimbursements for qualified expenses are capped at the present value of the project's gross electric benefits[6]	**YES**	**YES**
Simple Payback	Reimbursements for qualified expenses are capped at an amount that yields an 18-month simple payback[7] (18 month simple payback = 1st year savings X 1.5 This amount is the minimum amount the customer would have to contribute to the project after ESA reimbursements)	**NO**	**YES**

[6] The present value of gross electric benefits are calculated in the current state approved screening tool by the EEU and are based on project costs and savings

[7] Payback shall be calculated based on anticipated energy and non-energy benefits, including but not limited to, reductions in operating and maintenance costs, fossil fuel savings, electricity savings, environmental compliance cost savings, labor savings, and savings from the avoidance of future equipment replacements.

Project Submission and Review Process

The ESA customer is responsible for completing all responsibilities outlined elsewhere in this document, and in the PUC ESA order and Revised Attachment A ESA Option, as appropriate.

In addition, the ESA customer must provide the EEU with all ESA project related information necessary for the EEU to evaluate the cost-effectiveness of qualified expenses for projects. ESA customers must submit all pertinent ESA project data to the EEU for screening and approval both prior to installation and after the project has been completed (if pre-project costs or savings are modified).

The EEU will review all projects submitted by the ESA customer. The EEU is authorized to reimburse qualified expenses for projects meeting state approved screening protocols for determining cost-effectiveness.

1. Project Pre-Installation Screening Review - the EEU will conduct a project pre-installation screening review to evaluate project cost-effectiveness based on estimated cost and savings figures.

2. Project Post-Installation Screening Review – the EEU will conduct a project post-installation screening review to evaluate project cost-effectiveness based on actual cost and savings figures and to determine the reimbursement to be made to the ESA customer for the submission of qualified expenses.

The typical project final review and approval steps to be completed by the EEU are:

1. Review project data (note: incomplete submission of information may delay project review process and/or reimbursement of qualified expenses)

2. Interview ESA customer or customer's agent to better understand the application of the proposed electrical energy efficiency project

3. Determine which costs are qualified expenses and reimbursable

4. Evaluate the project's cost-effectiveness based on estimated cost and savings figures

5. Report findings to the ESA customer and discuss adjustments to the project which might impact cost-effectiveness

6. Repeat steps 1 through 5, if adjustments to screening are necessary

7. Inform ESA customer in writing within 60 days of final outcomes and next steps:
    a. If project is determined to be cost-effective and is considered a qualified ESA project, the EEU will:
        i. reimburse the ESA customer for qualified expenses
        ii. update ESA available funds balance
        iii. upload project data to the EEU tracking database (KITT) for reporting
    b. If project is determined not to be cost-effective and is not a qualified project, the EEU will:
        i. issue a letter to the ESA customer outlining why the project is in part or in sum not eligible

Appeals Processes

Participating ESA customers have an option to appeal EEU or DPS decisions. The table below summarizes these opportunities:

Process	Appeal	Appeal process timeframe	Party with final decision authority
EEU role in determining project cost-effectiveness and in approving qualified expenses	ESA customer may propose an alternative method of third-party project review and approval to the PUC	Not specified	PUC
EEU determination of project cost-effectiveness and approval of qualified expenses	ESA customer may appeal EEU determination to DPS	DPS will attempt to reach resolution within 30 days	DPS
DPS determination of project cost-effectiveness and approval of qualified expenses or any other aspects of ESA qualification	ESA customer may appeal DPS determination to the PUC	Not specified	PUC
EEU determination of ESA customer's failure to submit qualified expenses in a timely manner.	ESA customer may apply to extend the time period before ESA available funds are forfeited	Appeal must be filed 45 days prior to forfeiture	PUC will solicit comments from EEU and DPS before making decision

APPENDIX A
Project Task List

The table below outlines many of the tasks required to provide information necessary for the EEU to demonstrate the validity of costs and benefits for completed ESA projects.

ESA Project Tasks
Project Qualification
Utility bill review and analysis
Energy goal setting, review, tracking and reporting of progress
Indentify state energy code compliance
Coordinate consultants and vendors
Project Site Information • Project location • Utility accounts affected
Identify energy efficiency opportunities • Facility walkthroughs • Audits • Analysis of findings
Research of cutting edge technologies
Preparation of pre-project documentation • Existing conditions (baseline information) o Operating conditions o Equipment/system efficiency o Equipment/system capacity • Energy efficient conditions o Operating conditions (run hours, etc.) o Equipment/system efficiency o Equipment/system capacity • Calculation of o Annual energy (kwh) savings o Winter and summer coincident demand (kW) reductions o Thermal (MMBtu) savings o Non-energy benefits • Project cost estimates o Labor o Materials o Subcontractors • Pre-installation metering plan
Pre-installation project screening
Identification of project capital • Internal budget • Financing • ESA reimbursements • Grants or other funding
Perform financial analysis (Internal Rate of Return, cash flow, etc.)
Presentation of project scope and economics to decision-makers

Project Build / Install
Coordinate and manage consultants and vendors for • Design • Engineering • Installation
Coordinate the acquisition of materials and equipment
Project Close-out
Documentation and reporting of project costs • Labor costs • Material costs • Subcontractor/vendor costs
Post-installation project screening
Coordination of post-installation metering
Payment of invoices for consultants, equipment, etc.
Regulatory Issues
EEC monthly charges reported to Efficiency Vermont
Monthly/Annual reporting to Public Utility Commission
Responding to DPS annual savings verification questions
Tracking of Energy Savings Account • Managing energy and investment performance • Managing investment schedule • Managing available fund balances

This table is intended for illustration purposes only. The EEU reserves the right to modify it at any time.

APPENDIX B
Retrofit and Market-Driven Project Examples

Assumptions for all examples below:

- Customer's annual EEC payments equal $7,500
- Annual ESA deposits equal $5,197.50 (EEC x 69.3%)
- All qualified expenses include installation labor and materials, technical and administrative labor costs
- All energy efficiency measures are deemed to be cost-effective based on EEU screening of the costs and benefits in the current state approved screening tool

Market Driven Project Examples

Two market-driven project (end of life equipment replacement) examples are illustrated below. The first is lighting project the second a cooling project.

- In the lighting example, the customer has recently purchased new office space and plans to replace lamps and ballasts in seventy-five old light fixtures will upgrade from baseline efficiency for new equipment to high performance T-8 fluorescent lamps and ballasts.

Market-Driven Lighting Project	Lighting
Total Project Cost	$4,125
Qualified Expenses[8]	$1,688
Energy Savings	1,500 kwh
Energy Cost Savings (incl. O & M savings)	$ 175
Simple Payback	9.6 years
PV of Gross Electric Benefits	$2,742
ESA Reimbursement	**$1,688**
Customer Share	**$2,437**

- In the cooling project, the customer's 10 ton rooftop cooling unit has failed. They plan to replace the inoperable equipment with a new unit that exceeds baseline efficiency by installing equipment with a performance rating of 12.0 EER (Energy Efficiency Ratio).

Market-Driven Cooling Project	Cooling
Total Project Cost	$6,000
Qualified Expenses[9]	$1,000
Energy Savings	1,500 kwh
Energy Cost Savings (incl. O & M savings)	$ 180
Simple Payback	5.5 years
PV of Gross Electric Benefits	$3,525
ESA Reimbursement	**$1,000**
Customer Share	**$5,000**

[8] In Market Driven projects not all labor and material costs are included. See on page 9 for more detail.
[9] In Market Driven projects not all labor and material costs are included. See on page 9 for more detail.

Retrofit Project Examples

Two examples of the same Retrofit lighting project are illustrated below. In the both examples, the customer plans to replace one-hundred metal halide fixtures with the equivalent number of T-5 high bay fixtures. These retrofit project reimbursements for qualified expenses are capped at the NPV of Gross Electric Benefits and/or at a 1.5 year simple payback (1.5 x 1st year savings).

- Example one: the project cost is $20,000; the lights are operating 3,000 hours per year.
- Example two: the project cost is $15,000; the lights are operating 4,000 hours per year.

Retrofit Projects	Example 1	Example 2
Project Cost (qualified expenses)	$20,000	$15,000
Energy Savings	72,000 kwh	96,000 kwh
Energy Cost Savings	$7,500	$10,000
Simple Payback	2.7 years	1.5 years
PV of Gross Electric Benefits	$98,000	$118,000
ESA Reimbursement[10]	**$ 8,700**	**$0.00**
Customer Share	**$11,300**	**$15,000**

[10] Limitations to ESA reimbursements are outlined on page 9. In example 2, simple payback is 1.5 years so no reimbursement is available.

APPENDIX C
Contacts and Links to More Information:

Vermont Department of Public Service
c/o Energy Program Specialist (ESAs)
112 State St., Third Floor
Montpelier, VT 05620-2601
802-828-2811
www.publicservice.vermont.gov

Vermont Public Utility Commission
c/o Clerk of the Commission (ESAs)
112 State St., Fourth Floor
Montpelier, VT 05620-2701
802-828-2358
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