BED Non-Resource Acquisition Activities Description and Potential Outcomes
(EEU-2013-01 Demand Resource Plan)

Education and Training
Smart Grid and AMI
Applied Research and Development
Planning and Development
Evaluation
Policy and Public Affairs
Information Technology
General Administration

Education and Training

2015-2017 Proposed Budget **3 yr. Budget $126,876**

1. **Energy Codes and Standards Support** **Budget $6,300**

   Activity Description-The City of Burlington has fully adopted RBES and CBES as the source documents within the City's energy efficiency ordinance. BED works with EVT to provide information and training to area building professionals so that there is a full understanding of the codes and the EEU services available for those projects that can be incentivized to exceed code. As part of the BED/VEIC annual coordination agreement, BED will contribute to EVT's costs of providing training and outreach to area contractors.

   Budget Estimate Explanation- BED's budget estimate is based on a percentage of EVT's estimate for this activity. Historically with the annual coordination agreement, BED and EVT have agreed to base shared new construction program costs on recent yearly averages of the number of construction projects rather than a percentage of statewide electric sales. This approach recognizes Burlington's smaller new construction market relative to the rest of the state. For the purposes of this NRA estimate, BED applied to 3% to EVT's estimated budget.

2. **Energy Literacy Project Support** **Budget $46,476**

   Activity Description- This initiative includes BED's participation and support of the Energy Literacy Project in K-12 schools in concert with the Vermont Energy Education program. This work is designed to have a lasting impact on energy usage behavior. Ultimately, BED hopes that it will contribute to increasing participation in EEU services and initiatives but its primary focus is energy education.

   Budget Estimate Explanation- BED's budget estimate is based on a percentage of EVT's estimate for this activity.

3. **General Public Education** **Budget $62,400**

   Activity Description- This work includes those BED efforts to build overall awareness of energy efficiency, building performance issues and available efficiency services from BED, Vermont Gas Systems and the low-income weatherization program that are not tied to specific program goals. It includes presentations at public forums and workshops, and activities with Burlington's numerous educational institutions. Media responses, the development of monthly energy tips and the annual energy efficiency calendar project for elementary school students are also included in this activity.

   Budget Estimate Explanation- BED used tracked spending to inform the budget estimate

4. **Better Building by Design Conference** **Budget $11,700**

Activity Description- This activity includes BED's support of the annual Better Buildings by Design conference. BED is privileged to be a long time sponsor of this event that has grown over the years to become a valuable resource to customers, regional design professionals and contractors. It is a great forum to network, exchange ideas and to learn about new concepts and technologies.

Budget Estimate Explanation- This estimate is based on historical spending as it has been part of the BED and EVT annual coordination agreement for many years.

Potential Education and Training Outcomes - A number of the outcomes are aligned to EVT's but specific to BED: increase the number of 4th grade classes in each Burlington school that actively participates in the annual Energy Calendar project. Historically, not all of the schools or classes participate every year.

For the Energy Literacy project for Burlington schools:

Output	**Indicator**
Students and teachers reached	# students and teachers participating in at least one ELP activity
Schools reached	# schools with at least one ELP activity
In-class presentations conducted	
Teacher trainings conducted	# trainings conducted for teachers and/or curriculum coordinators

Smart Grid and AMI

2015-2017 Proposed Budget **3 yr. Budget $110,100**

1. **UVM/BED Testing In-Home Devices with Students Living Off-campus** **Budget $47,400**

Activity Description- BED has the opportunity to work on an energy study, through UVM's Clean Energy Grant Fund, with PhD Students from UVM's Rubenstein School of Environment and Natural Resources. The proposal is to study and support environmental behavior change among the college population living off-campus.

One of BED's biggest residential energy efficiency challenges is addressing Burlington's large population of rental properties, and student rentals in particular. BED's participation in this study will help us to develop innovative and creative ways to engage this population.

Budget Estimate Explanation- This estimate is based on BED's best estimate on the amount of staff time needed to work with UVM and participants on this effort.

2. **UVM Energy Minder Study/Peer Exchange Platforms** **Budget $62,700**

Activity Description- BED has been working with UVM on a consumer behavior study (Energy Minder) stemming from smart grid meter deployment. The goal of Energy Minder is to evaluate the utility of an energy efficiency social network in which energy efficiency models are derived from interactions (questions and answers) among participants within a web-based social network.

Social networks are known to be an important driver of behavior change. The advent of internet-tools for social networking has had some impact on behavior, but much of their use is currently limited to leisure activities. Social pressure has been shown to have some impact on energy efficiency, but has not been extensively evaluated as a means of meeting energy efficiency goals. The goal of Energy Minder is to develop and test a new social networking tool for sharing energy consumption information among customers and to test the hypothesis that a web-based social network can assist electricity consumers in identifying relationships between energy consumption and information exchanged within the social network.

This activity will allow BED to continue to support the project and potentially enhance the program and website tool. During the 2015-2017 period BED will explore with UVM Engineering staff if the tool should continue as part of BED's activities into the future. BED's thinking now is that some type of "peer exchange" tool will be valuable in terms of influencing energy behavior. BED will learn a great deal more throughout the performance period which will help to inform 2018 and beyond.

Budget Estimate Explanation- This estimate is based on BED's best estimate on the amount of staff time needed to work with UVM on this effort.

Smart Grid & AMI Potential Outcomes- Long lasting energy efficiency benefits created by the smart-grid investments are largely unknown at this early stage but are clearly worth pursuing. These activities should help to inform all stakeholders of the efficacy of these kinds of efficiency efforts and if they should or should not be included in future energy efficiency potential models.

Applied Research and Development

2015-2017 Proposed Budget **3 yr. Budget $88,800**

1. **Technology Demonstrations** **Budget $56,700**

Activity Description- BED's plan is to use a portion of these funds to continue researching various methods to improve the energy performance of RTU's including the real savings benefits from emerging advanced control measures.

BED also plans to explore the potential benefits from commercial building envelope commissioning services. Really knowing that envelopes are performing as designed is a general weakness in BED's new construction service (very likely a widespread problem across the country) and BED would like to explore approaches to improve building practices. There are cooling load benefits as well as HVAC pump benefits.

Budget Estimate Explanation- This estimate is based on BED's best professional judgment and experience to date.

2. **Emerging Data Services and Analytics** **Budget $32,100**

Activity Description - BED's plan is to continue to explore and pilot tools that can help it and customers better understand energy usage patterns and trends in ways that gives quick and useful information.

BED has experience with Enernoc's Energy Insight tool and growing experience with the Skyspark platforms. BED has learned that these tools can be very helpful for certain customers but not all types of customers. BED plans to continue to test other products that fit a larger percentage of our customer base.

Budget Estimate Explanation- This estimate is based on BED's best professional judgment and experience to date.

Applied Research and Development Outcomes - The ability to test these various concepts will inform: if there are products and services available, customer and contractor acceptance issues, cost and implementation issues and if any of these activities should be moved to Resource Acquisition in the next EE program period.

Planning and Reporting

2015-2017 Proposed Budget **3 yr. Budget $126,600**

1. **Annual Plan** **Budget $8,700**

Activity Description- This work includes BED's responsibility to provide the Board with a detailed Annual Plan as described in the "Process and Administration of an Order of an Appointment" document. BED will submit to the Board an EEU Annual Plan by November 1 each year. An Annual Plan will include, at a minimum, a summary of all planned service delivery strategies and service offerings, market initiatives, and any other planned implementation activities for the coming year.

Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

2. **Demand Resource Plan** **Budget $16,800**

Activity Description- This work includes BED's development, in collaboration with the DPS, EVT and VSPC, of a Demand Resource Plan (DRP). The DRP is a set of year-by-year values for EEU demand-side electricity resource and non-resource acquisition budgets, by calendar year, for the twenty year period, as well as a set of year-by-year savings goals for heating and process fuels, by calendar year, for a ten-year period following a Board order adopting the plan.

Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

3. **Vermont State Planning Committee (VSPC)** **Budget $4,500**

Activity Description- This period will see BED's continuing participation in the VSPC Energy Efficiency and Forecasting subcommittee process and collaboration with the DPS, VELCO, and VEIC. This activity is specific to the energy efficiency and forecasting activities and does not include BED's participation in the VSPC as a distribution utility.

Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

4. **ISO-NE FCM Participation** **Budget $71,400**

Activity Description- This work includes BED's continue participation in the ISO-New England Forward Capacity Market (FCM). FCM is a wholesale capacity market where demand resources, such as energy efficiency, may be bid to supply peak capacity reductions on a comparable basis with supply resources such as generation. BED has successfully participated in the ISO-NE Forward Capacity Market since the Board approved BED's participation in 2006.

BED will continue to prepare and submit bids to provide BED's capacity savings as a Demand Resource in annual Forward Capacity Market auctions. The activities associated with participation are capacity forecasting, resource qualification, bid development, and auction bidding. BED will continue to file with ISO-NE monthly reports of capacity savings, along with other periodic ISO-NE data requests, from BED's installed energy efficiency measures and receive payment from ISO-NE for these savings claims.

Budget Estimate Explanation- BED has based this estimate on historic ISO-FCM market participation costs.

5. **Reporting** **Budget $25,200**

Activity Description- This work covers all required regulatory reports associated with BED's EEU activities.

These reports include:

1. DSM Annual Report- submitted each spring
2. BED Monthly and Quarterly Reports
3. Periodic Ad hoc reporting requests

Budget Estimate Explanation- BED used tracked spending to inform the budget estimate

Potential Planning and Reporting Outcomes- These funds support BED's active engagement in a number of important forums that bring value to ratepayers. These activities also help to keep the PSB, DPS, Burlington Electric Commission and customers informed about how well BED is meeting established budgets and savings targets.

Evaluation

2015-2017 Proposed Budget **3 yr. Budget $54,300**

1. **Annual Savings Verification** **Budget $12,300**
   Activity Description- The DPS annually verifies BED savings claims. The process requires the delivery of BED's annual savings claim to the DPS along with a sample of individual project files for review. Throughout the process there is a regular exchange of information and discussion regarding savings quantification methods and project documentation.

   Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

2. **Technical Advisory Group (TAG)** **Budget $6,600**
   Activity Description- BED staff participates in the TAG process in collaboration with the DPS and EVT. The TAG resolves issues that arise from the annual savings verification process where questions are raised about specific engineering assumptions and calculations. The TAG also provides a forum for the review of new efficiency measures and emerging technologies.

   Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

3. **Technical Reference Manual (TRM)** **Budget $35,400**
   Activity Description- The TRM is the reference source for all characterizations of prescriptive measures. These characterizations provide the basis for savings claims for prescriptive energy efficiency measures installed each year. Measures are frequently amended, added or removed to reflect current information.

   EVT undertakes main responsibility for TRM maintenance and updates and BED contributes to these efforts through the BED/EVT annul coordination agreement process. BED also makes updates to its program tools to ensure they are in-sync with the TRM.

   Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

Potential Evaluation Outcomes- These activities allow BED to continuously improve the accuracy of its measure savings claim and actively engage in the discussion of new resource acquisition measures and the appropriate savings characterizations to be applied.

Policy and Public Affairs

2015-2017 Proposed Budget **3 yr. Budget $44,400**

1. **Public Affairs** **Budget $17,400**

   Activity Description- This work supports BED's participation in broad energy efficiency related discussions. This includes participation in energy forums, working with the media to explain the role of energy efficiency and to respond to media requests for information. This work also includes briefing the Legislature on efficiency related matters.

   Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

2. **Regulatory Affairs (non-DRPP)** **Budget $27,000**

   Activity Description- This work supports BED's participation in EEU related regulatory proceedings including the preparation of needed materials.

   Budget Estimate Explanation- BED used tracked spending to inform the budget estimate.

   Potential Policy and Public Affairs Outcomes- BED will continue to actively participate in EEU regulatory proceedings providing timely responses to regulatory initiatives and engage in state and regional regulatory issues.

Information Technology (IT)

2015-2017 Proposed Budget **3 yr. Budget $75,000**

Activity Description- BED's IT activities mainly consists of continuing the support of and improvement to the DSM database system for the collection and processing of project data and program information critical to tracking, reporting and planning functions. There is a fairly regular need to alter existing tools or add new tools and functionality to the system which helps us to better understand and respond to changes in the Burlington marketplace.

Budget Estimate Explanation- Historically, BED has coded and tracked all IT work related to EEU programs.

Potential IT Outcomes- Continuous improvement of BED's ability to track and report on EEU activities. BED has also been actively exploring IT solutions to increase the efficiency of its project savings analysis and customer energy audit report production process.

General Administration (not program-specific)

2015-2017 Proposed Budget **3 yr. Budget $78,000**

Activity Description- This category covers BED's costs for the overall management of EEU programs not specific to the individual programs and includes: general staff meetings, coordination of program implementation across all program functions, coordination with other EEU's and managing and monitoring of overall performance and spending.

Budget Estimate Explanation- BED used actual tracked spending to inform the budget estimate.

Potential General Administration Outcomes - This activity funds over 30 general energy services staff meeting per year, over 25 meetings with EVT and VGS annually and almost weekly communications with broader BED staff on efficiency matters.