VERMONT DEPARTMENT OF PUBLIC SERVICE
ENERGY EFFICIENCY DIVISION

Request for Proposals

Evaluation Research for
Efficiency Vermont's Business Sector Initiative

Introduction

Contractor services are requested to provide the Vermont Department of Public Service (DPS) with an evaluation of the Efficiency Vermont (EVT) Business Sector (Commercial and Industrial) Initiative. The primary functions will be to perform a market assessment; conduct an evaluation of EVT's business services; update and gather data on key market indicators needed to assess market impacts; review EVT's approach for adjusting program-induced energy impacts to account for market effects (total market effects less naturally occurring technology adoption); and provide suggestions concerning how EVT's market influence and the findings from this research can be incorporated into reliable estimates of total energy impacts. The RFP does not request an impact evaluation of EVT's installed measures or a revision to EVT's impact estimates.

The contract period will run through June 15, 2005. Proposals are due by 4:00 P.M. on Wednesday, August 25, 2004 with the goal of awarding a contract by October 1, 2004. One hardcopy and an electronic copy of the proposal must be delivered to Robert Ide, Department of Public Service. Proposals and questions should be addressed to:

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Vermont Department of Public Service
Energy Efficiency Division
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Assistance in gaining access to copies of this RFP and standard state contract provisions are available from:

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Vermont Department of Public Service
Energy Efficiency Division
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Background

It is important for successful proposers to understand the background and conceptual approach to energy efficiency in Vermont. In particular, the market approach to energy efficiency combines whole sectors into a single market-focused initiative (rather than multiple programs targeting a market sector), and simultaneously and strategically targets both near-term energy savings and long-term market transformation. As a result, the evaluation must look at whole markets and conceptualize from the market down to the individual consumers in the sector, rather than the traditional approach of aggregating participants up by "programs."

In 1999, Vermont created the first Energy Efficiency Utility (EEU) to administer almost all of the electric ratepayer-funded efficiency programs in the state. The Public Service Board (PSB) has authority over the implementation and evaluation of energy efficiency services in Vermont. The PSB has delegated the implementation of Board-approved evaluation efforts to the DPS. This evaluation effort will be contracted and directed by state of Vermont DPS managers.

To provide the energy efficiency services the PSB has selected a non-utility corporation known as Efficiency Vermont (EVT) to administer an approved set of energy efficiency services to the people of Vermont through two different sets of coordinated market sector based energy efficiency services (residential sector services and business sector services). This RFP focuses on evaluating the effects of the business sector services.

In 2003, an innovative approach to providing energy efficiency services was implemented in Vermont that eliminated the programmatic borders and the incremental program-based approach to providing services. This new approach provides a seamless set of integrated services to the commercial and industrial markets through the use of market sector implementation teams that focus on the energy and energy-related needs of the customer, rather than offering a specific prescribed set of pre-approved program-based technologies. However, tracking and reporting of the energy impacts associated with these services are maintained at the installed technology level. This approach allows the program to be flexible and offer a wider mix of services than that available from the more typical program-based designs, yet track energy savings associated with the specific actions that are taken by participants. The energy savings associated with the service efforts are based on engineering and adjusted engineering estimations of impact that are calculated at the individual technology or facility level. The results of these calculations are then applied to the number of installed technologies, and aggregated to report market sector impacts.

Most EVT evaluation research activities have focused on the assessment of market baseline conditions and market operations. In particular, the business sector evaluation, lead by the GDS team and published in March - May, 2003 provides an understanding of the market and some of the current baselines in the sector.[1] The evaluation that results from this RFP is expected to provide:

1. Improved baselines for specific market segments previously established,
2. Updated and improved baselines in other areas,
3. Data on key market indicators needed to assess market impacts,
4. An assessment of the current method for adjusting energy saving impact estimates to account for market effects and recommendations for changes in the estimation approach, if desirable, and

[1] All evaluation reports can be found on the state website <http://www.state.vt.us/psd/Menu/EE_and_Renewable/EEU_Eval_Home.htm>

5. a strategic process evaluation of the EVT C/I initiatives.

Previous evaluations have assessed a wide range of baseline conditions at the expense of data reliability for specific key market effects metrics. These studies have purposely focused on a wide range of market metrics to gain a broad understanding of the market and of the potential market effects. The overall goal of this research is to provide reliable evaluation findings to document program effects to date, and to provide reliable baselines for future market effects measurements. As a result, this study should focus on a more limited set of key market effects metrics.

Statement of Work

Although the actual implementation of the evaluation efforts may involve a single set of related tasks that will answer different aspects of multiple goals, the following goals must be successfully addressed:

1. Update key market indicators and gather data needed to assess market impacts.
2. Update C&I equipment baseline.
3. Update new construction baseline.
4. Develop baseline for multifamily new construction and refine estimates of the size of the market based on the previous work conducted by West Hill Energy and Computing Inc. and establish a method by which changes in these practices can be tracked over time(See:http://www.state.vt.us/psd/Menu/EE_and_Renewable/eval/ResNewConstruction/ WHEC-OnsiteReport/RNC-OnsiteComplete.pdf).
5. Recommend a methodology to determine the size of the C/I new construction market and establish a method to track change in the market on an ongoing basis.
6. Assessment of the availability of high efficiency equipment, the stocking practices and decisions relating to this availability, and the distribution chain practices associated with high efficiency equipment and the development of recommendations on how EVT can effectively intervene to encourage improvements that lead to higher energy efficiency equipment adoption rates.
7. Assessment of the design and installation practices for lighting, HVAC and boilers, and the development of recommendations on how EVT can effectively intervene to encourage improvements.
8. Assess the process used to adjust energy savings estimations to account for market effects (total market effects less naturally occurring technology adoption) and recommend changes to that approach, where appropriate, using the results from this and past evaluations as supporting documentation for the recommendations.
9. A strategic process evaluation of C&I sector services[2], including:
    a. A focus on understanding non-participation barriers and decisions for not using EEU's services by C/I customers, trade allies, and vendors . The results of this research will include recommendations on how EEU services can be modified to increase participation and improve operations. This task will also incorporate research already conducted by EVT on this issue.
    b. An examination of the participation process and the experiences of EEU trade allies and vendors, to identify ways to improve service delivery and customer participation.

[2] Note: The process evaluation does not include a review of EVT's tracking system or an assessment of the adequacy of the tracking system.

c. Suggest potential case studies of past participants that might be pursued by EVT to demonstrate EEU effects based on the interviews with key market actors, venders and trade allies.
d. Organize and present useful metrics on the organizational efficiency of EVT, such as estimated kWh and kW per ratepayer dollar and per EVT full-time equivalent employee; as well as other metrics suggested by the bidder that might be used as baseline measures of overall EVT cost-efficiency.

Department Priorities

This evaluation is expected to involve a substantial commitment of resources, but the resources are limited. Therefore, proposers need to understand the priorities of the DPS. The use of contractor resources may not exactly parallel the priorities, but in all cases, the highest priorities must be well addressed, and all goals must be addressed.

First Priority: Goals 1, 2, 6, 7 and 8 are central to the evaluation and are interrelated. Substantive measures of market impacts on the technologies and the practices are expected to take the most effort in this research. These efforts are important because the innovative approach of EVT requires reliable measures of kWh and kW from both direct technology (subsidized) impacts of the initiatives, but also for the market effects that result from the subsidies (spillover) and the market transformation efforts. As a result, reliable indicators of both short-term and long-term EEU market effects and other market changes are important.

Second Priority: Goals 3, 4, 5 are important. In the case of new C/I construction practice, the previous GDS study spent significant resources two years ago with on-site visits. It is probably premature and too expensive at this time to again study on-site construction practices, however, a method for continuing the tracking of the size and efficiency of this market is requested. Multi-family new construction was not addressed during the GDS research, and its size and importance to energy consumption is not well established. This study should establish a baseline and a reliable way to track multi-family energy efficient construction practices in the future.

Third Priority: Process evaluation research (Goal 9) and interim indicators (non energy impacts) of market progress (market effects of Goal 1) are both important, but must be subsidiary to meeting the goals of the first two priorities.

Suggested Approaches

The selected contractor is ultimately responsible for delivering the goals of this research; however fulfilling all the needs within budget may require a leveraged primary approach, with back-up efforts if needed. Suggestions are included herein to stimulate thought and to illustrate the potential for answering multiple issues with a single coordinated research approach. It is the bidder's responsibility to offer their approach to accomplish the goals of this RFP. The approach outlined below is a suggested approach that, if well implemented, can accomplish the goals of this research, however bidders should feel free to give their opinions on the effectiveness of this suggested approach and/or to suggest other approaches and present justification supporting a different approach. The DPS is looking for the strongest and most reliable approach for accomplishing the goals of the research while keeping the study within budget.

Equipment Suppliers

One key priority for this evaluation must be the equipment supplier market. It was difficult for GDS to effectively address this issue in previous evaluations and it continues to be a source of frustration to many decision makers in Vermont. According to the GDS study, the number of potential suppliers is limited – 39 electrical/lighting and 48 HVAC mechanical suppliers (Table 3.1, in the GDS report). This is an estimate of the universe of these suppliers in Vermont, however, the contractor should be prepared for the possibility that it could be larger by 25% and to be able to identify a larger supplier market to contact in this study. It is assumed that the sampling frame used by GDS is available as a starting place. A successful effort to get information from these suppliers will serve four goals of the DPS:

1. Obtain equipment baselines and market share information (Goals 1 and 2).
2. Assess the availability, stocking practices, and distribution chain for energy efficient C/I equipment (Goal 5),
3. Inform the assessment of energy impact adjustment methods (Goal 8),
4. Obtain insiders views on the process issues for this study including why some market actors are non-participants and how to change the program to increase participation; participant experiences and recommendations on program changes to increase participant satisfaction and experiences; and ways to improve the program (Goal 9).

The success of this approach depends on three assumptions: a sufficient sample of the distributors can be contacted; that they are cooperative and will provide a basis for identifying market effects, and that those who are contacted are representative of the Vermont market, or for which a weighting on the representativeness can be developed. If these assumptions can be approximated, Vermont can have a more robust estimator of market activity and EEU's market influence/share at a lower cost than what can be obtained by seeking the answers from end-use consumers. However, this approach requires skilled/experienced researchers that can obtain the detailed information needed. The contractor should be prepared to suggest alternative ways to measure the market effects and establish estimates if they are not successful in gaining sufficient cooperation from a representative sample of the market.

In addition, given the unified approach of EVT to the markets and the desire to understand EVT market effects including spillover, these are key informants on volume of sales. If we define the measurable market effects of energy efficient equipment in terms of the total market minus the expected baseline and program subsidized purchases, knowing the total size of the market is critical, and, if it is substantially larger than the sum of program participants' purchases and the naturally occurring baseline, it need not be measured with great precision to provide an estimate of the scale of the market impacts that EVT is having – direct and indirect. This is an important goal of this research.

Phone interviews apparently often fail to get the respondents attention and time, and since most of them are located in-state (p. 109, GDS), we suggest a sampling plan that covers rural and urban areas, and puts a large portion of the project resources into conducting on-site interviews that collect as much information as possible from the suppliers of efficient HVAC and lighting.

In all cases, it is acknowledged that the actual energy savings that result from EVT services must depend on assumptions of the savings per efficient widget sold and a reasonable assumption about the naturally occurring baseline – i.e., the growth in penetration of the sales of the technology in the absence of the acquisition and market transformation effects of the EVT initiatives.

Currently decision makers in Vermont and elsewhere have been looking at a bottom up approach to estimating savings (i.e. how many participants, times savings per participant, minus free-riders, plus spillover). This approach results in the usual arguments that the free-ridership is being under-estimated or that spillover is being missed on a large scale, or even worse, true-spillover is being treated as free-ridership. The approach suggested here is that free-ridership and self-selection are captured in the baseline growth in acceptance and installation (as estimated from Delphi processes, pre-program data-points from other parts of the country), and that "spillover" among participants and nonparticipants is really the market effects of both the EVT subsidies/rebates and the educational and infrastructure building aspects of the market transformation facets of the C/I initiative. This should result in less precise estimates, but ones which are scaled to the full market and in which no installations are missed or double-counted. Knowing the full market size of the efficient equipment and how it has changed is essential to using this top-down approach.

Property Developers

Developers are another group for which the DPS may need a lot more focus during this round of research. Developers can be a source of information on construction practices in both the C/I sector (Goal 3) and the multi-family sector (Goal 4) targeted in this study. Developers can be used to supplement the building permit data on multi-family construction, first to characterize the market for new construction in terms of construction types, locations, standard construction practice, and very importantly, with regard to energy use in multifamily homes in VT, what fraction is expected to be seasonal housing in the near-term and long-term. As a result, permit data will need to be updated to obtain a handle on the size and location of the multifamily market (as with all C/I new construction and renovation work). Knowing where multifamily development is located (i.e. downtown Burlington, Stowe, etc.) will help indicate whether this is an important annual energy use market or a peak season issue. The developers, however, can be an excellent source of market intelligence about this issue, and likewise, would also be good sources for verification of the windows market for C/I. Again, understanding how many square feet of multifamily homes and C/I new construction is occurring, and how much of that is influenced by EVT is an important market impact metric. If the efficiency gains per square foot can be roughly estimated, the energy impacts can be approximated net of baseline.

Interim Market Measures from Market Partners

While not the highest priority for this research, the DPS is interested in important *interim* measures of market effects (whether EVT is impacting market interactions (Goals 1 and 7). The market actors whose behaviors are of significant interest are the architects, mechanical engineers, and contractors. The GDS team was successful in filling their samples with these individuals. As a result, there is a good chance that they can now be interviewed by phone. This is recommended, not just because of cost, but because the target market seemed to have been responsive and there are a substantial number of interviews that are needed, but also because, Vermont has previous baseline indicators that were measured via telephone interviews, and consistent research methods should produce more valid comparisons over time. (Note the recommendations above to use on-site interviews were for market effects indicators for which there are no strong baselines.)

The selected market indicators should only be the best subset of all those available. Prior experience has shown that questions about behaviors and interactions must be carefully and concretely phrased and asked by skilled survey staff who understand the issues and the data needs in order to elicit meaningful and useful responses. Fortunately, several of these very

specific inquiries were included in the baseline work by GDS. Certain behaviors are useful across categories of respondents, for example, one group may model day lighting strategies in their planning process, others may have rules-of-thumb that they have found provide reliable results, while others will have experience installing and commissioning measures necessary to make the strategy work.

The following behaviors or practices are targeted because there are valid-appearing available baselines, they are unambiguous indicators of market success, and they provide the evaluation contractor the opportunity to be consistent across market channel actors.

1. Awareness and use of third party whole building commissioning.
2. Economizer use and installation
3. Modeling, designing strategies, and providing equipment for day lighting.
4. Awareness of Act 250 and the degree to which it is used and followed (EVT is not responsible for enforcing or policing the Act, but ignoring it will create a lost opportunity to enhance codes with program activity).
5. Use of efficient lighting technologies; e.g. Super T-8s and suitable application of T-5s.
6. Other indicators are possible, and should be suggested by respondents to this RFP.

For the sake of leveraging resources and making the most out of the respondents' time, working with the market channel actors (suppliers, contractors, architects, engineers, venders, wholesalers, etc.) may be one of the best sources for information on which of their customers are not taking advantage of efficiency opportunities and why, those who may not be normally contacted through the market activities of EVT and how best to reach them, and what are the significant participation barriers within the portions of the market they serve. Likewise, these actors may be the best source for information about EVT's processes and services that can be improved to obtain more cost-effective energy resources by better matching program services to market needs or expectations. These contacts will be an important source of data for the process evaluation questions.

Process Evaluation

The issues of nonparticipation are an important component of the process evaluation, as are methods to modify the current mix of services or service approaches to improve participation or to increase satisfaction. However, the emphasis should also be on understanding the effectiveness of EVT and the services that they currently have in place. This can be accomplished through interviews with trade market allies, vendors and program participants and program managers. Another important component of this research effort will be to look at overall performance indicators for EVT that can be tracked over time to assess how EVT is progressing at obtaining cost-effective resources and effect changes in the operations of the targeted markets.

To understand who is not participating in EVT efforts and what can be done to increase program participation, non-participating market actors should also be surveyed. Again, for the sake of leveraging resources and making the most out the respondents' time, working with the market channel actors may be the best source for information on which of their customers are or are not taking advantage of efficiency opportunities, why they are and are not participating, those who may or may not be normally contacted through the market activities of EVT, and what are the significant participation barriers within the portions of the market they serve.

A key remaining element of the evaluation is research into non-participating industrial customers whose efficiency improvements may lie not with construction and renovation issues but with industrial process issues. Wood products manufacturers, millwork shops, and light industry may have only tangential linkages to efficiency through the above contractor channels. A serious effort is needed to identify these types of businesses and understand how to influence their participation and partnership with EVT. This is a process evaluation task that can begin with sampling frames provided by the EVT and compared to statewide firmographics data. EVT has made a serious effort to identify the extent of this market. Using these contacts can help determine how this market can be further penetrated.

Tasks and Activity Scheduling

- *Kick off Meeting*: Meet with DPS staff and their evaluation consultant to ensure that there is a common understanding of the project's needs and the proposed work efforts and products. Prior to this meeting, the contractor(s) need to familiarize themselves with the operation of the EVT and the prior evaluation results. Contractors should come to this meeting prepared to identify the level of EVT assistance needed for the evaluation and the timelines associated with this assistance. EVT managers will be invited to this meeting to discuss this assistance. This meeting should occur within two weeks from the award of the evaluation contract.
- *Revised Work Plan*: a revised work plan documenting the common understandings between the contractors and the DPS/EVT should be submitted. This plan will present the detailed schedule for completion of interim products, e.g., sampling plans, interview protocols, draft analysis plans, interim review schedules, etc. The revised plan should be provided to DPS within two weeks following the Kick-off meeting.
- *Draft Process Evaluation Report* – See "Proposal Submission Timeline".
- *Draft Market Effects Report* – See "Proposal Submission Timeline".
- *Final Reports* – Three weeks from receipt of DPS comments.
- *Monthly Progress Reports* - Within 10 days of the end of each month.

Project Management

Management responsibilities include regular project updates with the DPS manager. Each month the contractor and the DPS manager will have a monthly conference telephone call in which the Contractor will provide a project progress review. In addition, the contractor shall prepare a monthly written progress report indicating the evaluation progress over the prior month, the planned activities for the next month, any issues that need to be addressed with suggested in-budget resolutions. These reports must be filed with the DPS manager by the 10th day of the month.

Databases from Project

Survey and interview data shall be entered into an electronic database and provided to DPS to support additional analysis by DPS staff and to support future evaluations. Data entry procedures shall be developed to ensure data quality and consistent entry of all fields. Data shall be submitted to the DPS in a mutually acceptable, commonly usable electronic format, along with a

documented data dictionary describing the database contents. Proposals should discuss the suggested database to be used and the data quality procedures planned.

Pricing

The DPS intends to procure the best value for the cost while requiring that all goals of the procurement are met. This is expected to be a significant level of effort to provide defensible, substantive impact results. It is anticipated that the level of effort will require more than a quarter of a million dollars in effort, but under no circumstances should a proposer expect that department will contract for more than $375,000 to answer all of the goals outlined in this RFP. Bidders should understand that the primary goal of this research is to be able to reliably identify the market effects from the EVT services.

Criteria for selection

The DPS will evaluate the bidders' proposals according to the criteria listed below:

1. Responsiveness/thoroughness and practicality of the proposed approach in meeting the research objectives and for completing the tasks described in this RFP.
2. Experience of key personnel.
3. Experience of the contractor in successfully completing similar research and ability to provide on-time, in-budget research.
4. The proposal presentation with respects to the following presentations / discussions:
   - Technical expertise to conduct the research.
   - Past research in other similar projects .
   - Clear understanding of study requirements.
   - Ability to provide high-quality written analysis and reports
5. Proposed staffing plan of bidder, including staff assignments.
6. Past performance of the bidder and any proposed subcontractors.
7. Quality and completeness of the proposal (in terms of coverage, organization, graphics, grammar, spelling, etc.). The quality of the proposal (along with the sample report) will be considered an indication of the likely appearance of deliverables from the Bidder.
8. Price.

The Proposal Submission

The proposal should present a clear understanding of the issues to be addressed and a description of how the bidders proposed approach will accomplish each of the research goals. The proposal should also address how the DPS's research priorities will be addressed in the approach. The proposal should be structured to provide the following sections:

1. Introduction,
2. Understanding of the research goals and associated issues,
3. Overview of the proposed approach,
4. Detailed Task descriptions,
5. Descriptions of similar projects,
6. Qualifications of firm(s),
7. Qualification of individuals,

8. Management and staff structure,
9. References,
10. Timeline (all work must be completed prior to June 15, 2005 with important program redesign information available by January 7 2005),
11. Task and total project budget that includes a listing of all staff assigned to the project and their time allocations and billing rates.
12. Attachment A: Sample report from prime contractor,
13. Attachment B: Other attachments as needed.

Introduction: The introduction should present the research team and provide general information about the team and how the team will approach the project.

Understanding of the research goals and associated issues: This section should provide a discussion of the research goals and the key issues that are associated with this research. The purpose of this section is to allow the DPS to judge the bidders understanding of the research needs and the goals that need to be addressed.

Overview of the proposed approach: This section should present an overview of the proposed research approached allowing the DPS to understand the general proposed approach in which the task are to be placed.

Detailed Task descriptions: This section should present the individual tasks that are proposed to be conducted in order to complete the research project. The tasks should be descriptive in enough detail that the DPS can understand how the research will be conducted. This section should also address sampling approaches as well as analysis and reporting activities.

Descriptions of similar projects conducted: This section provides for a brief presentation of similar types of research conducted by the prime and other key members of the research team. The discussion should allow DPS to judge the experiences of the bidder or the bidding team relative to the goals of this project.

Qualifications of firm(s): This section is provided to allow the bidder to present their corporate qualifications that are in addition to the above descriptions.

Qualification of individuals: The proposal should detail the individuals to be assigned to the tasks described and include a resume for each of the key individuals involved in the research.

Management and staff structure: The proposals should clearly define the team's management and operational structure.

References: The bidder should provide at least three references of similar work with other clients. The references should include a brief description of the research effort including the name, address, phone number and e-mail address of the client's representative for the referenced project.

Timeline: The project should include a task timeline to allow completion of all work by June 15, 2005. However bidders should understand that the DPS will need information from this study to inform the program redesign process in January of 2005. The successful bidder will need to be willing to work with the PDS to identify and report metrics and study results that can be used to support the program redesign process by January 7 2005.

Task and total project budget: The budget should include task-level budgets by assigned staff.

Attachment A: Sample report from prime contractor: The bidder should provide at least one example of a project report associated with a research effort similar in size and focus of this effort. This report will be viewed as an example of the writing and presentation ability of the bidder, and the ability to conduct and complete the research. The report can be provided in CD or hardcopy format.

Attachment B: Other attachments as needed.

Teaming Among Evaluation Consultants

The DPS realizes that this proposal may involve teaming arrangements across evaluation or other firms in order to provide a complete proposal addressing all of the DPS research goals. The DPS is receptive to teaming arrangements and encourages teaming across multiple firms or individuals when teaming results in a seamless research design, including project management responsibilities that improve the ability of the contractor to fully meet the research goals of this RFP.

Exclusionary Provisions

The firms contracted to provide evaluation services will be ineligible to bid on any of the implementation services provided by the EVT. This requirement is provided in order to keep the evaluation firms independent of the service design, management or implementation efforts. Firms or individuals currently employed by any partner firm in Efficiency Vermont, or by EVT itself, or by Burlington Electric Department, are not eligible to submit a proposal. Firms/individuals must agree not to undertake such employment during the term of the contract.

Past Studies and Reports

Reports from previously conducted evaluation studies referenced in this RFP can be viewed at http://www.state.vt.us/psd/Menu/EE_and_Renewable/EEU_Eval_Home.htm.

Business Sector Service Descriptions

A description of EVT's business sector services can be found at: http://www.efficiencyvermont.com/. The 2004 Annual Plan for Business Services can be found at: http://www.efficiencyvermont.org/Docs/2004AnnualPlan.pdf.