

Summary of Formal Evaluation Activities

The Public Service Department has contracted with a number of qualified firms and individuals to provide an independent evaluation of EVT's management and delivery of the core, state-wide DSM programs in Vermont. Xenergy and GDS Associates are heading-up a coordinated team of professionals hired by the DPS to conduct and oversee the residential and commercial and industrial ("C&I") evaluation research. The program evaluation activities are being coordinated closely with primary research being conducted by these same firms to better understand and characterize the specific markets and market participants targeted by the core programs. The coordinated evaluation activities utilize phone and on-site surveys to collect information on representative samples of program participants, non-participants and various market actors as well as primary data on equipment efficiency levels, current construction practices and market behavior. The results of the evaluation and market characterization research are compiled and analyzed in individual reports that identify key findings by market sector and program. The individual reports are, in turn, analyzed and synthesized into an integrated final report which will summarize progress and accomplishments and identify problems and opportunities for improvement in the programs currently being implemented. These findings coupled with lessons learned and current market data will inform and lead to increased effectiveness of core DSM program design and delivery in Vermont.

The framework for the independent evaluation was developed by the Public Service Department, consultants and other interested parties in late 2000. A Request for Proposals was issued and the two contractor teams were selected to conduct the evaluation and market characterization for the Residential and C&I sectors. A Memorandum from Scudder Parker to the Board of December 29, 2000 entitled *Evaluation Effort: Report, and Plans for Energy Efficiency Evaluation Projects* which described the overall proposed framework of the independent evaluation through calendar year 2002 is attached. Other documents were developed by the Department and its consultants to guide the evaluation contractors as the independent evaluation research commenced in 2001.

Throughout this period, evaluation work plans, sampling plans, survey designs and data collection instruments were developed and submitted to the DPS, the Contract Administer, EVT and project consultants for review and comment prior to field implementation. A summary of the various evaluation surveys conducted to date and schedules for those currently underway, or planned for later in 2002, are provided in the following tables:

C&I Evaluation Activity		
Phone Survey	Sample Size	Status
Architect/Engineer	46	Complete
Contractors		
General	31	Complete
Mechanical	19	Complete
Electrical	23	Complete
Suppliers		
HVAC	4	Complete
Lighting	7	Complete
Motor	5	Complete
Window	7	ongoing
End User		
New Construction	100	ongoing
Remodeling, Renovation and Equipment Replacement		
Replacement	100	ongoing
Existing	300	ongoing
Engineering Review		
Project specific reviews	25	ongoing
On-Site Survey		
New Construction	40	Target 3 rd quarter 2002
Remodeling, Renovation	25	Target 3 rd quarter 2002
Equipment Replacement	15	Target 3 rd quarter 2002

Residential Evaluation Activity		
Phone Survey		
Residential New Construction	Sample Size	Status or Target Date
Homebuyer Program Participant	100	Complete
Homebuyer Program Non-participant	100	Complete
Builder Program Participant	25	Complete
Builder Non-participant	45	Complete
Remodler	40	Complete
Other Market Actors	30	ongoing
Efficient Products Program		
EPP Retailer	24	ongoing
On-Site Survey		
Residential New Construction	160	June 15
EPP On-Site	100	July 15
EPP Mystery Shopper	8	Complete

The Department has also contracted with GDS Associates to provide an assessment of the Burlington Electric Department's delivery of the core programs in the city as well as its record in coordinating the administration of the programs with EVT and VGS . The Department also retained GDS to conduct an initial investigation of the Customer Credit Program. These two evaluation studies, in conjunction with the integrated EVT program and market characterization currently in progress, provide significant information and timely feedback on EVT's performance to date with respect to achieving its goals and objectives by program and key market segment.

The independent market assessment work also provides new information and considerable insight into the markets targeted by each of the core programs. Market characteristics associated with energy efficiency investments and technologies are being refined to better understand consumer, contractor and vendor decision making to improve the development, design and delivery of DSM programs in the state. It is expected that these refinements will result in future program refinements to address a variety of identified market barriers and structural market conditions and deficiencies.

DPS expenditures to date and budgets for the remainder of 2002, for contracted services to provide the independent evaluation, are summarized on the attached DPS M&E Evaluation Budget Summary Table.

DPS M&E Evaluation Budget Summary

Updated May 28, 2002

Funds from Fiscal Agent				To Date
	2000	2001	2002	Total
Funding				
Original Allocation	\$300,000	\$372,000	\$453,000	\$1,125,000
BED Contribution	\$18,000	\$18,000	\$18,000	\$54,000
subTotal	\$318,000	\$390,000	\$471,000	\$1,179,000
EEC fund interest			\$150,000	\$150,000
RBES grant			\$35,000	\$35,000
TOTAL Funds Available				\$1,364,000
Expenditures				
Planning/Management	\$17,112	\$42,421	\$17,404	\$76,937
C & I	\$0	\$127,141	\$118,151	\$245,292
Res	\$14,899	\$114,183	\$96,063	\$225,145
Engineering Support		\$5,978	\$4,439	\$10,417
Annual Report/Verification	\$18,617	\$31,131	\$10,393	\$60,140
Other			\$1,634	\$1,634
Total Expenditures	\$50,628	\$320,853	\$248,083	\$619,565
Revised Budget		\$657,372	\$992,518	
Total Funds Available				
Encumbrances/Commitments				
Planning/Management			\$20,649	
C & I			\$229,538	
Res			\$257,298	
Engineering Support			\$0	
Annual Report/Verification			\$72,817	
BED assessment				
CCP assessment				
Total Commitments			\$580,302	
Total Expenditures + Commitments		\$320,853	\$828,385	
Total Available (Rev. Budget less Total expenditure)		\$336,518	\$164,133	
	Expenditures	Encumbrances	Expected	
	To Date	Commitments	End of 2002	
Expenditures				
Planning/Management	\$76,937	\$20,649	\$97,586	
C & I	\$245,292	\$218,738	\$464,030	
Res	\$225,145	\$257,298	\$482,443	
Engineering Support	\$10,417	\$10,800	\$21,217	
Annual Report/Verification	\$60,140	\$72,817	\$132,957	
Other	\$1,634	\$0	\$1,634	
Total Expenditures	\$619,565	\$580,302	\$1,199,867	
Total Funds Available			\$1,364,000	
Uncommitted*			\$164,133	

* Much of this "uncommitted" amount is earmarked for anticipated evaluation activities later in 2002, but is not yet reflected in formal commitments.

Note: BED assessment and CCP assessment costs are incorporated into C&I commitment amounts.

Memorandum

Vermont Department of Public Service

To: Vermont Public Service Board

From: Scudder H. Parker, Vermont Department of Public Service

Subject: Evaluation Effort: Report, and Plans for Energy Efficiency Utility Evaluation Projects

Date: December 29, 2000

CC: Richard Sedano, Commissioner, VT Department of Public Service
Docket No. 5980 Parties

Introduction:

On October 4, 2000, the Department filed a Memorandum with the Board addressing the issue of what form and schedule the Department should use in reporting to the Board on its conduct of the evaluation responsibilities assigned to the DPS by the Board in its Order in Docket No. 5980.

In its Memorandum, the Department proposed “to file a plan for all Core Program evaluation by Dec. 29, 2000, with updates in April of 2001 and 2002.” Consistent with its proposal, the Department provides the following plan for evaluation projects over the next two years.

Update:

In its October Memorandum the Department provided a list of evaluation-related activities that were completed at that time. Since October the following additional tasks have either been completed or are near completion:

- ! The RFP for a firm or firms to provide evaluation and engineering services received five responses. After a careful selection process, a team led by GDS Associates was selected to provide evaluation services in the Commercial/Industrial sector, and to provide engineering review services. A team led by Xenergy, Inc. was selected to provide evaluation services in the residential sector. The contracts with both firms are near completion.

- ! The format Efficiency Vermont will use to report program activity, including energy savings and costs to the DPS in March of 2001 has been finalized after substantial negotiation. BED and the Contract Administrator were fully involved in these negotiations. It is expected that BED will use substantially the same format. The DPS anticipates that BED will file its report on April 1, 2001.
- ! The DPS presented the new EVT reporting format to other Vermont utilities that may have DSM activity to report for the year 2000. The purpose of the meeting was to explore the extent to which these utilities might be able to adapt their DSM reporting to be consistent with the revised format.
- ! The DPS is negotiating with BED the level of their financial contribution to the DPS Core Program evaluation effort.
- ! A market characterization and process evaluation of the Dairy Farm retrofit program has been completed and is under review.

Outline and Schedule of Proposed Evaluation Projects:

Detailed plans and designs for each evaluation project will be finalized through close coordination among the DPS, the selected evaluation contractors and EVT and BED staff. The broad outline of the evaluation projects the Department plans to conduct over the next two years follows:

In both the residential and the commercial/industrial sectors the Department will conduct four critical evaluation tasks:

1. ***Verify EVT Savings. Perhaps the most basic evaluation task the Department will perform is the assessment and verification of both electric and Total Resource Benefit (“TRB”) savings claimed by EVT in its annual report.***

In a document filed with the Board on October 4, 2000, entitled “*Overview Of DPS Evaluation Approach To Energy Efficiency Utility*” the Department described the approach it intends to take and the variety of methods it will use to verify electric and TRB savings claims. (See pp.17-19 “***Impact Evaluation***” of that document for details.

Many of these activities are ongoing in nature. They will be conducted by DPS staff with primary assistance from West Hill Energy and Computing and by GDS, through engineering review services.

The Department and its consultants have put considerable effort over the last six months into negotiating savings estimation methods and algorithms, defining the scope and format of the reference manual that EVT is required to maintain, and putting in place the capability to review complex and cutting-edge engineering analyses on which EVT requests Department input.

The agreement on the annual reporting format and DPS participation in review of the EVT tracking system are important preconditions to the review of claimed savings that EVT will submit to the DPS on March 1 each of the next three years.

The three additional evaluation projects discussed below will help inform the ongoing verification work of the Department. In addition they will provide a better understanding of the markets being served, the effectiveness of programs being delivered, input about how to improve programs, and the availability of cost-effective savings in the future.

2. ***Lost Opportunity Program Initial Market Characterization and Process Evaluation. Starting in early 2001, evaluations (Initial Evaluations) that include market characterization, process evaluation and an assessment of early market indicators will be conducted for the Core lost opportunity programs.***

In the residential market this will be done for the Residential New Construction program (including substantial renovation) and the Efficient Products program.

In the commercial/industrial market this will include the C&I new construction (including substantial renovation and additions) and the equipment replacement program segments of the Commercial Energy Opportunities program.¹

The goal of each evaluation project is to:

- , Gain a clear and methodologically sound understanding of how the targeted markets work and a preliminary assessment of where they stand in relation to available efficiency measures and services.
- , Assess how the EVT programs targeted to these markets are functioning and whether they can be improved, enhanced or re-directed.

¹The DPS recognizes that there is potential overlap in efficient products between the residential and commercial/industrial sectors, the DPS will address program market overlap in its evaluation study designs. For instance, the DPS may look at retail markets in the residential program evaluations, and supply house and vendor distribution systems in the C/I program evaluations.

- , Provide a rough characterization of market conditions facing the EVT Programs as they began implementation in 2000.
- , Select key market indicators that should be used to gauge program accomplishments in the future.

Each of these evaluation projects will have to take into account relevant non-program activities and concerns in each market. Such activities may include other market influences, certain related evaluation objectives and other-jurisdiction evaluation activities that will need to be considered and perhaps incorporated into the design of these evaluation projects. For example:

In the Residential Market, the evaluation project will include consideration of the role of Vermont's residential building efficiency standard ("RBES"), and may incorporate certain evaluation activities focusing specifically on the implementation of this code (using funds from a DOE grant). In addition, Energy Star and NEEP evaluation activities that are market tool- or technology-specific will need to be considered in the design of the evaluation project.

In the Commercial/Industrial Market, the evaluation project will need to take account of the Act 250 process, the commercial building efficiency standard ("CEBES") that is under development in Vermont, and other NEEP initiatives and evaluation activities.

Other Considerations in finalizing the design of each of these Initial Evaluation projects will be the interaction of EVT programs with Vermont Gas DSM activities, the relationship to other utility DSM efforts, including utility retrofit programs and Distributed Utility Planning ("DUP") activities, and the role of, and potential for, thermal energy efficiencies in customer decision-making about investments in electric efficiency measures.

The Department will seek to balance its concern for defining markets broadly (thus attempting to take account of many market factors), with the reality of its limited evaluation budget. Achieving this balance will require the DPS to prioritize market characterization activities and, in some cases, limit the scope of such activities. The DPS will seek input from EVT and the Contract Administrator in establishing the priorities and scope of these activities.

In addition to the major initial evaluation tasks described above, the DPS and EVT may undertake a number of smaller, more focused evaluation activities. Examples may include; determining appropriate baselines for high-cost measures (such as snowmaking equipment) or providing quick market characterizations to guide program design for emerging market programs (such as the retrofit program focused on municipal water and sewer plants.)

Time line: The DPS is hopeful that the residential and C/I initial projects can be well under way and delivering preliminary information by July 2001.

3. ***Baseline development. The third major evaluation activity will be to determine efficiency baselines for the Core lost opportunity programs on which Initial Evaluations have been performed.***

One of the important goals of the Initial Evaluations is to select Market Indicators (“MI”) that are likely to be the best indicators of program success and market acceptance of efficiency measures.

Baseline Development will establish an appropriate benchmark measurement of these indicators at a particular point in time which can be used to assess market effects of these programs in the future.

In most cases it will not be realistic, given the relatively short time frame of this EVT contract period, and the limited evaluation budgets available, to revisit these baselines before the initial three-year EVT contract expires.

These baselines will however, become the basis for goal-setting and performance measurement of EEU programs (and potentially other public policy initiatives) in the future.

Time line: The baseline studies should be conducted promptly after the market indicators have been identified. Baseline studies should be concluded by the first quarter of 2002, or earlier if possible.

4. ***Retrofit Program market characterization, process evaluation and preliminary assessment. The fourth major evaluation activity will focus on retrofit markets and will help the Department finalize its 2002 report required under ¶ 18 of the Docket 5980 MOU.***

The Department will evaluate EVT retrofit program activity and other retrofit opportunities in both the residential and the commercial/industrial sectors. These evaluation projects will have the following goals:

- , Gain a clear and methodologically sound understanding of how the retrofit markets work and a preliminary assessment of where they stand in relation to available efficiency measures.

- , Assess how the EVT low income retrofit and the emerging market retrofit programs are functioning and whether they can be improved, enhanced or re-directed.
- , Make a preliminary estimate of any market effects from EVT programs in place.
- , Select key market indicators that could be used to gauge program accomplishments or market transformation effects in the future.
- , Analyze the impact of independent market players and market forces that may be promoting efficiency services in these markets.
- , Update estimates of “economically achievable energy efficiency potential” in these markets.

The DPS intends to leverage its evaluation investment by capturing related information to the greatest extent possible. For example, the DPS anticipates that the retrofit market evaluation may also: 1) Provide a more detailed characterization of Vermont’s commercial/industrial markets by sub-components; 2) Assess the potential of emerging energy technologies such as combined heat and power (“CHP”); 3) Assess the need for and possible benefits of expanding the ability of C&I customers to interrupt their loads; and 4) possibly estimate the effects of Distributed Utility Planning practices by regulated utilities on these markets.

Time line: These evaluation projects should be under way by the first quarter of 2002, and completed by October 1, of 2002.²

5. *Other Evaluation Projects. Other Evaluation Projects will be performed in 2002, including an evaluation of BED’s delivery of Core programs in its service territory.*

The design of this evaluation will be negotiated between the DPS and BED. It will take place in 2002.

Distribution of this Report:

Although this is not a formal filing in a Docket, the Department is providing copies of this document to the Docket No. 5980 service list, to the Contract Administrator, and to Efficiency Vermont.

²Portions of these evaluation projects are likely to be billed back to Vermont utilities under the provisions of ¶ 18 of the 5980 MOU.