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veic.org

May 21, 2014

Ms. Susan Hudson, Clerk
Vermont Public Service Board
112 State Street
Montpelier, VT 05620-2701

Re: EEU 2013-01 VEIC Final Comments on Budget and Savings Recommendations

Dear Ms. Hudson:

On May 14, 2014, and May 15, 2014, the Vermont Public Service Board held workshops to discuss resource and non-resource acquisition elements, evaluation, and compensation regarding budget and savings recommendations for VEIC in this proceeding.

VEIC submits these final comments on the details of the budget and savings recommendations that were discussed in the workshops. This filing summarizes each question and provides a response, sequentially according to workshop transcripts.

VEIC appreciates the opportunity to provide this additional information to the Board and parties in this proceeding. Please feel free to contact me if you have any questions regarding this filing.

Sincerely yours,

A handwritten signature in blue ink that reads "Michael J. Wickenden".

Michael Wickenden
Director of Regulatory Affairs

cc: 2013-01 Service List (electronic service only)

FINAL COMMENTS ON BUDGET AND SAVINGS RECOMMENDATIONS DEMAND RESOURCES PLAN PROCEEDING EEU-2013-01

May 21, 2014

VEIC hereby responds to questions that arose at two workshops: the May 14, 2014, Workshop on Resource Acquisition Elements, and the May 15, 2014, Demand Resources Plan Workshop on Non-Resource Acquisition, Evaluation, and Compensation. These comments address each workshop separately. Each item is identified by keywords and the page and line numbers of the transcript from each respective workshop.

This document accompanies a spreadsheet, VEIC EEU Program Budget Recommendation – May 21, 2014. The budget recommendations reflect VEIC's proposal for the EEU budget, and contains totals for the Burlington Electric Department and the Public Service Department.

RESPONSES TO QUESTIONS FROM THE BOARD ABOUT RESOURCE ACQUISITION ACTIVITY (MAY 14, 2014)

1. Maximum achievable forecast (page 20; lines 3-9)

Mr. Knauer asked why GDS's maximum achievable forecast differs from VEIC's 2011 maximum achievable study results.

Response: On April 8, 2011, the Department filed a comprehensive summary of the differences in methodology between the 2011 GDS maximum achievable study and VEIC's 2011 maximum achievable study. Given that the GDS methodology remained the same between its earlier study and the maximum achievable forecast for the 2014 – 2033 Demand Resources Plan, the differences persist. VEIC continues to believe that the GDS approach undervalues Vermont's maximum achievable potential. A copy of the Department's April 8, 2011, filing is attached.

2. Upstream savings (page 44; lines 4-7)

Mr. Knauer asked how burdensome it would be to improve the tracking of “upstream savings,” and if the additional data prove useful, whether there would be budget implications.

Response: VEIC agrees that there would be many benefits to enhanced data tracking of upstream measure savings. Three such benefits are (1) more informed rate and bill analysis, (2) more accurate savings estimates, and (3) additional program design intelligence.

With regard to the question of burden, it is important to note that significant programmatic barriers exist in VEIC’s ability to obtain customer-specific data. The advantages of upstream programs have made them increasingly popular not only in Vermont, but throughout the Northeast’s other efficiency programs. However, VEIC is not aware of program implementers that have cost-effectively and comprehensively addressed residential and C&I upstream program data collection barriers. Without direct access to customer-specific data, the costs of meeting data-driven program objectives are commensurately higher than they would be if access were not a significant issue.

Currently, VEIC works collaboratively with the Vermont Public Service Department and others in the Efficiency Vermont Technical Advisory Group (TAG) in designing Vermont’s upstream energy efficiency programs to maximize data collection efforts. Consequently, participant demographic data as well as sales data are collected by distributors in upstream commercial and industrial initiatives.

VEIC is committed to working with the Department as it designs its evaluation activities to capture opportunities to leverage existing evaluation activities and to plan initiatives that can address this shortfall in obtaining data.

3. Carryover and ability to handle an increasing budget (page 106; line 18, to page 107; line 16)

Mr. Knauer asked whether the causes for the current-year carryover request might impinge on VEIC’s ability to handle an increasing budget amount in future years.

Response: In response to the Board’s previous request for more information regarding VEIC’s 2013 carryover request, VEIC has provided the Board with a substantial amount of information regarding the reasons for the request and VEIC’s plans for stronger performance in 2014. Given the lead time it takes to fully ramp up and implement spending and program changes to accomplish the desired results, and given the history of previous carryover requests, VEIC entered 2014 with plans and strategies in place for making substantial progress toward both the Quantifiable Performance Indicator and budget performance targets for Efficiency Vermont. That is, VEIC has proceeded on the assumption that it should be fully prepared to implement activity appropriate to an increased budget resulting from the Board’s possibly granting of this



2013 – 2014 carryover request. At this time, VEIC has a high degree of confidence that if the carryover request is granted, it will use the full budget for the 2012 – 2014 performance period. VEIC satisfactorily fulfilled its performance obligations following its previous request for allocation of carryover funding, during the 2009 – 2011 performance period.

Essentially, VEIC believes that this is a question of aligning the timing of strategic implementation with the management of achieving performance targets, and less a matter of its ability to handle an increasing budget. VEIC has demonstrated its ability to respond to increasing budgets and goals and is prepared to do so again if directed by the Board.

RESPONSES TO QUESTIONS FROM THE BOARD ABOUT NON-RESOURCE ACQUISITION ACTIVITY (MAY 15, 2014)

4. Highlights piece (page 56: lines 12-17)

Mr. Knauer asked if the Highlights Piece was a required regulatory report.

Response: Yes. VEIC's *Efficiency Vermont Annual Highlights* is produced for general public distribution. It is designed to satisfy a requirement in the *Process and Administration Document* (proposed revised version):

In addition, an EEU shall publish and distribute materials that highlight annual results for public distribution. An EEU shall consult with the DPS on the content of these materials.

P&A proposed revised version, Appendix B, Section 4.B¹

5. FCM evaluation costs (page 59; lines 20-25)

Ms. Krolewski asked about reducing Forward Capacity Market (FCM) evaluation costs.

Response: VEIC believes that lower evaluation costs could be possible if the Board were to revisit its May 25, 2011, Order re: Evaluation of Forward Capacity Market Savings Claims.² Specifically, VEIC suggests the Board adopt a February 3, 2011, VEIC proposal (Non-Resource

¹ The current, 2010 *Process and Administration Document* contains similar language:

A. *Annual Reports shall include, in addition to the information included in monthly and quarterly reports, at a minimum unless otherwise directed by the Board:*

(a) *A summary of progress and highlights for the year, including any significant changes in strategies or services funded by EEU Funds...* (Appendix B, Section 3.A(a), p. 35).

² <http://psb.vermont.gov/sites/psb/files/orders/2011/EEU-2010-06OrderReFCMVerification.pdf>.



Acquisition Description and Budget Proposals - Revised) and as further discussed in VEIC's filings of April 3 and April 17, 2011.³

VEIC is not aware of any other FCM efficiency provider that does not follow the general approach of evaluating (1) measurement and verification implementation, (2) measurement review, (3) measurement and verification finalization, and (4) equipment calibration. VEIC continues to believe that VEIC implementation of the evaluation of the FCM savings claim, with the Department fulfilling the role of reviewing and verifying VEIC's adherence to the ISO New England-approved EM&V plan methodology, would produce significant administrative efficiencies. These efficiencies would result in decreased costs and the maintenance of accurate, reliable, and qualified savings estimates for submission into the FCM.

6. Efficiency Vermont blog (page 63: lines 1-5)

Mr. Sinclair requested information pertaining to activity on the Efficiency Vermont blog.

Response: The [Efficiency Vermont blog](#) was created as a tool to educate the public and policy makers about the value of energy efficiency in ways that go beyond promotion of individual efficiency measures. This means both (1) speaking broadly to the statewide value and rationale of energy efficiency and Efficiency Vermont, and (2) providing high-level information about energy efficiency technologies that goes beyond simple promotion of incentives and program participation. The blog supports the efforts of Efficiency Vermont to "Provide information and education that will empower consumers to manage their energy use" as called for in the VEIC Order of Appointment (Section II.1.O).

Since its creation in Fall 2012, the blog has seen a steady increase in readership, even as the number of posts has remained relatively stable (typically 4-6 per month). In other words, the effective "yield rate" of the investment in creating content for the blog has improved over time, as shown in Figure 1.

³ For the proposal: <http://psb.vermont.gov/sites/psb/files/projects/EEU/drp/2-3-11RevisedVEICDRPNRADescriptionProposal.pdf>; page 10.

For the April 3, 2011 filing: <http://psb.vermont.gov/sites/psb/files/projects/EEU/drp/4-3-11VEICSuppFilingNRAFCMME.pdf>.

For the April 17, 2011, filing: <http://psb.vermont.gov/sites/psb/files/projects/EEU/drp/4-17-11VEICCommentsReDPSrevisedMandVbudgets.pdf>.



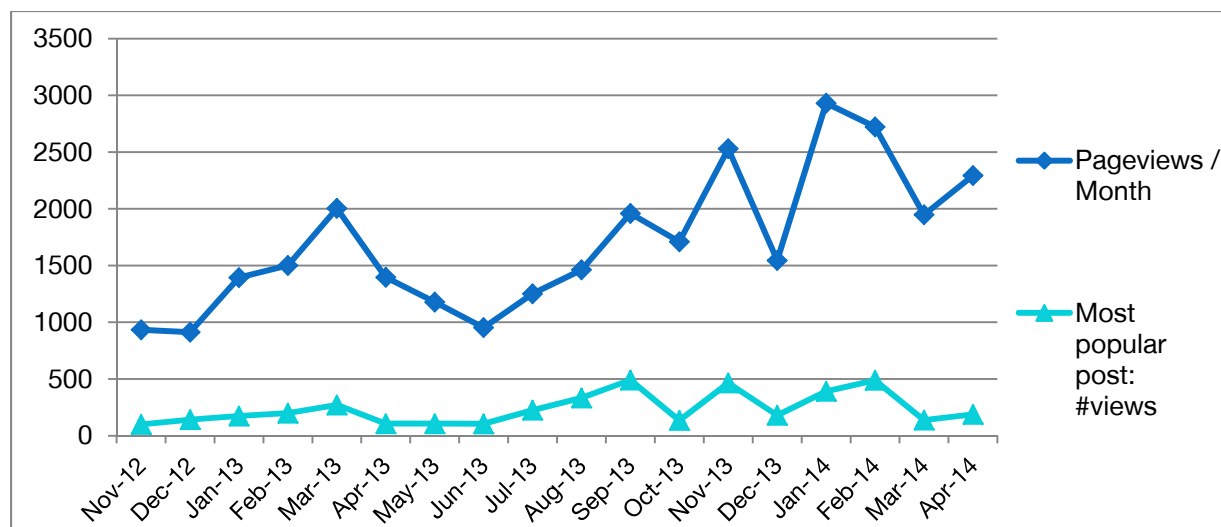


Figure 1. Page views per month and most popular posts, Efficiency Vermont blog, since November 2012.

The blog is proving to be a useful resource not only for customers, but also for policy makers, peers, and members of the media. VEIC has used blog postings as exhibits for legislative briefings, to answer questions from peers about aspects of VEIC's work, and as resources for members of the media interested in energy efficiency. For example:

- [“MPG for your home”](#) helped generate [a story by WPTZ-TV’s Stewart Ledbetter on the topic of home energy labeling](#). It also helped provide valuable feedback to the House Committee on Natural Resources and Energy’s Vermont Energy Labeling Working Group by allowing people to cast votes and comment on draft versions of the label (this post generated more comments than any other post to date).
- [“Who Says There’s No Such Thing as Efficient Electric Heat?”](#) gave Efficiency Vermont a valuable opportunity to engage directly with customers in a new way. The Efficiency Vermont Customer Support team had reported they were fielding many requests for information and incentives related to heat pumps. Because Efficiency Vermont only briefly offered incentives through the Green Mountain Power CEED Fund for this technology, there was nothing on the Efficiency Vermont website that discussed it. It became one of the most popular posts on the blog. VEIC included this post in materials given to the Senate Committee on Finance, because the issue of heat pumps incentives was being discussed during the 2014 legislative session.
- Other posts have provided good detail on programs, and convey clear, approachable information to customers:
 - [“To Do-it-Yourself or Not Do-it-Yourself – That Is the Question”](#) explored a popular topic, DIY home efficiency improvements.
 - [“Energy Efficiency as an Investment”](#) used an infographic to compare the performance of an efficiency investment to a stock market investment.
- [Another recent post](#) solicited feedback on the 2014 Better Buildings by Design conference, which helps VEIC plan for the 2015 conference.

VEIC tightly manages the costs of the blog and weighs those costs against the blog's benefits and reach to ratepayers. Although the level of activity and required labor can vary depending on the need for technical review, graphic content, and other factors, the blog on average costs \$1,500 per month to produce.

7. VGS EEU docket (page 65:lines 6-10)

Mr. Knauer asked VEIC and the Department to comment on the appropriateness of ratepayer funding VEIC's participation in that the EEU Docket relating to Vermont Gas Systems.

Response: On May 30, 2012, the Board granted VEIC's request to intervene in Docket No. 7676, affirming VEIC's substantial interest in that proceeding. VEIC's interests in the outcome of the Board's investigation were due to:

...(1) its long-standing role, and current appointment, as provider of energy efficiency utility services to electric ratepayers and heating and process fuel users in Vermont; and (2) the potential appointment of an EEU other than Vermont Gas Systems, Inc., ("VGS") to provide efficiency services in VGS service territory.

Order Re Vermont Energy Investment Corporation Motion to Intervene,
May 30, 2012, at 1

The Board expected that "VEIC will contribute meaningfully to deliberations on how an Order of Appointment of an entity to provide natural gas efficiency services in VGS's service territory will promote the good of the State." (Order at 2)

Because of VEIC's role in contributing to "the good of the State," VEIC believes Vermont ratepayer funding for the organization's ongoing participation is reasonable, VEIC's participation as an EEU reinforces the comprehensive platform that is needed to serve and benefit ratepayers of all utilities as the State progresses toward meeting the legislated State energy goals.⁴

Also as noted by Mr. Wickenden at the workshop,⁵ topics under consideration in Docket 7676 potentially affect all EEUs. Thus, having VEIC's collaboration on behalf of ratepayers provides significant value in maximizing administrative efficiency, by providing relevant and necessary information for decision making. VEIC's participation, with the support of ratepayer funds, is also a feature of its responsibilities as an EEU, as detailed in VEIC's Order of Appointment.⁶

⁴ Vermont Energy Efficiency and Affordability Act (2007 – 2008 legislative session) establishing building efficiency goals: Act 92; 10 V.S.A. § 581.

⁵ Page 65: lines 22-25. and page 66: lines 1-15.

⁶ See Order of Appointment, Section II: Responsibilities of VEIC as an EEU including 1.F, H, I, K, L, M, and N (all on page 4).

http://psb.vermont.gov/sites/psb/files/orders/2010/Att_to_Order_of_App_for_VEICPFD2010-12-20.pdf.



The EEU's fulfillment of those responsibilities, in regulatory proceedings, was also recognized as a fundamental benefit of the franchise model.⁷

8. Compensation - margin vs. mark-up (page 107; lines 23-25)

In response to Ms. Krolewski's request, VEIC wishes to clarify the determination of the total available "compensation amount" as determined by two methods: "Margin" and "Mark-up."

In the 2011 - 2014 performance periods, VEIC's compensation rate (4.1%) is calculated with the **margin** method. **VEIC's 2015 – 2017 compensation proposal of 5% is also based on the margin method** (see the accompanying spreadsheet, VEIC EEU Program Budget Recommendations).

When applying either a margin method or a mark-up method to a base amount, using identical percentages for each method, the mark-up rate will always produce a lower compensation dollar total. Thus, in setting the EEU Compensation amount and rates, it is important to disclose whether the calculation has used a margin rate or a mark-up rate.

Mark-up Method

The mark-up method is easier to calculate than the margin method if one does not begin with a pre-defined Total EEU Costs cap:

$$\text{Mark-up Rate (\%)} \times \text{EEU Cost (not including compensation)} = \text{Compensation Costs (\$)}$$

$$\text{Therefore, Total EEU Costs} = \text{EEU Cost} + \text{Compensation Costs (\$)}$$

Margin Method

If one starts with a not-to-exceed Total EEU Costs cap, the margin rate is easier to apply:

$$\text{Total EEU Costs} \times \text{Margin Rate (\%)} = \text{Compensation Costs (\$)}$$

$$\text{Total EEU Costs} - \text{Compensation Costs (\$)} = \text{EEU Cost}$$

Where:

- EEU Cost = cost for services and goods, without Compensation Costs (\$)
- Total EEU Costs = cost for services and goods, and Compensation Costs (\$)

⁷ Board Order of November 24, 2009, Docket No. 7466, Finding of Fact #20 (in part):
Eliminate potential conflicts inherent in the Board's role as a contract manager by enabling the Board to operate solely as the administrative tribunal whose charge it is to ultimately decide the various energy efficiency regulatory matters before it with the EEU, DPS, and other parties presenting issues and providing testimony and comments in support of a particular result...

Each method can be applied in both cases.

9. Compensation – VEIC’s financial viability (page 112; lines 12-16)

In response to Ms. Krolewski’s request, VEIC provides the following additional information regarding the extent to which compensation is necessary for VEIC’s financial viability.

The increasing size of Efficiency Vermont budgets and the increasingly ambitious performance goals for a program with harder-to-reach customer opportunities puts monthly strains on VEIC’s cash flows. To minimize the interest expense of borrowing to meet monthly expenditures, for example, VEIC has obtained short-term credit, which it pays back upon receipt of reimbursement from the State. Because VEIC on-hand cash and assets are insufficient to secure credit for the volume of Efficiency Vermont expenditures, banks will issue a line a credit according to a formula related only to current receivables.

In practice, VEIC can borrow no more than 80% of receivables from the prior month. Although VEIC’s line of credit is capped at \$6.9 million, the available amount is only as great as 80% of the prior month’s receivables. Because it is only 80% of receivables, VEIC must float some of its own cash to ensure payment of monthly program expenses.

Thus, VEIC finds itself in a continual cash-poor position at certain times of the month; it must use funds from operating fees to provide cash flow. Further, VEIC’s ability to borrow for any purpose unrelated to Efficiency Vermont work is severely curtailed because of these requirements.

Banks do not consider the prospect of earning a performance award once every three years a relevant factor in issuing credit for the next month. Although the performance award does contribute to VEIC’s cash assets and serves as a vehicle for the organization to make important investments, it does not contribute to VEIC’s day-to-day financial viability.

The growing budgets for 2015-2017 will continue to exacerbate VEIC’s cash flow situation. VEIC proposed that the current split between the performance award (60%) and the operating fee (40%) be changed to 50% for each component of the compensation package. Such a shift from 40% to 50% for the operating fee would help to mitigate this financial condition, enabling greater cash flow and greater ability to leverage cash position for needed borrowing.

10. Compensation – proposed split (page 120; lines 1-2)

Mr. Knauer asked about the proposed split and the historical trend.

VEIC did not base its compensation proposal on a historical perspective. Underlying this decision against using a historical perspective is that the scope of Resource Acquisition and



Non-Resource Acquisition activity for the 2015-2017 performance period, in the context of the 20-year forecast, bears insufficient resemblance to activity under any of the previous four performance periods of the three-year contract cycles, and the first three-year cycle as an appointed energy efficiency utility.

Instead, VEIC based its request on (1) the language of the Board's opinion in the Order of Appointment in Docket 7466, and (2) the market realities of operating the EEU as a leading partner in fulfilling State law for energy efficiency in buildings. Both have in common the principle of fair return.

This is a question of equal pay for equal work, as demonstrated in VEIC's comparison of efficiency program providers' compensation across the nation. It is not a question of either historical practice or carrots and sticks. Efficiency Vermont is now too mature and too complex an operation, with too many regulatory burdens, to thrive on lower-than-market approaches that are defensible only for untested, start-up operations.

VEIC urges the Board to reject the Department's compensation recommendation that uses this unfortunate logic.

With regard to the split, please see the discussion under Item 9.



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April 8th, 2011

Susan M. Hudson, Clerk
 Vermont Public Service Board
 112 State Street
 Montpelier, VT 05620-2701

Re: Department of Public Service filing of Energy Efficiency Potential Study in the Demand Resource Plan proceeding.

Dear Ms. Hudson:

As part of the Public Service Board (Board) Demand Resources Plan (DRP) Proceeding (EEU-2010-06) the Department of Public Service (Department) filed on February 3rd, 2011, a Draft Final report detailing the "Electric Energy Efficiency Potential for Vermont," completed for the Department by GDS Associates, Inc and the Cadmus Group. Enclosed with this memo, the Department files the final version of that report.

The detailed report estimates the technical, economic, and maximum achievable potential for electric energy efficiency from 2012-2031 for both Energy Efficiency Utility service territories independently, and provides aggregated statewide estimates. Numerous revisions to the final report were made, as detailed below in this memo. Overall, the total estimated statewide energy efficiency potential is similar to the draft report:

Final Statewide Energy Efficiency Potential (% of forecasted 2031 sales)			
Territory	Technical Potential	Economic Potential	Maximum Achievable Potential
Statewide	31.7%	29.2%	25.4%
Efficiency Vermont	31.8%	29.3%	25.5%
Burlington Electric	30.0%	27.5%	24.1%

This potential study was used to inform the Department's development of resource plan scenarios for the Board's consideration in the DRP process.

A similar electric energy efficiency potential study for the state of Vermont was completed in 2010 by the Vermont Energy Investment Corporation (VEIC). The Department and the GDS/Cadmus Team worked cooperatively with VEIC to review measure assumptions and compare methodological approaches in an effort to gain an understanding of any possible differences between the two studies, and modify approaches where appropriate. In general, the two studies employed similar measure characterizations and energy efficiency potential strategies. Both studies used the Vermont Technical Reference Manual as the main data source for measure costs, savings



and useful lives. However, as noted at the workshop discussing the draft study, there were also some critical differences between the two studies.

The primary contrasting approach relates to the treatment of equipment in the market that is already energy efficient. The GDS/Cadmus team excluded measures that are currently efficient from the eligible pool of measures to determine potential for savings from 2012-2031. The analysis recognizes these measures as the portion of the market that has already been transformed and accounted for in the most recent ITRON forecast¹. Because naturally occurring energy savings are already largely reflected in the electricity sales forecast used in this study, these electric savings are not available to be saved again through the study team's energy efficiency supply curve analysis. The VEIC approach allows all measures (regardless of current efficiency) to become eligible over time for future participation in DSM programs and the estimated potential, then applies unique free-ridership and spillover rates to net out the impact on future savings and costs. This difference is addressed further in Section 5.11 of the final report.

As suggested above, another contrasting approach between the two studies is the application of free-ridership and spillover estimates to residential and commercial/industrial measures. The VEIC study applies unique free-ridership and spillover rates for all analyzed measures. The GDS/Cadmus team assumed spillover and free-riders would effectively cancel each other out, leading to a net-to-gross ratio of 1.0, with one exception. Recognizing that CFL lighting technology in the residential sector has historically been evaluated with significantly lower net to gross ratios than other standard measures, residential CFL bulbs were assigned an annual net to gross ratio of 0.40 during the 20 year analysis period. After accounting for CFL bulbs in the residential sector, the overall difference in net-to-gross ratios between the two studies are minimal. The overall net-to-gross ratio utilized by VEIC in the residential sector is 0.99.² The overall net-to-gross ratio for the commercial/industrial sector is 1.05.

There are merits to both approaches to the above issues. The GDS/Cadmus study is useful for predicting the long-term potential for energy efficiency, particularly when using a top-down approach to determine savings potential based on a load forecast that recognizes certain market changes in energy efficiency over time. In turn, the VEIC approach can be advantageous for program planning purposes. The use of historical and forecasted free-ridership and spillover rates allows the EEU to anticipate future budgets and expected net savings critical to the program planning process. The GDS/Cadmus team recognizes the merit of anticipated free-ridership and spillover estimates and has made an effort to adjust the potential savings and costs produced in this report for the additional resource plan scenarios being developed in the DRP by the annual net-to-gross estimates calculated by VEIC at the sector level.

¹ Itron is contracted by Vermont Electric Company (VELCO) to complete a long range load forecast for the state. This forecast (referred to as "the ITRON forecast", is the relative comparison point for both the Department and VEIC studies.

² Calculated after removing CFL bulbs attributed to the efficient products program.

It is extremely difficult to determine the exact MWh difference caused by the two methodological approaches. That said, the GDS/Cadmus team has estimated that these differences account for about half of the difference in savings potential between the two studies.

Although the discussion above characterizes the main methodological differences between the two studies, other contrasting assumptions were identified. These, as well as any changes from the draft report are noted below. Of note, the first difference in the commercial sector is estimated to account for the majority of the remaining differences in study results.

Residential:

1. Revised the useful life of fuel-switching measures to 20 years. This eliminates the need for re-upping savings after the end of useful life within the study period, as it is unlikely that the participant would revert back to electric equipment.
2. Revised the costs of Light Emitting Diode (LED) bulbs down to \$4 in 2020, \$2 in 2030. Revised cost estimates compare more favorably to the forecasted cost of LED bulbs assumed by VEIC, and are consistent with industry expectations. VEIC and the DPS have agreed to use this assumption going forward in the resource scenario plans.
3. Revised cost of Heat Pump Water Heaters and Heat Pump Dryers to be treated similar to emerging technologies. Price is estimated to decrease by ~3% annually (in nominal terms). GDS/Cadmus costs still do not decline as rapidly as VEIC in an effort to recognize that increased market acceptance could impact costs.
4. Reduced the number of homes eligible for clothes dryer fuel-switching to reflect possible limited availability. Those homes moved away from fuel-switching received the heat pump clothes dryer as a competing alternative.
5. Reduced in the number of homes eligible for exhaust fans (based on data provided by VEIC regarding the applicability of the measure throughout VT).
6. Removed weatherization participants that produced no electric savings (or negative electric savings) and that relied solely on non-electric benefits (i.e. gas/propane) to be cost-effective based on the VT Societal Test.
7. The VEIC study includes a portion of the CFL screw-in bulbs attributed to the commercial/industrial sector under their Efficient Products Program (Residential Sector) totals. The GDS/Cadmus study did not include any commercial/industrial bulbs under the residential sector.

Commercial/Industrial

8. Re-examined LED bulb technologies replacing current fluorescent tube applications. The decision was made to continue to exclude this technology from GDS/Cadmus potential estimates due to uncertainties in market acceptance and overall cost-effectiveness. This measure alone represents approximately 200,000 MWh or 45% of the difference between studies. The measure is introduced well into the second decade of the VEIC study, so the difference is likely to have little

practical effect on the early years of the resource plan scenarios. This measure should be evaluated again in the next DRP proceeding.

9. Adjusted the annual rate of penetration for efficient measures to occur more rapidly in early years. Recent historical DSM efforts suggested that actual penetration could occur at a faster rate than initially modeled. Although this has little effect on the estimated potential available in 2031 it does impact the annual timing of benefits and program costs.

All Sectors:

10. Adjusted load forecast to include the impacts of DSM efforts in 2010 and 2011. The current ITRON forecast only includes DSM efforts through 2009. The forecast continues to exclude anticipated DSM efforts beginning in 2012.
11. Update to assumed non-incentive costs based on a better understanding of Efficiency Vermont's annual reporting and budgeting assumptions

Combined, the changes have reduced residential potential from 894,360 MWh (36% of 2031 residential sales) to 819,382 MWh (34% of 2031 residential sales). Savings have also declined slightly in the commercial/industrial sector, from 639,051 MWh to 616,291 MWh. Overall, potential savings (as a % of 2031 sales) decreased from 26% to 25.4% for all sectors combined. The changes had a more significant impact on assumed costs. In the residential sector, NPV costs declined from \$811 million to \$628.5 million. In the commercial/industrial sector NPV costs increased \$224.4 million to \$313.9 million. Overall, the changes to costs and savings increased the total VT Societal benefit-cost ratio from 2.2 to 2.6 for measures installed from 2012-2031.

Other Differences:

VEIC, in a memo to the Board on March 7, 2011, described a number of other differences in studies. Those that are not discussed above are mentioned below. This list is taken directly from the VEIC memo with some minor modifications to the language. For the resource plan scenarios, the Department has not changed its assumptions for any of the below identified differences, with one exception. In number 3, the pace of retrofit activity is necessarily variable with the scenarios.

1. The GDS/Cadmus study did not include load or load reductions associated with participants in the Self Managed Energy Efficiency Program.
2. The GDS/Cadmus study reports savings at the customer meter. VEIC reported potential at generation
3. The GDS/Cadmus study assumed a slower pace of retrofit activity than VEIC
4. The GDS/Cadmus study included savings and costs associated with indirect and direct feedback (behavioral) measures, VEIC's study did not.
5. VEIC included commercial savings and costs in the residential forecast from CFL sales in the Efficient Products Program. The GDS/Cadmus study placed these savings in the appropriate sectors

6. The GDS/Cadmus study included miscellaneous savings and costs associated with residential consumer electronics, recognizing that there is unknown potential in this fast growing end use. The VEIC study did not.
7. Different treatment of costs for thermal home retrofit measures. The Department study continues to include costs associated with the thermal measures; the VEIC study assumes the thermal costs were funded from an alternative source.

The Department greatly appreciates the participation of both VEIC and Burlington Electric Department in the development of the Electric Energy Efficiency Potential Study. We look forward to improving processes and building on the knowledge gained here to apply to future estimates of remaining potential. The Department also acknowledges the work that the GDS/Cadmus team put into this effort.

Please feel free to contact me with any questions,

Sincerely,

A handwritten signature in black ink, appearing to read 'Walter' followed by a stylized flourish.

Walter (TJ) Poor
Energy Program Specialist
Department of Public Service
802-828-0544