

State of Vermont
Department of Public Service
112 State Street
Montpelier, VT 05620-2601
<http://www.publicservice.vermont.gov>

[phone] 802-828-2811
[fax] 802-828-2342
[tty] 800-734-8390

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January 10, 2018

Judith Whitney, Clerk
Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620-2701

Re: EEU 2015-02

Department of Public Service Revised Verification of the 2016 Efficiency Savings Claim of the Natural Gas Energy Efficiency Utility operated by Vermont Gas Systems

Dear Ms. Whitney:

The Public Service Department (Department or PSD) provides to the Public Utility Commission, a Verification Report of the 2016 Efficiency Savings Claim of the natural gas Energy Efficiency Utility (EEU) operated by Vermont Gas Systems (VGS). This letter describes the two-step review process undertaken by the Department to assess the performance of the EEU. First, the Department verified the reported savings of the VGS EEU. Using that data, the Department then assessed whether the natural gas EEU operated by VGS made satisfactory progress in 2016 toward achieving the Quantitative Performance Indicators (QPIs) and other qualitative obligations required by the Transition Period Plan. The Department's conclusion is that VGS did make satisfactory progress toward these goals.

This report, which covers the first year of the appointment of VGS as an EEU, and the first year of the two-year Transition Period Plan, is the fulfillment of the Department's obligation to perform annual savings verifications of the natural gas EEU pursuant to Sections II.3.E and II.3.H (c) of the "Process and Administration of an Energy Efficiency Utility Order of Appointment," and Section III.5.B of the "Order of Appointment for Vermont Gas Systems, Inc.," issued by the Public Utility Commission on February 12, 2016.

To carry out these verification activities the Department retained the services of a consultant, Energy and Resource Solutions Inc. (ERS), to provide expert review and analysis of the VGS 2016 savings claim for the Commercial and Industrial (C&I) sector programs as well as the

Residential New Construction program. Department staff also verified the savings claim for the Residential Equipment Replacement (RER) and Low-Income Home Retrofit (RIR-LI) programs.

The objective of savings verification is to calculate annual and peak day realization rates (RRs) at the program and sector levels while leveraging information garnered during the verification process to inform future program design. Evaluation activities include review of the full database of measure data and sampled project files to accomplish the following:

- Verify that savings assumptions have been applied appropriately and calculations performed correctly.
- Calculate verified savings.

The Department has reviewed the results from these activities and concurs with the findings of ERS contained in the attached report entitled: *Savings Verification of Vermont Gas Systems' 2016 C/I and RNC Custom Program Results*. The results of this evaluation are summarized in the table below:

Table 1. C&I and Custom Residential New Construction Reported and Verified Savings

Program	VGS Reported Annual Mcf	Verified Annual Mcf	2016 Annual Mcf Realization Rate	VGS Reported Peak Day Mcf	Verified Peak Day Mcf	2016 Peak Day Realization Rate
Commercial Equipment Replacement (CER)	6,404	5,506	86%	30	29	97%
Commercial Retrofit (CSR)	28,079	29,287	104%	52	45	87%
Commercial New Construction (CNC)	14,001	7,875	56%	150	101	68%
C/I sector total	48,484	42,668	88%	232	176	76%
Program	Tracking Annual Mcf	Verified Annual Mcf	2016 Annual Mcf Realization Rate	VGS Reported Peak Day Mcf	Verified Peak Day Mcf	2016 Peak Day Realization Rate
Custom Residential New Construction (RNC) program total	6,274	3,083	49%	67	34	50%

Department staff also verified the savings claims for the Residential Equipment Replacement (RER) and Low-Income Home Retrofit (RIR-LI) programs operated by VGS during 2016. The results of that review are included in the report entitled: *Savings Verification of Vermont Gas Systems' 2016 Residential Equipment Replacement and Low-Income Home Retrofit Programs*, also attached, and summarized in the following table:

Table 2. Residential Equipment Replacement and Low-Income Home Retrofit Program Reported and Verified Savings

Program	VGS Reported Annual Mcf	Verified Annual Mcf	2016 Annual Mcf Realization Rate	VGS Reported Peak Day Mcf	Verified Peak Day Mcf	2016 Peak Day Realization Rate
Residential Equipment Replacement (RER)	10,799	10,678	99%	92	91	99%
Low Income Home Retrofit (RIR-LI)	1,132	1,132	100%	12	12	100%
Total	11,931	11,810	99%	105	103	99%

The Department certifies the VGS portfolio verified savings for 2016 as shown in Tables 3 and 4, below.

Table 3. VGS Commercial and Industrial Sector Certified Verified Savings for PY2016

Program	VGS Reported Annual Mcf	Verified Annual Mcf	2016 Annual Mcf Realization Rate	VGS Reported Peak Day Mcf	Verified Peak Day Mcf	2016 Peak Day Realization Rate
Commercial Equipment Replacement (CER)	6,404	5,506	86%	30	29	97%
Commercial Retrofit (CSR)	28,079	29,287	104%	52	45	87%
Commercial New Construction (CNC)	14,001	7,875	56%	150	101	68%
C/I sector total	48,484	42,668	88%	232	176	76%

Table 4. VGS Residential Sector Certified Verified Savings for PY2016

Program	VGS Reported Annual Mcf	Verified Annual Mcf	2016 Annual Mcf Realization Rate	VGS Reported Peak Day Mcf	Verified Peak Day Mcf	2016 Peak Day Realization Rate
Residential New Construction EVT (RNC-EVT)	2,486	2,486	100%	30	30	100%
Custom Multifamily Residential New Construction (RNC-MF Custom) program total	6,274	3,083	49%	67	34	50%
Residential New Construction (RNC) total	8,760	5,569	64%	96	63	66%
Residential Equipment Replacement (RER) total	10,786	10,678	99%	92	91	99%
Residential Home Retrofit(RIR)	3,227	3,185	100%	43	43	100%
Home Performance with Energy Star (HPW)	437	437	100%	6	6	100%
Low Income Residential Home Retrofit (RIR-LI and RLI custom)	1,132	1,132	100%	12	12	100%
Residential Home Retrofit (RIR) total	4,796	4,754	100%	61	61	100%
Residential Sector total	24,342	21,001	86%	250	216	86%

Table 5, below, lists the certified savings on the sector and overall portfolio level.

Table 5. VGS Sector- and Portfolio-Level Certified Verified Savings for PY2016

Sector	VGS Reported Annual Mcf	Verified Annual Mcf	2016 Annual Mcf Realization Rate	VGS Reported Peak Day Mcf	Verified Peak Day Mcf	2016 Peak Day Realization Rate
Residential Sector total	24,342	21,001	86%	250	216	86%
C/I sector total	48,484	42,668	88%	232	176	76%
Portfolio Total	72,826	63,669	87%	482	392	81%

Section II.3.E of the *Process and Administration of an Energy Efficiency Utility Order of Appointment* document requires the Department to annually certify to the Board that the natural gas EEU operated by VGS has satisfactorily achieved the performance metrics known as Quantifiable Performance Indicators (QPIs) that are designed to assess whether the EEU is meeting established savings goals on the schedule and at the levels set by the Commission in its Order of December 23, 2015 in this proceeding.

- (a) Whether VGS has made appropriate interim progress toward achieving QPIs;
- (b) Whether VGS is satisfactorily executing those of its responsibilities that are not directly measured by QPIs; and
- (c) Whether VGS' performance relative to its QPIs is consistent with the portion of the 2-year budget that has been expended thus far.

Progress Toward Achieving Quantifiable Performance Indicators

Based on a review of VGS' savings claims including the savings verification activities described in the attached reports, the Department concludes that VGS is making appropriate progress towards achieving the minimum requirement of the set QPI targets for the two-year Transition Period. However, the application of the realization rates from this savings verification will make achieving those QPI goals more difficult. Tables 6, 7 and 8, below summarize VGS' performance in 2016 with respect to these criteria.

Table 6. Progress Toward Goals – QPI #1: Annual Incremental Mcf Savings

Program	QPI #1 Annual Incremental Mcf Savings		
	TPP* 2016-17 Annual Mcf Two-Year Goal	PY** 2016 Verified Annual Mcf	Progress Toward Goal
Residential Home Retrofit (RIR)	7,852	4,780	61%
Residential New Construction (RNC)	17,554	5,569	32%
Residential Equipment Replacement (RER)	23,695	10,678	45%
Residential Sector Total	49,101	21,001	43%
Commercial Retrofit (CSR)	35,687	29,287	82%
Commercial New Construction (CNC)	30,600	7,875	26%
Commercial Equipment Replacement (CER)	30,998	5,506	18%
C&I Sector Total	97,285	42,668	44%
Portfolio Total	146,386	63,669	43%

*Transition Period Plan

** Program Year

Table 7. Progress Toward Goals – QPI #2: Total Resource Benefits

Program	QPI #2 Total Resource Benefits		
	TPP* 2016-17 Two-year TRB Goal	PY** 2016 Verified TRB	Progress Toward Goal
Residential Home Retrofit (RIR)	\$1,647,708	\$1,033,491	63%
Residential New Construction (RNC)	\$3,704,973	\$888,003	24%
Residential Equipment Replacement (RER)	\$4,617,641	\$2,092,582	45%
Residential Sector Total	\$9,970,322	\$4,014,076	40%
Commercial Retrofit (CSR)	\$4,808,539	\$4,476,516	93%
Commercial New Construction (CNC)	\$4,768,269	\$1,273,216	27%
Commercial Equipment Replacement (CER)	\$5,372,958	\$793,527	15%
C&I Sector Total	\$14,949,766	\$6,543,259	44%
Portfolio Total	\$24,920,088	\$10,557,335	42%

*Transition Period Plan

** Program Year

Table 8. Progress Toward Goals – QPI #3: Peak Day Mcf Savings

Program	QPI #3 Peak Day Mcf Savings		
	TPP* 2016-17 Peak Day Mcf Two-year Goal	PY** 2016 Verified Peak Day Mcf	Progress Toward Goal
Residential Home Retrofit (RIR)	70	61	87%
Residential New Construction (RNC)	140	63	45%
Residential Equipment Replacement (RER)	189	91	48%
Residential Sector Total	399	216	54%
Commercial Retrofit (CSR)	70	45	64%
Commercial New Construction (CNC)	275	101	37%
Commercial Equipment Replacement (CER)	155	29	19%
C&I Sector Total	500	176	35%
Portfolio Total	899	392	44%

*Transition Period Plan

** Program Year

Satisfaction of Non-Quantifiable Responsibilities Required of the EEU

(b) The Department’s qualitative assessment of the performance of the natural gas EEU, conducted by our review of reports and communications between staff and the EEU during 2016, confirms that VGS is also satisfactorily executing certain responsibilities that are not directly measured by QPIs. PSD’s review has concluded that VGS has met each of the following non-quantifiable responsibilities described in its Order of Appointment:

- Assist other Vermont Utilities in connection with the performance of Distributed Utility Planning and transmission planning.
- Provide technical support and training regarding the development and implementation of state energy codes and standards.

- Implement marketing to promote customer participation in and market awareness of EEU services and initiatives; increase consumer demand for energy-saving products and services; and affect consumer decision-making in consumer-driven energy efficiency choices.
- Provide: a toll-free number for its customers; a web page describing services available to customers; and effective customer response and referral.
- Provide general information to the public to:
 - Increase consumer awareness and understanding of the benefits of reducing energy use;
 - Inform consumers of the best technologies available to them; and
 - Refer consumers to information and service resources other than the EEU,
- Assist the Board and/or the Department in developing and implementing any Self-Administered or Managed Energy Efficiency Programs for eligible gas EEU customers.

2016 Proportional Budget Expenditure by Program and Section

The Department concludes that the proportional spending by VGS on EEU activities during 2016 is appropriate, particularly since this is the first full year of operation for the EEU as an entity that is distinct from VGS. It is also the first year in which the EEU sought to meet specific budgets and goals that had been established by the Commission for the natural gas EEU. While progress is judged on an annual basis, meeting these targets at the end of the two-year performance period is the ultimate goal. In addition, the next performance period currently under review in EEU 2016-03 will be for three years, providing even more flexibility to the EEU with respect to the timing of spending and the achievement of performance metrics.

Table 9 compares the progress toward the two-year goals for QPIs #1-3 with the percentage of the budget expended by program and sector. For the residential sector, expenditures for 2016 are more than half of the two-year budget, while progress toward goals for QPIs #1 and #2 are at only 43% and 45% of the two-year goal, respectively after applying the savings verification realization rates.¹ Progress toward the QPI #3 goal is 54% for the residential sector. For the Commercial and Industrial sector, expenditures are well below budget and progress toward the QPI goals is below the first-year goals after applying savings verification realization rates. Overall, expenditures for 2016 are close to budget (52% of the two-year budget) while QPI performance is below target at 42% to 44% of the two-year goal for each of the three QPIs.

Table 9. Expenditures and Progress Toward Goals – QPIs #1, #2 and #3

Program	Budget and Expenditures			QPI #1: Incremental Mcf	QPI #2: TRB	QPI #3: Peak Day Mcf
	TPP 2016- 17 Two- Year Budget	PY 2016 Expenditures	Expenditures as % of Two- Year Budget	Progress Toward Two-Year Mcf Goal	Progress Toward Two-year TRB Goal	Progress Toward Two- year Peak Day Mcf Goal
Residential Home Retrofit	\$1,715,255	\$978,380	57%	61%	63%	87%
Residential New Construction	\$532,908	\$302,590	57%	32%	24%	45%
Residential Equipment Replacement	\$1,265,657	\$804,249	64%	45%	45%	48%
Residential Sector Total	\$3,513,820	\$2,085,219	59%	43%	45%	54%

¹ Progress toward the QPI #1 and #2 goals were 47% before application of realization rates.

Commercial Retrofit (CSR)	\$597,460	\$277,672	46%	82%	93%	64%
Commercial New Construction	\$583,718	\$203,414	35%	26%	27%	37%
Commercial Equipment Replacement	\$538,742	\$147,456	27%	18%	15%	19%
C&I Sector Total	\$1,719,920	\$628,542	37%	44%	44%	35%
Portfolio Total	\$5,233,740	\$2,713,761	52%	42%	42%	44%

Please contact me with any questions.



Keith Levenson
Energy Programs Specialist
Department of Public Service