THE CADMUS GROUP, INC.

Final Report

Impact Evaluation for Rhode Island Multifamily Gas Program EnergyWise (Program Year 2010)

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Executive Summary

National Grid retained The Cadmus Group, Inc. to estimate the Rhode Island Multifamily Gas Energy*Wise* Program's energy savings impacts. The program provides audits and financial incentives for installation of space heating and water heating energy-efficiency measures to multifamily gas facilities that have five or more units and have not participated in the Energy*Wise* program during the past five years. Eligible facilities can receive incentives covering 50 percent of costs for installing insulation, air sealing, duct insulation, and duct sealing. Customers also receive free installation of water savings devices (low-flow showerheads and aerators). In program year 2010 (PY2010), the Energy*Wise* program served 27 multifamily gas facilities, comprising approximately 2,300 units.

The evaluation sought to estimate the program's savings realization rate. The major tasks included: data collection and preparation, data analysis, and reporting. Using a statistically adjusted engineering regression of billing data, Cadmus estimated the savings realization rate, which was then applied to *ex ante* program savings.

Data Collection

National Grid provided billing data for months between 2008 and 2011, along with measure installation information (incentive paid dates, types of measures, and engineering estimates of savings) for premises within the 27 participating multifamily facilities. For analysis, Cadmus aggregated these data to the facility level, given that many facilities were master metered, and information about measures was provided at the facility level. Cadmus merged the billing and measure data with each facility's weather data, derived from the nearest weather station.

To screen for missing or erroneous billing data, Cadmus performed a number of data quality control checks; no concerns were identified. Recently, National Grid implemented a number of improvements to its program tracking system to facilitate mapping billing accounts and participation data to program facilities.

Analysis

To estimate the program's gas savings, Cadmus used the following statistically adjusted engineering model:

$$therms_{it} = \beta HDD_{it} + \delta ESE_{it} + \lambda_i + \rho_{im} + \varepsilon_{it} \qquad \text{(Equation 1)}$$

The dependent variable was the monthly gas usage per unit per day in facility 'i.' We modeled monthly gas usage as a function of the average daily heating degree days (HDD_{it}) and expected engineering savings per unit per day (ESE_{it}). The coefficient on expected engineering savings (δ) was the model's savings realization rate. The model also included facility and facility-month fixed effects. Facility fixed effects (λ) captured consumption specific to each facility that did not vary across months of the year. Facility-month fixed effects (ρ_{im}) captured consumption specific to a facility and month. For example, behavior captured by facility-month fixed effects would be energy usage changes resulting from residents regularly taking vacations during a certain month.

We estimated a year-over-year difference version of Equation 1:

$$\Delta therms_{it} = \beta \Delta HDD_{it} + \delta \Delta ESE_{it} + \Delta \varepsilon_{it} \qquad \text{(Equation 2)}$$

We modeled the difference in gas consumption between a month in the post-installation period and the same month in the pre-installation period as a function of differences between the HDD and the engineering savings estimate. Differencing removed unobservable facility fixed effects and facility-month fixed effects, which are potentially correlated with the other explanatory variables in the model. Coefficients in the difference equation (Equation 2) retained their original interpretation.

Using information about when National Grid paid incentives, we defined post-installation and pre-installation periods. As lags may have occurred between the time measures were first installed and their incentive paid dates, we defined pre-installation periods as 13 to 24 months prior to the incentive paid date (allowing us to avoid contaminating the pre-installation period). Including months with measures in the pre-installation period would have biased down savings estimates. We defined the post-installation period as months after National Grid paid incentives for the measures.

We estimated the model by weighted least squares, with weights equaling the number of units in the facility and the estimation including data for all 27 facilities.

Results

Table ES-1 presents savings estimates. Our savings realization rate estimate (the coefficient on δ) was 121 percent, with a 90 percent confidence interval lower bound of 94 percent, and an upper bound of 149 percent. This savings estimate implied verified savings were statistically significant, and equaled 121 percent of the engineering estimate of expected savings.

Ex post verified savings were 21.4 therms per unit. The 90 percent confidence interval included a lower bound of 16.5 therms and an upper bound of 26.3 therms. *Ex ante* savings were 17.6 therms per unit.

The 27 facilities' *ex ante* total program savings engineering estimate was 40,350 therms. Applying the 121 percent realization rate resulted in verified savings of 48,824 therms. The lower bound of the 90 percent confidence interval was 37,594 therms and the upper bound was 60,052 therms.

Table ES-1. Savings Estimates—Program Year 2010

	Point estimate	Lower Bound 90% Confidence Interval	Upper Bound 90% Confidence Interval
Realization rate (percent)	121%	94%	149%
Unit savings (therms)	21.4	16.5	26.3
Program savings (therms)	48,824	37,594	60,052

Conclusions

Cadmus found program facilities' PY2010 gas savings were larger than expected. The 121 percent savings realization rate implied *ex-post verified* unit savings of 21.4 therms and program savings of 48,824 therms.

Based on these findings, Cadmus recommends National Grid continue to pursue savings opportunities in Rhode Island multifamily gas facilities. The program's better-than-expected performance suggests it can be a source of future savings.

In preparing and analyzing the data, Cadmus also found the changes to the billing and program tracking data ensured we had the full billing histories and program data for each participating facility. We recommend National Grid continue to maintain and use its improved data program tracking system. Also, National Grid should track measure installation dates to eliminate any uncertainty in future billing analyses about when measures were installed.

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1. Introduction

Program Description

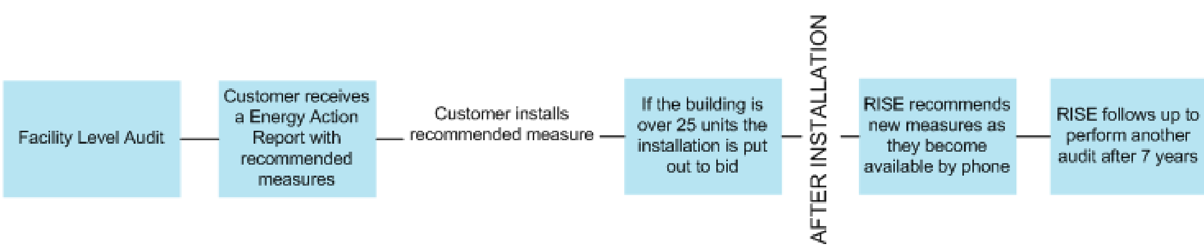
Initiated in July 2007, the Rhode Island Multifamily Gas Energy*Wise* Program was designed to provide residential customers in multifamily gas-heated facilities with energy audits, installed measures, and education to improve energy efficiency. Multifamily facilities with five or more units could participate, provided they had not previously participated in Energy*Wise* during the past five years, and could receive an incentive covering 50 percent of installation costs for insulation, air sealing, duct insulation, and duct sealing. Customers also received free installation of water savings devices (low-flow showerheads and aerators). In program year 2010 (PY2010), Energy*Wise* served 27 multifamily gas facilities, comprising approximately 2,300 units.

Primarily the multifamily gas program has been marketed through direct telephone solicitation by implementation subcontractors, or through word of mouth by facility owners. In addition, multifamily complexes served seven or more years ago may be targeted, through direct calls, for second visits. National Grid maintains a Website describing the program, and offers a call center phone number to answer customers' questions about the program.

The audit contractor RISE Engineering (RISE) implements the Rhode Island gas program. The implementer often has subcontractors perform specific work, such as weatherization for gas heated facilities. Additionally, Rhode Island customers in gas-heated facilities can choose from a list of approved weatherization service providers.

The Energy*Wise* program offers a range of services to natural gas customers. During audits, the auditor collects information about a facility (multifamily), and enters the data into software. After returning to the office, the auditor used the software to generate a detailed proposal for the multifamily facility. Figure 1 illustrates the multifamily facility program delivery approach.

Figure 1. Multifamily Program Delivery (Gas Heat)



Eligible multifamily facilities[1] receive:

- A building energy audit.
- A proposal or contract detailing recommendations for installation of additional measures.

[1] A unit is an occupant (tenant or owner) space. A premise is defined as a building with one or more units. A facility is defined as a multifamily complex with one or more premises. For master-metered sites, a premise represents the entire facility's total usage.

- Direct installation of low-cost, energy-efficiency measures, such as high-efficiency showerheads, faucet aerators, and hot water pipe wrapping.
- Installation of weatherization measures (insulation, air sealing, duct sealing, and duct insulation). Measures eligible for installation depend on the facility's type (gas space and water heat, or gas water heat only) and heating system.
- Incentives for installation of recommended measures.[2]
- Project management.

Evaluation Goals

The Rhode Island Multifamily Gas Program Energy*Wise* evaluation sought to estimate program savings impacts in PY2010. Cadmus calculated a realization rate, which can be applied to engineering estimates of gas savings, and documented lessons learned through the evaluation.

Evaluation Approach

Cadmus estimated program gas savings using a statistically adjusted engineering (SAE) regression analysis of consumption by participating facilities. National Grid provided Cadmus with three years of billing data and program tracking data for the 27 program facilities, which Cadmus used to model monthly facility gas consumption as a function of heating degree days, the engineering savings estimate, and facility and facility-month fixed effects. We estimated a year-over-year differenced version of the model by weighted least squares.

[2] National Grid provides incentives for weatherization measures only to customers heating their homes with electricity or gas provided by National Grid; however, advice can be provided on a "fuel blind" basis.

2. Data Collection and Preparation

Data Collection

The billing analysis used the three primary data sources summarized below:

- **Participation and measure installation data.** National Grid provided information about each of the 27 participating facilities: facility name, facility address, number of units, number of premises, measures installed, savings from measures installed, rebate paid dates. A separate file tied each premise to the associated facility.
- **Billing data.** National Grid provided monthly billing data for each premise in each of the 27 facilities. Premise-level billing data were provided for December 2007 through April 2011.[3]
- **Weather data.** From the National Climatic Data Center (NCDC), Cadmus obtained historical daily average temperature weather data, from January 2007 through April 2011, for three representative Rhode Island stations: Providence, Newport, and Westerly. Each facility was mapped to the nearest station using the facility and weather station zip code. Providence was station closest for 24 facilities; Newport was closest for two facilities; and Westerly was closest for one facility. Cadmus also obtained TMY2 (1971–2000) series, 30-year normal monthly heating degree day data, associated with each zip code from the NCDC.

These three data collection types are examined in greater detail below.

Participation and Measure Installation Data

Table 1 summarizes measure installation and participant characteristics for the 27 program facilities, which represented 2,293 units, and 1,450 premises. The smallest facility contained eight units, while the largest contained 409 units. The rebate paid dates ranged from February 2010 through December 2010.

Expected program total savings were 40,350 therms. Of these, 26,878 therms (67 percent of total savings) would derive from insulation and air sealing measures, which were expected to affect space heating usage, and 13,472 therms (33 percent of the total savings) would derive primarily from base load water heating measures. Average savings per participant were 17.6 therms. *Ex ante* savings estimates per unit ranged from approximately 2 therms per unit to 101 therms per unit.[4]

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[3] Cadmus originally requested billing data for all unit occupants in program facilities during the program participation period. However, in buildings with individually metered units, the number of units in the estimation sample changed over time because of unit occupant entry into and exit from facilities, which affected facility consumption. Next, Cadmus requested premise level billing data. This data contained the entire billing data history at each premise, rather than just for the most recent occupant. In the updated billing data, the number of units did not change over time.

[4] There were two facilities for which engineering savings were not disaggregated into savings from space heat and water heat measures. For these facilities, we allocated savings to space heat and water heat according to the average allocations in facilities that disaggregated their savings.

Table 1. Facility Information

	Sum	Average	Minimum	Maximum
Units	2,293	85	8	409
Premises	1,450	56	1	414
Rebate paid date	NA	7/4/2010	2/9/2010	12/14/2010
Ex ante total savings (therms)	40,350	1,494	156	6,607
Ex ante heating savings (therms)	26,878	995	0	6,597
Ex ante non-heating savings (therms)	13,472	499	0	3,364
Ex ante total savings per unit (weighted by units)	NA	17.6	1.6	101.2

The participant data and the measure installation data tracking system were very detailed and accurate.

Monthly Billing Data

Table 2 summarizes the characteristics of billing data usage per occupant unit.[5] Average annual pre-period usage was 513 therms per unit. The 17.6 therm *ex ante* annual savings estimate was 3.4 percent of the pre-period usage. For one site, the *ex ante* annual savings represented less than 1 percent of the facility's pre-period usage, while, for another site, it was as high as 29 percent of pre-period usage in the facility.

Table 2. Pre-Period Usage Billing Data Summary

	Sum	Average	Minimum	Maximum
Units	2,293	85	8	409
Pre period usage per unit (weighted)	NA	513	57	1,567
Ex ante total savings per unit (weighted)	NA	17.6	1.6	101.2
Ex ante savings as percent of pre-usage	NA	3.4%	0.4%	29.1%

Weather Data

Table 3summarizes the weather data characteristics. As noted, the Providence weather station was nearest for 98 percent of the units in the program. The May 2009 to April 2010 period immediately before measure installations was mild compared to the post period. Weather data in the May 2008 to April 2009 period were more similar to the May 2010 to April 2011 period in terms of heating degree days.

[5] Obtaining the historical billing data at the premise level proved to be very important, as this allowed us to determine when occupants moved, and to track the entire billing analysis history at a premise, not just for the current unit occupant's history.

Table 3. Weather Data Information

Weather Station	Number of Facilities	Number of Units	Annual HDD May 2008 to April 2009	Annual HDD May 2009 to April 2010	Annual HDD May 2010 to April 2011
Providence	24	2,239	5,768	5,239	5,602
Newport	2	44	5,581	5,308	5,725
Westerly	1	10	5,796	5,375	5,650
Overall	27	2,293	5,764	5,241	5,604

Data Preparation

The data preparation required the following steps, which are described in greater detail below:

1. Billing data cleaning
2. Billing data weather matching
3. Monthly allocation of billing consumption
4. Billing data month pre-post pairing
5. Billing data screening
6. Billing data facility totals
7. Facility level measure data preparation
8. Matching of facility level measure data and billing data

1. Billing Data Cleaning

We screened premise level monthly billing data for potential problems. Average daily consumption (ADC) was obtained by dividing monthly therm usage by the days of service in the billing cycle. The billing data were then plotted at the premise level. Billing data generally were of excellent quality.[6] Nevertheless, a couple of issues emerged. Monthly readings with fewer than 15 days were removed from the analysis. First, these readings, which typically occurred at the beginning of premise billing histories, were related to a low use/vacant period right after a unit occupant moved into the residence, and, in some cases, belonged to the previous tenant. Second, in some cases, usage appeared to be for an entire month, but days of service in the month were very low for actual usage. This led to unusually high average daily usage. This problem was addressed by using the much more representative actual number of days elapsed since the previous billing period. These monthly screens resulted in removal of only about 0.5 percent of the billing records.[7]

[6] The billing data generally covered usage over a month, and over 98% of the readings spanned between 20 and 40 days. None of the data was missing from one month to another. Moreover, examining the plots, they showed clear seasonal usage profile, with very little indication of the presence of estimated readings.

[7] This screen removed only monthly readings from the analysis. An entire premise was never removed with this screen.

2. Billing Data Weather Matching

After cleaning the monthly billing data, we identified a facility's nearest weather station, based on its weather station zip codes. As noted, three weather stations were used in the analysis. We obtained heating degree days with a base temperature of 65 degrees from the average daily temperatures. Next, we obtained total heating degree days for each premise-level billing data period.

3. Monthly Allocation

We allocated premise level billing data to calendar months in preparation for facility usage aggregation. Monthly allocation ensured normalization across different read cycles and length of cycles across all units in a facility. Through this process, the weather data were also allocated to calendar months, ensuring both billing data and associated matched weather data were similarly allocated to calendar month periods.

4. Billing Data Month Pre-Post Pairing

As rebate paid dates ranged from February 2010 through December 2010, and billing data were only available through May 2011, most facilities did not have 12 month of billing data in the post-period. To resolve misbalances between pre- and post-months in the analysis, we matched months in the pre- and post-periods. We defined the post-period as months two years preceding the rebate paid date. For example, if a facility's rebate paid date was September 2010, the post-period for all premises at the facility was defined as being from October 2010 through April 2011, and the pre-period for all premises was defined as being the same months from October 2008 through April 2009.

We did not use the period immediately before measure installations (months 1 to 12 before installation) because some measure installations may have occurred in the months preceding the rebate paid date, potentially contaminating the baseline period.[8]

5. Billing Data Screening

Premise-level billing data were screened to ensure each premise used in the modeling was representative of the facility's typical usage. We applied two premise-level screens before summing premise-level usage up to facility usage.

Our examination of premise-level monthly billing data showed some premises had vacant periods. Premises were excluded from analysis if average pre-period or post-period usage was less than 0.5 therms per day. This usage cutoff level was associated with the bottom 5 percent of average daily premise usage levels.

Any premise with a usage change of more than 60 percent from pre- to post-period also was removed from analysis. This percent change cutoff corresponded to dropping the top and bottom 2.5 percent of the premises' percent changes, for a total of 5 percent of premises. As the largest percent savings at any facility was 29 percent, any change in usage of more than 60 percent (twice the maximum of that expected) at the premise level indicated: a change in the number of

[8] Tests of regression models using the 12 months immediately preceding the rebate paid date as the pre-period resulted in savings significantly lower and more imprecise than reported results, which was consistent with pre-period contamination.

occupants, a prolonged vacancy period, or some other non-program related gas equipment changes. All these potential problems were eliminated by using the percent change screen.

Table 4 summarizes sample attrition from the premise screening. Originally, the 27 facilities had 1,450 premises. The premise level screens removed 130 premises, for a 9 percent attrition. For the final regression modeling, a total of 1,320 premises were aggregated to the facility level. All 27 facilities, however, were represented in the final regression modeling, and no entire facility was dropped.

Table 4. Premise Level Account Attrition

	Remaining	Dropped	% Remaining
Original number of premises received	1,450	0	100%
No matching pre and post months	1,447	3	99.8%
Average pre-period or post-period usage less than 0.5 therms per day	1,404	43	96.8%
Change in usage by more than 60% from pre- to post-period	1,320	84	91.0%
Overall premise attrition	1,320	130	91.0%

6. Billing Data Facility Totals

After screening premise data, we summed premise monthly usages to the facility level. Facility usage per unit was obtained by dividing monthly facility usage by the number of units in the facility. In aggregating to data at the facility level, monthly allocated heating degree days were averaged across premises for each facility and month. This ensured heating degree days were representative for the facility.

7. Facility Level Measure Data Preparation

National Grid provided Cadmus with detailed measure savings data for each facility. This measure detail allowed Cadmus to map measures into two categories: space-heating measures, and base-load measures. Average daily *ex ante* savings for both categories were then obtained for each month as follows.

Space Heating Measures

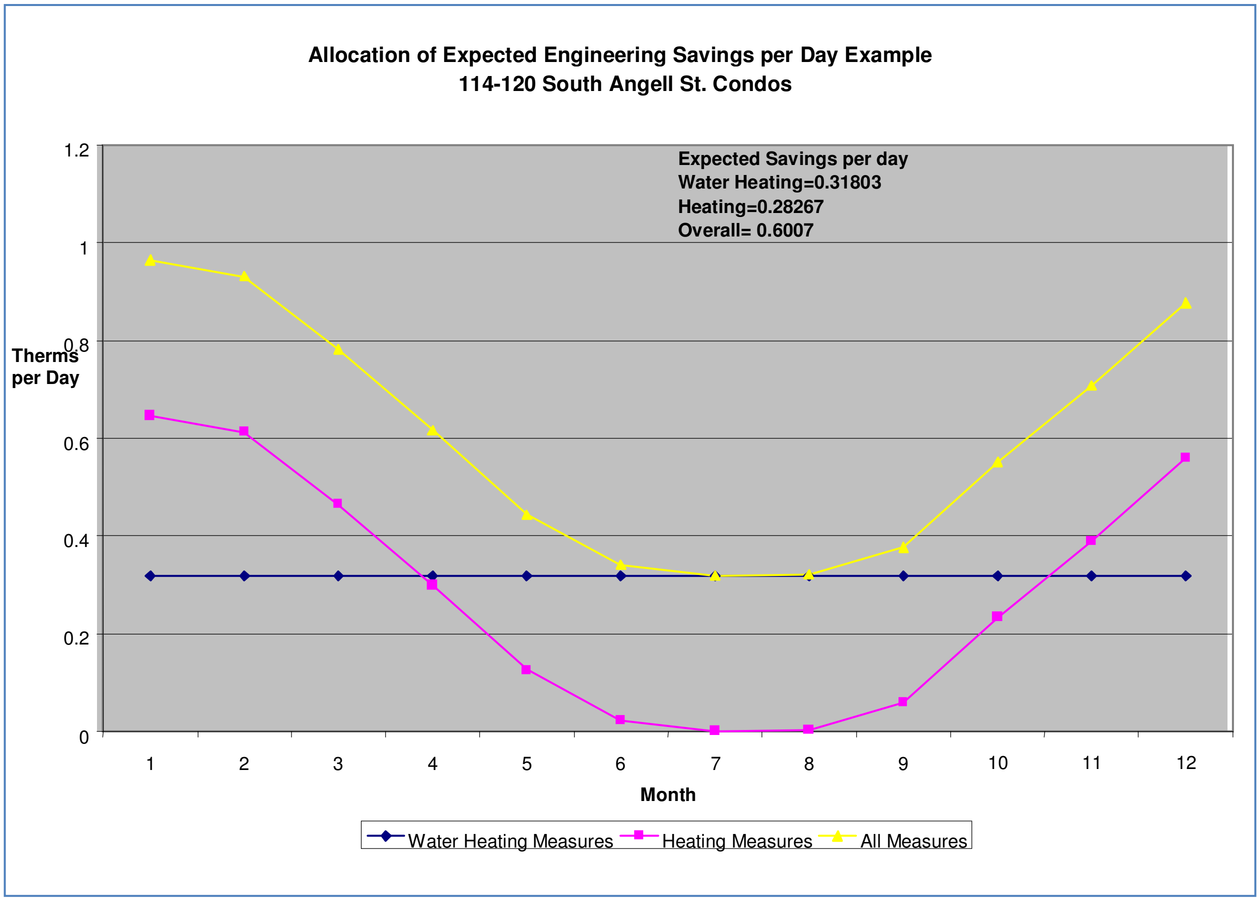
For space heating measures, *ex ante* monthly savings estimates were expected to be proportional to the number of heating degrees in each month. Thus, total annual facility heating savings were allocated to each month by the total normal heating degree days occurring in the month.

Base-Load Measures

For base load measures, total annual facility savings were simply divided by 365.

Heating and non-heating (base load) monthly facility *ex ante* savings estimates were divided by the number of units for direct comparison to usage in the billing data. Finally, heating and non-heating savings were summed into a site-level *ex ante* monthly total for use in the regression model. Figure 2 shows allocation for a representative facility.

Figure 2. Allocation of *Ex Ante* Savings by Month



8. Matching of Facility Level Measure Data and Billing Data

Finally, facility billing and weather data were merged with monthly facility measure data. For the pre-installation period, the savings were set to 0.

After completing these steps, billing data, weather data, and facility level savings estimates were ready for energy savings modeling.

3. Energy Savings Analysis

Model Specification and Estimation

Cadmus used a statistically adjusted engineering (SAE) model to estimate program gas savings, modeling monthly gas usage per unit per day as a function of average daily heating degree days (HDD_{it}) and expected engineering savings per unit per day (ESE_{it}):

$$therms_{it} = \beta HDD_{it} + \delta ESE_{it} + \lambda_i + \rho_{im} + \varepsilon_{it} \qquad \text{(Equation 1)}$$

Model variables and coefficients were defined as follows:

- $therms_{it}$ was gas usage per unit per day in facility i in month t (the model's dependent variable).
- HDD_{it} was average daily heating degree days in month t. The coefficient β indicated the effect of HDDs on average daily consumption.
- ESE_{it} was the engineering savings estimate for facility i in month t. The coefficient on expected engineering savings (δ) was the savings realization rate in the model.
- λ_i was a facility fixed effect. It captured consumption specific to each facility that did not vary across months of the year.
- ρ_{im} was a facility-month fixed effect that captured consumption specific to a facility and month. An example of behavior captured by the facility-month fixed effect would be energy usage changes resulting from residents regularly taking vacations during a certain month.

We estimated the model using a year-over-year monthly differencing strategy. Equation 1 described facility i's gas consumption in period t (a month and year). Facility i's energy consumption in the same month in the preceding year was described as:

$$therms_{it-12} = \beta HDD_{it-12} + \delta ESE_{it-12} + \lambda_i + \rho_{im} + \varepsilon_{it-12} \qquad \text{(Equation 2)}$$

Taking the difference between Equation 1 and Equation 2 yielded the estimating equation:

$$\Delta therms_{it}=\beta \Delta HDD_{it} + \delta \Delta ESE_{it} + \Delta\varepsilon_{it} \qquad \text{(Equation 3)}$$

We modeled the difference in gas consumption between a month in the post-installation period and the same month in the pre-installation period as a function of the differences between the HDD and the engineering savings estimate. Differencing removed unobservable facility fixed effects and facility-month fixed effects, which potentially correlated with the other explanatory variables in the model. Coefficients in the difference equation (Equation 2) retained their original interpretation.

We defined post-installation and pre-installation periods using information about the timing of National Grid's incentive payments. As there may have been lags between when measures were installed and incentive payment dates, we defined pre-installation periods as 13 to 24 months prior to the incentive paid date (which allowed us to avoid contaminating the pre-installation period). Hence, Equation 3 was created by taking the difference between a month in the post-installation period and the same month two years earlier. Including months with measures in the pre-installation period would have bias down savings estimates.[9] We defined the post-installation period as months after National Grid paid incentives for measures.

We estimated the model using weighted least squares, with weights equal to the number of units in the facility, and included data for all 27 facilities in the estimation.

Results

Table 5 presents savings estimates. The savings realization rate estimate (the coefficient on δ) was 121 percent, with a 90 percent confidence interval lower bound of 94 percent and an upper bound of 149 percent. This savings estimate implied verified savings were statistically different from zero and equal to 121 percent of the engineering estimate of expected savings.

Ex post verified savings were 21.4 therms per unit. The 90 percent confidence interval included a lower bound of 16.5 therms and an upper bound of 26.3 therms. *Ex ante* savings were 17.6 therms per unit.

For the 27 facilities, the *ex ante* total program savings engineering estimate was 40,350 therms. Therefore, applying the 121 percent realization rate resulted in verified savings of 48,824 therms. At a 90 percent confidence interval, the lower bound was 37,594 therms, and the upper bound was 60,052 therms.

Table 5. Savings Estimates—Program Year 2010

	Point estimate	Lower Bound 90% Confidence Interval	Upper Bound 90% Confidence Interval
Realization rate (percent)	121%	94%	149%
Unit savings (therms)	21.4	16.5	26.3
Program savings (therms)	48,824	37,594	60,052

[9] As noted, Cadmus found evidence the period immediately preceding the invoice date included some months in which measures had already been installed.

4. Conclusions and Recommendations

Cadmus found larger-than-expected PY2010 gas savings in program facilities. The estimated savings realization rate of 121 percent indicated *ex post* verified savings 21 percent greater than the engineering savings estimate. The savings realization rate had a 90 percent confidence interval lower bound of 94 percent and an upper bound of 149 percent.

The savings realization rate implied 21.4 therm *ex post* verified savings per unit, with a 90 percent confidence interval lower bound of 16.5 therms and upper bound of 26.3 therms. For PY2010, program verified savings were 48,824 therms, with a 90 percent confidence interval lower bound of 37,594 therms and upper bound of 60,052 therms.

Several findings also emerged related to the data tracking and collection process. First, in preparing and analyzing the data, we found the process of matching premise billing histories and program measures to their facilities simple due the use of consistent identifying variables. In our previous evaluation (2008), the identifying variables were inconsistent, making it more difficult to aggregate all billing histories associated with a facility.

Also in preparing the billing data, Cadmus was reminded of the importance of analyzing billing histories of premises in program facilities. Originally, Cadmus requested billing histories for unit occupants in program facilities. We discovered the number of unit occupants in the estimation sample changed over time, with unit occupants entering and exiting from the facility, which would have made estimation of savings based on unit data more difficult. Rather, Cadmus worked with National Grid to obtain billing data for all premises in program facilities.

Finally, Cadmus found engineering savings estimates for two program facilities had not been broken into savings estimates for water heat and space heat measures. In estimating the statistically adjusted model, Cadmus allocated gas savings from space heat measures across the months. Allocation of savings proved complicated for these two facilities because engineering savings estimates were not disaggregated into space heat and water heat components.

Based on these findings, Cadmus offers the following recommendations:

- National Grid should continue to pursue savings opportunities in Rhode Island multifamily gas facilities. The program's better-than-expected performance suggests it can be a source of future savings.
- National Grid should continue to maintain and use its improved data program tracking system.
- For future evaluations, National Grid should remind evaluators to request billing histories for all premises or units in facilities during the estimation period, not billing histories for unit occupants in the facilities during the program participation period.
- National Grid should remind its implementers disaggregate engineering savings estimates into space heat and water components.
- National Grid should track the dates when measures were installed in facilities. Information about installation dates would eliminate any uncertainty about the definition of the treatment period.

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Appendix A. Regression Results

The following table provides regression outputs of the final savings model.

Source	Analysis of Variance				
	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1041.5786	520.78931	137.82	<.0001
Error	249	940.93561	3.77886		
Corrected Total	251	1982.5142			
Root MSE	1.94393		R-Square	0.5254	
Dependent Mean	0.02988		Adj R-Square	0.5216	
Coeff Variance	6506.31851				
Variable	Parameter Estimates				
	DF	Parameter Estimates	Standard Error	t value	Prob. t
DeltaHDD	1	0.07054	0.00429	16.46	<.0001
EXANTE_SAVINGS	1	1.2145	0.16447	7.38	<.0001