



# Home Energy Reports Impact Evaluation Report

Energy Efficiency Plan Year 2020  
(01/01/2020-12/31/2020)

**Prepared for:**

**Nicor Gas**

**FINAL**

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## 1. Introduction

This report presents results from the CY2020 impact evaluation of Nicor Gas' Home Energy Reports (HER) Program. It summarizes the total energy impacts for the program broken out by relevant measure and program structure details. Based on guidance from the Illinois Stakeholder Advisory Group (SAG), Guidehouse normalized CY2020 program savings for the coronavirus pandemic.<sup>1,2</sup> The appendices provide the impact analysis methodology and details of the total resource cost (TRC) inputs.

CY2020 covers January 1, 2020 through December 31, 2020. However, the CY2020 savings for this program reflect savings from the wave launch (October 1, 2019) to December 31, 2020. Savings were not claimed for this wave in CY2019, as the savings from October 1, 2019 to December 31, 2019 were not statistically different from zero. Guidehouse, Nicor Gas, the implementer, and Illinois Commerce Commission (ICC) staff agreed that these savings can be counted with the next program year to avoid penalizing the gas companies for the heating season starting so late in the program year. Persistence from 2019 into 2020 is subtracted from the CY2020 savings estimate.

## 2. Program Description

The HER Program is designed to generate energy savings by providing residential customers with information about energy use and conservation strategies. Program participants receive information from regularly mailed and emailed home energy reports, including:

- Assessment of how their recent energy use compares to their past energy use
- Tips on how to reduce energy consumption, some of which are tailored to the customer's circumstances
- Information on how their energy use compares to that of neighbors with similar homes

An important feature of the Nicor Gas HER program is that it is designed as a randomized controlled trial (RCT). To estimate changes in energy use due to the program, customers in the target group of residential customers were randomly assigned to either the recipient group or the control (non-recipient) group.<sup>3</sup> Customers may opt *out* of the program at any time, but cannot opt *in* due to the RCT design. An implication of the RCT design is that the savings estimates are intrinsically net of free-ridership and most spillover bias. Unless otherwise noted, reported "savings" in this report refer to *normalized net savings*.<sup>4</sup>

The program launched in October 2019 and targeted 154,999 participants and 45,000 controls. Table 2-1 shows active accounts at the beginning of the evaluation period, October 2019.

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<sup>1</sup> This decision is documented in meeting notes from the June 11 and August 24, 2020 SAG meetings (available at <https://www.ilsag.info/events/list>).

<sup>2</sup> The normalization method used for Nicor Gas is described in Section A.1.

<sup>3</sup> Guidehouse conducted this randomization and results were delivered to Nicor Gas in a memo, *Nicor Gas Ecotagious HER Randomization Memo*, on September 18, 2019.

<sup>4</sup> In some instances, the word "net" appears in column headings and summary sentences for added clarity. For CY2020 specifically, the reported savings are normalized savings.

**Table 2-1. CY2020 Volumetric Findings Detail**

Participation	Customer Count
Participants	154,287
Controls	44,812

Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.

### 3. Program Savings Detail

Table 3-1 summarizes the energy savings the HER Program achieved in CY2020. The savings values in the table represent savings normalized for the effects of COVID-19 using an approach agreed upon by Guidehouse, Nicor Gas, and the implementer, which leverages the preliminary analysis conducted for October 2019 to March 2020<sup>5</sup>, and also applied a reasonable assumption of ramp-up.<sup>6</sup> These savings reflect adjustments for uplift,<sup>7</sup> as well as removing savings persisting from 2019 into 2020 per the Illinois Statewide Technical Reference Manual (TRM).<sup>8</sup> Additionally, since the RCT design inherently estimates net savings, neither the evaluation team nor the implementer estimated gross savings, and there is no gross realization rate and no net-to-gross (NTG) ratio. Guidehouse's savings are very similar to the ex ante with a 102% realization rate.

**Table 3-1. 2020 Annual Energy Savings Summary**

Wave	Ex Ante Savings, therms	Verified Unadjusted Savings, therms*	Persistence Adjustment, therms†	Final Verified Savings, therms	Verified Realization Rate‡
Oct2019	1,189,693	1,338,752	124,663	1,214,089	102%

\* Verified unadjusted savings account for uplift (which is inherently accounted for in the normalization method) but not persistence.

† This adjustment reduces savings by the amount attributable to sending reports in 2019 and is prescribed in the Adjustments to Behavior Savings to Account for Persistence measure in the TRM. See TRM, Measure 6.1.1, Volume 4, Version 8.0.

‡ The verified realization rate compares final verified savings with ex ante savings.

Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.

### 4. Program Savings by Measure

The HER Program includes a single measure, behavioral savings, and so the program savings and measure savings are the same. Detailed savings are presented in Appendix B.

<sup>5</sup> Guidehouse. 2020. *Home Energy Report Interim Impact Evaluation Savings Memo*.

<sup>6</sup> Ramp-up reflects the increase in savings over time with continued treatment, particularly in the first few years of a new program.

<sup>7</sup> It is important to use normalized savings estimates that account for expected double counting because suspensions in other program operations, as well as changes to the HER program cross-promotion of other programs, likely resulted in different than normal uplift during the coronavirus pandemic. Based on review of other similar programs, we have reduced the savings by 2.5% for double counting.

<sup>8</sup> See TRM, Measure 6.1.1, Volume 4, Version 8.0. POINT TO APPROPRIATE SECTION WITH PERSISTENCE METHODOLOGY.

## 5. Impact Analysis Findings and Recommendations

### 5.1 Impact Parameter Estimates

The HER Program does not have relevant impact parameters.

### 5.2 Impact Findings and Recommendations

For Nicor Gas's HER program, Guidehouse verified CY2020 impacts of 1,214,089 therms.

**Finding 1.** The pandemic overshadowed CY2020, which led to stay at home orders, social distancing, and sustained work-from-home behaviors from March, and through much of 2020. Program verified net savings in CY2020 were normalized to adjust for the effects of the pandemic using historical savings data. Alongside normalized savings, the evaluation team modeled actual savings from CY2020 to offer a point of comparison. Normalized savings were 13% higher than actual savings when adjusted for uplift, and 4% higher when adjusted for persisting savings along with uplift. Should pandemic-induced behaviors persist and translate into the new normal, misalignment of persisting normalized savings with actual customer behaviors can result in steeper than warranted reductions in future years' verified savings, presenting a source of uncertainty and risk for the program.

**Finding 2.** The Illinois Energy Efficiency Stakeholder Advisory Group (SAG) has stated that savings should again be normalized for the effect of the coronavirus pandemic in CY2021. Guidehouse sees two paths forward for claiming savings in CY2021:

1. Use the same normalization method as CY2020 (considering whether further ramp up should be assumed in CY2021).
2. Use the CY2020 results to justify that the normalized savings were close enough to the actual to just estimate actual savings for CY2021, and say these savings results are equivalent to normalized. As stated in Finding 1, claimed normalized savings were 4% higher than actual savings, which is well within the year-over-year variation the evaluator expects to see in this type of program.

**Recommendation 1.** The program team should discuss these options and provide feedback to Guidehouse on whether one approach is preferable over the other.

## Appendix A. Impact Analysis Methodology

### A.1 Savings Methodology – Normalized Savings

As the Nicor Gas HER program launched in late 2019 and therefore has very limited program data prior to the coronavirus pandemic, Guidehouse normalized based on percentage rather than absolute (therm) savings. The per household percentage savings are multiplied by normalized baseline usage and then persisting savings from (October through December) 2019 are subtracted to get final, claimable normalized savings.

Table A-1 shows the normalized per household savings based on research on historic program data (from Nicor Gas and other utilities) and feedback from Nicor Gas and the implementer. A detailed description of the methodology used to create these recommendations is presented below the table.

**Table A-1. Recommended Normalized Per Household Per Day Savings for CY2020**

Time Period	Normalized Savings Based On	Percentage value
Oct 2019 through March 2020	Percentage savings from Nicor Gas CY2019 interim analysis	0.38%*
April through December 2020	Adjust percentage savings from the preliminary analysis for expected ramp-up between year 1 and year 2	0.50%†

\* Based on preliminary analysis results from October 2019 to March 2020 of 0.39% (Guidehouse. 2020. Home Energy Report Interim Impact Evaluation Savings Memo) adjusted for 2.5% uplift.

† Based on expected ramp up of 32% from year 1 to year 2 which is the average of other gas HER programs in IL.

Source: Guidehouse analysis of historic HER program data from various jurisdictions.

The evaluation team used the methodology described in the following paragraphs to create the normalized savings values. Nicor Gas' 2019 wave was launched in October 2019 and thus has only five months of program history prior to the pandemic. Therefore, we were not able to rely on program history to determine per household per day savings values as the evaluation teams did for other HER programs in Illinois.

The evaluation team used percentage savings from the interim analysis<sup>9</sup> for October 2019 through March 2020<sup>10</sup>, and multiplied that value by average ramp-up across other gas HER programs in Illinois from year 1 to year 2 for April through December 2020. Guidehouse adjusted these values for expected double counting (i.e., uplift). In our view, it is important to use normalized savings estimates that account for expected double counting because suspensions in other program operations, as well as changes to the HER program cross-promotion of other programs, likely resulted in different than normal uplift during the coronavirus pandemic. Based on review of other programs, we reduced the savings by 2.5% for double counting.

Guidehouse multiplied the normalized percentage savings by expected baseline usage to get total claimable CY2020 savings. Guidehouse reviewed CY2020 usage patterns compared to historic patterns to ensure that the coronavirus pandemic did not unduly affect baseline usage.

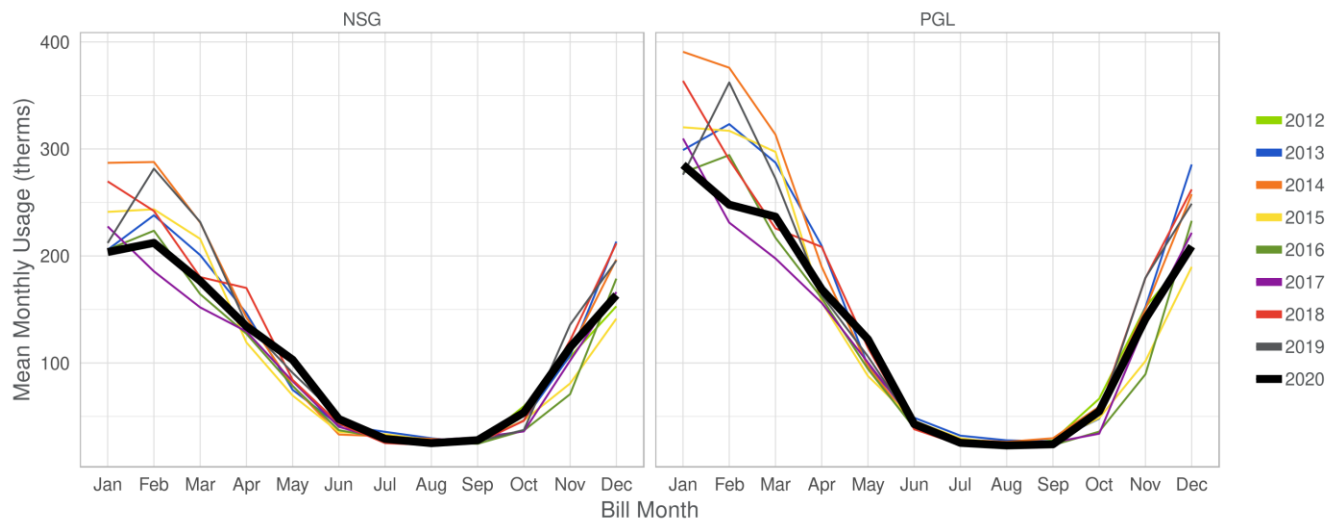
<sup>9</sup> Guidehouse. 2020. *Home Energy Report Interim Impact Evaluation Savings Memo*.

<sup>10</sup> This period is expected to be mostly unaffected by the coronavirus pandemic.

Guidehouse only had Nicor Gas data back to late 2018, so we reviewed usage patterns for Peoples Gas (PGL) and North Shore Gas (NSG) where we had data back to 2012.

Figure A-1 shows that 2020 usage was in line with previous years. Heating season usage was on the lower side of the years reviewed, which aligned with the weather being on the warmer side of the years reviewed. Given this, Guidehouse applied the normalized percentage savings values directly to 2020 usage to get normalized absolute savings.

**Figure A-1. Annual Usage for PGL and NSG**



Source: Guidehouse analysis of historic HER program data from PGL and NSG.

## A.2 Savings Methodology – Actual Savings Modeling

This section details the methodology employed for developing custom savings estimates for CY2020. Notably, these savings were not used by the evaluation team to develop claimable savings for CY2020, but were developed for robustness purposes to allow a comparison to the normalized savings used for claimable savings, and for future use when the program transitions away from using normalized savings estimates.

### A.2.1 Data Cleaning

The evaluation team removed customers and data points from the analysis in several steps:

- Excluded post-period data from outside of the period of examination (October 2019 through 2020) and relevant pre-period (October 2018 to September 2019)
- Removed exact duplicate observations
- Aggregated bills that ended in the same month
- Excluded observations with a bill length greater than 90 days
- Excluded outlier observations, defined as observations with average daily usage outside plus or minus one order of magnitude from the median
- For the lagged dependent variable (LDV) model, removed observations that did not have a usage value in the same month of the pre-period



These cleaning steps removed 0% of customers and 4% of observations, evenly distributed across participants and controls. This suggests that the evaluation team’s cleaning steps did not introduce non-random biases into the data.

## A.2.2 Modeling Methodology

The evaluation team used LDV and linear fixed effects regression (LFER) models to estimate actual program savings.<sup>11</sup> Neither of these results were used for claiming savings in CY2020, as normalized savings were claimed based on the method described in Section A.1. The following sections present the specifications for each model.

### Lagged Dependent Variable Model

The LDV model controls for non-treatment differences in energy use between treatment and control customers using lagged energy use as an explanatory variable. The model frames energy use in calendar month  $t$  of the post-program period as a function of both the treatment variable and energy use in the same calendar month of the pre-program period. The underlying logic is that systematic differences between control and treatment customers will be reflected in differences in their past energy use, which is highly correlated with their current energy use. Formally, the model is shown in Equation A-1.

#### Equation A-1. Lagged Dependent Variable Regression Model

$$ADU_{kt} = \beta_1 Treatment_k + \sum_j \beta_2 Month_{jt} + \sum_j \beta_3 Month_{jt} \cdot ADUlag_{kt} + \varepsilon_{kt}$$

Where:

$ADU_{kt}$	is average daily consumption of therms by household $k$ in bill period $t$
$Treatment_k$	is a binary variable taking a value of 0 if household $k$ is assigned to the control group, and 1 if assigned to the treatment group
$Month_{jt}$	is a binary variable taking a value of 1 when $j = t$ and 0 otherwise <sup>12</sup>
$ADUlag_{kt}$	is household $k$ 's energy use in the same calendar month of the pre-program year as the calendar month of month $t$ <sup>13</sup>
$\varepsilon_{kt}$	is the cluster-robust error term for household $k$ during billing cycle $t$ ; cluster-robust errors account for heteroskedasticity and autocorrelation at the household level.

The coefficient  $\beta_1$  is the estimate of average daily therms energy savings due to the program.

<sup>11</sup> Across the two models, the parameter estimates were not statistically different; that is, the estimates for each model are within the 90% confidence bounds for the other model. Furthermore, the pattern across the different program waves between the two models is very similar. This supports the methodological approach, and indicates the results are robust.

<sup>12</sup> In other words, if there are  $T$  post-program months, there are  $T$  monthly dummy variables in the model, with the dummy variable  $Month_{jt}$  the only one to take a value of 1 at time  $t$ . These are, in other words, monthly fixed effects.

<sup>13</sup> Note that the evaluation team imputed these values for some observations of Waves 10, 11, and 12 as discussed in Section **Error! Reference source not found.**

## Linear Fixed Effects Regression Model

The LFER model used by the evaluation team is one in which the average daily consumption of therms by household  $k$  in bill period  $t$ , denoted by  $ADU_{kt}$  is a function of the following three terms:

1. The binary variable  $Treatment_k$ .
2. The binary variable  $Post_t$ , taking a value of 0 if month  $t$  is in the pre-treatment period, and 1 if in the post-treatment period.
3. The interaction between these variables,  $Treatment_k \cdot Post_t$ .

Formally, the LFER model is shown in Equation A-2.

### Equation A-2. Linear Fixed Effects Regression Model

$$ADU_{kt} = \alpha_{0k} + \alpha_1 Post_t + \alpha_2 Treatment_k \cdot Post_t + \varepsilon_{kt}$$

Coefficient  $\alpha_{0k}$  captures all household-specific effects on energy use that do not change over time, including those that are unobservable. Coefficient  $\alpha_1$  captures the average effect across all households of being in the post-treatment period. The effect of being both in the treatment group and in the post period, i.e., the effect directly attributable to the program, is captured by the coefficient  $\alpha_2$ . In other words, whereas the coefficient  $\alpha_1$  captures the change in average daily therms use across the pre- and post-treatment for the control group, the sum  $\alpha_1 + \alpha_2$  captures this change for the treatment group and so  $\alpha_2$  is the estimate of average daily therms energy savings due to the program.

### A.2.3 Account for Uplift in Other Energy Efficiency Programs

The home energy reports sent to participating households included energy-saving tips, some of which encouraged participants to enroll in other Nicor Gas energy efficiency (EE) programs. If participation rates in other EE programs were the same for HER participant and control groups, the savings estimates from the regression analysis are already “net” of savings from the other programs, as this indicates the HER Program had no net effect on participation in the other EE programs. However, if the receipt of reports increased participation rates of recipients relative to controls in other EE programs, then the combined savings across all programs would be lower than indicated by the simple summation of savings in the HER and the other EE programs. For instance, if the HER Program increases participation in another EE program, the resulting increase (“uplift”) in savings may be allocated to either the HER Program or the EE program, but cannot be allocated to both programs simultaneously.<sup>14</sup>

As data permitted, Guidehouse used a difference-in-difference (DID) statistic to estimate uplift in other EE programs. To calculate the DID statistic, Guidehouse calculated the difference between the HER treatment and control groups in average EE program savings per customer in the post period,<sup>15</sup> and subtracted the same difference from the pre-period. For instance, if the EE program savings during CY2020 is five therms for the treatment group and three therms for

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<sup>14</sup> It is not possible to avoid double-counting of the savings generated by programs for which tracking data are not available, such as upstream programs.

<sup>15</sup> Where the averages are calculated over all treatment and control group customers, not just those who participated in other EE programs.

the control group, and the savings during the year before the start of the HER Program is two therms for the treatment group and one therm for the control group, then the DID statistic is one therm, as reflected the following calculation:

$$\begin{aligned}
 & (\text{CY2020 treatment group savings} - \text{CY2020 control group savings}) - (\text{pre-year treatment group} \\
 & \quad \text{savings} - \text{pre-year control group savings}) = \text{DID statistic} \\
 & \quad (5 - 3) - (2 - 1) = 1
 \end{aligned}$$

The DID statistic generates an unbiased estimate of uplift when the baseline average savings is the same for the treatment and control groups, or when these values are different due only to differences between the two groups in time-invariant factors, such as the square footage of the residence.

An alternative statistic that generates an unbiased estimate of uplift when the baseline average savings in the EE program is the same for the treatment and control groups, is a simple difference in savings during CY2020. Guidehouse uses this alternative statistic –the “post-only difference” (POD) statistic – in cases where the EE program did not exist for the entire pre-program year.

Guidehouse examined the uplift associated with four other Nicor Gas programs: Energy Savings Kits (ESK), Home Energy Efficiency Rebates (HEER), Home Energy Savings (HES), and Income Qualified Single Family (IQ). Note that, since this is the first year of Nicor Gas’ HER program, legacy uplift was not calculated, but it will be in the future.<sup>16</sup>

#### A.2.4 Account for Savings Persistence and Participant Retention

Continued implementation of HER programs in Illinois and across the country has demonstrated persistence of savings beyond the first year, leading Illinois to adopt a measure persistence framework in Version 8.0 of the TRM. This framework assumes that savings persist over five years, but the persistence decays in each year. The TRM recommends using the persistence factors presented in Table A-2 over the five-year life to estimate lifetime gas savings for the program. In CY2020, Nicor Gas’ only wave is in Year 2.<sup>17</sup>

**Table A-2. HER Gas Savings Persistence Factors**

Year	Gas Persistence Factor
Year 1	100%
Year 2	45%
Year 3	20%
Year 4	9%
Year 5	4%

*Source: TRM, Measure 6.1.1, Volume 4, Version 8.0.*

Per the TRM, the adjustment for persistence also accounts for the program retention rate.

<sup>16</sup> Legacy uplift refers to uplift from prior years for which the measure life of the applicable program has not yet passed. These savings are also de-rated by the average move out rate to account for savings which no longer get captured in our HER analysis.

<sup>17</sup> Note, 15 months of savings are being claimed for this wave in CY2020 (from October 2019 to December 2020). Persistence from the last three months of 2019 are subtracted from the savings estimate.

## Appendix B. Detailed Impact Analysis Results

This appendix presents detailed savings and aggregated uplift analysis results. Tables with the regression outputs and detailed uplift results are available upon request.

### B.1 Normalized Savings

This section shows details of the normalized savings calculation in Table B-1. The normalized savings estimates were estimated as described in Section A.1.

**Table B-1. CY2020 HER Program – Normalized Savings Results**

Savings Category	Oct2019 Wave
Treatment Customer Count*	154,287
Control Customer Count*	44,812
Normalized Per Participant Per Day Savings†	0.02
Per Participant Average Days	442
Normalized Annualized Customer Savings, therms‡	7.17
Normalized Net Savings, therms	1,338,752
Retrospective Retention Rate§	98.5%
Savings Attributed to Prior Years	124,663
Verified Net Savings, therms#	1,214,089

\* These counts are for active customers at the beginning of the evaluation period.

† Savings values are adjusted for assumed uplift.

‡ Total savings are pro-rated for participants that closed their accounts during the evaluation period.

§ The retrospective retention rate reflects actual program retention from one year to the next.

|| Savings attributed to prior years are those deducted for persistence from 2019 within the TRM framework. This value is calculated by multiplying the 2019 customer savings calculation by the retrospective retention rate and the savings decay rate for the second year of receiving reports, respectively.

# Verified Net Savings are equal to Normalized Net Savings less Savings Attributed to Prior Years.

Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.

### B.2 Actual Savings

Table B-2 summarizes estimated, actual program savings including uplift adjustments. The table also includes the number of participants, controls, and average savings rates. Both modeled savings and average savings rates include standard error figures. Note that this table does not reflect claimable savings which are based on the normalized, rather than actual, results.

**Table B-2. CY2020 HER Program – Actual Savings Results**

Savings Category	Oct2019 Wave
Treatment Customer Count*	154,287
Control Customer Count*	44,812
Percent Savings	0.40%
<i>Percent Savings Std. Err.</i>	0.07%
Annualized Customer Savings, therms†	6.71
<i>Annualized Customer Savings Std. Err.</i>	1.17
Net Savings Prior to Uplift, therms	1,252,982
<i>Net Savings Std. Err.</i>	218,187
CY2020 Uplift, therms‡	66,027
CY2020 Custom Savings Calculation	1,186,955
Retrospective Retention Rate§	98.5%
Savings Attributed to Prior Years	22,310
Verified Net Savings, therms#	1,164,645

\* These counts are for active customers at the beginning of CY2020.

† Total savings are pro-rated for participants that closed their accounts during CY2020.

‡ No adjustment was made to total savings for negative uplift, (i.e. cases where the HER Program decreased participation in other programs).

§ The retrospective retention rate reflects actual program retention for each wave from 2019 into 2020.

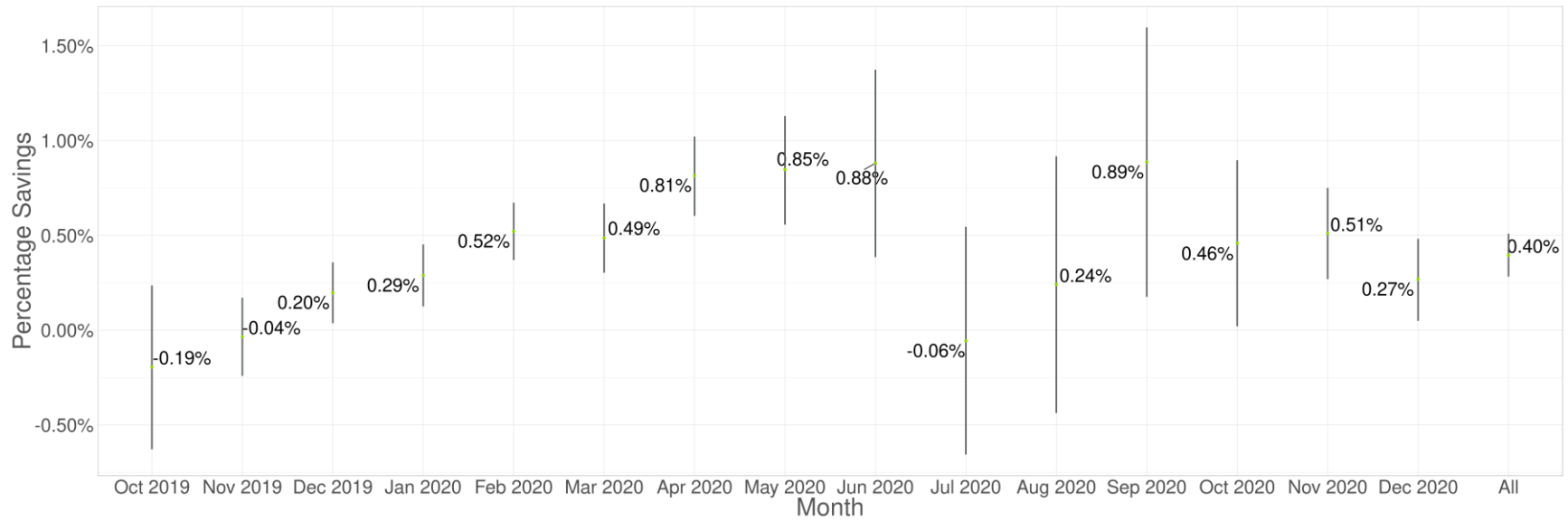
|| Savings attributed to prior years are those deducted for persistence from 2019 within the TRM framework. This value is calculated by multiplying the 2019 customer savings by the retrospective retention rate by the savings decay rate for the second year of receiving reports.

# Verified Net Savings are equal to Net Savings, Prior to Uplift less CY2020 Uplift and Savings Attributed to Prior Years.

Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.

Figure B-1 shows actual energy savings with 90% confidence intervals.

**Figure B-1. CY2020 Percent Savings and 90% Confidence Interval, by Wave**



Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.

## B.3 Uplift Analysis Results

This section summarizes CY2020 uplift results. These results were not used for claiming savings in CY2020, as normalized savings were claimed based on the method described in Section A.1.

The uplift of savings in other EE programs was a small proportion of the total savings: 66,027 therms, or approximately 5%. Double counting of savings with other Nicor Gas EE programs does not appear to be a significant issue for the HER Program.

Table B-3 presents program savings due to participation in other EE programs in CY2020. Each column provides information on one of four EE Programs for which estimates for deemed savings are available.<sup>18</sup> While this table shows estimates of both positive and negative uplift, only positive values were used to adjust program savings for double-counting. For all cases where the EE program did not exist in the pre-program year, the estimate is based on a probability of detection (POD) statistic; otherwise it is based on a DID statistic.<sup>19</sup>

**Table B-3. CY2020 Nicor Gas HER Uplift Adjustment Details**

Program	ESK	HEER	HES	IQ
Median program savings, annual therms per EE participant	70.98	140.24	30.34	65.43
Number of treatment customers	154,995	154,995	154,995	154,995
Number of control customer	44,998	44,998	44,998	44,998
Avg. savings per HER treatment customer, CY2020	1.07	1.23	0.18	0.18
Avg. savings per HER control customer, CY2020	0.70	1.17	0.18	0.25
CY2020 savings difference	0.38	0.06	0.00	-0.07
Avg. savings per HER treatment customer, pre	0.07	0.97	0.20	0.05
Avg. savings per HER control customer, pre	0.07	0.92	0.24	0.05
Pre savings difference	0.00	0.06	-0.05	-0.01
DID or POD statistic	0.38	0.00	0.05	-0.06
Savings attributable to other programs, therms	58,248	474	7,305	-9,013
Implied change in participation	820.6	3.4	240.7	-137.7

Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.

## B.4 Comparison of Normalized and Actual Savings

This section compares normalized and actual savings for CY2020. Table B-4 compares two sets of savings values: 1) savings adjusted for uplift but not for persisting savings and 2) savings adjusted for uplift and persisting savings. Both comparisons are useful, the first offers insight into the magnitude of difference in savings estimates, while the second offers insight into the additional difference caused by the persisting savings adjustment. As Table B-4 shows, normalized savings adjusted for uplift but not for persisting savings are 13% higher than equivalently adjusted actual savings. After adjusting for persisting savings, normalized savings are 4% higher than actual savings.

<sup>18</sup> See Section A.2.3 for more information about the programs considered.

<sup>19</sup> See Section A.2.3 for more information on POD and DID statistics.

**Table B-4. Normalized and Actual Savings Comparison**

Wave	Treatment Customer Count	Control Customer Count	Savings Adjusted for Uplift and Prior to Adjusting for Persisting Savings				Savings Adjusted for Uplift and Persisting Savings			
			Per Participant Per Day Savings (Normalized), therms	Per Participant Per Day Savings (Actual), therms	Total Normalized Savings, therms	Total Actual Savings, therms	Normalized Savings/Actual Savings	Total Normalized Savings, therms	Total Actual Savings, therms	Normalized Savings/Actual Savings
Oct2019	154,287	44,812	0.020	0.018	1,338,752	1,186,955	113%	1,214,089	1,164,645	104%

Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.



## Appendix C. Program Specific Inputs for the Illinois TRC

Table C-1, the Total Resource Cost savings table for Nicor Gas, includes cost-effectiveness analysis inputs available at the time of finalizing the CY2020 HER impact evaluation report. Additional required cost data (e.g., measure costs, program level incentive and non-incentive costs) are not included in this table and will be provided to evaluation later. Note: detail in this table (e.g., EULs), other than final CY2020 savings and program data, are subject to change and are not final.

**Table C-1. Total Resource Cost Savings Summary for Nicor Gas**

Savings Category	Nicor Gas
Number of Participants	154,287
Effective Useful Life (Years)	5
<i>Ex Ante</i> Savings, therms	1,189,693
Verified Net Savings After Uplift Adjust, therms	1,214,089

*Source: Guidehouse analysis of Nicor Gas program tracking and customer billing data.*