



# Home Energy Reports Impact Evaluation Report

Energy Efficiency Plan: Program Year 2022  
(1/1/2022-12/31/2022)

Prepared for:

Nicor Gas Company

**FINAL**

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## 1. Introduction

This report presents the results of the impact evaluation of the Nicor Gas’s Home Energy Report (HER) Program including a summary of the energy impacts for the total program and broken out by relevant measure and program structure details. The appendices provide the impact analysis methodology and details of the total resource cost (TRC) inputs. Program year 2022 covers January 1, 2022 through December 31, 2022.

## 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 each target group of residential customers were randomly assigned to either the recipient group or the control (non-recipient) group. 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.

The Nicor Gas HER program includes two waves in 2022. Wave 1 was launched in October 2019 and targeted 132,000 participants and 38,000 controls. Wave 3 was launched in September 2020 and targeted 180,000 treatment customers and 67,000 control customers. Wave 2 also launched in September 2020, but was not treated (i.e., received no reports) in 2022. Table 2-1 shows active accounts at the beginning of the evaluation period, January 2022 for Wave 1 and Wave 3.

**Table 2-1. 2022 Volumetric Findings Detail**

Wave	Participant Count	Control Count
Wave 1	132,426	38,489
Wave 3	180,209	60,846

*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 2022. These savings reflect adjustments for uplift,<sup>1</sup> as well as removing savings persisting from 2019 to 2021 per the Illinois Statewide Technical Reference Manual (IL-TRM).<sup>2</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. Across both waves, the realization rate is 103%.

**Table 3-1. 2022 Annual Energy Savings Summary**

Wave	Ex Ante Savings (therms)	Verified Unadjusted Savings (therms)	Total Uplift† Adjustment (therms)	Total Persistence‡ Adjustment (therms)	Final Verified Savings (therms)	Verified Realization Rate§
Wave 1	629,627	1,070,189	76,812	491,814	501,563	80%
Wave 3	107,773	409,653	78,600	71,584	259,470	241%
<b>Total</b>	<b>737,400</b>	<b>1,479,842</b>	<b>155,411</b>	<b>563,398</b>	<b>761,032</b>	<b>103%</b>

† The uplift adjustment accounts for savings caused by uplift into other programs which must be removed from the HER program to avoid double counting. The adjustment accounts for both uplift in the current program year and from prior program years where the measures uplifted into are still generating savings. These adjustments are described in Appendix A.1.3.

‡ The persistence adjustment reduces savings by the amount attributable to sending reports in 2019 to 2021 and is prescribed in the Adjustments to Behavior Savings to Account for Persistence measure in the IL-TRM. See IL-TRM, Measure 6.1.1, Volume 4, Version 10.0. This is also described in Appendix A.1.4.

§ 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.

### 5. Impact Analysis Findings and Recommendations

For Nicor Gas' HER program, Guidehouse verified 2022 impacts of 761,032 therms.

**Finding 1.** Overall across both waves, Guidehouse found an energy savings realization rate of 103% compared with the program implementer ex ante savings estimate. Prior to adjusting for uplift and persistence, Guidehouse's total savings were lower than the implementer's for Wave 1 and higher for Wave 3. These initial differences likely come from small differences in the methodology paired with low per customer savings that exacerbate those differences when totaled up to the program level. Guidehouse's calculation of the persistence adjustment was lower than the implementer's, but we also adjust for uplift which the implementer does not. Uplift lowered savings by about 11% and persistence by a further 38%. These adjustments placed Wave 1 savings below ex ante savings (80% realization rate), while Wave 3 remained well above ex ante savings (241%).

<sup>1</sup> See Appendix A.1.3.

<sup>2</sup> See IL-TRM, Measure 6.1.1, Volume 4, Version 10.0 and Appendix A.1.4.

**Recommendation 1a.** If possible, in future program years the implementer should consider adjusting the ex ante savings estimates for uplift. The uplift adjustment has a larger impact the longer a wave has been in place. Based on uplift from 2021 and 2022, the uplift adjustment averaged 11% with a 2% decrease from 2021 to 2022. Therefore, our expectation is that the 2023 adjustment is likely to fall between 10% and 13%.

**Recommendation 1b.** To better determine where differences in savings are coming from, in future years the implementer should share more granular values from the ex-ante savings calculations including breakouts for per participant savings and participant days. It would also be helpful to know the assumed uplift the implementer is accounting for. This level of granularity would allow Guidehouse to better identify where differences in savings are coming from.

**Finding 2.** Wave 3 has lower savings (0.15%) after just over two years in the program compared to Wave 1 after two years (0.56% savings). Wave 3 has lower average daily usage than Wave 1 which may be driving the lower savings. However, Wave 3 saw very little ramp-up compared to CY2021 (when savings were 0.10%). More time under a new program implementer may increase savings.

**Recommendation 2.** The program team should continue to monitor savings for Wave 3 to anticipate where savings will plateau, and determine whether additional interventions (for example, more reports) may be needed to drive further savings.

## Appendix A. Impact Analysis Methodology

The 2022 impact methodology uses the same custom savings methodology as CY2020 and CY2021.<sup>3</sup>

### A.1 Savings Methodology

This section details the methodology employed for developing custom savings estimates for 2022. These estimates were used for verifying savings for both waves.

#### A.1.1 Data Cleaning

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

- Excluded data from outside of the period of examination and relevant pre-period for each wave
- 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

Across both waves, these cleaning steps removed no entire customers and less than 2% of observations (after subsetting to the relevant analysis period), evenly distributed across participants and controls. This result suggests that the evaluation team's cleaning steps did not introduce non-random biases into the data.

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<sup>3</sup> While normalized savings were calculated in CY2020 and CY2021 due to the impact of the pandemic, only actual savings were calculated for the CY2022 evaluation.

## A.1.2 Modeling Methodology

The evaluation team used LDV and linear fixed effects regression (LFER) models to estimate program savings.<sup>4</sup> Both approaches should, in principle, produce unbiased estimates of program savings under a wide range of conditions, but Guidehouse prefers the LDV results for two reasons. First, savings estimates produced by the LDV model tend to be more accurate and more precisely estimated than those from the LFER model<sup>5</sup> based on experience analyzing similar HER programs' impacts and findings from the academic literature.<sup>6</sup> Second, the implementer uses a similar model for its evaluation, which makes the two sets of results more comparable. Although the LDV and LFER models are structurally very different, these should generate similar program savings estimates, assuming the RCT is well balanced with respect to the drivers of energy use. Guidehouse used the LDV results for reporting total program savings for 2022, while the LFER provided a robustness check.

### 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>7</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 $t$
$\varepsilon_{kt}$	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

<sup>4</sup> Across the two models, the parameter estimates were not statistically different for either wave; that is, the estimates for each model are within the 90% confidence bounds for the other model. This supports the methodological approach, and indicates the results are robust.

<sup>5</sup> One likely reason for this situation is that the LDV model embodies more flexibility than the LFER model, in that the former allows the individual customer control variable to vary seasonally while the latter does not – a particularly attractive feature given the highly seasonal nature of natural gas usage. The LFER model treats all unobserved inter-household heterogeneity affecting households' energy usage as time-invariant, while the LDV model uses lagged individual controls that can vary over time.

<sup>6</sup> Allcott, Hunt and Todd Rogers, 2014. "The Short-Run and Long-Run Effects of Behavioral Intervention: Experimental Evidence from Energy Conservation." *American Economic Review*, 104(10): 3003-37.

<sup>7</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.



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

### 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.1.3 Accounting for Uplift in Other Energy Efficiency Programs

#### Accounting for Uplift in 2022

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>8</sup> When the HER Program decreases participation in other programs, there is no issue of double counting, and no adjustment to the savings total is made.

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<sup>8</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.

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>9</sup> and subtracted the same difference from the pre-period.<sup>10</sup> For instance, if the EE program savings during 2022 is five therms for the treatment group and three therms for 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 in Equation A-3.

### Equation A-3. Current Year Uplift Calculation

$$\begin{aligned} & (2022 \text{ treatment group savings} - 2022 \text{ control group savings}) - (\text{pre-year treatment group} \\ & \text{savings} - \text{pre-year control group savings}) = \text{DID statistic} \\ & (5 - 3) - (2 - 1) = 1 \end{aligned}$$

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 2022. 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), market rate Multi-Family (MF), and Income Eligible (IE)<sup>11</sup>.

### Accounting for Legacy Uplift

The uplift adjustment methodology above only accounts for uplift which occurs in the current program year because EE program tracking files in any given program year only capture the new measures installed in that year, regardless of the expected measure life.<sup>12</sup> However, for other EE programs that include measures with multiyear measure lives, the HER Program savings capture the portion of savings due to uplift in each year of that program’s measure life. For instance, a measure with a 10-year measure life that was installed in 2019 would generate savings captured in the HER Program savings not just in 2019, but in 2020 through 2029 as well.

Consider the following example. A household receiving home energy reports through the HER Program enrolls in the HES Program in CY2021. The uplift adjustment subtracts HES CY2021 Program savings to avoid double counting. In 2022, this household still receives savings from the HES Program because it has a 13-year measure life. However, the 2022 HER uplift

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<sup>9</sup> Where the averages are calculated over all treatment and control group customers, not just those who participated in other EE programs.

<sup>10</sup> Other EE program savings were pro-rated to the program participation date assuming a flat load shape.

<sup>11</sup> Including single family, multifamily, and public housing authority,

<sup>12</sup> Tracking data files are set up this way because, in conformity with the IL-TRM, Section 3.2, savings are first-year savings, not lifetime savings.

adjustment does not remove these savings because the 2022 adjustment only accounts for measures installed in 2022, the initial year the household entered a program. When only relying on the uplift adjustment, HES second-year savings would be included in the 2022 HER Program's savings, which is inconsistent with Illinois' practices of only crediting utilities with first-year EE program savings. Legacy uplift removes double counted energy savings from programs that include measures with multiple-year measure life.

The evaluation team accounts for legacy uplift by subtracting the double counted savings from previous years, adjusted for the average annual move out rate,<sup>13</sup> from 2022 HER savings through the measure lives of measures from other EE programs. The legacy uplift adjustment is shown in Equation A-4.

#### Equation A-4. Legacy Uplift Calculation

$$\text{HER Savings}_{\text{PY}}^{\text{Adjusted}} = \text{HER Savings}_{\text{PY}}^{\text{Unadjusted}} - \text{Uplift Savings}_{\text{PY}} - \sum_{i=1}^{\text{PY}-1} \text{"Live" Legacy Uplift Savings}_i \cdot (1 - \text{MOR})^{\text{PY} - i}$$

Where, "Live" Legacy Uplift Savings refers to uplift savings where the other EE programs' measure lives have not yet run out (i.e., where measure life exceeds the difference between *PY* and *i*) and MOR refers to the move out rate. To streamline the analysis, instead of using individual measure lives in developing legacy uplift savings, and subsequently removing measures one-by-one once they reach the end of their EULs, the evaluation team calculated EULs at the program level by weighting measure-specific EULs by savings. Once the program reaches its weighted average measure life (WAML), it is removed from the legacy uplift calculation.

The legacy uplift adjustment removes double counted savings from the CY2020 and CY2021 evaluations for the ESK, HEER, HES, MF, and IE programs.

#### A.1.4 Accounting 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 10.0 of the IL-TRM. This framework assumes that savings persist over seven years, but the persistence decays in each year. The IL-TRM recommends using the persistence factors presented in Table A-1 over the seven-year life to estimate lifetime gas savings for the program.

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<sup>13</sup> Because HER Program participants are dropped from that program when they move, other EE programs' savings are no longer captured in the HER Program savings from that point forward.

**Table A-1. HER Gas Savings Persistence Factors**

Year	Gas Persistence Factor
Year 1	100%
Year 2	70%
Year 3	49%
Year 4	34%
Year 5	24%
Year 6	17%
Year 7	12%

*Source: IL-TRM, Measure 6.1.1, Volume 4, Version 10.0.*

The persistence factors above apply for the forward-looking cost-effectiveness calculations. However, in removing persistence from prior years Guidehouse used the persistence factors in effect from those years per IL-TRM v11.0:<sup>14</sup>

...when persistence factors are changed, the evaluation will utilize the persistence factors that were used to calculate claimed savings in previous years to subtract persistence savings from those years. For example, persistence factors changed between CY2021 and 2022; in CY2021 the earlier persistence factors (based on a 5-year measure life) were used to claim savings from CY2021-CY2025, therefore in 2022-CY2025 persisting savings from CY2021 should be subtracted based on those same persistence factors.

In 2022, Wave 1 is in year 4 and Wave 3 is in year 3. Using the applicable persistence, Guidehouse used persistence factors of 45% for savings from 2021, 20% for savings from 2020, and 9% for savings from 2019.<sup>15</sup> Per the TRM, the adjustment for persistence also accounts for the program retention rate calculated based on actual customer counts in the program year-over-year.<sup>16</sup>

Table A-2 provides a breakdown of the persistence factors and savings attributed to prior years for both waves. The total persistence adjustment (Section E) is calculated as the sum all savings attributed to prior years (Section D) (i.e.,  $D1+D2+D3=E$ ). Each row of section D is calculated by multiplying the corresponding rows of Section A (actual savings), Section B (persistence adjustment factors) and Section C (retention rates) (e.g.,  $A1*B1*C1=D1$ ).

<sup>14</sup> This language was added for clarity in IL-TRM v11 but, per the example in the text, is also applicable to the persistence factor change occurring in CY2022.

<sup>15</sup> For both waves, Guidehouse used the actual savings from CY2020 and CY2021 to subtract from CY2022 actual savings. Normalized savings were not used.

<sup>16</sup> Starting in CY2023, the evaluation team will apply a wave-specific prospective retention rate based on the age of the wave in accordance with IL-TRM v11.0.

**Table A-2. HER Persistence Summary**

Section	Row	Value	Wave 1	Wave 3
A	1	Actual Savings CY2019	50,314	-
	2	Actual Savings CY2020	1,164,645	39,272
	3	Actual Savings CY2021	682,376	154,813
B	1	3-Year Persistence Adjustment Factor	0.09	0.09
	2	2-Year Persistence Adjustment Factor	0.20	0.20
	3	1-Year Persistence Adjustment Factor	0.45	0.45
C	1	2019 to 2022 Retention Rate	0.858	-
	2	2020 to 2021 Retention Rate	0.871	0.901
	3	2021 to 2022 Retention Rate	0.938	0.926
D	1	Savings Attributed to 2019	3,887	-
	2	Savings Attributed to 2020	202,887	7,082
	3	Savings Attributed to 2021	285,041	64,502
E	1	Total Persistence Adjustment	491,814	71,584

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

## 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 Savings

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

Table B-1 summarizes estimated 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. This table reflects claimed savings for 2022 for both Wave 1 and Wave 3.

**Table B-1. 2022 HER Program – Savings Results**

Savings Category	Wave 1	Wave 3
Treatment Customer Count*	132,426	180,209
Control Customer Count*	38,489	60,846
Percent Savings	0.48%	0.15%
<i>Percent Savings Std. Err.</i>	0.09%	0.07%
Annualized Customer Savings, therms <sup>†</sup>	8.19	2.14
<i>Annualized Customer Savings Std. Err.</i>	1.58	1.00
Net Savings Prior to Uplift, therms	1,070,189	409,653
<i>Net Savings Std. Err.</i>	206,967	191,124
2022 Uplift, therms <sup>‡</sup>	6,262	9,949
Legacy Uplift, therms <sup>‡</sup>	70,550	68,651
2022 Custom Savings Calculation	993,377	331,053
Savings Attributed to Prior Years <sup>§</sup>	491,814	71,584
Verified Net Savings, therms <sup>  </sup>	501,563	259,470

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

<sup>†</sup> Annualized savings are average daily savings multiplied by 365, however, total savings are pro-rated for participants that closed their accounts during the evaluation period.

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

<sup>§</sup> Savings attributed to prior years are those deducted for persistence from 2019, 2020, and 2021 within the IL-TRM framework.

<sup>||</sup> Verified Net Savings are equal to Net Savings, Prior to Uplift less 2022 Uplift, Legacy Uplift, and Savings Attributed to Prior Years.

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

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

**Figure B-1. 2022 Percent Savings and 90% Confidence Interval, by Wave**



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

## B.2 Uplift Analysis Results

This section summarizes 2022 uplift results. The uplift of savings in other EE programs was 155,411 therms, or approximately 11% of total savings. The uplift can be broken down into uplift in 2022 and legacy uplift from previous program years. The 2022 uplift was 16,211 therms or 1% of total program savings, and the legacy uplift was 139,201 therms or 9% of total program savings. The relatively large portion of savings double counted with other Nicor Gas EE programs suggests that the home energy reports are doing a good job of channeling customers into other EE programs.

Table B-2 and Table B-3 present program savings due to participation in other EE programs in 2022 for each of the HER program waves. Each column provides information on one of five EE Programs for which estimates for deemed savings are available.<sup>17</sup> While these tables show 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>18</sup>

**Table B-2. 2022 Nicor Gas HER Uplift Adjustment Details, Wave 1**

Program	ESK	HEER	HES	IE
Median program savings, annual therms per EE participant	24.07	139.91	17.76	24.07
Number of treatment customers	131,868	131,868	131,868	131,868
Number of control customer	38,379	38,379	38,379	38,379
Avg. savings per HER treatment customer, 2022	0.07	0.58	0.06	0.13
Avg. savings per HER control customer, 2022	0.09	0.52	0.08	0.09
2022 savings difference	-0.01	0.06	-0.01	0.04
Avg. savings per HER treatment customer, pre	0.07	1.03	0.21	0.05
Avg. savings per HER control customer, pre	0.07	0.95	0.22	0.06
Pre savings difference	0.00	0.07	-0.02	-0.01
DID or POD statistic	-0.02	-0.01	0.00	0.05
Savings attributable to other programs, therms	-2,068	-1,896	21	6,240
Implied change in participation	-85.9	-13.6	1.2	259.3

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

<sup>17</sup> See Section A.1.3 for more information about the programs considered. Note that MF was considered for Wave 1 but there was no crossover participation between MF and HER in 2022.

<sup>18</sup> See Section A.1.3 for more information on POD and DID statistics.



**Table B-3. 2022 Nicor Gas HER Uplift Adjustment Details, Wave 3**

Program	ESK	HEER	HES	IE	MF
Median program savings, annual therms per EE participant	70.98	102.51	20.70	15.97	5342.01
Number of treatment customers	193,031	193,031	193,031	193,031	193,031
Number of control customer	64,287	64,287	64,287	64,287	64,287
Avg. savings per HER treatment customer, 2022	0.08	0.66	0.06	0.10	0.00
Avg. savings per HER control customer, 2022	0.08	0.66	0.07	0.10	0.00
2022 savings difference	-0.01	0.01	-0.01	0.00	0.00
Avg. savings per HER treatment customer, pre	0.49	0.92	0.16	0.07	0.00
Avg. savings per HER control customer, pre	0.51	0.95	0.13	0.06	0.00
Pre savings difference	-0.02	-0.03	0.02	0.01	0.00
DID or POD statistic	0.01	0.04	-0.03	-0.01	0.00
Savings attributable to other programs, therms	2,131	6,878	-5,766	-1,843	939
Implied change in participation	30.0	67.1	-278.5	-115.4	0.2

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 2022 HER impact evaluation report. Currently, 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 include in the evaluation later.

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

Savings Category	Nicor Gas
Number of Participants	312,635
Effective Useful Life (Years)	7
Ex Ante Savings (therms)	737,400
Verified Net Savings (therms)	761,032

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