



Opinion **Dynamics**

# AMEREN ILLINOIS COMPANY

2022 INTEGRATED IMPACT  
EVALUATION REPORT

FINAL

APRIL 30, 2023



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## I. EXECUTIVE SUMMARY

This report presents impact evaluation results from Ameren Illinois Company's (AIC) portfolio of energy efficiency programs implemented during the 2022 calendar year. The overarching objective of the 2022 impact evaluation is to determine the gross and net electric energy, electric demand, and natural gas impacts associated with the AIC energy efficiency portfolio. The purpose of this report is to aggregate results from AIC's Residential, Business, and Voltage Optimization Programs and present the utility's performance relative to electric energy savings metrics codified in Illinois state law.

Key performance metrics for the portfolio include:

- **Cumulative Persisting Annual Savings (CPAS):** Since 2018, electric energy savings goals for Illinois utilities have been primarily defined based on persisting savings as a percentage of sales. As such, annual evaluations of AIC's electric energy efficiency programs must present both annual and persisting savings over the life of delivered measures. As a result, AIC and its program implementer have sought to deliver programs that achieve savings that persist for longer periods of time.
- **Weighted Average Measure Life (WAML):** Section 8-103B allows AIC to create a regulatory asset from all of its 8-103B expenditures, and amortize and recover the total expenditures of that regulatory asset "over a period that is equal to the weighted average of the measure lives implemented for that year that are reflected in the regulatory asset."<sup>1</sup> Therefore, annual evaluations of AIC's electric energy efficiency programs must present a WAML in accordance with the guidelines for calculation presented in the Illinois Stakeholder Advisory Group's (SAG) WAML Report.<sup>2</sup>
- **Applicable Annual Incremental Goal (AAIG):** Section 8-103B allows AIC to earn a rate of return on their electric energy efficiency spending if they create a regulatory asset, as discussed above. The rate of return that is earned can be adjusted either up or down as a function of AIC's performance relative to its AAIG. The AAIG is defined as the difference between the cumulative persisting electric savings goal for the year being evaluated and the cumulative persisting electric savings goal for the previous year. AIC must achieve sufficient savings through its programs to replace savings from measures at the end of their measure life before progress can be counted toward the AAIG. Therefore, annual evaluations of AIC's electric energy efficiency programs must assess AIC's performance against its AAIG.

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<sup>1</sup> Illinois Energy Efficiency Stakeholder Advisory Group. Weighted Average Measure Life Report. 2018.

<sup>2</sup> Ibid.

## I.I OVERVIEW OF THE AIC PORTFOLIO

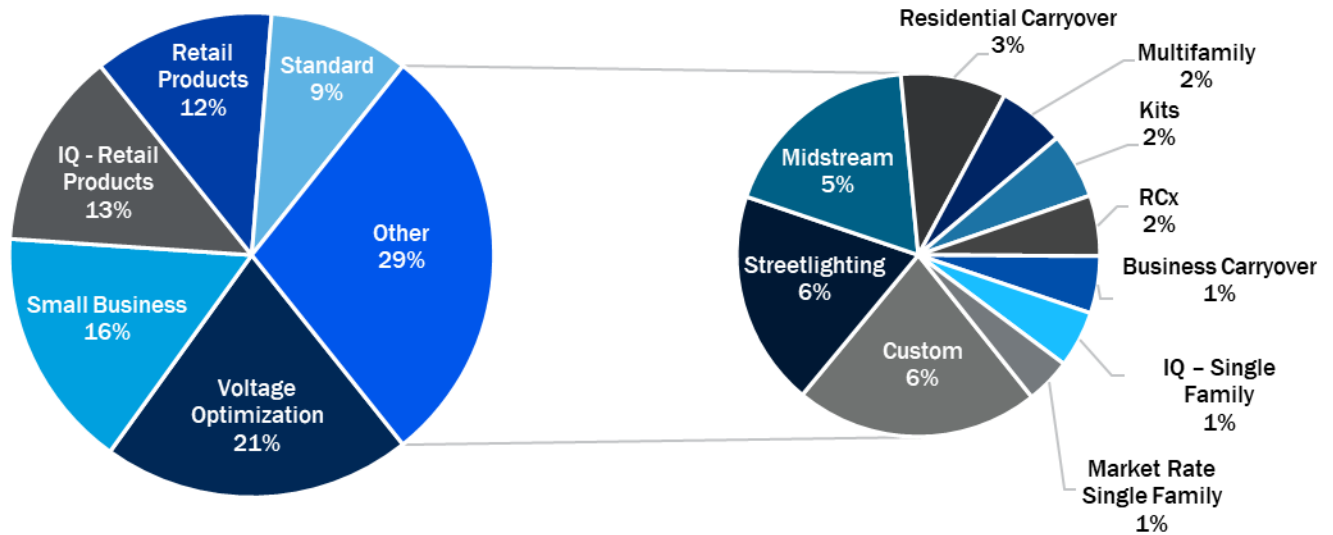
AIC's 2022 portfolio is made up of three programs: the Residential Program, the Business Program, and the Voltage Optimization Program. The Residential and Business Programs are split into a number of initiatives, organized in our evaluations as detailed below:

- Residential Program
  - Retail Products Initiative
  - Income Qualified Initiative – Single Family Offerings
  - Multifamily Initiatives
  - Market Rate Single Family Initiative
  - Kits Initiatives
- Business Program
  - Standard Initiative
  - Custom Initiative
  - Retro-Commissioning (RCx) Initiative
  - Streetlighting Initiative
  - Small Business Initiative
  - Midstream Initiative
- Voltage Optimization Program

Individual Residential and Business Program initiatives are further split into channels. For more details on the Residential and Business Programs, please see the 2022 AIC Residential Program Annual Impact Evaluation Report and 2022 AIC Business Program Annual Impact Evaluation Report. Note that to best serve AIC and stakeholders, we have considered the delivery strategy and unique characteristics for each AIC offering at the Initiative and channel level and have organized our evaluation activities to most effectively use evaluation resources, minimize customer touchpoints, and optimize research insights. As a result of organizational choices made in this process, evaluation reporting for the Residential Program is not organized in a way that perfectly aligns with formal portfolio organization. For further details on where this report differs in its reporting from AIC's portfolio organization, please see the 2022 Residential Program Annual Impact Evaluation Report.

Overall, the portfolio's savings are driven heavily by a small number of initiatives. The Residential Program's Retail Products Initiative and Income Qualified Initiative – Retail Products channel, the Voltage Optimization Program, and the Business Program's Small Business Initiative together provide nearly two-thirds (62%) of portfolio verified net electric energy savings.<sup>3</sup> Figure 1 shows portfolio verified net electric energy savings by initiative.

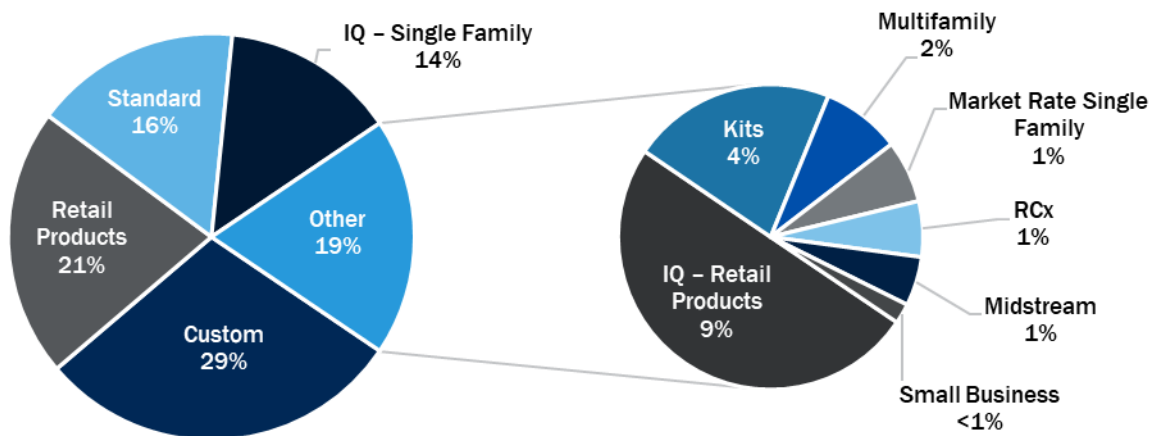
Figure 1. 2022 AIC Portfolio Verified Net Electric Energy Savings by Initiative



Note: Carryover savings are those that derive from measures incented or distributed in prior program years.

Gas savings are somewhat more diversified across initiatives. Four initiatives (Business Standard and Custom, as well as Residential Retail Products and Income Qualified – Single Family) each provide 14% or more of portfolio gas savings. Figure 2 shows portfolio verified net gas savings by initiative.<sup>4</sup>

Figure 2. 2022 AIC Portfolio Verified Net Gas Savings by Initiative



<sup>3</sup> Excluding the conversion of alternate fuels to MWh for goal attainment.

<sup>4</sup> Excluding the conversion of alternate fuels to MWh for goal attainment.

## 1.2 2022 PORTFOLIO SAVINGS

Overall, AIC's portfolio outperformed its 2022 goal. The portfolio achieved 114% of its AAIG and 107% of its CPAS target. The portfolio WAML is 12.6 years, which is a slight decrease compared to the 2021 portfolio, which had a WAML of 12.9 years.<sup>5</sup>

### 1.2.1 ANNUAL SAVINGS

Table 1 presents annual savings achieved by the 2022 AIC portfolio. The conversion of some gas savings to electric energy savings for goal attainment purposes is discussed further in Section 3.1. The calculation of residential nonparticipant spillover (NPSO) is discussed further in Section 2.3.1.

Table 1. 2022 AIC Portfolio Annual Savings

	Energy Savings (MWh)	Peak Demand Savings (MW)	Gas Savings (Therms)
Ex Ante Gross Savings	453,895	57.51	5,778,497
Gross Realization Rate <sup>a</sup>	101%	98%	99%
Verified Gross Savings	473,130	71.85	5,824,597
Net-to-Gross Ratio (NTGR)	0.889	0.884	0.811
Verified Net Savings Before Conversion, NPSO	420,401	63.49	4,722,731
Verified Net Savings with NPSO Adder	422,311	63.83	4,769,952
Converted Savings (AIC Claimable Therms)	19,688	N/A	-649,582
Converted Savings (AIC Non-Claimable Therms) <sup>b</sup>	15,407	N/A	N/A
Verified Net Savings After Conversion	457,406	63.83	4,097,996

<sup>a</sup> The gross realization rates do not consider savings for carryover savings, ECT, the 2021 BOC cohort, or peak demand savings for the Voltage Optimization Program. Therefore, gross realization rates cannot be directly calculated from values presented in this table.

<sup>b</sup> AIC converted additional therms of gas and propane savings that were not eligible to be claimed against its gas savings goals in 2022. For further detail, see the 2022 Residential Program Annual Impact Evaluation Report and the 2022 Business Program Annual Impact Evaluation Report.

### 1.2.2 APPLICABLE ANNUAL INCREMENTAL GOAL ACHIEVEMENT

AIC achieved 114% of its 2022 AAIG for electric savings. 2022 AAIG achievement is presented in Table 2.

Table 2. 2022 AIC Portfolio AAIG Achievement

Metric	MWh
2022 Annual Net Savings	457,406
2022 Expiring CPAS from Legislation	148,186
2022 Expiring CPAS from 2021 Portfolio	0
2022 Expiring CPAS from 2020 Portfolio	1,458
2022 Expiring CPAS from 2019 Portfolio	3,162
2022 Expiring CPAS from 2018 Portfolio	2,604
2022 Annual Incremental Savings Achieved	301,996
2022 AAIG	263,793
<b>% of 2022 AAIG Achieved</b>	<b>114%</b>

<sup>5</sup> These WAMLs do not include the Voltage Optimization Program in accordance with Illinois policy.

## I.2.3 CUMULATIVE PERSISTING ANNUAL SAVINGS

Table 3 summarizes overall CPAS and WAML for the 2022 AIC portfolio by program. The overall WAML for the portfolio is 13.0 years including Voltage Optimization and 12.6 years excluding Voltage Optimization.

Table 3. 2022 AIC Portfolio CPAS and WAML

Program	WAML	First-Year Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2022	2023	2024	2025	...	2030	...	
Residential	11.0	180,367	0.853	153,806	153,806	153,499	153,350	...	103,483	...	1,487,236
Business	13.8	250,144	0.866	216,708	216,708	216,294	212,808	...	198,816	...	2,914,920
Voltage Optimization	15.0	86,892	N/A	86,892	86,892	86,892	86,892	...	86,892	...	1,303,386
<b>2022 CPAS</b>		<b>517,403</b>	<b>0.884</b>	<b>457,406</b>	<b>457,406</b>	<b>456,685</b>	<b>453,050</b>	...	<b>389,191</b>	...	<b>5,705,541</b>
Expiring 2022 CPAS				0	0	721	3,635	...	3,814	...	
Expired 2022 CPAS				0	0	721	4,356	...	68,215	...	
WAML	<b>13.0</b>										
WAML without VO	<b>12.6</b>										

## I.2.4 CUMULATIVE PERSISTING ANNUAL SAVINGS GOAL ACHIEVEMENT

AIC achieved 107% of its 2022 CPAS goal for electric savings. 2022 AAIG achievement is presented in Table 4.

Table 4. 2022 AIC Portfolio CPAS Achievement

Metric	MWh
2022 CPAS from 2022 Portfolio	457,406
2022 CPAS from 2021 Portfolio	451,995
2022 CPAS from 2020 Portfolio	441,021
2022 CPAS from 2019 Portfolio	302,895
2022 CPAS from 2018 Portfolio	307,402
2022 CPAS from Legislation	1,037,305
2022 CPAS Achieved	2,998,024
2022 CPAS Goal	2,806,315
<b>% of 2022 CPAS Achieved</b>	<b>107%</b>



## 2. EVALUATION APPROACH

The following section of the report describes the evaluation approach taken for the impact evaluation of the 2022 AIC portfolio. As part of the evaluation process, the evaluation team applied versions of the Illinois Energy Efficiency Policy Manual and the Illinois Technical Reference Manual (IL-TRM) applicable to the 2022 program year (Version 2.1 and Version 10.0 [V10.0], respectively) wherever relevant.<sup>6</sup>

### 2.1 RESEARCH OBJECTIVES

The overarching research objectives for the impact evaluation of AIC’s 2022 energy efficiency programs are as follows:

- Estimate the estimated gross energy and demand impacts from the portfolio.
- Estimate the net energy and demand impacts from the portfolio.

The evaluation team met these objectives by conducting the impact evaluation activities listed in Table 5. As shown, for most initiatives, the impact evaluation primarily consisted of applying savings algorithms from the IL-TRM V10.0 to final initiative tracking databases to estimate verified gross savings. In addition, we reviewed initiative materials and interviewed initiative managers.

Table 5. 2022 Impact Evaluation Activities

Program	Initiative	Gross Impacts					Net Impacts
		IL-TRM Application Review	Engineering Desk Reviews	On-Site Measurement and Verification (M&V)	Consumption Analysis	Survey-Based Analysis	Application of SAG-Approved NTGRs
Residential Program	Retail Products Initiative	✓				✓	✓
	Income Qualified Initiative – Single Family Offerings	✓					✓
	Multifamily Initiatives	✓					✓
	Market Rate Single Family Initiative	✓					✓
	Kits Initiatives	✓					✓
Business Program	Standard Initiative	✓	✓				✓
	Custom Initiative		✓	✓	✓		✓
	Retro-Commissioning Initiative		✓	✓	✓		✓
	Streetlighting Initiative	✓					✓
	Small Business Initiative	✓					✓
	Midstream Initiative	✓					✓
Voltage Optimization		✓			✓		

The following sections provide further detail on the verified gross and net impact evaluation activities.

<sup>6</sup> In future years, the evaluation team will apply updated versions of these manuals to the evaluation of this Program as required by law, Illinois Commerce Commission orders, and changes to the manuals themselves.

## 2.2 VERIFIED GROSS IMPACT ANALYSIS APPROACH

### 2.2.1 APPLICATION OF IL-TRM V10.0

To determine verified gross impacts associated with the majority of the measures delivered through the 2022 AIC portfolio, we reviewed the content of the initiative tracking database to identify database errors and duplicate records, and to ensure that the implementer correctly applied savings algorithms and assumptions stated in the IL-TRM V10.0 and the IL-TRM V10.0 errata document. In particular, we applied the algorithms and assumptions provided in the IL-TRM V10.0, while using project-specific data from the initiative tracking databases as inputs where appropriate. As part of this process, we also verified measure installations through analysis of initiative tracking databases, as well as through the review of supporting project documentation.

### 2.2.2 CARRYOVER SAVINGS

In addition to savings achieved by AIC's portfolio through measures delivered during the 2022 program year, AIC also claimed savings in 2022 from lighting measures distributed by the portfolio in prior years but not installed until 2022. The relevant initiatives include:

- Residential Program
  - 2020 and 2021 Retail Products Initiative
  - 2020 and 2021 Income Qualified Initiative
  - 2020 and 2021 Kits Initiatives
- Business Program
  - 2020 and 2021 Midstream Initiative

Carryover savings are evaluated using the applicable net-to-gross ratio (NTGR) and in-service rate (ISR) trajectory assumption based on the year in which the product was sold, and IL-TRM V10.0 and IL-TRM V10.0 errata assumptions for all other relevant impact parameters. We reported on AIC's 2022 carryover savings as part of an earlier memo.<sup>7</sup>

### 2.2.3 APPLICATION OF CUSTOM IMPACT METHODS

The Custom and RCx initiatives, a small number of Standard Initiative measures, and the Efficient Choice Tool are not suitable for gross impact analysis solely using the IL-TRM. These initiatives require custom energy savings calculations to determine some or all gross impacts. Further details on the custom impact methods applied for these initiatives are presented in the 2022 AIC Residential Program Annual Impact Evaluation Report and 2022 AIC Business Program Annual Impact Evaluation Report.

## 2.3 VERIFIED NET IMPACT ANALYSIS APPROACH

To determine verified net savings for the 2022 AIC portfolio, we primarily applied SAG-approved NTGRs to verified gross savings. The one exception is BOC, for which the savings algorithms in IL-TRM V10.0 directly estimate net savings.

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<sup>7</sup> Memo is awaiting finalization.

## 2.3.1 NON-PARTICIPANT SPILLOVER

Net impact evaluation of AIC's Residential Program includes a non-participant spillover (NPSO) adder on net savings for non-income qualified efforts. This adder is 3.1% for non-income-qualified electric savings (energy and demand) and 4.4% for non-income qualified gas savings. Table 6 summarizes verified, non-IQ net savings for AIC's Residential Program by channel and computes the NPSO adder as defined above.

Table 6. 2022 Residential Program Verified Net Savings Summary for Non-IQ Programs

Channel	Verified Net MWh	Verified Net MW	Verified Net Therms
Retail Products (Non-IQ)	49,647	8.69	955,767
Efficient Choice Tool	1,026	0.10	54,385
Retail Products Carryover (Non-IQ)	4,873	0.85	0
Market Rate Multifamily	1,219	0.21	3,899
Midstream HVAC	4,726	1.18	43,569
Home Efficiency	132	0.04	15,591
<i>Non-IQ Residential Program Subtotal</i>	<i>61,623</i>	<i>11.07</i>	<i>1,073,211</i>
<b>Residential NPSO Adder</b>	<b>1,910</b>	<b>0.34</b>	<b>47,221</b>

## 2.4 SOURCES AND MITIGATION OF ERROR

The evaluation team took steps to mitigate potential sources of error throughout the planning and implementation of the 2022 evaluation. In particular, we took the following actions to address potential sources of error:

- **Analysis Error:**
  - **Prescriptive Gross Impact Calculations:** For prescriptive gross impact calculations, we applied IL-TRM V10.0 calculations to the participant data in the tracking database to calculate gross impacts. To minimize data analysis error, a separate team member reviewed all calculations to verify their accuracy.
  - **Custom Gross Impact Calculations:** We determined custom gross impacts using desk reviews and data collected during on-site M&V. To minimize data analysis errors, the evaluation team had all calculations reviewed by a separate team member to verify that calculations were performed accurately.
  - **Net Impact Calculations:** For net impact calculations, we applied SAG-approved NTGRs to estimated gross impacts to derive net impacts. To minimize analytical errors, all calculations were reviewed by a separate team member to verify their accuracy.
- **Survey Error:**
  - **Survey Measurement Error:** The validity and reliability of survey data were addressed through multiple strategies. First, we relied on our experience to create questions that align with the idea or construct that they were intended to measure (i.e., face value validity). We reviewed the questions to ensure that we did not ask double-barreled questions (i.e., questions that ask about two subjects, but allow only one response) or loaded questions (i.e., questions that are slanted one way or the other). We also checked the overall logical flow of the questions to avoid confusing respondents, which would decrease reliability.

All survey instruments were reviewed by key members of the evaluation team and were provided to AIC and ICC Staff for review.

- **Non-Response Bias:** Because the yield for the ECT survey was approximately 8%, there is the potential for non-response bias. We attempted to mitigate possible bias by sending multiple reminder emails to each prospective respondent at different times of the day and week.
- **Self-Report Error:** By conducting rigorous efficiency verification (asking respondents to submit photos of product receipts, nameplates, or model numbers of equipment), we addressed potential self-report error associated with improper respondent categorization of equipment as efficient through the ECT survey.
- **Sampling Error:**
  - Custom Initiative Impact Sample: The evaluation team completed an impact review for 51 of 140 Custom Initiative projects achieving savings in 2022, drawing three waves of stratified samples separately for projects claiming electric and gas savings. For gross impact results, at the 90% confidence level, we achieved a relative precision of 6.4% for electric energy savings, 8.8% for electric demand savings, and 7.5% for gas savings.
  - RCx Core Impact Sample: The evaluation team completed desk reviews and site visits for a census of RCx Initiative projects (five projects). There is, therefore, no sampling error around our impact results.
- **Non-Sampling Error:**
  - **Measurement Error:** To minimize data collection error during on-site M&V, the evaluation team used trained engineers and technicians familiar with the equipment covered by the Custom and RCx initiatives and with the methods used to calculate the gross impacts.

For the Virtual Commissioning™ channel specifically, we also addressed the following types of error:

- **Errors Due to Presence of Non-Routine Events:** “Non-routine events” (NREs) refer to changes in facility energy consumption resulting from facility-related changes not related to the interventions recommended through the channel. NREs can make it difficult to accurately measure savings using meter-based approaches, including the approach used for Virtual Commissioning™. The evaluation team accounted for NREs in our modeling approach by removing data for the affected period and/or extending the baseline back in time accordingly, consistent with International Performance Measurement and Verification Protocol (IPMVP) Non-Routine Adjustment Options 1 and 3, respectively.<sup>8</sup>
- **Model Specification Error:** In this type of error, variables that predict model outcomes are left out when they should be included, which can produce biased estimates. The models used to estimate ex ante impacts in 2022 excluded weather interaction terms despite the weather-sensitive nature of the interventions, such as HVAC scheduling adjustments. The evaluation team addressed this type of error by modifying the facility-level models before producing verified savings, in cases where the inclusion of weather interactions improved model fit. We also recommended that the implementation team take this approach in future years or provide documentation on their model selection process and rationale for excluding these terms. We also recommended that the implementation team include projected R2 values in each workbook in future program years to help with assessments of over- or underfitting.
- **Measurement Error:** In the context of the Virtual Commissioning™ channel, measurement error occurs when utility electric meters do not accurately record the true energy consumption of a facility. In practice, little can be done in an evaluation context to mitigate this error. However, we know from experience that this type of error is expected to be small and not have significant bearing on modeling.
- **Prediction Error:** Prediction error occurs when the model does not perfectly predict what future energy consumption will be. We did not have one year of post-period data for all Virtual Commissioning™ projects in 2022, which introduces uncertainty because the model was not able to train on a full range of temperature data after the

<sup>8</sup> Webster, Lia. IPMVP Application Guide on Non-Routine Events and Adjustments. Efficiency Valuation Organization (EVO). 2020. Opinion Dynamics

intervention was initiated. This may increase the prediction error for temperatures that are outside the range of the training data. The team addressed this by carefully examining model fit diagnostics.

- **Multicollinearity:** This type of modeling error can both bias the model results and produce very large variance in the results. The team addressed this issue by carefully considering model specifications and data to ensure that there were no multicollinearity issues.

Finally, note that the calculations in some of the tables in this report cannot be exactly reproduced due to rounding.

### 3. PORTFOLIO VERIFIED SAVINGS

Within the following sections, the evaluation team presents initiative-level detail on verified Annual Savings (annualized 2022 energy savings).

#### 3.1 SAVINGS CONVERSION

Illinois state law<sup>9</sup> allows electric utilities to “convert” savings achieved of other fuels, including natural gas, to electric savings for the purposes of goal attainment in certain cases. The total amount of savings allowed to be converted is capped at a maximum of 10% of the utility’s applicable annual total savings requirement.<sup>10,11</sup>

AIC met the above criteria in 2022 and chose to convert savings from a number of initiatives: propane savings from the Retail Products, Small Business, and Custom initiatives, as well as gas savings<sup>12</sup> from the Income Qualified, Custom, and Standard initiatives. Per Illinois state law, AIC was capped at a total conversion of no more than 41,920 MWh. Using the SAG-approved conversion factor of 29.3 kWh per therm, this equals 1,430,729 therms that could be converted to electric savings.

AIC identified specific measures in the Retail Products and Income Qualified initiatives, as well as specific projects in the Small Business, Custom, and Standard initiatives for the evaluation team to convert. All eligible savings were converted. Table 7 includes a summary of AIC’s 2022 converted savings. These savings are also included as line items in Table 8, Table 10, Table 11, and Table 13 in the following sections of the report.

Table 7. 2022 AIC Converted Savings

Initiative	Channel	Gas Therms Converted	Propane Therms Converted	MWh Equivalent
Retail Products	Incentive-Based	0	2,265	66
Small Business	SBEP	0	312	9
Income Qualified	Smart Savers	135,047	0	3,957
Income Qualified	Single Family	182,335	0	5,342
Custom	Custom Incentives	855,304	148	25,065
Standard	HVAC	980	0	29
Standard	Specialty Equipment	21,394	0	627
<b>Total</b>		<b>1,197,787</b>		<b>35,095</b>
<i>Conversion Cap</i>		<i>1,430,729</i>		<i>41,920</i>
<i>% of Cap</i>		<i>83.7%</i>		<i>83.7%</i>

#### 3.2 2022 RESIDENTIAL PROGRAM ANNUAL SAVINGS

The 2022 Residential Program achieved 153,806 MWh, 23.22 MW, and 2,171,063 therms in verified net savings to be counted toward AIC’s energy savings goals. These savings include a non-participant spillover (NPSO) “adder” on net

<sup>9</sup> 220 ILCS 5/8-103B(b-25).

<sup>10</sup> The annual total savings requirement is the AAIG plus the additional savings that need to be acquired on an annual basis to replace any savings from measures at the end of their measure life before progress can be counted toward AAIG.

<sup>11</sup> Note that prior to the passage of CEJA, the (b-25) savings conversion was capped at 10% of AAIG, rather than the annual total savings requirement.

<sup>12</sup> Some of the converted gas savings were associated with sites that did not receive gas service from AIC, and therefore not all the converted gas savings were claimable as gas savings by AIC.

savings.<sup>13,14</sup> These savings are also reported after accounting for the legislatively-allowed conversion of other fuel savings to electric energy savings for the purpose of goal attainment. Table 8, Table 9, and Table 10 present ex ante gross, verified gross, and verified net electric energy, electric demand, gas, and by initiative and channel for the 2022 Residential Program.

Table 8. 2022 Residential Program Electric Energy Annual Savings Summary

Initiative	Channel	Ex Ante Gross MWh	Gross Realization Rate	Verified Gross MWh	NTGR	Verified Net MWh
Retail Products Initiative	Incentive-Based Channels	129,678	97%	126,311	0.832	105,110
	ECT	N/A	N/A	1,525	0.673	1,026
	Carryover <sup>a</sup>	N/A	N/A	11,217	0.751	8,421
Income Qualified Initiative – Single Family Offerings	Single Family	2,137	100%	2,133	1.000	2,133
	SAVE Kits	1,615	100%	1,615	1.000	1,615
	Healthier Homes	1	100%	1	1.000	1
	CAA	892	100%	889	1.000	889
	Smart Savers	1,050	115%	1,209	1.000	1,209
	MHAS	108	96%	103	1.000	103
	Joint Utility	112	97%	109	1.000	109
	Carryover <sup>a</sup>	N/A	N/A	1,349	1.000	1,349
Multifamily Initiatives	IQ Multifamily	5,071	100%	5,074	1.000	5,074
	Market Rate Multifamily	1,416	100%	1,417	0.860	1,219
	Public Housing	850	100%	851	1.000	851
Market Rate SF Initiative	Midstream HVAC	5,888	100%	5,896	0.801	4,726
	Home Efficiency	162	100%	162	0.810	132
Kits Initiatives	School Kits	3,028	100%	3,028	1.000	3,028
	High School Innovation	580	101%	584	1.000	584
	Community Kits	1,248	99%	1,232	1.000	1,232
	Ad Hoc Distribution	3,827	57%	2,184	1.000	2,184
	Carryover <sup>a</sup>	N/A	N/A	1,543	0.996	1,538
<i>Residential Program Subtotal</i>		<i>157,662</i>	<i>97%</i>	<i>168,431</i>	<i>0.846</i>	<i>142,530</i>
Residential NPSO Adder						1,910
IQ – Single Family (gas conversion)						5,342
IQ – Single Family (gas conversion)						3,957
Retail Products (propane conversion)						66
<b>Residential Program Total</b>						<b>153,806</b>

<sup>a</sup> Carryover savings are those achieved through installation of measures during 2022 that were distributed or rebated in prior program years. For clarity, we break out carryover separately throughout this report. More information on carryover savings is available in Section 2.2.2.

<sup>b</sup> Calculations of gross realization rate at the Residential Program level exclude categories of savings with no ex ante savings.

<sup>13</sup> Opinion Dynamics. Ameren Illinois Company Energy Efficiency Portfolio 2022 Net-to-Gross Ratios.

<https://www.ilsag.info/wp-content/uploads/AIC-2022-NTGR-Recommendations-for-SAG-FINAL-2021-09-27.xlsx>

<sup>14</sup> The process of computing savings from the residential NPSO adder is complex. See Section 2.3.1 for more detail.

Table 9. 2022 Residential Program Electric Demand Annual Savings Summary

Initiative	Channel	Ex Ante Gross MW	Gross Realization Rate	Verified Gross MW	NTGR	Verified Net MW
Retail Products Initiative	Incentive-Based Channels	20.40	97%	19.74	0.831	16.41
	ECT	N/A	N/A	0.15	0.672	0.10
	Carryover <sup>a</sup>	N/A	N/A	1.47	0.750	1.10
Income Qualified Initiative – Single Family Offerings	Single Family	0.75	99%	0.74	1.000	0.74
	SAVE Kits	0.21	100%	0.21	1.000	0.21
	Healthier Homes	<0.01	100%	<0.01	1.000	<0.01
	CAA	0.24	100%	0.24	1.000	0.24
	Smart Savers	0.31	127%	0.39	1.000	0.39
	MHAS	0.04	84%	0.03	1.000	0.03
	Joint Utility	0.04	106%	0.05	1.000	0.05
	Carryover <sup>a</sup>	N/A	N/A	0.16	1.000	0.16
Multifamily Initiatives	IQ Multifamily	0.69	107%	0.73	1.000	0.73
	Market Rate Multifamily	0.19	136%	0.26	0.834	0.21
	Public Housing	0.13	100%	0.14	1.000	0.14
Market Rate SF Initiative	Midstream HVAC	1.47	100%	1.47	0.800	1.18
	Home Efficiency	0.04	100%	0.04	0.826	0.04
Kits Initiatives	School Kits	0.46	100%	0.46	1.000	0.46
	High School Innovation	0.08	101%	0.08	1.000	0.08
	Community Kits	0.15	96%	0.15	1.000	0.15
	Ad Hoc Distribution	0.46	58%	0.27	1.000	0.27
	Carryover <sup>a</sup>	N/A	N/A	0.18	0.996	0.18
<i>Residential Program Subtotal<sup>b</sup></i>		25.67	98%	27.18	0.848	22.88
Residential NPSO Adder						0.34
<b>Residential Program Total</b>						<b>23.22</b>

<sup>a</sup> Carryover savings are those achieved through installation of measures during 2022 that were distributed or rebated in prior program years. For clarity, we break out carryover separately throughout this report. More information on carryover savings is available in Section 2.2.2.

<sup>b</sup> Calculations of gross realization rate at the Residential Program level exclude categories of savings with no ex ante savings.



Table 10. 2022 Residential Program Gas Annual Savings Summary

Initiative	Channel	Ex Ante Gross Therms	Gross Realization Rate	Verified Gross Therms	NTGR	Verified Net Therms
Retail Products Initiative	Incentive-Based Channels	1,545,220	98%	1,510,190	0.929	1,402,568
	ECT	N/A	N/A	90,188	0.603	54,385
Income Qualified Initiative – Single Family Offerings	Single Family	346,103	99%	344,257	1.000	344,257
	SAVE Kits	55,689	100%	55,681	1.000	55,681
	Healthier Homes	0	N/A	0	N/A	0
	CAA	92,282	100%	92,042	1.000	92,042
	Smart Savers	121,776	111%	135,047	1.000	135,047
	MHAS	29,529	100%	29,418	1.000	29,418
	Joint Utility	0	N/A	0	N/A	0
Multifamily Initiatives	IQ Multifamily	65,226	99%	64,818	1.000	64,818
	Market Rate Multifamily	4,252	100%	4,252	0.917	3,899
	Public Housing	6,117	100%	6,117	1.000	6,117
Market Rate SF Initiative	Midstream HVAC	48,619	100%	48,410	0.900	43,569
	Home Efficiency	18,868	100%	18,881	0.826	15,591
Kits Initiatives	School Kits	105,449	100%	105,449	1.000	105,449
	High School Innovation	20,850	100%	20,850	1.000	20,850
	Community Kits	53,829	96%	51,578	1.000	51,578
	Ad Hoc Distribution	27,747	58%	15,954	1.000	15,954
<i>Residential Program Subtotal</i>		<i>2,541,554</i>	<i>98%</i>	<i>2,593,132</i>	<i>0.941</i>	<i>2,441,224</i>
Residential NPSO Adder						47,221
IQ – Single Family (gas conversion)						-182,335
IQ – Single Family (gas conversion)						-135,047
<b>Residential Program Total</b>						<b>2,171,063</b>

### 3.3 2022 BUSINESS PROGRAM ANNUAL SAVINGS

The 2022 Business Program achieved 216,708 MWh, 27.10 MW, and 1,926,934 therms in verified net savings. These savings are also reported after accounting for the legislatively-allowed conversion of other fuel savings to electric energy savings for the purpose of goal attainment. Table 11, Table 12 and Table 13 present ex ante gross, verified gross, and verified net electric energy, electric demand, and gas savings, by initiative and channel, for the 2022 Business Program.

Table 11. 2022 Business Program Electric Energy Annual Savings Summary

Initiative/Channel	Ex Ante Gross MWh	Gross Realization Rate	Verified Gross MWh	NTGR	Verified Net MWh
Standard - Core	43,933	100%	43,770	0.828	36,256
Standard - OS	1,216	137%	1,666	0.996	1,660
Standard - BOC	1,132	100%	1,645	N/A	1,645
Custom - Custom Incentives	28,392	96%	27,221	0.786	21,396
Custom - New Construction Lighting	8,508	70%	5,997	0.786	4,714
RCx - Core	1,989	89%	1,773	0.880	1,560
RCx - Virtual Commissioning™	5,528	96%	5,319	0.930	4,947
Streetlighting - MOSL	442	100%	442	0.690	305

Initiative/Channel	Ex Ante Gross MWh	Gross Realization Rate	Verified Gross MWh	NTGR	Verified Net MWh
Streetlighting - UOSL	22,989	99%	22,727	1.000	22,727
Small Business - SBDI	75,958	100%	75,950	0.891	67,672
Small Business - SBEP	108	137%	147	0.891	131
Midstream - Lighting	23,305	99%	23,028	0.913	21,029
Midstream - HVAC	489	94%	460	0.881	405
Midstream - Food Service	610	89%	544	0.800	435
Midstream - Lighting Carryover <sup>a</sup>	7,117	100%	7,117	0.857	6,098
<i>Business Program Subtotal</i>	<i>221,643</i>	<i>98%</i>	<i>217,807</i>	<i>0.877</i>	<i>190,979</i>
Small Business - SBEP (propane conversion)					9
Custom Incentives (eligible gas conversion)					9,733
Custom Incentives (non-eligible gas conversion)					15,327
Custom Incentives (propane conversion)					4
Standard Core (gas conversion)					656
<b>Business Program Total</b>					<b>216,708</b>

<sup>a</sup> Carryover savings are those achieved through installation of measures during 2022 that were distributed or rebated in prior Program years. For clarity, we break out carryover savings separately throughout this report.

Table 12. 2022 Business Program Electric Demand Annual Savings Summary

Initiative/Channel	Ex Ante Gross MW	Gross Realization Rate	Verified Gross MW	NTGR	Verified Net MW
Standard - Core	7.16	103%	7.39	0.824	6.09
Standard - OS	0.20	206%	0.40	0.982	0.40
Standard - BOC	1.13	11%	0.18	N/A	0.18
Custom - Custom Incentives	3.06	102%	3.11	0.786	2.44
Custom - New Construction Lighting	1.35	96%	1.30	0.786	1.02
RCx - Core	0.16	65%	0.10	0.822	0.09
RCx - Virtual Commissioning™	0.00	N/A	0.00	N/A	0.00
Streetlighting - MOSL	0.00	N/A	0.00	N/A	0.00
Streetlighting - UOSL	0.00	N/A	0.00	N/A	0.00
Small Business - SBDI	11.43	100%	11.42	0.891	10.17
Small Business - SBEP	0.02	347%	0.08	0.891	0.07
Midstream - Lighting	5.50	100%	5.48	0.913	5.00
Midstream - HVAC	0.14	100%	0.14	0.881	0.12
Midstream - Food Service	0.00	N/A	0.08	0.800	0.06
Midstream - Lighting Carryover <sup>a</sup>	1.69	100%	1.69	0.857	1.45
<i>Business Program Subtotal</i>	<i>31.85</i>	<i>98%</i>	<i>31.36</i>	<i>0.864</i>	<i>27.10</i>
<b>Business Program Total</b>					<b>27.10</b>

<sup>a</sup> Carryover savings are those achieved through installation of measures during 2022 that were distributed or rebated in prior Program years. For clarity, we break out carryover savings separately throughout this report.

Table 13. 2022 Business Program Gas Annual Savings Summary

Initiative/Channel	Ex Ante Gross Therms	Gross Realization Rate	Verified Gross Therms	NTGR	Verified Net Therms
Standard - Core	1,219,958	106%	1,287,924	0.548	705,392
Standard - OS	61,840	101%	62,438	0.880	54,945
Standard - BOC	13,164	100%	17,904	N/A	17,904
Custom - Custom Incentives	1,798,303	96%	1,731,269	0.800	1,385,015
Custom - New Construction Lighting	0	N/A	0	N/A	0
RCx - Core	59,742	94%	56,097	0.940	52,731
RCx - Virtual Commissioning™	0	N/A	0	N/A	0
Streetlighting - MOSL	0	N/A	0	N/A	0
Streetlighting - UOSL	0	N/A	0	N/A	0
Small Business - SBDI	0	N/A	0	N/A	0
Small Business - SBEP	21,190	100%	21,238	0.891	18,923
Midstream - Lighting	0	N/A	0	N/A	0
Midstream - HVAC	36,504	100%	36,504	0.880	32,124
Midstream - Food Service	26,241	69%	18,090	0.800	14,472
<i>Business Program Subtotal</i>	<i>3,236,943</i>	<i>100%</i>	<i>3,231,465</i>	<i>0.706</i>	<i>2,281,507</i>
Small Business - SBEP (propane conversion)					-312
Custom Incentives (gas conversion)					-332,199
Standard Core (gas conversion)					-22,374
<b>Business Program Total</b>					<b>1,926,934</b>

### 3.4 2022 VOLTAGE OPTIMIZATION PROGRAM ANNUAL SAVINGS

The 2022 Voltage Optimization Program achieved 86,892 MWh and 13.52 MW in verified net savings. Table 14 presents ex ante gross, verified gross, and verified net savings for the 2022 Voltage Optimization Program.

Table 14. 2022 Voltage Optimization Program Annual Savings Summary

	Energy Savings (MWh)	Demand Savings (MW)	Gas Savings (Therms)
Ex Ante Gross Savings	74,590 <sup>a</sup>	N/A <sup>b</sup>	N/A
Gross Realization Rate	116%	N/A	N/A
Verified Gross Savings	86,892	13.52	N/A
NTGR	N/A	N/A	N/A
Verified Net Savings	86,892	13.52	N/A

<sup>a</sup> Ex ante gross savings sourced from AIC. Ex ante gross savings assume 0.80 CVR factor and 3.2% voltage reduction across the 181 measured circuits.

<sup>b</sup> There are no ex ante demand savings estimates for this program.

## 4. PORTFOLIO ECONOMIC AND EMPLOYMENT IMPACTS

The Illinois Energy Efficiency Policy Manual (“the Policy Manual”) Version 2.1 requires that each program administrator in Illinois annually report estimates of the economic development and employment impacts of its energy efficiency programs.<sup>15</sup> In accordance with that requirement, this section includes a summary of the economic and employment impacts produced by AIC’s energy efficiency portfolio in 2022, as well as the inputs used to estimate these results.

The methodology used in this analysis is consistent with that developed by consensus with the Illinois Stakeholder Advisory Group Non-Energy Impacts Working Group and used in the previously prepared 2021 analysis.<sup>16</sup> While the evaluation team made minor refinements to the analysis as process improvements from the prior analyses, and restructured the analysis in order to support reporting on the timeline required by the Policy Manual, analytical results are directly comparable to those presented in prior years.

Table 15 presents the cumulative economic and employment impacts resulting from AIC’s 2022 energy efficiency programs. Further analytical details are available on request.

Table 15. 2022 AIC Portfolio Job and Macroeconomic Impacts

Impact Category	Direct	Indirect	Induced	Total
Industry Output	\$701,528,794	\$302,359,848	\$712,668,678	\$1,716,557,321
Employment (Job-Years)	3,832	1,603	3,328	8,764
Labor Income	\$180,765,347	\$88,524,515	\$140,824,675	\$410,114,537

<sup>15</sup> Illinois Energy Efficiency Policy Manual Version 2.1, Section 6.7.

<sup>16</sup> Opinion Dynamics. Ameren Illinois Company 2021 Integrated Impact Evaluation Report.

<https://www.ilsag.info/wp-content/uploads/2021-AIC-Integrated-Impact-Evaluation-Report-REVISED-FINAL-2022-05-11.pdf>

APPENDIX A. 2022 DETAILED VERIFIED SAVINGS RESULTS

Table 16 and Table 17 present the detailed verified savings results tables for the 2022 AIC portfolio.

Table 16. 2022 Detailed Verified Savings Results - Electric

Initiative	Channel	Ex Ante Gross	Realization Rate	Verified Gross			Deemed / Used	Verified Net					Actual	Evaluation Estimate (Where Available)	Participation		WAML
		First Year Annual Energy Savings	Energy Savings (Ex Ante Gross / Verified Gross)	First Year Annual Energy Savings	First Year Peak Demand Savings	Lifetime Savings	NTGR	First Year Annual Savings	First Year Peak Demand Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	NTGR	# Units	Units Definition	Years
		MWh	%	MWh	MW	MWh	%	MWh	MW	MWh	\$/MWh	\$/MWh	\$	%			
<b>Residential Program</b>																	
Retail Products	Incentive-Based Channels	129,678	97%	126,311	19.74	1,145,871	0.832	105,110	16.41	953,536	\$120.93	\$13.33	\$12,711,396.02	No research	2,698,124	Measures	10.4
Retail Products	Retail Products - Carryover	N/A	N/A	11,217	1.47	90,446	0.751	8,421	1.10	67,899	\$0.00	\$0.00	\$0.00	N/A	N/A	N/A	9.5
Retail Products	Efficient Choice Tool	N/A	N/A	1,525	0.15	20,306	0.673	1,026	0.10	13,666	\$333.56	\$25.05	\$342,390.79	Various	6,900	Measures	13.5
Income Qualified	Single Family	2,137	100%	2,133	0.74	29,834	1.000	2,133	0.74	29,834	\$418.95	\$38.18	\$2,530,418.96	N/A	1,241	Homes served	15.6
Income Qualified	Joint Utility	112	97%	109	0.05	1,081	1.000	109	0.05	1,081				N/A	62	Homes served	13.1
Income Qualified	SAVE Kits	1,615	100%	1,615	0.21	15,955	1.000	1,615	0.21	15,955				N/A	2,049	Kits distributed	10.3
Kits	Ad Hoc Measure Distribution	3,827	57%	2,184	0.27	19,405	1.000	2,184	0.27	19,405				N/A	97,660	Measures	9.5
Income Qualified	Healthier Homes	1	100%	1	0.00	6	1.000	1	0.00	6	\$239,280.71	\$24,240.65	\$135,486.39	N/A	1	Home served	10.3
Income Qualified	CAA	892	100%	889	0.24	13,305	1.000	889	0.24	13,305	\$3,292.20	\$219.96	\$2,926,634.83	N/A	310	Homes served	16.0
Income Qualified	Smart Savers	1,050	115%	1,209	0.39	13,294	1.000	1,209	0.39	13,294	\$341.19	\$31.02	\$412,352.32	N/A	2,815	Adv. Thermostats	11.0
Income Qualified	MHAS	108	96%	103	0.03	1,165	1.000	103	0.03	1,165	\$8,554.75	\$758.11	\$883,461.55	N/A	115	Homes served	11.7
Income Qualified	Income Qualified - Carryover	N/A	N/A	1,349	0.16	12,487	1.000	1,349	0.16	12,487	\$0.00	\$0.00	\$0.00	N/A	N/A	N/A	10.0
Multifamily	Income Qualified - Multifamily	5,071	100%	5,074	0.73	61,234	1.000	5,074	0.73	61,234	\$1,119.05	\$92.73	\$5,678,374.56	N/A	3,860	Tenant units	12.5
Multifamily	Public Housing	850	100%	851	0.14	11,016	1.000	851	0.14	11,016	\$1,721.81	\$132.94	\$1,464,509.73	N/A	578	Tenant units	13.6
Multifamily	Market Rate Multifamily	1,416	100%	1,417	0.26	16,524	0.860	1,219	0.21	14,218	\$616.77	\$52.89	\$751,954.49	No research	849	Tenant units	13.0
Market Rate Single Family	Midstream HVAC	5,888	100%	5,896	1.47	92,867	0.801	4,726	1.18	74,427	\$520.98	\$33.34	\$2,530,418.96	Various	4,508	Measures	15.8
Market Rate Single Family	Home Efficiency	162	100%	162	0.04	1,814	0.810	132	0.04	1,468				No research	441	Homes served	13.0
Kits	School Kits	3,028	100%	3,028	0.46	29,236	1.000	3,028	0.46	29,236	\$215.57	\$21.74	\$778,588.03	N/A	8,500	Kits distributed	10.0
Kits	High School Innovation	580	101%	584	0.08	6,575	1.000	584	0.08	6,575				N/A	2,500	Kits distributed	11.8
Kits	Community Kits	1,248	99%	1,232	0.15	12,022	1.000	1,232	0.15	12,022	\$193.38	\$19.81	\$238,148.99	N/A	2,945	Kits distributed	10.0
Kits	Kits - Carryover	N/A	N/A	1,543	0.18	14,314	0.996	1,538	0.18	14,260	\$0.00	\$0.00	\$0.00	N/A	N/A	N/A	10.0
Residential NPSO Adder		N/A	N/A	N/A	N/A	N/A	N/A	1,910	0.34	16,419	\$0.00	\$0.00	\$0.00	N/A	N/A	N/A	10.4
<b>Business Program</b>																	
Standard	Standard - Core	43,933	100%	43,770	7.39	562,498	0.828	36,256	6.09	465,930	\$246.50	\$19.46	\$9,346,209.35	No research	50,879	Measures	12.9
Standard	Online Store	1,216	137%	1,666	0.40	14,487	0.996	1,660	0.40	14,436				No research	2,319	Measures	9.3
Standard	BOC	1,132	100%	1,645	0.18	15,171	1.000	1,645	0.18	15,171	\$22.49	\$2.44	\$37,008.33	No research	16	Students	13.0
Custom	Custom Incentives	28,392	96%	27,221	3.11	390,058	0.786	21,396	2.44	306,585	\$366.61	\$25.67	\$9,571,948.51	No research	84	Projects	14.3
Custom	New Construction Lighting	8,508	70%	5,997	1.30	84,412	0.786	4,714	1.02	66,348				No 2022 research	36	Projects	14.1
Retro-Commissioning	Retro-Commissioning - Core	1,989	89%	1,773	0.10	15,250	0.880	1,560	0.09	13,415	\$211.45	\$27.78	\$1,375,825.56	No research	5	Projects	8.6
Retro-Commissioning	VCx	5,456	98%	5,319	0.00	38,830	0.930	4,947	0.00	36,112				No research	50	Projects	7.3

Initiative	Channel	Ex Ante Gross	Realization Rate	Verified Gross			Deemed / Used	Verified Net					Actual	Evaluation Estimate (Where Available)	Participation		WAML
		First Year Annual Energy Savings	Energy Savings (Ex Ante Gross / Verified Gross)	First Year Annual Energy Savings	First Year Peak Demand Savings	Lifetime Savings	NTGR	First Year Annual Savings	First Year Peak Demand Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	NTGR	# Units	Units Definition	Years
		MWh	%	MWh	MW	MWh	%	MWh	MW	MWh	\$/MWh	\$/MWh	\$	%			
Streetlighting	MOSL	442	100%	442	0.00	8,831	0.690	305	0.00	6,093	\$56.07	\$2.96	\$1,291,482.31	No research	378	Streetlights	20.0
Streetlighting	UOSL	22,989	99%	22,727	0.00	429,728	1.000	22,727	0.00	429,728				N/A	34,873	Streetlights	20.0
Small Business	SBDI	75,958	100%	75,950	11.42	900,097	0.891	67,672	10.17	801,987	\$274.99	\$23.20	\$18,608,914.19	No research	2,472	Projects	12.8
Small Business	SBEP	108	137%	147	0.08	2,922	0.891	131	0.07	2,604	\$1,255.51	\$63.28	\$164,766.74	No research	39	Projects	19.8
Midstream	Lighting	23,305	99%	23,028	5.48	329,490	0.913	21,029	5.00	300,890	\$175.74	\$12.36	\$3,843,359.58	No research	442	Projects	14.4
Midstream	HVAC	489	94%	460	0.14	5,276	0.881	405	0.12	4,648				No research	124	Projects	11.5
Midstream	Food Service	610	89%	544	0.08	6,809	0.800	435	0.06	5,447				No research	89	Projects	12.5
Midstream	Lighting - Carryover	7,117	100%	7,117	1.69	101,362	0.857	6,098	1.45	86,846	\$0.00	\$0.00	\$0.00	N/A	N/A	N/A	14.4
<b>Voltage Optimization Program</b>																	
Voltage Optimization		74,590	116%	86,892	13.52	1,303,386	1.000	86,892	13.52	1,303,386	\$246.37	\$16.42	\$21,407,601.21	N/A	181	Circuits	15.0
<b>Portfolio Total</b>		<b>453,895</b>	<b>104%</b>	<b>473,130</b>	<b>71.85</b>	<b>5,872,949</b>	<b>0.893</b>	<b>422,311</b>	<b>63.83</b>	<b>5,242,135</b>	<b>\$246.26</b>	<b>\$19.84</b>	<b>\$103,997,826.45</b>				<b>13.0</b>

Savings presented reflect actual savings achieved by the programs and do not reflect the Illinois state law-allowed conversion of alternate fuels to MWh for goal attainment.

Program costs presented in the "Portfolio Total" row include unallocated portfolio-level administrative cost and therefore are in excess of the sums of the individual rows.

Table 17. 2022 Detailed Verified Savings Results - Gas

Initiative	Channel	Ex Ante Gross	Realization Rate	Verified Gross		Deemed/Used	Verified Net				Actual	Evaluation Estimate (Where Available)	Participation		WAML		
		First Year Annual Energy Savings	Energy Savings (Ex Ante Gross / Verified Gross)	First Year Annual Energy Savings	Lifetime Savings	NTGR	First Year Annual Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	NTGR	# Units	Units Definition	Years		
		Therms	%	Therms	Therms	%	Therms	Therms	\$/Therm	\$/Therm	\$	%					
<b>Residential Program</b>																	
Retail Products	Incentive-Based Channels	1,545,220	98%	1,510,190	16,613,533	0.929	1,402,568	15,429,592	\$1.70	\$0.15	\$2,384,131.80	No research	39,903	Measures	11.0		
Retail Products	Efficient Choice Tool	N/A	N/A	90,188	1,105,200	0.603	54,385	666,458	\$0.92	\$0.08	\$50,245.11	Various	2,192	Measures	12.3		
Income Qualified	Single Family	346,103	99%	344,257	4,967,340	1.000	344,257	4,967,340	\$7.97	\$0.56	\$3,313,803.25	N/A	1,241	Homes served	14.4		
Income Qualified	Joint Utility	0	N/A	0	N/A	N/A	0	0				N/A	62	Homes served	N/A		
Income Qualified	SAVE Kits	55,689	100%	55,681	797,352	1.000	55,681	797,352				N/A	2,049	Kits distributed	14.3		
Kits	Ad Hoc Measure Distribution	27,747	58%	15,954	159,544	1.000	15,954	159,544				N/A	97,660	Measures	10.0		
Income Qualified	Healthier Homes	0	N/A	0	N/A	N/A	0	0	N/A	N/A	\$18,429.12	N/A	1	Home served	N/A		
Income Qualified	CAA	92,282	100%	92,042	1,516,325	1.000	92,042	1,516,325	\$12.72	\$0.77	\$1,171,145.96	N/A	310	Homes served	16.5		
Income Qualified	Smart Savers	121,776	111%	135,047	1,485,522	1.000	135,047	1,485,522	\$0.29	\$0.03	\$38,917.84	N/A	2,815	Adv. thermostats	11.0		
Income Qualified	MHAS	29,529	100%	29,418	351,036	1.000	29,418	351,036	\$21.22	\$1.78	\$624,402.42	N/A	115	Homes served	11.9		
Multifamily	Income Qualified - Multifamily	65,226	99%	64,818	690,390	1.000	64,818	690,390	\$3.89	\$0.36	\$251,877.32	N/A	3,860	Tenant units	10.7		
Multifamily	Market Rate Multifamily	4,252	100%	4,252	48,840	0.917	3,899	44,788	\$7.18	\$0.63	\$28,006.77	No research	578	Tenant units	11.5		
Multifamily	Public Housing	6,117	100%	6,117	65,574	1.000	6,117	65,574	\$8.95	\$0.83	\$54,753.25	N/A	849	Tenant units	10.7		
Market Rate Single Family	Midstream HVAC	48,619	100%	48,410	532,513	0.900	43,569	479,261	\$3.79	\$0.30	\$224,132.31	Various	4,508	Measures	11.0		
Market Rate Single Family	Home Efficiency	18,868	100%	18,881	323,460	0.826	15,591	267,094				No research	441	Homes served	17.1		

Initiative	Channel	Ex Ante Gross	Realization Rate	Verified Gross		Deemed/Used	Verified Net				Actual	Evaluation Estimate (Where Available)	Participation		WAML
		First Year Annual Energy Savings	Energy Savings (Ex Ante Gross / Verified Gross)	First Year Annual Energy Savings	Lifetime Savings	NTGR	First Year Annual Savings	Lifetime Savings	First Year Cost per First Year Annual Savings	First Year Cost per Lifetime Savings	Program Costs	NTGR	# Units	Units Definition	Years
		Therms	%	Therms	Therms	%	Therms	Therms	\$/Therm	\$/Therm	\$	%			
Kits	School Kits	105,449	100%	105,449	1,510,036	1.000	105,449	1,510,036				N/A	8,500	Kits distributed	14.3
Kits	High School Innovation	20,850	100%	20,850	343,232	1.000	20,850	343,232	\$0.84	\$0.06	\$105,483.89	N/A	2,500	Kits distributed	16.5
Kits	Community Kits	53,829	96%	51,578	629,005	1.000	51,578	629,005	\$0.63	\$0.05	\$32,309.70	N/A	2,945	Kits distributed	12.2
Residential NPSO Adder		N/A	N/A	N/A	N/A	N/A	47,221	535,424	\$0.00	\$0.00	\$0.00	N/A	N/A	N/A	11.3
<b>Business Program</b>															
Standard	Standard - Core	1,219,958	106%	1,287,924	13,656,438	0.548	705,392	7,479,587	\$2.67	\$0.25	\$2,026,958.92	No research	50,879	Measures	10.6
Standard	Online Store	61,840	101%	62,438	686,817	0.880	54,945	604,399				No research	2,319	Measures	11.0
Standard	BOC	13,164	100%	17,904	165,077	1.000	17,904	165,077	\$0.28	\$0.03	\$5,032.52	No research	16	Students	9.2
Custom	Custom Incentives	1,798,303	96%	1,731,269	25,384,225	0.800	1,385,015	20,307,380	\$2.02	\$0.14	\$2,797,652.09	No research	47	Projects	14.7
Custom	New Construction Lighting	0	N/A	0	N/A	N/A	0	0				N/A	N/A	N/A	N/A
Retro-Commissioning	Retro-Commissioning - Core	59,742	94%	56,097	482,434	0.940	52,731	453,488	\$6.59	\$0.77	\$347,761.88	No research	2	Projects	8.6
Retro-Commissioning	VCx	0	N/A	0	N/A	N/A	0	0				N/A	N/A	N/A	N/A
Streetlighting	MOSL	0	N/A	0	N/A	N/A	0	0	N/A	N/A	\$0.00	N/A	N/A	N/A	N/A
Streetlighting	UOSL	0	N/A	0	N/A	N/A	0	0				N/A	N/A	N/A	N/A
Small Business	SBDI	0	N/A	0	N/A	N/A	0	0	N/A	N/A	\$0.00	N/A	N/A	N/A	N/A
Small Business	SBEP	21,190	100%	21,238	424,757	0.891	18,923	378,459	\$13.74	\$0.69	\$259,927.45	No research	39	Projects	20.0
Midstream	Lighting	0	N/A	0	N/A	N/A	0	0	\$2.82	\$0.25	\$131,306.80	N/A	N/A	N/A	N/A
Midstream	HVAC	36,504	100%	36,504	401,547	0.880	32,124	353,362				No research	124	Projects	11.0
Midstream	Food Service	26,241	69%	18,090	222,379	0.800	14,472	177,903				No research	89	Projects	12.3
<b>Voltage Optimization Program</b>															
Voltage Optimization		0	N/A	0	0	N/A	0	0	N/A	N/A	\$0.00	N/A	N/A	N/A	N/A
<b>Portfolio Total</b>		<b>5,778,497</b>	<b>101%</b>	<b>5,824,597</b>	<b>72,562,578</b>	<b>0.811</b>	<b>4,722,731</b>	<b>59,322,205</b>	<b>\$3.28</b>	<b>\$0.26</b>	<b>\$15,503,826.17</b>				<b>12.5</b>

Savings presented reflect actual savings achieved by the programs and do not reflect the Illinois state law-allowed conversion of alternate fuels to MWh for goal attainment. Program costs presented in the "Portfolio Total" row include unallocated portfolio-level administrative cost and therefore are in excess of the sums of the individual rows.

## APPENDIX B. 2022 PROGRAM EVALUATION REPORTS

The 2022 Residential Program, Business Program, and Voltage Optimization Program Impact Evaluation Reports, as well as the 2022 AIC Carryover Savings Memo are available under separate cover on the Illinois Stakeholder Advisory Group website: (<https://www.ilsag.info/evaluation-documents/final-evaluation-reports/>).



## APPENDIX C. 2022 CUMULATIVE PERSISTING ANNUAL SAVINGS

This appendix presents detailed CPAS for the AIC portfolio by initiative. Due to many years of CPAS, the tables can be challenging to read; please reference the separately provided CPAS spreadsheet for additional detail as needed. Table 18 presents CPAS for the 2022 AIC portfolio through 2049 at the initiative level. Lifetime savings for the 2022 AIC portfolio are 5,705,541 MWh.

Table 18. 2022 AIC Portfolio CPAS and WAML

Initiative	WAML	First-Year Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)													
				2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Retail Products Initiative	10.4	127,836	0.830	106,136	106,136	106,136	106,136	87,441	85,749	84,972	68,675	68,222	67,483	27,042	13,917	12,907	12,907
Retail Products Carryover	9.5	11,217	0.751	8,421	8,421	8,421	8,421	6,432	6,218	6,170	5,115	5,112	5,112	12	12	12	12
IQ Initiative – Single Family Offerings	13.2	6,057	1.000	6,057	6,057	6,057	6,057	6,056	6,056	5,552	4,814	4,808	4,808	3,380	1,977	1,969	1,969
IQ Carryover	10.0	1,349	1.000	1,349	1,349	1,349	1,349	1,349	1,349	1,349	1,014	1,014	1,014	0	0	0	0
Multifamily Initiatives	12.7	7,342	0.973	7,144	7,144	7,144	6,995	6,778	6,774	6,518	6,060	6,060	6,060	4,288	3,378	3,378	3,378
Market Rate SF Initiative	15.7	6,059	0.802	4,857	4,857	4,857	4,857	4,827	4,827	4,827	4,816	4,815	4,815	4,764	4,569	4,569	4,569
Kits Initiatives	10.0	7,027	1.000	7,027	7,027	6,721	6,721	6,721	6,721	6,721	4,716	4,610	4,610	661	661	661	661
Kits Carryover	10.0	1,543	0.996	1,538	1,538	1,538	1,538	1,518	1,518	1,518	1,246	1,155	1,155	0	0	0	0
Residential NPSO Adder	10.4	2,565	1.000	1,910	1,910	1,910	1,910	1,264	1,205	1,177	1,083	1,082	1,066	594	300	282	282
IQ – Single Family (gas conversion)	18.7	5,342	1.000	5,342	5,342	5,342	5,342	5,342	5,342	2,861	2,861	2,580	2,580	2,580	1,624	1,624	1,624
IQ – Smart Savers (gas conversion)	11.0	3,957	1.000	3,957	3,957	3,957	3,957	3,957	3,957	3,957	3,957	3,957	3,957	3,957	0	0	0
RP (propane conversion)	11.0	71	0.929	66	66	66	66	66	66	66	66	66	66	66	0	0	0
Standard Initiative	12.8	47,081	0.840	39,561	39,561	39,557	39,527	38,458	38,344	38,151	37,932	37,834	34,357	28,571	22,729	20,445	19,166
Custom Initiative	14.3	33,218	0.786	26,110	26,110	26,110	26,110	26,098	25,662	25,603	25,593	25,511	24,397	23,623	23,620	22,261	17,397
Retro-Commissioning Initiative	7.6	7,092	0.917	6,507	6,507	6,507	6,507	6,507	6,507	6,507	3,044	936	0	0	0	0	0
Streetlighting Initiative	20.0	23,168	0.994	23,031	23,031	23,031	21,572	21,572	21,572	21,572	21,572	21,572	21,572	21,572	21,572	21,572	21,572
Small Business Initiative	12.8	76,097	0.891	67,803	67,803	67,392	65,396	63,775	62,761	61,873	61,355	60,771	59,007	57,698	44,745	23,495	20,517
Midstream Initiative	14.3	24,032	0.910	21,870	21,870	21,870	21,870	21,420	21,400	21,347	20,737	20,737	20,736	20,730	20,371	19,992	19,992
Midstream Initiative - Carryover	14.4	7,117	0.857	6,098	6,098	6,098	6,098	5,950	5,942	5,925	5,726	5,726	5,726	5,724	5,724	5,724	5,724
SBEP (propane conversion)	20.0	10	0.891	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Custom Incentives (gas conversion - AIC therms)	14.1	12,167	0.800	9,733	9,733	9,733	9,733	9,733	9,733	9,733	9,733	9,733	8,858	8,825	8,825	8,825	5,625
Custom Incentives (gas conversion - non-AIC therms)	13.8	19,159	0.800	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	15,327	7,254
Custom Incentives (propane conversion)	25.7	5	0.800	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Standard - Core (gas conversion)	14.7	996	0.658	656	656	656	656	656	656	656	656	656	656	627	627	627	627
Voltage Optimization	15.0	86,892	N/A	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892	86,892
<b>2022 CPAS</b>		<b>517,403</b>	<b>0.884</b>	<b>457,406</b>	<b>457,406</b>	<b>456,685</b>	<b>453,050</b>	<b>428,153</b>	<b>424,591</b>	<b>419,289</b>	<b>393,006</b>	<b>389,191</b>	<b>380,269</b>	<b>316,947</b>	<b>276,886</b>	<b>250,575</b>	<b>230,182</b>
Expiring 2022 CPAS				0	0	721	3,635	24,898	3,562	5,302	26,283	3,814	8,923	63,322	40,061	26,311	20,393
Expired 2022 CPAS				0	0	721	4,356	29,254	32,816	38,118	64,401	68,215	77,138	140,459	180,520	206,831	227,225

Table 18 (Continued). 2022 AIC Portfolio CPAS and WAML

Initiative	WAML	First-Year Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)													
				2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Retail Products Initiative	10.4	127,836	0.830	12,490	406	221	94	94	10	10	10	7	0	0	0	0	0
Retail Products Carryover	9.5	11,217	0.751	9	0	0	0	0	0	0	0	0	0	0	0	0	0
IQ Initiative – Single Family Offerings	13.2	6,057	1.000	1,969	1,795	1,403	1,403	1,338	1,115	0	0	0	0	0	0	0	0
IQ Carryover	10.0	1,349	1.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multifamily Initiatives	12.7	7,342	0.973	3,378	1,506	122	121	121	121	0	0	0	0	0	0	0	0
Market Rate SF Initiative	15.7	6,059	0.802	4,569	2,510	961	961	37	30	0	0	0	0	0	0	0	0
Kits Initiatives	10.0	7,027	1.000	661	467	467	467	467	467	0	0	0	0	0	0	0	0
Kits Carryover	10.0	1,543	0.996	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential NPSO Adder	10.4	2,565	1.000	270	101	35	32	3	1	0	0	0	0	0	0	0	0
IQ – Single Family (gas conversion)	18.7	5,342	1.000	1,624	1,624	1,624	1,624	1,624	1,624	68	68	68	68	68	0	0	0
IQ – Smart Savers (gas conversion)	11.0	3,957	1.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RP (propane conversion)	11.0	71	0.929	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Standard Initiative	12.8	47,081	0.840	18,921	324	324	324	324	324	267	267	267	0	0	0	0	0
Custom Initiative	14.3	33,218	0.786	11,207	3,917	2,047	2,037	2,037	1,915	1,853	1,848	1,437	286	113	36	0	0
Retro-Commissioning Initiative	7.6	7,092	0.917	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Streetlighting Initiative	20.0	23,168	0.994	21,572	21,572	21,572	21,572	21,572	21,572	0	0	0	0	0	0	0	0
Small Business Initiative	12.8	76,097	0.891	19,558	129	129	129	129	129	0	0	0	0	0	0	0	0
Midstream Initiative	14.3	24,032	0.910	15,959	28	14	14	14	14	0	0	0	0	0	0	0	0
Midstream Initiative - Carryover	14.4	7,117	0.857	4,564	0	0	0	0	0	0	0	0	0	0	0	0	0
SBEP (propane conversion)	20.0	10	0.891	9	9	9	9	9	9	0	0	0	0	0	0	0	0
Custom Incentives (gas conversion - AIC therms)	14.1	12,167	0.800	4,102	1,886	475	475	475	475	475	268	0	0	0	0	0	0
Custom Incentives (gas conversion - non-AIC therms)	13.8	19,159	0.800	2,924	1,230	88	88	88	88	88	88	88	88	88	59	0	0
Custom Incentives (propane conversion)	25.7	5	0.800	4	4	4	4	4	4	4	4	4	4	4	3	0	0
Standard - Core (gas conversion)	14.7	996	0.658	627	0	0	0	0	0	0	0	0	0	0	0	0	0
Voltage Optimization	15.0	86,892	N/A	86,892	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>2022 CPAS</b>		<b>517,403</b>	<b>0.884</b>	<b>211,309</b>	<b>37,509</b>	<b>29,495</b>	<b>29,354</b>	<b>28,336</b>	<b>27,898</b>	<b>2,765</b>	<b>2,553</b>	<b>1,871</b>	<b>446</b>	<b>273</b>	<b>97</b>	<b>0</b>	<b>0</b>
<b>Expiring 2022 CPAS</b>				<b>18,872</b>	<b>173,801</b>	<b>8,014</b>	<b>141</b>	<b>1,018</b>	<b>438</b>	<b>25,133</b>	<b>212</b>	<b>682</b>	<b>1,426</b>	<b>173</b>	<b>176</b>	<b>97</b>	<b>0</b>
<b>Expired 2022 CPAS</b>				<b>246,097</b>	<b>419,898</b>	<b>427,912</b>	<b>428,052</b>	<b>429,070</b>	<b>429,509</b>	<b>454,641</b>	<b>454,854</b>	<b>455,535</b>	<b>456,961</b>	<b>457,133</b>	<b>457,309</b>	<b>457,406</b>	<b>457,406</b>
<b>WAML</b>	<b>13.0</b>																
<b>WAML without VO</b>	<b>12.6</b>																