



Opinion **Dynamics**

AMEREN ILLINOIS COMPANY

2023 INTEGRATED IMPACT EVALUATION REPORT

FINAL

APRIL 30, 2024



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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 2023 calendar year. The overarching objective of the 2023 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."¹ 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.²
- **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.

¹ Illinois Energy Efficiency Stakeholder Advisory Group. *Weighted Average Measure Life Report*. 2018.

² *Ibid.*

I.1.1 OVERVIEW OF THE AIC PORTFOLIO

AIC's 2023 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

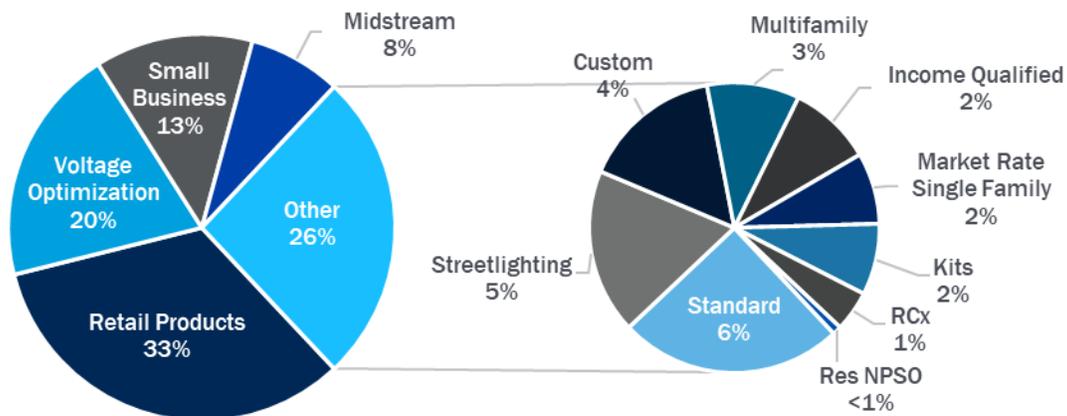
Individual Residential and Business Program initiatives are further split into channels. For more details on the Residential and Business Programs, please see the *2023 AIC Residential Program Annual Impact Evaluation Report* and the *2023 AIC Business Program Annual Impact Evaluation Report*. Note that 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 *2023 AIC Residential Program Annual Impact Evaluation Report*.

AIC has a specific focus on serving low income customers through its residential energy efficiency programs. While the Income Qualified Initiative focuses entirely on these customers, most of AIC's other residential efforts also direct a significant portion of their services to low income customers. Most notably, the majority of the savings achieved by Retail Products Initiative in 2023 were in delivery of measures to low income customers. In addition, two of the three components of the Multifamily Initiatives (the Income Qualified channel of the Multifamily Initiative as well as the Public Housing Initiative) deliver services to only low income customers, and all channels of the Kits Initiatives are focused entirely on low income customers as well.

1.1.2 2023 PORTFOLIO PERFORMANCE

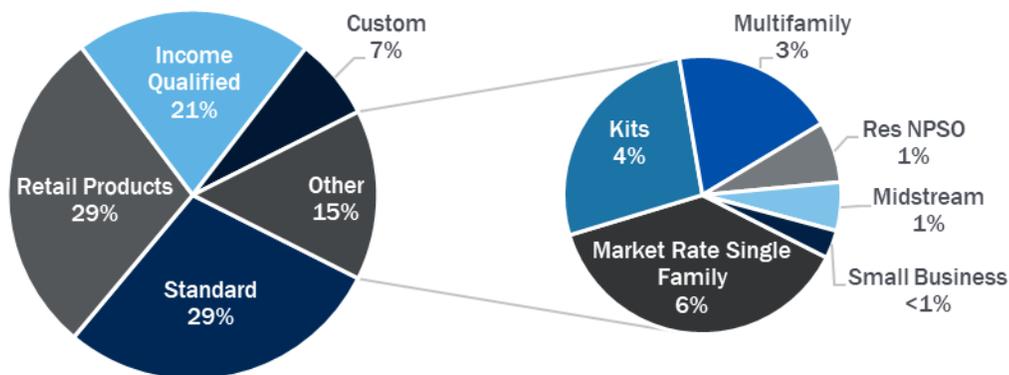
Overall, the portfolio's savings are driven heavily by a small number of initiatives. The Residential Program's Retail Products Initiative (including the Income Qualified Initiative – Retail Products channel), the Voltage Optimization Program, and the Business Program's Small Business Initiative together provided two-thirds (66%) of portfolio verified net electric energy savings in 2023. Figure 1 shows 2023 portfolio verified net electric energy savings by initiative.

Figure 1. 2023 AIC Portfolio Verified Net Electric Energy Savings by Initiative



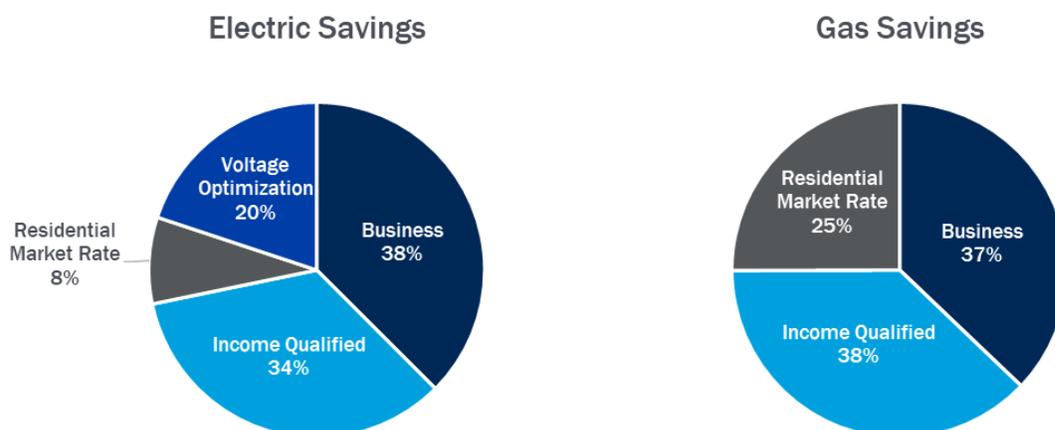
Gas savings are similarly concentrated. Three initiatives (The Business Program's Standard Initiative and the Residential Program's Retail Products and Income Qualified – Single Family Initiatives) provided over three-quarters of portfolio gas savings in 2023. Figure 2 shows portfolio verified net gas savings by initiative.

Figure 2. 2023 AIC Portfolio Verified Net Gas Savings by Initiative



As discussed above, the majority of AIC's residential program offerings are focused on low-income customers. Figure 3 presents a chart of AIC portfolio savings that breaks out Residential Program savings by market rate vs. low income to provide a better picture of the degree to which AIC's portfolio delivered energy savings to low-income customers. Over one third of AIC's total 2023 portfolio savings are realized by low-income customers.

Figure 3. 2023 AIC Portfolio Verified Net Savings by Sector



Note that Figure 3 understates the extent to which AIC’s electric programs delivered energy savings to low-income customers in 2023. As discussed in greater depth in the *2023 AIC Voltage Optimization Program Annual Impact Evaluation Report*, AIC has prioritized low-income customers as part of its VO deployment. While our evaluation is unable to explicitly apportion savings to low-income customers from the Voltage Optimization Program, as a distribution circuit-level improvement, a share of the savings realized by the Program are realized by low-income customers.

1.2 2023 PORTFOLIO SAVINGS

Overall, AIC’s portfolio outperformed its 2023 goals. The portfolio achieved 132% of its AAIG and 109% of its CPAS target. The portfolio WAML is 12.7 years, which is a slight increase compared to the 2022 portfolio, which had a WAML of 12.6 years.

1.2.1 ANNUAL SAVINGS

Table 1 presents annual savings achieved by the 2023 AIC portfolio. Savings conversions are discussed further in Section 3.1. The calculation of residential nonparticipant spillover (NPSO) is discussed further in Section 2.3.1.

Table 1. 2023 AIC Portfolio Annual Savings

	Energy Savings (MWh)	Peak Demand Savings (MW)	Gas Savings (Therms)
Ex Ante Gross Savings	434,427	52.78	5,937,521
Gross Realization Rate ^a	102%	99%	100%
Verified Gross Savings	462,578	67.55	6,008,704
NTGR	0.904	0.899	0.815
Verified Net Savings Before Residential NPSO and Conversions	417,997	60.74	4,895,576
Verified Net Savings with NPSO Adder	419,047	60.91	4,947,504
(b-25) Conversions - AIC Gas	18,939	N/A	-646,385
(b-25) Conversions - Other Fuels ^b	19,172	N/A	N/A
Verified Net Savings After Conversion	457,158	60.91	4,301,120

^a Calculations of gross realization rate exclude categories of savings with no corresponding ex ante savings. Therefore, gross realization rates cannot be directly calculated from values presented in this table.

^b AIC converted natural gas and propane savings that were not eligible to be claimed against its gas savings goals in 2023. For further detail, see the *2023 AIC Residential Program Annual Impact Evaluation Report* and the *2023 AIC Business Program Annual Impact Evaluation Report*.

I.2.2 APPLICABLE ANNUAL INCREMENTAL GOAL ACHIEVEMENT

AIC achieved 132% of its 2023 AAIG for electric savings. 2023 AAIG achievement is presented in Table 4.

Table 2. 2023 AIC Portfolio AAIG Achievement

Metric	MWh
2023 Annual Net Savings	457,158
2023 Expiring CPAS from Legislation	125,202
2023 Expiring CPAS from 2022 Portfolio	0
2023 Expiring CPAS from 2021 Portfolio	908
2023 Expiring CPAS from 2020 Portfolio	4,849
2023 Expiring CPAS from 2019 Portfolio	7,489
2023 Expiring CPAS from 2018 Portfolio	3,603
2023 Annual Incremental Savings Achieved	315,107
2023 AAIG	239,060
% of 2023 AAIG Achieved	132%

I.2.3 CUMULATIVE PERSISTING ANNUAL SAVINGS

Table 3 summarizes overall CPAS and WAML for the 2023 AIC portfolio by program. The overall WAML for the portfolio is 13.1 years including Voltage Optimization and 12.7 years excluding Voltage Optimization. Additional detail on CPAS achieved by the portfolio is available in Appendix C.

Table 3. 2023 AIC Portfolio CPAS and WAML

Program	WAML	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)							Lifetime Savings (MWh)
				2023	2024	2025	2026	...	2030	...	
Residential	10.5	224,558	0.891	200,129	200,129	199,405	199,405	...	96,606	...	2,022,863
Business	15.2	198,605	0.874	173,614	173,614	173,429	170,127	...	158,851	...	2,565,226
Voltage Optimization	15.0	83,416	N/A	83,416	83,416	83,416	83,416	...	83,416	...	1,251,236
2023 CPAS		506,578	0.902	457,158	457,158	456,250	452,948	...	338,873	...	5,839,325
Expiring 2023 CPAS				0	0	908	3,302	...	87,801	...	
Expired 2023 CPAS				0	0	908	4,210	...	118,285	...	
WAML	13.1										
WAML without VO	12.7										

I.2.4 CUMULATIVE PERSISTING ANNUAL SAVINGS GOAL ACHIEVEMENT

AIC achieved 109% of its 2023 CPAS goal for electric savings. 2023 CPAS achievement is presented in Table 4.

Table 4. 2023 AIC Portfolio CPAS Goal Achievement

Metric	MWh
2023 CPAS from 2023 Portfolio	457,158
2023 CPAS from 2022 Portfolio	457,406
2023 CPAS from 2021 Portfolio	451,086
2023 CPAS from 2020 Portfolio	436,173
2023 CPAS from 2019 Portfolio	295,406
2023 CPAS from 2018 Portfolio	303,800
2023 CPAS from Legislation	912,102
2023 CPAS Achieved	3,313,131
2023 CPAS Goal	3,045,376
% of 2023 CPAS Goal Achieved	109%

2. EVALUATION APPROACH

The following section of the report describes the evaluation approach taken for the impact evaluation of the 2023 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 2023 program year (Versions 2.1 and 3.0, and Version 11.0 [V11.0], respectively) wherever relevant.³

2.1 RESEARCH OBJECTIVES

The overarching research objectives for the impact evaluation of AIC’s 2023 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 V11.0 to final initiative tracking databases to estimate verified gross savings. In addition, we reviewed initiative materials and interviewed initiative managers.

Table 5. 2023 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	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 Program		✓			✓	✓

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

³ 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 V11.0

To determine verified gross impacts associated with the majority of the measures delivered through the 2023 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 V11.0 and the IL-TRM V11.0 errata document. In particular, we applied the algorithms and assumptions provided in the IL-TRM V11.0, 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 APPLICATION OF CUSTOM IMPACT METHODS

The Custom and RCx initiatives and a small number of Standard Initiative measures 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 *2023 AIC Business Program Annual Impact Evaluation Report*.

2.2.3 CARRYOVER SAVINGS

In addition to savings achieved by AIC's portfolio through measures delivered during the 2023 program year, AIC also claimed savings in 2023 from lighting measures distributed by the portfolio in prior years but not installed until 2023. The relevant initiatives include:

- Residential Program
 - 2021 and 2022 Retail Products Initiative
 - 2021 and 2022 Income Qualified Initiative
 - 2021 and 2022 Kits Initiatives
- Business Program
 - 2021 and 2022 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, the applicable measure life and midlife adjustments as detailed in the IL-TRM V10.0 errata memo,⁴ and IL-TRM V11.0 assumptions for all other relevant impact parameters. We reported on AIC's 2023 carryover savings as part of an earlier memo.⁵

⁴ Use of the IL-TRM V10.0 errata memo relates to a compromise agreement reached between Illinois stakeholders relating to the phase-out of screw-base lighting measure eligibility in Illinois and will continue through 2024.

⁵ Opinion Dynamics. *Ameren Illinois Company Lighting Carryover Savings Claimable in 2023* accessed at: <https://www.ilsag.info/wp-content/uploads/AIC-2023-Lighting-Carryover-Savings-Memo-FINAL-2024-03-02.pdf>

2.3 VERIFIED NET IMPACT ANALYSIS APPROACH

To determine verified net savings for the 2023 AIC portfolio, we applied SAG-approved NTGRs⁶ to verified gross savings.

2.3.1 RESIDENTIAL NON-PARTICIPANT SPILLOVER

Net impact evaluation of AIC's Residential Program includes a non-participant spillover (NPSO) adder to net savings achieved by non-income qualified (non-IQ) efforts. This NPSO adder is 3.1% for non-IQ electric savings (energy and demand) and 4.4% for non-IQ gas savings.⁷ Table 6 summarizes verified, non-IQ net savings for AIC's Residential Program by initiative and computes the NPSO adder as defined above.

Table 6. 2023 Residential Program Verified Net Savings Summary for Non-Income Qualified Initiatives

Initiative/Channel	Verified Net MWh	Verified Net MW	Verified Net Therms
Retail Products – Incentive-Based Channels (non-IQ)	16,135	3.13	865,222
Efficient Choice Tool	374	0.06	29,321
Retail Products Carryover (non-IQ)	6,264	0.82	N/A
Market Rate Multifamily	2,413	0.36	8,581
Midstream HVAC	8,617	1.18	262,076
Home Efficiency	70	0.03	14,983
Non-IQ Residential Program Subtotal	33,873	5.57	1,180,183
Residential NPSO Adder	1,050	0.17	51,928

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 2023 evaluation. In particular, we considered the below types of error:

- **Analysis Error:**
 - **Prescriptive Gross Impact Calculations:** We calculated gross impacts by applying IL-TRM V11.0 calculations to the participant data in the tracking database. 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, we had all calculations reviewed by a separate team member to verify that calculations were performed accurately.
 - **Net Impact Calculations:** We derived net impacts by applying SAG-approved NTGRs to estimated gross impacts. To minimize analytical errors, all calculations were reviewed by a separate team member to verify their accuracy.
- **Sampling Error:**
 - **Custom Initiative Impact Sample:** The evaluation team completed an impact review for 48 of 117 Custom Incentives projects achieving savings in 2023, drawing three waves of stratified samples separately for projects

⁶ Opinion Dynamics. *Ameren Illinois Company Energy Efficiency Portfolio 2023 Net-to-Gross Ratios* accessed at: <https://www.ilsag.info/evaluator-ntg-recommendations-for-2023/>

⁷ Ibid.

claiming electric and gas savings. For gross impact results, at the 90% confidence level, we achieved a relative precision of 7.6% for electric energy savings, 19.7% for electric demand savings, and 0.7% for gas savings. We also completed impact reviews for seven of 22 New Construction Lighting projects achieving savings in 2023, drawing a single stratified sample. For gross impact results, at the 90% confidence level, we achieved a relative precision of 4.1% for electric energy savings and 3.3% for electric demand savings. Further detail on our methodology for Custom Initiative sampling is provided in the *2023 AIC Business Program Impact Evaluation Report*.

▪ **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 Initiative and with the methods used to calculate the gross impacts.

For the VCx channel and Virtual SEM pilot, 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 VCx and Virtual SEM. 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.⁸
- **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 2023 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 in cases where the inclusion of weather interactions improved model fit, before producing verified savings. 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.
- **Measurement Error:** In the context of the VCx channel and Virtual SEM pilot, 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 to have a 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 receive a full year of post-period data for all VCx and Virtual SEM projects in 2023, which introduces uncertainty because the models were not able to train on a full range of temperature data after the intervention was initiated. This could increase the prediction error for temperatures that are outside the range of the training data. We 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. We addressed this issue by carefully considering model specifications and data to ensure that there were no multicollinearity issues.

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

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

3. PORTFOLIO VERIFIED SAVINGS

3.1 SAVINGS CONVERSIONS

In certain circumstances, Illinois state law allows electric utilities to claim energy savings achieved from fossil fuels against their AIG and CPAS goals. We refer to these savings as “conversions.” There are two separate types of conversions that Illinois electric utilities may make:

- Subsection (b-25) conversions.**⁹ We refer to these conversions as “(b-25) conversions” throughout this report. Under subsection (b-25), Illinois state law allows electric utilities to convert fossil fuel savings achieved through energy efficiency programs funded with electric dollars to electric energy savings on an equivalent British thermal unit (Btu) basis for the premises in certain situations. There is an annual cap on (b-25) conversions; no more than 10% of the electric utility’s applicable annual total savings requirement (AATS) may be met via (b-25) conversions each year. For AIC, these conversions can include natural gas provided by AIC (savings of which could also be counted toward AIC’s 8-104 goals) and natural gas not provided by AIC or delivered fuels such as propane (savings of which could not be counted toward AIC’s 8-104 goals).
- Subsection (b-27) conversions.**¹⁰ We refer to these conversions as “(b-27) conversions” throughout this report. Under subsection (b-27), Illinois state law allows electric utilities to offer and promote measures that electrify enduses that would otherwise be served by combustion of fossil fuel at the premises, provided that the electrification measures reduce total energy consumption at the premises. When these measures are offered, the electric utility may count net Btu savings achieved at the premises¹¹ in kWh toward its electric savings goals. There is an annual cap on (b-27) conversions; in 2023, no more than 5% of the electric utility’s AATS may be met via (b-27) conversions. In addition, a minimum of 25% of all electrification savings counted toward the utility’s goals each year must be from electrification of enduses in low-income housing.

3.1.1 (B-25) CONVERSIONS

In 2023, AIC identified savings achieved by a number of initiatives for (b-25) conversions. Per Illinois state law, AIC was capped at a total conversion of no more than 38,111 MWh. Using the SAG-approved conversion factor of 29.3 kWh per therm, this equals 1,300,720 therms that could be converted to electric savings. After evaluation, we determined that savings identified for conversion by AIC were in excess of the conversion cap, and therefore we prioritized savings for conversion in line with legislation and AIC guidance. Table 7 presents a summary of AIC’s 2023 (b-25) savings conversions.

Table 7. 2023 AIC (b-25) Conversions

Initiative	Channel	AIC Gas Therms Converted	Non-AIC Gas Therms Converted	Propane Therms Converted	MWh Equivalent
Retail Products	Market Rate	0	0	57,003	1,670
Income Qualified	Retail Products	0	0	19,939	584
Income Qualified	Single Family	205,688	855	0	6,052
Income Qualified	CAA	0	223	0	7
Income Qualified	Smart Savers	400,905	114	9,755	12,036

⁹ 220 ILCS 5/8-103B(b-25).

¹⁰ 220 ILCS 5/8-103B(b-27).

¹¹ The net difference between the decreased fossil fuel usage and the increased electric usage expressed in Btus.

Initiative	Channel	AIC Gas Therms Converted	Non-AIC Gas Therms Converted	Propane Therms Converted	MWh Equivalent
Income Qualified	Joint Utility	0	3,663	0	107
Income Qualified	MHAS	39,791	0	0	1,166
Kits	Joint Utility	0	464	0	14
Standard	SE	0	10,372	0	304
Standard	STRR	0	11,829	0	347
Custom	Custom Incentives	0	537,505	0	15,749
Small Business	SBEP	0	2,614	0	77
Total			1,300,720		38,111
Conversion Cap			1,300,720		38,111
% of Cap			100.0%		100.0%

3.1.2 (B-27) CONVERSIONS

AIC made no (b-27) conversions in 2023.

3.2 2023 RESIDENTIAL PROGRAM ANNUAL SAVINGS

The 2023 Residential Program achieved 200,129 MWh, 24.89 MW, and 2,447,596 therms in verified net savings. These savings include a non-participant spillover (NPSO) “adder” to net savings.^{12,13} These savings also include (b-25) conversions of fuels not provided by AIC, which are detailed further in Section 3.1.1 above. Table 8, Table 9, and Table 10 present ex ante gross, verified gross, and verified net electric energy, electric demand, and gas savings, by Initiative and channel, for the 2023 Residential Program.

Table 8. 2023 Residential Program Electric Energy Annual Savings Summary

Initiative/Channel	Ex Ante Gross MWh	Gross Realization Rate	Verified Gross MWh	Net-to-Gross Ratio (NTGR)	Verified Net MWh
Retail Products – Income Qualified	121,109	100%	121,418	0.898	109,002
Retail Products – Market Rate Incentive-Based	20,675	98%	20,258	0.796	16,135
Retail Products – Efficient Choice Tool	N/A	N/A	562	0.666	374
Retail Products – Income Qualified Carryover	N/A	N/A	7,557	0.919	6,941
Retail Products – Market Rate Carryover	N/A	N/A	8,799	0.712	6,264
Income Qualified – Single Family	3,106	101%	3,124	1.000	3,124
Income Qualified - CAA	1,111	99%	1,101	1.000	1,101
Income Qualified – Joint Utility	105	100%	105	1.000	105
Income Qualified – Smart Savers	4,942	97%	4,807	0.999	4,804
Income Qualified – MHAS	183	147%	269	1.000	269
Income Qualified – Carryover	N/A	N/A	737	1.000	737
Multifamily – Income Qualified	8,128	94%	7,643	1.000	7,643
Multifamily – Market Rate	2,752	100%	2,750	0.878	2,413
Multifamily – Public Housing	1,266	94%	1,194	1.000	1,194

¹² Opinion Dynamics. Ameren Illinois Company Energy Efficiency Portfolio 2023 Net-to-Gross Ratios accessed at: <https://www.ilsag.info/evaluator-ntg-recommendations-for-2023/>

¹³ The process of computing savings from the residential NPSO adder is complex. See Section 2.3.1 for more detail.

Initiative/Channel	Ex Ante Gross MWh	Gross Realization Rate	Verified Gross MWh	Net-to-Gross Ratio (NTGR)	Verified Net MWh
Market Rate Single Family – Midstream HVAC	12,280	100%	12,287	0.701	8,617
Market Rate Single Family – Home Efficiency	83	100%	84	0.834	70
Kits – School Kits	4,082	123%	5,027	1.000	5,027
Kits – High School Innovation	713	111%	793	1.000	793
Kits – Mobile Home Kits	1,330	100%	1,330	1.000	1,330
Kits – Income Qualified Community Kits	156	103%	161	1.000	161
Kits – Joint Utility Kits	87	113%	98	1.000	98
Kits – Carryover	N/A	N/A	1,245	0.996	1,240
<i>Residential Program Subtotal</i>	<i>182,109</i>	<i>100%^a</i>	<i>201,349</i>	<i>0.881</i>	<i>177,443</i>
Residential NPSO Adder					1,050
(b-25) Conversions - AIC Gas					18,939
(b-25) Conversions - Non-AIC Gas					156
(b-25) Conversions - Propane					2,540
Residential Program Total					200,129

^a Calculations of gross realization rate at the Residential Program level exclude categories of savings with no ex ante savings.

Table 9. 2023 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 – Income Qualified	15.10	99%	14.98	0.900	13.47
Retail Products – Market Rate Incentive-Based	4.21	97%	4.07	0.770	3.13
Retail Products – Efficient Choice Tool	N/A	N/A	0.09	0.667	0.06
Retail Products – Income Qualified Carryover	N/A	N/A	0.98	0.807	0.80
Retail Products – Market Rate Carryover	N/A	N/A	1.15	0.807	0.93
Income Qualified – Single Family	0.87	101%	0.87	1.000	0.87
Income Qualified - CAA	0.26	97%	0.25	1.000	0.25
Income Qualified – Joint Utility	0.04	100%	0.04	1.000	0.04
Income Qualified – Smart Savers	1.33	92%	1.23	0.999	1.22
Income Qualified – MHAS	0.05	231%	0.11	1.000	0.11
Income Qualified – Carryover	N/A	N/A	0.09	1.000	0.09
Multifamily – Income Qualified	0.84	99%	0.84	1.000	0.84
Multifamily – Market Rate	0.41	102%	0.42	0.864	0.36
Multifamily – Public Housing	0.15	112%	0.17	1.000	0.17
Market Rate Single Family – Midstream HVAC	1.68	100%	1.68	0.700	1.18
Market Rate Single Family – Home Efficiency	0.04	100%	0.04	0.842	0.03
Kits – School Kits	0.62	116%	0.72	1.000	0.72
Kits – High School Innovation	0.10	111%	0.11	1.000	0.11
Kits – Income Qualified Community Kits	0.17	100%	0.17	1.000	0.17
Kits – Mobile Home Kits	0.02	102%	0.02	1.000	0.02
Kits – Joint Utility Kits	0.01	115%	0.01	1.000	0.01

Initiative/Channel	Ex Ante Gross MW	Gross Realization Rate	Verified Gross MW	NTGR	Verified Net MW
Kits – Carryover	N/A	N/A	0.14	0.996	0.14
<i>Residential Program Subtotal</i>	25.90	99% ^a	28.17	0.878	24.72
Residential NPSO Adder					0.17
Residential Program Total					24.89

^a Calculations of gross realization rate at the Residential Program level exclude categories of savings with no ex ante savings.

Table 10. 2023 Residential Program Gas Annual Savings Summary

Initiative/Channel	Ex Ante Gross Therms	Gross Realization Rate	Verified Gross Therms	NTGR	Verified Net Therms
Retail Products – Income Qualified	500,708	103%	513,555	1.000	513,555
Retail Products – Market Rate Incentive-Based	982,688	98%	965,353	0.896	865,222
Retail Products – Efficient Choice Tool	N/A	N/A	48,623	0.603	29,321
Income Qualified – Single Family	387,406	100%	388,395	1.000	388,395
Income Qualified - CAA	112,071	101%	112,999	1.000	112,999
Income Qualified – Joint Utility	N/A	N/A	N/A	N/A	N/A
Income Qualified – Smart Savers	487,592	96%	468,036	1.000	467,813
Income Qualified – MHAS	54,178	95%	51,317	1.000	51,317
Multifamily – Income Qualified	89,536	100%	89,674	1.000	89,674
Multifamily – Market Rate	9,304	100%	9,304	0.922	8,581
Multifamily – Public Housing	41,101	100%	41,102	1.000	41,102
Market Rate Single Family – Midstream HVAC	323,915	100%	324,132	0.809	262,076
Market Rate Single Family – Home Efficiency	18,217	100%	18,221	0.822	14,983
Kits – School Kits	105,035	127%	133,530	1.000	133,530
Kits – High School Innovation	17,452	120%	20,867	1.000	20,867
Kits – Income Qualified Community Kits	40,889	98%	40,266	1.000	40,266
Kits – Mobile Home Kits	2,021	116%	2,344	1.000	2,344
Kits – Joint Utility Kits	0	N/A	7	1.000	7
<i>Residential Program Subtotal</i>	3,172,113	100% ^a	3,226,995	0.942	3,042,053
Residential NPSO Adder					51,928
(b-25) Conversions – AIC Gas					-646,385
Residential Program Total					2,447,596

^a Calculations of gross realization rate at the Residential Program level exclude categories of savings with no ex ante savings.

3.3 2023 BUSINESS PROGRAM ANNUAL SAVINGS

The 2023 Business Program achieved 173,614 MWh, 22.92 MW, and 1,853,524 therms in verified net savings. These savings include (b-25) conversions of fuels not provided by AIC, which are detailed further in Section 3.1.1 above. 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 2023 Business Program.

Table 11. 2023 Business Program Electric Energy Annual Savings Summary

Initiative/Channel	Ex Ante Gross MWh	Gross Realization Rate	Verified Gross MWh	Net-to-Gross Ratio (NTGR)	Verified Net MWh
Standard - Core	29,570	99%	29,351	0.825	24,206
Standard - OS	2,542	99%	2,518	0.927	2,333
Standard - BOC Training	819	100%	752	1.000	752
Custom - Custom Incentives	21,975	89%	19,565	0.786	15,382
Custom - New Construction Lighting	2,100	92%	1,940	0.786	1,525
RCx - VCx	5,597	94%	5,247	0.930	4,880
RCx - Virtual SEM	44	87%	38	1.000	38
Streetlighting - MOSL	133	100%	133	0.690	92
Streetlighting - UOSL	19,917	100%	19,917	1.000	19,917
Small Business - SBDI	61,903	100%	61,906	0.891	55,159
Small Business - SBEP	711	46%	327	0.891	291
Midstream - Lighting	29,202	101%	29,577	0.913	27,010
Midstream - HVAC	215	99%	213	0.884	189
Midstream - Food Service	590	101%	594	0.800	475
Midstream - Lighting Carryover	5,735	100%	5,735	0.853	4,890
Business Program Subtotal	181,053	98%	177,813	0.884	157,138
(b-25) Conversions - Non-AIC Gas					16,476
Business Program Total					173,614

Table 12. 2023 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	4.83	100%	4.81	0.827	3.98
Standard - OS	0.62	89%	0.56	0.886	0.49
Standard - BOC Training	0.01	918%	0.08	N/A	0.08
Custom - Custom Incentives	2.69	90%	2.41	0.786	1.90
Custom - New Construction Lighting	0.37	90%	0.33	0.786	0.26
RCx - VCx	0.00	N/A	0.00	N/A	0.00
RCx - Virtual SEM	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	9.72	100%	9.73	0.891	8.67
Small Business - SBEP	0.19	81%	0.15	0.891	0.14
Midstream - Lighting	6.94	97%	6.70	0.913	6.12
Midstream - HVAC	0.05	101%	0.06	0.883	0.05
Midstream - Food Service	0.09	102%	0.09	0.800	0.07
Midstream - Lighting Carryover	1.36	100%	1.36	0.853	1.16
Business Program Subtotal	26.88	98%	26.29	0.872	22.92
Business Program Total					22.92

Table 13. 2023 Business Program Gas Annual Savings Summary

Initiative/Channel	Ex Ante Gross Therms	Gross Realization Rate	Verified Gross Therms	NTGR	Verified Net Therms
Standard - Core ^a	2,052,279	102%	2,086,763	0.614	1,281,871
Standard - OS	134,311	101%	136,026	0.880	119,703
Standard - BOC Training	12,371	76%	9,367	N/A	9,367
Custom - Custom Incentives	488,613	97%	471,737	0.800	377,390
Custom - New Construction Lighting	0	N/A	0	N/A	0
RCx - VCx	0	N/A	0	N/A	0
RCx - Virtual SEM	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	1	1.000	1
Small Business - SBEP	27,486	97%	26,729	0.891	23,815
Midstream - Lighting	0	N/A	0	N/A	0
Midstream - HVAC	13,658	100%	13,658	0.880	12,019
Midstream - Food Service	36,690	100%	36,696	0.800	29,357
Midstream - Lighting Carryover	0	N/A	0	N/A	0
<i>Business Program Subtotal</i>	<i>2,765,408</i>	<i>101%</i>	<i>2,780,978</i>	<i>0.667</i>	<i>1,853,524</i>
Business Program Total					1,853,524

3.4 2023 VOLTAGE OPTIMIZATION PROGRAM ANNUAL SAVINGS

The 2023 Voltage Optimization Program achieved 83,416 MWh and 13.10 MW in verified net savings. Table 14 presents ex ante gross, verified gross, and verified net savings for the 2023 Voltage Optimization Program.

Table 14. 2023 Voltage Optimization Program Annual Savings Summary

	Energy Savings (MWh)	Peak Demand Savings (MW)	Gas Savings (Therms)
Ex Ante Gross Savings ^a	71,264	N/A	N/A
Gross Realization Rate	117%	N/A	N/A
Verified Gross Savings	83,416	13.10	N/A
NTGR	N/A	N/A	N/A
Verified Net Savings	83,416	13.10	N/A

^a Ex ante energy savings sourced from AIC. Ex ante gross savings assume 0.80 CVR factor and 3.2% voltage reduction across the 194 measured circuits.

^b There are no ex ante peak demand savings estimates for this program.

4. PORTFOLIO ECONOMIC AND EMPLOYMENT IMPACTS

The Illinois Energy Efficiency Policy Manual (“the Policy Manual”) Version 3.0 requires that each program administrator in Illinois annually report estimates of the economic development and employment impacts of its energy efficiency programs.¹⁴ In accordance with that requirement, this section includes a summary of the economic and employment impacts produced by AIC’s energy efficiency portfolio in 2023, 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 previous analyses.

Table 15 presents the cumulative economic and employment impacts resulting from AIC’s 2023 energy efficiency programs. Further analytical details are available on request.

Table 15. 2023 AIC Portfolio Job and Macroeconomic Impacts

Impact Category	Direct	Indirect	Induced	Total
Industry Output	\$654,042,892	\$286,234,749	\$853,131,871	\$1,793,409,512
Employment (Job-Years)	3,535	1,492	3,801	8,827
Labor Income	\$167,237,648	\$82,889,195	\$160,465,658	\$410,592,501

¹⁴ Illinois Energy Efficiency Policy Manual Version 3.0, Section 6.7.
Opinion Dynamics

APPENDIX A. 2023 DETAILED VERIFIED SAVINGS RESULTS

Table 16 and Table 17 present the detailed verified savings results tables for the 2023 AIC portfolio.

Table 16. 2023 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	\$	%			
Residential Program																	
Retail Products	Income Qualified	121,109	100%	121,418	14.98	1,105,280	0.898	109,002	13.47	992,253	\$79.35	\$8.72	\$8,649,822.45	N/A	2,579,232	Measures Incented	9.0
Retail Products	Market Rate Incentive-Based	20,675	98%	20,258	4.07	232,031	0.796	16,135	3.13	184,804	\$363.63	\$31.75	\$5,867,104.87	No research	201,712	Measures Incented	11.6
Retail Products	ECT	N/A	N/A	562	0.09	7,286	0.666	374	0.06	4,856	\$894.56	\$68.95	\$334,791.60	Varies	4,250	Purchases	13.0
Retail Products	Income Qualified Carryover	N/A	N/A	7,557	0.98	70,380	0.919	6,941	0.90	64,650	N/A	N/A	N/A	N/A	N/A	N/A	10.0
Retail Products	Market Rate Carryover	N/A	N/A	8,799	1.15	59,593	0.712	6,264	0.82	42,426	N/A	N/A	N/A	N/A	N/A	N/A	9.3
Income Qualified	Single Family	3,106	101%	3,124	0.87	41,023	1.000	3,124	0.87	41,023	\$6,007.99	\$464.95	\$19,991,045.89	N/A	2,294	Customers Served	14.2
Income Qualified	Joint Utility	105	100%	105	0.04	1,127	1.000	105	0.04	1,127				N/A	98	Customers Served	11.6
Kits	Joint Utility Kits	87	113%	98	0.01	846	1.000	98	0.01	846				N/A	340	Kits	9.8
Income Qualified	CAA	1,111	99%	1,101	0.25	16,425	1.000	1,101	0.25	16,425	\$3,319.25	\$222.51	\$3,654,568.15	N/A	322	Customers Served	15.8
Income Qualified	Smart Savers	4,942	97%	4,807	1.23	52,881	0.999	4,804	1.22	52,843	\$485.59	\$44.14	\$2,332,747.14	N/A	9,239	Thermostats	11.0
Income Qualified	MHAS	183	147%	269	0.11	2,987	1.000	269	0.11	2,987	\$3,908.22	\$389.98	\$1,678,616.43	N/A	248	Customers Served	11.5
Kits	Mobile Home Kits	156	103%	161	0.02	1,317	1.000	161	0.02	1,317				N/A	242	Kits	9.1
Income Qualified	Carryover	N/A	N/A	737	0.09	6,826	1.000	737	0.09	6,826	N/A	N/A	N/A	N/A	N/A	N/A	10.0
Multifamily	Income Qualified	8,128	94%	7,643	0.84	100,183	1.000	7,643	0.84	100,183	\$1,046.66	\$79.85	\$7,999,961.74	N/A	2,026	Tenant Units	13.3
Multifamily	Market Rate	2,752	100%	2,750	0.42	32,603	0.878	2,413	0.36	28,613	\$351.03	\$29.61	\$847,182.93	Varies	903	Tenant Units	12.3
Multifamily	Public Housing	1,266	94%	1,194	0.17	13,861	1.000	1,194	0.17	13,861	\$1,335.95	\$115.06	\$1,594,879.30	N/A	1,135	Tenant Units	11.8
Market Rate Single Family	Midstream HVAC	12,280	100%	12,287	1.68	190,421	0.701	8,617	1.18	133,540	\$600.70	\$38.76	\$5,176,149.82	Varies	9,125	Measures Rebated	15.5
Market Rate Single Family	Home Efficiency	83	100%	84	0.04	1,562	0.834	70	0.03	1,303	\$5,686.82	\$304.32	\$396,603.71	No research	116	Customers Served	19.9
Kits	School Kits	4,082	123%	5,027	0.72	44,503	1.000	5,027	0.72	44,503	\$159.57	\$18.03	\$802,199.03	N/A	9,500	Kits	8.9
Kits	High School Innovation	713	111%	793	0.11	8,189	1.000	793	0.11	8,189	\$248.74	\$24.09	\$197,270.93	N/A	2,500	Kits	10.4
Kits	Income Qualified Community Kits	1,330	100%	1,330	0.17	12,056	1.000	1,330	0.17	12,056	\$505.70	\$55.80	\$672,741.17	N/A	2,965	Kits	8.2
Kits	Carryover	N/A	N/A	1,245	0.14	11,406	0.996	1,240	0.14	11,361	N/A	N/A	N/A	N/A	N/A	N/A	9.8
Residential NPSO Adder		N/A	N/A	N/A	N/A	N/A	N/A	1,050	0.17	12,262	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Business Program																	
Standard	Core	29,570	99%	29,351	4.81	384,915	0.825	24,206	3.98	317,439	\$292.86	\$22.83	\$7,992,497.71	Varies	669	Projects	13.2
Standard	Online Store	2,542	99%	2,518	0.56	27,737	0.927	2,333	0.49	25,705				Varies	2,883	Measures Incented	11.0
Standard	BOC	819	92%	752	0.08	6,932	1.000	752	0.08	6,932				N/A	12	Customers Trained	13.0
Custom	Custom Incentives	21,975	89%	19,565	2.41	325,958	0.786	15,382	1.90	256,268	\$539.82	\$32.71	\$9,126,829.02	No research	117	Projects	16.7
Custom	New Construction Lighting	2,100	92%	1,940	0.33	28,990	0.786	1,525	0.26	22,792				No research	22	Projects	14.9

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	\$	%			
Retro-Commissioning	Virtual Commissioning	5,597	94%	5,247	0.00	38,305	0.930	4,880	0.00	35,624	\$264.14	\$36.20	\$1,299,051.28	83%	31	Sites Treated	7.3
Retro-Commissioning	Virtual SEM	44	87%	38	0.00	266	1.000	38	0.00	266				No research	1	Participant	7.0
Streetlighting	MOSL	133	100%	133	0.00	2,658	0.690	92	0.00	1,834	\$1,099.87	\$54.99	\$1,099.87	No research	129	Streetlights	20.0
Streetlighting	UOSL	19,917	100%	19,917	0.00	372,078	1.000	19,917	0.00	372,078	\$87.10	\$4.66	\$87.10	N/A	29,389	Streetlights	20.0
Small Business	SBDI	61,903	100%	61,906	9.73	735,917	0.891	55,159	8.67	655,702	\$324.69	\$27.31	\$324.69	No research	311,991	Measures Installed	12.5
Small Business	SBEP	711	46%	327	0.15	6,439	0.891	291	0.14	5,737	\$1,950.79	\$98.94	\$1,950.79	No research	59	Projects Completed	19.7
Midstream	Lighting	29,202	101%	29,577	6.70	432,799	0.913	27,010	6.12	395,232	\$171.72	\$11.74	\$171.72	No research	774,926	Measures Incented	14.6
Midstream	HVAC	215	99%	213	0.06	2,730	0.884	189	0.05	2,413	\$3,445.54	\$269.17	\$3,445.54	Varies	187	Measures Incented	12.8
Midstream	Food Service	590	101%	594	0.09	7,170	0.800	475	0.07	5,736	\$527.50	\$43.67	\$527.50	No research	233	Measures Incented	12.1
Midstream	Carryover	5,735	100%	5,735	1.36	81,276	0.853	4,890	1.16	69,304	N/A	N/A	N/A	N/A	N/A	N/A	14.3
Voltage Optimization Program																	
Voltage Optimization		71,264	117%	83,416	13.10	1,251,236	1.000	83,416	13.10	1,251,236	\$274.71	\$18.31	\$22,915,227.00	N/A	191	Circuits	15.0
Portfolio Total		434,427	106%	462,610	67.59	5,542,330	0.906	419,052	60.94	5,049,535	\$293.75	\$23.66	\$123,091,264.47				12.7

Savings presented reflect actual savings achieved by the programs and do not reflect Illinois state law-allowed conversions used in determining goal attainment [(b-25) or (b-27) conversions].

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. 2023 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 Savings	Energy Savings (Ex Ante Gross / Verified Gross)	First Year Annual 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	\$	%					
Residential Program																	
Retail Products	Income Qualified	500,708	103%	513,555	6,040,023	1.000	513,555	6,040,023	\$1.47	\$0.12	\$753,477.42	N/A	2,579,232	Measures Incented	11.8		
Retail Products	Market Rate Incentive-Based	982,688	98%	965,353	10,688,031	0.896	865,222	9,579,415	\$1.96	\$0.18	\$1,694,177.97	No research	201,712	Measures Incented	11.1		
Retail Products	ECT	N/A	N/A	48,623	578,399	0.603	29,321	348,791	\$1.56	\$0.13	\$45,653.40	Varies	4,250	Purchases	11.9		
Income Qualified	Single Family	387,406	100%	388,395	7,344,709	1.000	388,395	7,344,709	\$8.53	\$0.45	\$3,313,496.31	N/A	2,294	Customers Served	18.9		
Income Qualified	Joint Utility	N/A	N/A	N/A	N/A	N/A	N/A	N/A				N/A	N/A	N/A	322	Customers Served	N/A
Kits	Joint Utility Kits	0	N/A	7	142	1.000	7	142				N/A	N/A	N/A	98	Customers Served	20.0
Income Qualified	CAA	112,071	101%	112,999	2,225,809	1.000	112,999	2,225,809				\$14.51	\$0.74	\$1,639,572.93	N/A	9,239	Thermostats
Income Qualified	Smart Savers	487,592	96%	468,036	5,148,397	1.000	467,813	5,145,946	\$0.29	\$0.03	\$137,350.96	N/A	248	Customers Served	11.0		
Income Qualified	MHAS	54,178	95%	51,317	965,152	1.000	51,317	965,152	\$7.84	\$0.43	\$420,796.13	N/A	2,026	Tenant Units	18.8		
Kits	Mobile Home Kits	2,021	116%	2,344	23,442	1.000	2,344	23,442				Varies	903	Tenant Units	10.0		
Multifamily	Income Qualified	89,536	100%	89,674	988,920	1.000	89,674	988,920	\$4.93	\$0.45	\$4.93	N/A	1,135	Tenant Units	11.0		
Multifamily	Market Rate	9,304	100%	9,304	101,311	0.922	8,581	93,440	\$3.24	\$0.30	\$3.24	Varies	9,125	Measures Rebated	10.9		
Multifamily	Public Housing	41,101	100%	41,102	458,448	1.000	41,102	458,448	\$3.40	\$0.31	\$3.40	No research	116	Customers Served	11.2		
Market Rate Single Family	Midstream HVAC	323,915	100%	324,132	5,984,028	0.809	262,076	4,838,363	\$2.32	\$0.13	\$2.32	N/A	9,500	Kits	18.5		
Market Rate Single Family	Home Efficiency	18,217	100%	18,221	364,423	0.822	14,983	299,660	\$25.80	\$1.29	\$25.80	N/A	2,500	Kits	20.0		
Kits	School Kits	105,035	127%	133,530	1,673,623	1.000	133,530	1,673,623	\$0.82	\$0.07	\$0.82	N/A	2,965	Kits	12.5		
Kits	High School Innovation	17,452	120%	20,867	326,854	1.000	20,867	326,854	\$1.75	\$0.11	\$1.75	N/A	242	Kits	15.7		
Kits	Income Qualified Community Kits	40,889	98%	40,266	484,932	1.000	40,266	484,932	\$3.46	\$0.29	\$3.46	N/A	340	Kits	12.0		
Residential NPSO Adder		N/A	N/A	N/A	N/A	N/A	51,928	638,384	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Business Program																	
Standard	Core	2,052,279	102%	2,086,763	24,170,597	0.614	1,281,871	14,847,683	\$2.24	\$0.19	\$3,160,494.44	Varies	669	Projects	11.6		
Standard	Online Store	134,311	101%	136,026	1,496,289	0.880	119,703	1,316,734				Varies	2,883	Measures Incented	11.0		
Standard	BOC	12,371	76%	9,367	121,770	1.000	9,367	121,770				N/A	12	Customers Trained	13.0		
Custom	Custom Incentives	488,613	97%	471,737	7,946,665	0.800	377,390	6,357,332	\$4.42	\$0.26	\$1,669,102.53	No research	117	Projects	16.8		
Custom	New Construction Lighting	0	N/A	0	N/A	N.A.	0	N/A				No research	22	Projects	N/A		
Retro-Commissioning	Virtual Commissioning	0	N/A	0	N/A	N.A.	0	N/A	N/A	N/A	N/A	83%	31	Sites Treated	N/A		
Retro-Commissioning	Virtual SEM	0	N/A	0	N/A	N.A.	0	N/A	N/A	N/A	N/A	No research	1	Participant	N/A		
Streetlighting	MOSL	0	N/A	0	N/A	N.A.	0	N/A	N/A	N/A	N/A	No research	129	Streetlights	N/A		
Streetlighting	UOSL	0	N/A	0	N/A	N.A.	0	N/A	N/A	N/A	N/A	N/A	29,389	Streetlights	N/A		
Small Business	SBDI	0	N/A	1	11	0.891	1	10	N/A	N/A	N/A	No research	311,991	Measures Installed	8.0		
Small Business	SBEP	27,486	97%	26,729	533,305	0.891	23,815	475,175	\$20.65	\$1.03	\$491,771.90	No research	59	Projects Completed	20.0		
Midstream	Lighting	0	N/A	0	N/A	N.A.	0	N/A	N/A	N/A	\$0.00	No research	774,926	Measures Incented	N/A		
Midstream	HVAC	13,658	100%	13,658	150,239	0.880	12,019	132,211	\$10.88	\$0.99	\$130,820.28	Varies	187	Measures Incented	11.0		
Midstream	Food Service	36,690	100%	36,696	441,147	0.800	29,357	352,918	\$4.57	\$0.38	\$134,180.69	No research	233	Measures Incented	12.0		

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	\$	%			Years
Voltage Optimization Program															
Voltage Optimization		0	N/A	0		N/A	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Portfolio Total		5,937,521	101%	6,008,704	78,256,668	0.823	4,947,504	65,079,888	\$3.47	\$0.26	\$17,171,631				13.0

Savings presented reflect actual savings achieved by the programs and do not reflect Illinois state law-allowed conversions used in determining goal attainment [(b-25) or (b-27) conversions].

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. 2023 PROGRAM EVALUATION REPORTS

The 2023 Residential Program, Business Program, and Voltage Optimization Program Impact Evaluation Reports, as well as the 2023 AIC Carryover Savings Memo are available under separate cover on the Illinois Stakeholder Advisory Group website (<https://www.ilsag.info>).

APPENDIX C. 2023 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 2023 AIC portfolio through 2049 at the initiative level. Lifetime savings for the 2023 AIC portfolio are 5,839,325 MWh.

Table 18. 2023 AIC Portfolio CPAS and WAML

Initiative	WAML	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)															
				2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Retail Products Initiative	9.4	142,238	0.882	125,511	125,511	125,511	125,511	125,465	125,339	125,339	120,210	39,989	38,557	32,107	18,414	17,400	17,400	17,097	705
Income Qualified Initiative - Single Family Offerings	12.7	9,406	1.000	9,402	9,402	9,402	9,402	9,402	9,402	8,689	8,540	7,859	7,859	7,527	2,492	2,476	2,476	2,476	2,180
Multifamily Initiatives	13.1	11,587	0.971	11,251	11,251	11,191	11,191	11,191	11,191	10,791	10,526	8,898	8,898	7,548	6,185	6,185	6,185	6,185	3,520
Market Rate Single Family Initiative	15.5	12,371	0.702	8,687	8,687	8,687	8,687	8,687	8,687	8,687	8,687	8,687	8,687	8,678	8,460	8,460	8,460	8,460	3,626
Kits Initiatives	9.0	7,410	1.000	7,410	7,410	6,748	6,748	6,748	6,748	6,748	5,955	2,743	2,743	897	897	897	897	897	503
Residential Carryover	9.7	18,338	0.828	15,183	15,183	15,183	15,183	12,107	11,842	11,739	9,568	9,417	9,417	93	93	92	92	73	0
Residential NPSO	12.3	1,387	0.757	1,050	1,050	1,048	1,048	952	940	935	905	890	875	744	418	399	399	392	144
Residential (b-25) Conversions	13.6	21,821	0.991	21,635	21,635	21,635	21,635	21,635	21,635	18,343	18,343	18,124	18,124	18,097	2,598	2,598	2,598	2,598	2,593
Standard Initiative	13.1	32,621	0.837	27,291	27,291	27,270	27,105	26,680	26,512	26,393	26,226	26,173	25,985	24,215	17,616	14,393	13,459	13,256	30
Custom Initiative	16.5	21,505	0.786	16,907	16,907	16,907	16,907	16,907	16,839	16,788	16,788	16,788	16,702	16,546	16,508	15,965	12,977	12,105	4,173
Retro-Commissioning Initiative	7.3	5,285	0.931	4,918	4,918	4,918	4,918	4,918	4,918	4,918	1,464	0	0	0	0	0	0	0	0
Streetlighting Initiative	20.0	20,050	0.998	20,009	20,009	20,009	18,464	18,464	18,464	18,464	18,464	18,464	18,464	18,464	18,464	18,464	18,464	18,464	18,464
Small Business Initiative	12.6	62,233	0.891	55,450	55,450	55,286	53,694	52,501	51,893	50,240	49,234	49,078	48,170	47,032	37,461	20,219	17,413	16,915	281
Midstream Initiative	14.6	30,384	0.911	27,673	27,673	27,673	27,673	27,673	27,664	27,664	27,664	27,664	27,653	27,651	27,017	25,731	25,731	20,535	40
Business Carryover	14.3	5,735	0.853	4,890	4,890	4,890	4,890	4,757	4,749	4,734	4,554	4,554	4,554	4,553	4,553	4,553	4,553	3,630	0
Business (b-25) Conversions	23.7	20,792	0.792	16,476	16,476	16,476	16,476	16,476	16,476	16,129	16,129	16,129	16,129	16,129	16,129	16,129	16,129	15,647	14,901
Voltage Optimization Program	15.0	83,416	1.000	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	83,416	0
2023 Portfolio CPAS		506,578	0.902	457,158	457,158	456,250	452,948	447,978	446,715	440,017	426,673	338,873	336,233	313,697	260,721	237,378	230,650	222,146	51,159
Expiring 2023 Portfolio CPAS				0	0	908	3,302	4,970	1,263	6,698	13,344	87,801	2,639	22,536	52,976	23,342	6,728	8,505	170,987
Expired 2023 Portfolio CPAS				0	0	908	4,210	9,180	10,443	17,141	30,485	118,285	120,925	143,461	196,437	219,779	226,507	235,012	405,999

Table 18 (Continued). 2023 AIC Portfolio CPAS and WAML

Initiative	WAML	Annual Verified Gross Savings (MWh)	NTGR	CPAS – Verified Net Savings (MWh)															
				2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
Retail Products Initiative	9.4	142,238	0.882	512	473	473	375	11	0	0	0	0	0	0	0	0	0	0	0
Income Qualified Initiative - Single Family Offerings	12.7	9,406	1.000	1,436	1,436	1,381	1,136	6	6	6	6	6	0	0	0	0	0	0	0
Multifamily Initiatives	13.1	11,587	0.971	117	117	117	117	0	0	0	0	0	0	0	0	0	0	0	0
Market Rate Single Family Initiative	15.5	12,371	0.702	859	859	61	53	0	0	0	0	0	0	0	0	0	0	0	0
Kits Initiatives	9.0	7,410	1.000	503	503	503	503	0	0	0	0	0	0	0	0	0	0	0	0
Residential Carryover	9.7	18,338	0.828	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential NPSO	12.3	1,387	0.757	32	31	6	4	0	0	0	0	0	0	0	0	0	0	0	0
Residential (b-25) Conversions	13.6	21,821	0.991	2,593	2,593	2,593	2,593	64	64	64	64	64	0	0	0	0	0	0	0
Standard Initiative	13.1	32,621	0.837	30	30	30	30	21	21	21	0	0	0	0	0	0	0	0	0
Custom Initiative	16.5	21,505	0.786	3,906	3,590	3,439	3,211	3,103	3,103	2,774	2,660	2,647	782	782	782	782	782	0	0
Retro-Commissioning Initiative	7.3	5,285	0.931	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Streetlighting Initiative	20.0	20,050	0.998	18,464	18,464	18,464	18,464	0	0	0	0	0	0	0	0	0	0	0	0
Small Business Initiative	12.6	62,233	0.891	281	281	281	281	0	0	0	0	0	0	0	0	0	0	0	0
Midstream Initiative	14.6	30,384	0.911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business Carryover	14.3	5,735	0.853	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Business (b-25) Conversions	23.7	20,792	0.792	14,901	14,901	14,901	14,901	14,824	14,824	14,824	14,824	14,824	0	0	0	0	0	0	0
Voltage Optimization Program	15.0	83,416	1.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023 Portfolio CPAS		506,578	0.902	43,634	43,278	42,250	41,668	18,029	18,018	17,689	17,554	17,541	782	782	782	782	782	0	0
Expiring 2023 Portfolio CPAS				7,525	356	1,028	581	23,639	12	328	135	13	16,759	0	0	0	0	782	0
Expired 2023 Portfolio CPAS				413,524	413,880	414,908	415,490	439,129	439,140	439,469	439,604	439,617	456,376	456,376	456,376	456,376	456,376	457,158	457,158
WAML	13.1																		
WAML without VO	12.7																		

APPENDIX D. 2023 HIGH IMPACT MEASURE LIST

The 2023 high impact measure list summarizes the IL-TRM measures that were most impactful for the AIC portfolio in 2023. Table 19 and Table 20 provide an excerpt showing the top 10 most impactful measures in the 2023 program year. The full high impact measure list is available separately on request.

Table 19. 2023 Electric Portfolio High Impact Measure List Top 10 Summary

IL-TRM Enduse	IL-TRM Section	IL-TRM Measure Name	Verified Gross kWh	% of Total Portfolio Savings
Lighting	4.5.4	LED Bulbs and Fixtures	102,163,186	22%
Cross-Cutting	6.2.1	Voltage Optimization	83,415,727	18%
Lighting	5.5.8	LED Screw Based Omnidirectional Bulbs	68,604,882	15%
Lighting	5.5.6	LED Specialty Lamps	32,585,091	7%
N/A	N/A	Custom Measures	30,331,470	7%
Lighting	5.5.13	EISA Exempt LED Lighting	22,847,042	5%
HVAC	5.3.16	Advanced Thermostats	21,898,346	5%
Lighting	4.5.16	LED Streetlighting	20,049,765	4%
HVAC	5.3.12	Ductless Heat Pumps	9,341,585	2%
HVAC	5.3.1	Centrally Ducted Air Source Heat Pump	8,545,491	2%

Source: Opinion Dynamics analysis of 2023 evaluation data

Note that savings totals reflect savings as assessed for cost-effectiveness analysis and therefore may exhibit variances from savings reported in the body of program evaluation reports per Illinois policy.

Table 20. 2023 Gas Portfolio High Impact Measure List Top 10 Summary

IL-TRM Enduse	IL-TRM Section	IL-TRM Measure Name	Verified Gross kWh	% of Total Portfolio Savings
HVAC	5.3.16	Advanced Thermostats	1,951,621	32%
HVAC	4.4.16	Steam Trap Replacement or Repair	803,424	13%
Hot Water	4.3.12	Tank Insulation	668,442	11%
N/A	N/A	Custom Measures	646,816	11%
HVAC	5.3.7	Gas High Efficiency Furnace	501,698	8%
Hot Water	4.3.6	Ozone Laundry	227,069	4%
Shell	5.6.1	Air Sealing	202,318	3%
HVAC	4.4.10	High Efficiency Boiler	167,481	3%
HVAC	4.4.48	Small Commercial Thermostats	149,684	2%
Hot Water	5.4.5	Low Flow Showerheads	91,389	1%

Source: Opinion Dynamics analysis of 2023 evaluation data

Note that savings totals reflect savings as assessed for cost-effectiveness analysis and therefore may exhibit variances from savings reported in the body of program evaluation reports per Illinois policy.



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