



Building Operator Certification Impact Evaluation Report

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

Prepared for:

Nicor Gas Company

FINAL

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Table of Contents

1. Introduction	1
2. Program Description	1
3. Program Savings Detail	2
4. Program Savings by Measure	2
5. Impact Analysis Findings and Recommendations	2
5.1 Findings and Recommendations	2
Appendix A. Impact Analysis Methodology	A-1
Appendix B. Program-Specific Inputs for the Illinois TRC	B-1

List of Tables, Figures, and Equations

Table 2-1. 2022 Volumetric Findings Detail	1
Table 3-1. 2022 Annual Energy Savings Summary	2
Table 5-1. Verified Gross Gas Savings Parameters	2
Table A-1. Savings Coefficients	A-1
Table A-2. Participant-Level Savings	A-1
Table B-1. Verified Cost-Effectiveness Inputs	B-1

1. Introduction

This report presents the results of the impact evaluation of the Nicor Gas 2022 Building Operator Certification (BOC) program and summarizes the total energy impacts for the program broken out by relevant measure and program structure details. The appendices provide the impact analysis methodology and details of the total resource cost (TRC) analysis inputs. Program Year 2022 covers savings from January 1 to December 31, 2022.

2. Program Description

BOC is a training and certification program for commercial building operators. The curriculum teaches participants how to improve building comfort and efficiency by optimizing a building’s systems. The curriculum has been offered for several years and is implemented throughout the region by the Midwest Energy Efficiency Alliance.

The BOC program offers full tuition reimbursement for ComEd, Ameren Illinois and natural gas customers who complete the curriculum. The sponsoring utilities’ goal is to have participants implement energy-saving practices at their facilities. BOC training has two curricula: BOC Level I and BOC Level II.¹ Both curricula require a time commitment of more than 60 hours for class training and assigned projects spread over several months.

The Nicor Gas BOC program coordinates with ComEd and Ameren Illinois where their service areas overlap. The program had three participants from the Nicor Gas territory in 2022 as Table 2-1 shows.

Table 2-1. 2022 Volumetric Findings Detail

Participation	Total
Level I Participants*	3
Level II Participants*	0
Total Participants	3

* Participants are defined as the number of BOC participants from Nicor Gas territory.

Source: Nicor Gas tracking data and Guidehouse evaluation team analysis

¹ Level I BOC Training is Building Systems Maintenance, and Level II BOC Training is Improving Building Operational Performance. The difference between Level I and Level II trainings includes the eligibility criteria: Level II training eligibility requires more years of operations and maintenance experience, higher levels of education, or the completion of Level I BOC training. Source: <https://www.theboc.info/building-operator-training/boc-eligibility/>.

3. Program Savings Detail

Table 3-1 summarizes the energy savings the BOC program achieved in 2022.

Table 3-1. 2022 Annual Energy Savings Summary

Program Path	Ex Ante Gross Savings (therms)	Verified Gross RR*	Verified Gross Savings (therms)	NTG†	Verified Net Savings (therms)
BOC	4,740	100%	4,740	1.00	4,740

*Realization rate (RR) is the ratio of verified gross savings to ex ante gross savings based on evaluation research findings.

†A deemed value. Available on the Stakeholder Advisory Group website: https://www.ilsag.info/ntg_2022.

Source: Guidehouse evaluation team analysis

4. Program Savings by Measure

The BOC program does not claim savings by measure, so this report does not present measure-level savings. Evaluation-verified savings for the program are calculated and reported at the participant level.

5. Impact Analysis Findings and Recommendations

Table 5-1 shows the unit therm savings and realization rate (RR) findings from Guidehouse’s review. The RR is the ratio of the verified savings to the ex ante savings. Following the table, Section 5.1 provides findings and recommendations. Appendix A provides a description of the impact analysis methodology.

Table 5-1. Verified Gross Gas Savings Parameters

Program Path	Unit Basis	Ex Ante Gross (therms/ft ² (capped))	Verified Gross (therms/ ft ² (capped))	RR	Data Source(s)
BOC	Participant	0.00316	0.00316	100%	Nicor Gas PTD* and IL-TRM, v10.0†, Section 4.8.24

*Program tracking data (PTD) provided by Nicor Gas, extract dated January 31, 2023.

†Illinois Statewide Technical Reference Manual (IL-TRM) version 10.0 from <http://www.ilsag.info/technical-reference-manual.html>.

Source: Guidehouse evaluation team analysis

5.1 Findings and Recommendations

Finding 1. The participant facility data captured from the BOC trainees had adequate data to calculate impacts using the Illinois Statewide Technical Reference Manual (IL-TRM) v10.0 algorithm. The evaluation team researched online sources and confirmed facility details including square footage.

Recommendation 1. To ensure the evaluation team has sufficient information to determine verified savings for each participant, the implementation contractor should continue to require BOC participants to provide the completed BOC Participant Information Template.

Appendix A. Impact Analysis Methodology

The impact evaluation team applied the algorithms from measure 4.8.24 Building Operator Certification (BOC) from the Illinois Statewide Technical Reference Manual (IL-TRM) version 10.0.² Guidehouse used information collected from the participants (building area provided in the Nicor Gas tracking data and coordinated with ComEd to gather information for large participants with several building addresses) and internet research (checking building square footage) to determine the inputs into the IL-TRM algorithm. Savings are capped at 500,000 square feet per participant. Table A-1 shows the savings coefficients from the IL-TRM, which are used in Equation A-1 to verify the estimated annual energy savings. Table A- shows the savings and managed building area for each participant.

Table A-1. Savings Coefficients

Savings Type	Variable Name	Value	Unit
Natural Gas	C_g	0.00316	therms/ft ² /participant

Source: IL-TRM v10.0, Section 4.8.24

Equation A-1. Annual Savings per Participant

$$\text{Natural Gas Savings} = C_g \times \text{Area (Minimum of participant ft}^2 \text{ or 500,000 ft}^2\text{)}$$

Table A-2. Participant-Level Savings

Participant No.	BOC Level	No. of Buildings	Managed Square Footage per Participant	TRM Capped Square Footage per Participant*	Verified Gross Savings (therms)	Verified Net Savings (therms)
1	Level I	28	2,774,273	500,000	1,580	1,580
2	Level I	14	1,206,649	500,000	1,580	1,580
3	Level I	8	614,141	500,000	1,580	1,580
Total		50	4,595,063	1,500,000	4,740	4,740

* Savings are capped at 500,000 square feet per participant, according to the IL-TRM.

Source: Nicor Gas tracking data and Guidehouse evaluation team analysis

² In this report, unless stated otherwise, IL-TRM refers to version 10.0 (v10.0).

Appendix B. Program-Specific Inputs for the Illinois TRC

Table B-1 shows the TRC cost-effectiveness analysis inputs available at the time of producing this impact evaluation report. Additional required cost data (e.g., measure costs, program-level incentive and non-incentive costs) are not included in this table and will be provided to the evaluation team later. Guidehouse will include annual and lifetime water savings and greenhouse gas reductions in the end of year summary report.

Table B-1. Verified Cost-Effectiveness Inputs

Program Path	Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (therms)	Verified Gross Savings (therms)	Verified Net Savings (therms)
BOC	Training	Participant	3	13	4,740	4,740	4,740
Total					4,740	4,740	4,740

Source: Nicor Gas tracking data and Guidehouse evaluation team analysis