



Energy-Saving Kits Impact Evaluation Report

Energy Efficiency Plan: Plan Year 6 (PY6)
(6/1/2016-12/31/2017)

Presented to
Nicor Gas Company

FINAL

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TABLE OF CONTENTS

1. Introduction 1

2. Program Description 1

3. Program Savings Summary 2

4. Program Savings by Measure 2

5. Impact Analysis Findings and Recommendations 3

6. Appendix 1. Impact Analysis Methodology 4

 6.1 Verified Gross Program Savings Analysis Approach 4

 6.2 Verified Net Program Savings Analysis Approach 4

7. Appendix 2. Program-Specific Inputs for the Illinois TRC 4

LIST OF TABLES AND FIGURES

Table 2-1. PY6 Volumetric Summary 1

Table 2-2. PY6 Distributed Measure Quantities 1

Table 3-1. PY6 Annual Energy Savings Summary 2

Table 4-1. PY6 Annual Energy Savings by Measure 2

Table 5-1. Verified Gross Savings Parameters 3

Table 5-2. In-Service Rate Parameters 3

Table 7-1. Total Resource Cost Savings Summary 4

1. INTRODUCTION

This report presents the results of the impact evaluation of the Nicor Gas PY6 Energy-Saving Kits program, a free product offering available under the Nicor Gas energySMART brand. It presents a summary of the energy impacts for the total program and broken out by relevant measure and program structure details. The appendix presents the impact analysis methodology. PY6 covers June 1, 2016 through December 31, 2017.

2. PROGRAM DESCRIPTION

The Energy-Saving Kits (Kits) program mails kits that consist of one or two high efficiency showerheads, two high efficiency bathroom faucet aerators, and a high efficiency dual spray kitchen faucet aerator to customers of Nicor Gas who request the kits on-line or by telephone. Nicor Gas promotes the distribution of the kits through the nicorgasrebates.com website, multicultural newspaper ads, emails, social media placements, and at live events. Both rental and owner-occupied dwellings are eligible for kits. Customers must be active residential customers of Nicor Gas, and only one kit is available for each account number. When customers apply to receive a kit from Nicor Gas, they are asked if they want one or two showerheads included in their kit (for the remainder of the report, kits containing one showerhead will be referred to as “Kit 1”, and kits containing two showerheads will be referred to as “Kit 2”). Both Kit 1 and Kit 2 contain one kitchen faucet aerator and two bath faucet aerators. Participating customers are responsible for installing the products they receive.

The program delivered 12,233 kits in PY6, which consisted of 59,995 measures as shown in the following tables.

Table 2-1. PY6 Volumetric Summary

Participation	Kit 1	Kit 2	Total
Number of Kits Distributed	1,170	11,063	12,233
Number of Measures / Kit	4	5	NA

Source: Nicor Gas tracking data and Navigant team analysis.

Table 2-2 summarizes the distributed measure quantities that are the basis for verified energy savings.

Table 2-2. PY6 Distributed Measure Quantities

Measure	Quantity Unit	Kit 1	Kit 2	Distributed Quantity
Showerheads	Each	1,170	22,126	23,296
Bath Faucet Aerators	Each	2,340	22,126	24,466
Kitchen Faucet Aerators	Each	1,170	11,063	12,233
Total		4,680	55,315	59,995

Source: Nicor Gas tracking data and Navigant team analysis.

3. PROGRAM SAVINGS SUMMARY

Table 3-1 summarizes the energy savings the Kits program achieved by path in PY6.

Table 3-1. PY6 Annual Energy Savings Summary

Program Path	Ex Ante Gross Savings (therms)	Verified Gross RR†	Verified Gross Savings (therms)	NTGR‡	Verified Net Savings (therms)
Kit 1	13,282	99%	13,131	0.84	11,030
Kit 2	204,934	99%	203,629	0.84	171,048
Total	218,216	99%	216,759	0.84	182,078

Source: Nicor Gas tracking data and Navigant team analysis.

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

‡ Net-to-Gross Ratio (NTGR) is the ratio of verified net savings to verified gross savings. The NTGR is a deemed value. Source: Nicor_Gas_GPY6_NTG_Values_2016-02-29_Final.xlsx, which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

4. PROGRAM SAVINGS BY MEASURE

The program includes three measure types as shown in the following table. The showerheads and kitchen faucet aerators contributed the most savings.

Table 4-1. PY6 Annual Energy Savings by Measure

Research Category	Ex Ante Gross Savings (therms)	Verified Gross RR†	Verified Gross Savings (therms)	NTGR‡	Verified Net Savings (therms)
Showerheads	162,360	100%	162,249	0.84	136,290
Bath Faucet Aerators	10,821	104%	11,253	0.84	9,453
Kitchen Faucet Aerators	45,146	96%	43,256	0.84	36,335
Total	218,216	99%	216,759	0.84	182,078

Source: Nicor Gas tracking data and Navigant team analysis.

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

‡ Net-to-Gross Ratio (NTGR) is the ratio of verified net savings to verified gross savings. The NTGR is a deemed value. Source: Nicor_Gas_GPY6_NTG_Values_2016-02-29_Final.xlsx, which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

5. IMPACT ANALYSIS FINDINGS AND RECOMMENDATIONS

Table 5-1 shows the unit therm savings and realization rate findings by measure from our review. The realization rate is the ratio of the verified savings to the ex ante savings. For showerheads, the two values indicate the unit savings for showerheads in Kit 1 and Kit 2, respectively. For faucet aerators, the two values in the ex ante savings indicate a change in unit savings provided in the tracking data. Appendix 1 provides a description of the impact analysis methodology.

Table 5-1. Verified Gross Savings Parameters

Measure	Unit Basis	Ex Ante Gross (therms per unit)	Verified Gross (therms per unit)	Realization Rate	Data Source(s)
Showerhead	Each	6.77 / 6.98*	6.77 / 6.98*	100%	Illinois TRM, v5.0†, Section 5.4.5
Bath Faucet Aerator	Each	0.44 / 0.46‡	0.46	104%	Illinois TRM, v5.0, Section 5.4.4
Kitchen Faucet Aerator	Each	3.71 / 3.54‡	3.54	96%	Illinois TRM, v5.0, Section 5.4.4

Source: Nicor Gas tracking data and Navigant team analysis.

* Multiple values indicate savings from showerheads in Kit 1 and Kit 2. Kit 1 contains one showerhead that saves 6.77 therms, while Kit 2 contains two showerheads that each save 6.98 therms.

† State of Illinois Technical Reference Manual version 5.0 from <http://www.ilsag.info/technical-reference-manual.html>.

‡ Multiple values indicate change in ex ante unit savings in tracking data.

From the beginning of the program, June 2016, through August 2017, the ex ante calculations were using incorrect in-service rates (ISR) for bath and kitchen faucet aerators. However, starting September 1, 2017, the issue was corrected in the tracking data. For September 2017 through December 2017, the realization rates were 100 percent for all measures. Table 5-2 shows the initial, corrected, and verified in-service rates.

Table 5-2. In-Service Rate Parameters

Measure	Initial Ex Ante ISR June 2016 – August 2017	Corrected Ex Ante ISR Sept 2017 – Dec 2017	Verified ISR†
Efficiency Kits – One showerhead kit	0.65	0.65	0.65
Efficiency Kits – Two showerhead kit	0.67	0.67	0.67
Bath Faucet Aerator	0.60	0.63	0.63
Kitchen Faucet Aerator	0.63	0.60	0.60

Source: Nicor Gas tracking data and Navigant team analysis.

† State of Illinois Technical Reference Manual version 5.0 from <http://www.ilsag.info/technical-reference-manual.html>.

Recommendation 1. As this ISR finding has been resolved, Navigant does not have any additional recommendations.

6. APPENDIX 1. IMPACT ANALYSIS METHODOLOGY

6.1 Verified Gross Program Savings Analysis Approach

Navigant determined verified gross savings for each program measure by conducting a tracking system review. Navigant used the Illinois TRM Version 5.0 methodology to calculate verified gross savings.

6.2 Verified Net Program Savings Analysis Approach

Navigant calculated verified net energy savings by multiplying the verified gross savings estimates by a net-to-gross ratio (NTGR). In PY6, the NTGR estimates used to calculate the net verified savings were based on past evaluation research and defined by a consensus process through SAG, as documented in a spreadsheet.¹

7. APPENDIX 2. PROGRAM-SPECIFIC INPUTS FOR THE ILLINOIS TRC

The Total Resource Cost (TRC) variable table only includes cost-effectiveness analysis inputs available at the time of finalizing this PY6 impact evaluation report. Additional required cost data (e.g., measure costs, program level incentive and non-incentive costs) are not included in this table and will be provided to evaluation later. Detail in this table (e.g., EULs) other than final PY6 savings and program data are subject to change and are not final.

Table 7-1. Total Resource Cost Savings Summary

Research Category	Units	Quantity	Effective Useful Life (years)	Ex Ante Gross Savings (therms)	Verified Gross Savings (therms)	Verified Net Savings (therms)
Showerhead	Each	23,296	10	162,360	162,249	136,290
Bath Faucet Aerator	Each	24,466	9	10,821	11,253	9,453
Kitchen Faucet Aerator	Each	12,233	9	45,146	43,256	36,335

¹ Source: Nicor_Gas_GPY6_NTG_Values_2016-02-29_Final.xlsx, which is to be found on the IL SAG web site here: <http://ilsag.info/net-to-gross-framework.html>