



# **ComEd Home Energy Savings EPY6/GPY3 Evaluation Report**

**Final**

**Energy Efficiency/Demand Response Plan:  
Plan Year 6  
(6/1/2013-5/31/2014)**

**Presented to  
Commonwealth Edison Company**

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Prepared by:

**Miroslav Lysyuk  
Navigant**

**Ryan Powanda  
Navigant**

[www.navigant.com](http://www.navigant.com)



**Submitted to:**

Commonwealth Edison Company  
Three Lincoln Centre  
Oakbrook Terrace, IL 60181

**Submitted by:**

Navigant Consulting, Inc.  
30 S. Wacker Drive, Suite 3100  
Chicago, IL 60606

**Contact:**

Randy Gunn, Managing Director  
312.583.5714  
Randy.Gunn@Navigant.com

Jeff Erickson, Director  
608.497.2322  
Jeff.Erickson@Navigant.com

Ryan Powanda, Senior Consultant  
303.728.2480  
Ryan.Powanda@Navigant.com

Miroslav Lysyuk, Senior Consultant  
312.583.5804  
Miroslav.Lysyuk@Navigant.com

The following people contributed to this report: Josh Arnold, Mary Thony.

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## Executive Summary

This report presents a summary of Navigant Consulting, Inc.'s (Navigant's) findings and recommendations from the impact evaluation of the EPY6/GPY3<sup>1</sup> Commonwealth Edison Company (ComEd) Home Energy Savings (HES) program. The HES program is a joint program of Nicor Gas and ComEd. The HES program provides single-family homeowners who are customers of Nicor Gas or ComEd in the Nicor Gas territory a home weatherization service package. The weatherization package includes a comprehensive home energy assessment with combustion safety testing, direct installation of selected energy efficiency and water-saving measures, and incentives for installing a recommended package of weatherization measures. The program underwent several notable changes in EPY6/GPY3. In EPY6/GPY3, the program launched an air sealing and insulation prescriptive track, and some contractors were allowed to conduct assessments in place of the implementation contractor. Energy Impact Illinois's (EI2) financial and outreach contributions to the program also ended and the program allowed some contractors to organize their own program informational parties in place of EI2. Finally, the program transitioned implementation contractors in the final month of the program year from Conservation Services Group (CSG) to CLEAResult.

### E.1 Program Savings

Table E-1 summarizes the electric savings from the ComEd EPY6/GPY3 HES program. The HES program realized verified net energy savings of 973 megawatt-hours (MWh) and verified net demand reduction of 1.40 megawatts (MW). Verified net peak demand was 0.91 MW. To calculate verified net savings for electric measures in each program, Navigant used the Net-to-Gross Ratio (NTGR) research from the joint ComEd and Nicor Gas HES program and approved through a consensus process by the Illinois Stakeholder Advisory Group (IL SAG).<sup>2</sup>

**Table E-1. EPY6 Total Program Electric Savings**

Savings Category	Energy Savings (MWh)	Demand Reduction (MW)	Peak Demand Reduction (MW)
Ex Ante Gross Savings	1,220	0.00	0.00
Verified Gross Savings	1,221	1.75	1.14
NTGR*	0.80	0.80	0.80
Verified Net Savings	973	1.40	0.91

\*A deemed value from ComEd EPY5-EPY6 Proposal Comparisons with SAG.xls, available on the IL SAG website: <http://ilsag.info/net-to-gross-framework.html>.

Source: ComEd tracking data and Navigant analysis

<sup>1</sup> The EPY6/GPY3 program year began June 1, 2013, and ended May 31, 2014.

<sup>2</sup> ComEd PY5-PY6 Proposal Comparisons with SAG.xls, available on the Illinois SAG website: <http://ilsag.info/net-to-gross-framework.html>

## E.2 Program Savings by Measure Category

Table E-2 summarizes the EPY6/GPY3 gross and net savings by measure category.

**Table E-2. EPY6/GPY3 Program Results by Measure Category**

Research Category	CFL	Hot Water	Thermostats	Weatherization	Total
Ex Ante Gross Savings (MWh)	512	9	20	679	1,220
Ex Ante Gross Demand Reduction (MW)	0.00	0.00	0.00	0.00	0.00
Verified Gross Savings (MWh)	512	11	19	679	1,221
Verified Gross Demand Reduction (MW)	0.52	0.04	0.00	1.19	1.75
Verified Gross Peak Demand Reduction (MW)	0.05	0.00	0.00	1.09	1.14
Verified Gross Realization Rate	100%	121%	93%	100%	100%
NTGR	0.79*	0.75*	0.90	0.80*	0.80
Verified Net Savings (MWh)	405	8	17	543	973
Verified Net Demand Reduction (MW)	0.41	0.34	0.00	0.95	1.40
Verified Net Peak Demand Reduction (MW)	0.04	0.00	0.00	0.87	0.91

\* A deemed value from ComEd EPY5-EPY6 Proposal Comparisons with SAG.xls, available on the IL SAG website: <http://ilsag.info/net-to-gross-framework.html>

Source: ComEd tracking data and Navigant analysis

## E.3 Impact Estimate Parameters for Future Use

In the course of the EPY6/GPY3 research, the evaluation team did research on parameters used in impact calculations, including those in the State of Illinois Technical Reference Manual (Illinois TRM). Some of those parameters are eligible for deeming for future program years. Table E-3 shows the evaluation team's parameters recommended for future use. Programmable thermostats were not included in the NTGR consensus process. Navigant researched NTGR values for comparable programs in the Northeast.

**Table E-3. Impact Estimate Parameters for Future Use**

Parameter	Value	Data Source
Programmable Thermostats NTGR – ComEd	0.90	Research findings sources: 2010 Gas Efficiency Annual Report by the Massachusetts Joint Utility <sup>3</sup> and Efficiency Vermont Year 2010 Savings Claim <sup>4</sup>

Source: Navigant analysis

<sup>3</sup> "2010 Gas Energy Efficiency Annual Report," Boston Gas Company, Colonial Gas Company, and Essex Gas Company, each doing business as National Grid, August 2011, page 67.

<sup>4</sup> "Year 2010 Savings Claim," Efficiency Vermont, April 1, 2011, page 162

#### ***E.4 Program Volumetric Detail***

The program had 2,540 electric participants in EPY6/GPY3 and distributed 12,859 compact fluorescent lamps (CFLs) and 483 other direct install measures (non-CFLs) in total, as Table E-4 shows. The HES program had 1,212 electric weatherization participants in EPY6/GPY3. These values are based on participants in the program tracking database with electric savings. Customers or measures with only gas savings are not included.

**Table E-4. EPY6/GPY3 Volumetric Findings Detail**

Participation	ComEd Total Participants or Measures Installed
Participants	2,540
Direct Install Measures (non-CFLs)	483
CFL Installations	12,859
Low-Flow Showerheads	15
Kitchen Faucet Aerators	5
Bathroom Faucet Aerators	18
Hot Water Temperature Setback	2
Pipe Insulation (Linear Feet)	60
Programmable Thermostats	86
Programmable Thermostat Education	337
Weatherization Participants	1,212

*Source: ComEd tracking data and Navigant analysis*

## E.5 Results Summary

Table E-5 summarizes the key metrics from EPY6/GPY3. These savings and installation values include electric participants and measures installed in households with electric heating and/or electric hot water heaters. Gas measures and savings are not included.

**Table E-5. EPY6/GPY3 Results Summary**

Participation	Units	EPY6
Verified Net Savings	MWh	973
Verified Net Demand Reduction	MW	1.40
Verified Net Peak Demand Reduction	MW	0.91
Verified Gross Savings	MWh	1,221
Verified Gross Demand Reduction	MW	1.75
Verified Gross Peak Demand Reduction	MW	1.14
Program MWh Realization Rate	%	100%
Program NTGR*	#	0.80
CFLs installed	#	12,859
Showerheads installed	#	15
Aerators installed	#	23
Hot Water Temperature Setback	#	2
Pipe Insulation (Linear Feet)	#	20
Programmable Thermostats	#	86
Programmable Thermostat Education	#	337
Insulation installed	#	1,206
Air Sealing installed	#	1,207
Participating customers	#	2,540

\* A deemed value from ComEd EPY5-EPY6 Proposal Comparisons with SAG.xls, available on the IL SAG website: <http://ilsag.info/net-to-gross-framework.html>

Source: ComEd tracking data and Navigant analysis



## E.6 Key Findings and Recommendations

The following section includes program findings and recommendations.<sup>5</sup>

### » Verified Gross Savings

- **Finding 1.** Verified gross savings were 1,221 MWh, verified gross demand reduction was 1.75 megawatts (MW), and verified gross peak demand reduction was 1.14 MW.

### » Gross Realization Rate

- **Finding 2.** The verified gross realization rate was 100 percent for MWh. Several of the measure-specific realization rates were not 100 percent. Some were higher than 100 percent and some were lower, with an overall realization rate of 100 percent. These include low-flow showerheads, aerators, pipe insulation, and programmable thermostats.
- **Recommendation 1.** The implementation contractor should add the quantity of existing kitchen and bathroom faucets in the tracking database for each residence installing the kitchen and bathroom faucet aerators measure.
- **Recommendation 2.** The implementation contractor should only claim programmable thermostat or programmable thermostat education savings for a maximum of one unit per household across the two measures, based on measure savings assumptions in the Illinois TRM.
- **Recommendation 3.** The implementation contractor should ensure that parameters used to calculate savings for weatherization measures are included in the tracking database provided to the evaluation team, as available. Upon review of the current tracking data extract, Navigant recommends adding wall/attic areas to the tracking database, as well as complete records of pre/post blower door values for air sealing participants.

### » Verified Net Savings

- **Finding 3.** Verified net savings were 973 MWh, verified net demand reduction was 1.40 MW, and verified net peak demand reduction was 0.91 MW. The NTGR estimates used to calculate the net verified savings were based on past evaluation research and approved through a consensus process by the IL SAG.

### » Program Participation

- **Finding 4.** The EPY6/GPY3 ComEd HES program had 2,540 total electric participants with weatherization jobs completed at 1,212 residences. The EPY5/GPY2 program had 2,438 total ComEd participants with weatherization jobs completed at 823 residences. The EPY6/GPY3 HES program had a 32 percent increase in weatherization jobs completed for ComEd customers.

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<sup>5</sup> Numbered findings and recommendations in this section are the same as those found in the Findings and Recommendations section of the evaluation report, for ease of reference between each section.

## 1 Introduction

### 1.1 Program Description

The Home Energy Savings (HES) program is an assessment and weatherization program jointly implemented by Commonwealth Edison Company (ComEd) with Nicor Gas. The HES program includes a home weatherization service package with a comprehensive home energy assessment and custom report, direct installation of selected energy efficiency measures, and incentives for installing a recommended package of weatherization measures based on the home energy assessment and resulting report. For the HES program, ComEd jointly manages the program with Nicor Gas and receives electric energy savings from compact fluorescent lamps (CFLs) and other eligible measures. In EPY6/GPY3, the program launched an air sealing and insulation prescriptive track, and some contractors were allowed to conduct assessments in place of the implementation contractor. Energy Impact Illinois (EI2) also ended its marketing and rebate contributions to the program and the implementation contractor changed in the final month of EPY6/GPY3.

### 1.2 Evaluation Objectives

In EPY6/GPY3, Navigant Consulting, Inc.'s (Navigant's) evaluation objectives were: (1) verifying program tracking system data, (2) verifying gross savings impacts based on the State of Illinois Technical Reference Manual (IL TRM), and (3) quantifying net savings impacts using net-to-gross (NTG) values from previous evaluation research for the HES program. The evaluation team identified the following key researchable questions for EPY6/GPY3.

#### 1.2.1 Impact Questions

1. What are the program's verified net and gross savings?
2. Are IL TRM algorithms and measure savings applied correctly and accurately reflected in the program(s) tracking system(s)?

#### 1.2.2 Process Questions

Navigant conducted process research in EPY6/GPY3 through interviews with program managers to understand the program's performance and changes in EPY6/GPY3.

## 2 Evaluation Approach

This evaluation of the HES program reflects the sixth year of ComEd program operation. The evaluation team reviewed the program tracking data and performed gross and net impact calculations to inform verified energy and demand reduction for EPY6/GPY3. Navigant evaluated gross savings by (1) reviewing the tracking system, (2) reviewing measure algorithms, if applicable, in addition to their respective values in the tracking system to ensure that they are appropriately applied, and (3) cross-checking totals. Navigant applied the verified gross realization rate on all savings that were claimed. To calculate verified net savings for electric measures in each program, Navigant used the Net-to-Gross Ratio (NTGR) research from the joint ComEd and Nicor Gas HES program and approved through a consensus process by the Illinois Stakeholder Advisory Group (IL SAG).<sup>6</sup>

### 2.1 Overview of Data Collection Activities

The core data collection activities included review of program tracking data and verification of direct install savings against the IL TRM Version 2.0. Table 2-1 and Table 2-2 show the full set of data collection activities.

**Table 2-1. Primary Data Collection Activities**

Method	Subject	Quantity Goal	Quantity Achieved	Dates	Impact/Process
Review program tracking data	Program Tracking Database(s)	All	All	June-August 2014	Impact
Review measures in IL TRM	Illinois Technical Reference Manual Version 2.0	selected	selected	June-September 2014	Impact
Interviews with program staff	Program administration and implementation	4	4	March-April 2014	Impact/Process

Source: Navigant analysis

**Table 2-2. Additional Resources Used in Evaluation**

Reference Source	Author	Application	Impact	Process
Illinois Technical Reference Manual Version 2.0	IL SAG	HES measure impact analysis	X	

Source: Navigant analysis

### 2.2 Verified Savings Parameters

Navigant calculated verified gross direct install savings for the EPY6/GPY3 HES program using algorithms, assumptions, and parameters defined in the IL TRM Version 2.0. Additionally, Navigant sourced heating, ventilating, and air-conditioning (HVAC) and water heating variables from the tracking database provided by the implementation contractor. Navigant used deemed NTGR to calculate verified net savings. Table 2-3 shows the key parameters used in the verified gross and net savings analysis.

<sup>6</sup> IL SAG Net to Gross framework, available at <http://ilsag.info/net-to-gross-framework.html>

**Table 2-3. Verified Savings Parameter Data Sources**

Verified Gross and Net Input Parameter	Value	Data Source	Deemed or Evaluated
NTGR – CFLs	0.79	IL SAG Consensus Process*	Deemed
NTGR – Hot Water Measures	0.75	IL SAG Consensus Process*	Deemed
NTGR – Weatherization Measures	0.80	IL SAG Consensus Process*	Deemed
CFL In-Service Rate	0.97	Illinois TRM, v2.0, Section 5.5.1	Deemed
Showerhead In-Service Rate	0.98	Illinois TRM, v2.0, Section 5.4.5	Deemed
Faucet Aerators In-Service Rate	0.95	Illinois TRM, v2.0, Section 5.4.4	Deemed

\* A deemed value from ComEd EPY5-EPY6 Proposal Comparisons with SAG.xls, which is found on the IL SAG website: <http://ilsag.info/net-to-gross-framework.html>

Source: Navigant analysis

### 2.2.1 Verified Gross Program Savings Analysis Approach

Navigant performed an engineering review for all direct install measures in EPY6/GPY3. ComEd provided the original tracking data for the HES program.

For weatherization projects, in EPY4/GPY1 Navigant performed a thorough literature review to compare evaluated savings values for projects with weatherization offerings similar to the HES program. Based on the findings from the literature review, Navigant determined that the savings values from the implementation contractor’s assessment software compared favorably with evaluated savings for similar programs and climates. Therefore, Navigant did not update the ex ante weatherization savings assumptions from the implementation contractor for EPY6/GYP3. The EPY4/GPY1 HES Report provides further detail on Navigant’s weatherization literature review.<sup>7</sup>

### 2.2.2 Verified Net Program Savings Analysis Approach

Navigant calculated verified net energy and demand reduction by multiplying the verified gross savings estimates by a NTGR. In EPY6/GPY3, the NTGR estimates used to calculate the net verified savings were based on past evaluation research and approved through a consensus process by the IL SAG.

### 2.2.3 Process Evaluation

Navigant conducted process research in EPY6/GPY3 through interviews with program managers to understand the program’s performance and changes in EPY6/GPY3. Based on discussions with ComEd, Navigant did not pursue further process research in EPY6/GPY3 because the HES program underwent a change of implementation contract towards the end of EPY6. The implementation contractor and the program design will be different in EPY7.

<sup>7</sup> Energy Efficiency ComEd Plan Year 4, Nicor Gas Plan Year 1 (6/1/2011-5/31/2012) Evaluation Report: Home Energy Savings Program, May 2013.

### 3 Gross Impact Evaluation

In this section, Navigant presents verified savings for the EPY6/GPY3 HES program. Navigant performed a tracking system review on the original tracking system provided by ComEd and calculated verified gross program savings. The program reported ex ante gross savings of 1,220 megawatt-hours (MWh) and did not estimate demand reduction. Navigant reports verified gross savings of 1,221 MWh, verified gross demand reduction of 1.75 megawatts (MW), and verified gross peak demand reduction of 1.14 MW. The corresponding verified gross realization rate is 100 percent for energy savings.

#### 3.1 Tracking System Review

For the EPY6/GPY3 evaluation, Navigant reviewed the tracking system provided by ComEd to verify the completeness and accuracy of the tracking system data and to identify any issues that would affect the impact evaluation of the HES program. Navigant found the tracking data documents sufficient to complete the gross impact evaluation of the HES program.

Key findings from the tracking system review include:

1. Navigant identified one project with claimed ex ante electric savings that had a gas hot water heater. Navigant re-assigned the electric savings to natural gas for this participant.
2. Navigant found that pipe insulation length and thickness were not included in the EPY6/GPY3 tracking data. These data were available for the evaluation team in prior program years. Navigant inferred the pipe insulation length and thickness from the ex ante savings claimed. Using this method, Navigant identified several project entries with erroneous pipe length entries of over nine feet. Navigant updated ex ante savings to cap the pipe insulation savings to nine feet (six feet on the hot water pipe and three feet on the cold water pipe).
3. Navigant identified seven projects with ex ante savings claimed for multiple programmable thermostats. Navigant capped ex ante deemed savings at one programmable thermostat per household.
4. Navigant identified multiple programmable thermostat education participants that were cross-listed with the programmable thermostat participants. The implementation contractor should only apply savings to either the programmable thermostats or the programmable thermostats education measure for cross-listed participants, based on the application of measure savings in the Illinois TRM. In the case where the tracking system had crossover participants for a new programmable thermostat and for thermostat education, Navigant applied the thermostat savings to the programmable thermostat measure.

#### 3.2 Program Volumetric Findings

In EPY6/GPY3, 2,447 ComEd customers participated in the HES program. The HES program saw 12,859 CFL installations in EPY6/GPY3, and 483 other (non-CFL) direct install measures, including hot water and thermostats measures. In homes with electric heating or cooling, 1,212 customers completed some level of weatherization work. Table 3-1 shows the full volumetric detail for EPY6/GPY3.

**Table 3-1. EPY6/GPY3 Volumetric Findings Detail**

Participation	ComEd Total Participants or Measures Installed
Participants	2,447
Direct Install Measures (non-CFL)	483
CFL Installations	12,859
Low-Flow Showerheads	15
Kitchen Faucet Aerators	5
Bathroom Faucet Aerators	18
Hot Water Temperature Setback	2
Pipe Insulation (Linear Feet)	60
Programmable Thermostats	86
Programmable Thermostat Education	337
Weatherization Participants	1,212

Source: ComEd tracking data and Navigant analysis

### 3.3 Gross Program Impact Parameter Estimates

Navigant calculated verified gross savings from the EPY6/GPY3 HES program using algorithms and parameters defined in the IL TRM Version 2.0. Navigant used the IL TRM for all direct install measures. Navigant conducted research to validate the parameters that the IL TRM did not specify.

**Table 3-2. Verified Gross Savings Parameters**

Measure	Deemed Input Parameter Source
All CFL Types	Illinois TRM v2.0 - Section 5.5.1 and 5.5.2
Shower Head	Illinois TRM v2.0 - Section 5.4.5
Kitchen Aerator	Illinois TRM v2.0 - Section 5.4.4
Bathroom Aerator	
Hot Water Temperature Setback	Illinois TRM v2.0 - Section 5.4.6
Pipe Insulation	Illinois TRM v2.0 - Section 5.4.1
Programmable Thermostat	Illinois TRM v2.0 - Section 5.3.11
Programmable Thermostat Education	Illinois TRM v2.0 - Section 5.3.11

Source: State of Illinois Technical Reference Manual Version 2.0 from <http://www.ilsag.info/technical-reference-manual.html>.

The EPY6/GPY3 ComEd tracking database provided all input parameters necessary to calculate savings using the IL TRM Version 2.0 for all measure installations.

For all direct install water-saving measures, Navigant applied gas savings calculations for all measure installations with gas hot water system and applied electric savings for measure installations with electric hot water systems. Navigant provided these data for each participant in the implementation contractor EPY6/GPY3 tracking database. Additionally, Navigant applied gas savings calculations for all programmable thermostat measures installed in residences with gas space heating, and Navigant applied electric savings for thermostat installations in residences with electric space heating. Navigant used this methodology for both programmable thermostat and programmable thermostat education measures, which include reprogramming existing programmable thermostats.

As an example, the IL TRM deems savings of 86.4 kilowatt-hours (kWh) for electric hot water heater temperature turndown, and 6.4 therms for a gas hot water heater temperature turndown. Navigant applied the deemed electric savings only to households with electric hot water heaters and applied the deemed gas savings only to households with gas hot water heaters. The program used the same methodology in calculating ex ante savings.

For weatherization projects, Navigant performed a thorough literature review in GYP1/EPY4 to compare evaluated savings values for projects with similar weatherization offerings as the HES program. Based on the findings from the literature review, Navigant determined that the savings values from the implementation contractor's energy model compare favorably with evaluated savings for similar programs and climates. Therefore, Navigant did not update the ex ante weatherization savings assumptions from the implementation contractor for EPY6/GPY3. The GYP1/EPY4 HES Report provides further detail on Navigant's weatherization literature review.

### ***3.4 Verified Gross Program Impact Results***

This section details the results of Navigant's verified gross impact analysis for the EPY6/GPY3 HES program. Navigant calculated verified gross savings with algorithms and assumptions based on the IL TRM Version 2.0. Verified gross savings for weatherization measures all use an in-service rate of 1.0 and Navigant assumed a persistence rate of 1.0, as weatherization measure uninstallation is unlikely. The resulting total program verified gross savings are 1,221 MWh, verified gross demand reduction of 1.75 MW, and verified gross peak demand reduction 1.14 MW, as shown in Table 3-3.

**Table 3-3. EPY6/GPY3 Verified Gross Impact Savings Estimates by Measure**

Research Category	Measure	Ex Ante Gross Savings (MWh)	Ex Ante Gross Demand Reduction (MW)*	Verified Gross Savings (MWh)	Verified Gross Demand Reduction (MW)	Verified Gross Peak Demand Reduction	MWh Verified Gross Realization Rate**
Direct Install Measures	9 Watt CFL	53	0.0	53	0.01	0.0	100%
	14 Watt CFL	189	0.0	189	0.02	0.0	100%
	19 Watt CFL	36	0.0	36	0.004	0.0	100%
	23 Watt CFL	50	0.0	50	0.01	0.0	100%
	9 Watt Globe CFL	184	0.0	184	0.01	0.0	100%
	Shower Head	7	0.0	9	0.001	0.0	128%
	Kitchen Aerator	0.5	0.0	0.4	0.0001	0.0	78%
	Bathroom Aerator	0.4	0.0	0.5	0.0004	0.0	107%
	Hot Water Temperature Setback	0.1	0.0	0.1	0.00001	0.0	100%
	Pipe Insulation	1	0.0	1	0.00007	0.0	89%
	Prog. Thermostat	4	0.0	4	0.0	0.0	92%
	Prog. Thermostat Education	16	0.0	15	0.0	0.0	94%
	Subtotal		541	0.0	542	0.56	0.05
Weatherization Measures	Attic Insulation	252	0.0	252	0.44	0.41	100%
	Wall Insulation	1	0.0	1	0.0013	0.0007	100%
	Floor Insulation (Other)	4	0.0	4	0.01	0.003	100%
	Duct Insulation & Sealing	1	0.0	1	0.001	0.0007	100%
	Air Sealing	421	0.0	421	0.74	0.68	100%
Subtotal		679	0.0	679	1.19	1.09	100%
<b>Total</b>		<b>1,220</b>	<b>0.0</b>	<b>1,221</b>	<b>1.75</b>	<b>1.14</b>	<b>100%</b>

\*ComEd did not claim ex ante demand (MW) savings in PY6.

\*\*RR = Realization Rate. This is the ratio of verified gross to ex ante gross savings.

Source: Navigant analysis

CFL measures accounted for the most direct install MWh savings as a percentage of total direct install energy savings, followed by programmable thermostats and low-flow showerheads. The majority of CFL savings came from 14W and 9W globe CFLs. Amongst weatherization measures, attic insulation and air sealing accounted almost all electric savings.



## 4 Net Impact Evaluation

In EPY6/GPY3, verified net savings were 973 MWh, verified net demand reduction was 1.4 MW, and verified net peak demand reduction was 0.91 MW. The NTGR estimates used to calculate the net verified savings were based on past evaluation research and approved through a consensus process by the IL SAG.<sup>8</sup> Table 4-1 shows the deemed NTG values and the EPY6/GPY3 verified net savings.

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<sup>8</sup> A deemed value from ComEd EPY5-EPY6 Proposal Comparisons with SAG.xls, which is found on the IL SAG website: <http://ilsag.info/net-to-gross-framework.html>

**Table 4-1. EPY6/GPY3 Verified Net Impact Savings Estimates by Measure Type**

Research Category	Measure	Verified Gross Savings (MWh)	Verified Gross Demand Reduction (MW)	Verified Gross Peak Demand Reduction (MW)	Deemed NTGR	Verified Net Savings (MWh)	Verified Net Demand Reduction (MW)	Verified Net Peak Demand Reduction (MW)
Direct Install Measures	9 Watt CFL	53	0.01	0.0	0.79*	42	0.005	0.0
	14 Watt CFL	189	0.02	0.0	0.79*	149	0.02	0.0
	19 Watt CFL	36	0.004	0.0	0.79*	28	0.003	0.0
	23 Watt CFL	50	0.01	0.0	0.79*	40	0.004	0.0
	9 Watt Globe CFL	184	0.01	0.0	0.75*	145	0.01	0.0
	Shower Head	9	0.001	0.0	0.75*	7	0.0004	0.0
	Kitchen Aerator	0.4	0.0001	0.0	0.75*	0	0.0001	0.0
	Bathroom Aerator	0.5	0.0004	0.0	0.75*	0	0.003	0.0
	Hot Water Temperature Setback	0.09	0.00001	0.0	0.75*	0	0.00001	0.0
	Pipe Insulation	1	0.00007	0.0	0.75*	0	0.0001	0.0
	Prog. Thermostat	4	0.0	0.0	0.90**	3	0.0	0.0
	Prog. Thermostat Education	15	0.0	0.0	0.90**	14	0.0	0.0
	Subtotal		542	0.56	0.05	0.79	430	0.44
Weatherization Measures	Attic Insulation	252	0.44	0.41	0.80*	202	0.35	0.32
	Wall Insulation	1	0.0013	0.0007	0.80*	1	0.001	0.0005
	Floor Insulation (Other)	4	0.01	0.003	0.80*	3	0.005	0.002
	Duct Insulation & Sealing	1	0.001	0.0007	0.80*	1	0.001	0.0005
	Air Sealing	421	0.74	0.68	0.80*	337	0.59	0.54
Subtotal		679	1.19	1.09	0.80	543	0.95	0.87
<b>Total</b>		<b>1,221</b>	<b>1.75</b>	<b>1.14</b>	<b>0.80</b>	<b>973</b>	<b>1.40</b>	<b>0.91</b>

\*Deemed by SAG for PY6 from ComEd EPY5-EPY6 Proposal Comparisons with SAG.xls

\*\*SAG did not deem NTG values for programmable thermostats for PY6. Research findings sources: 2010 Gas Efficiency Annual Report by the Massachusetts Joint Utility<sup>3</sup> and Efficiency Vermont Year 2010 Savings Claim<sup>4</sup>

Source: Navigant analysis

## 5 Findings and Recommendations

The following section includes program findings and recommendations.

### » Verified Gross Savings

- **Finding 1.** Verified gross savings were 1,221 MWh, verified gross demand reduction was 1.75 megawatts (MW), and verified gross peak demand reduction was 1.14 MW.

### » Gross Realization Rate

- **Finding 2.** Overall verified gross realization rate was 100 percent for MWh. Several of the measure-specific realization rates were not 100 percent. Some were higher than 100 percent and some were lower, with an overall realization rate of 100 percent. These include low-flow showerheads, aerators, pipe insulation, and programmable thermostats.
- **Recommendation 1.** The implementation contractor should add the quantity of existing kitchen and bathroom faucets in the tracking database for each residence installing the kitchen and bathroom faucet aerators measure.
- **Recommendation 2.** The implementation contractor should only claim programmable thermostat or programmable thermostat education savings for a maximum of one unit per household across the two measures, based on measure savings assumptions in the Illinois TRM.
- **Recommendation 3.** The implementation contractor should ensure that parameters used to calculate savings for weatherization measures are included in the tracking database provided to the evaluation team, as available. Upon review of the current tracking data extract, Navigant recommends adding wall/attic areas to the tracking database, as well as complete records of pre/post blower door values for air sealing participants.

### » Verified Net Savings

- **Finding 3.** Verified net savings were 973 MWh, verified net demand reduction was 1.40 MW, and verified net peak demand reduction was 0.91 MW. The NTGR estimates used to calculate the net verified savings were based on past evaluation research and approved through a consensus process by the IL SAG.

### » Program Participation

- **Finding 4.** The EPY6/GPY3 ComEd HES program had 2,540 total electric participants with weatherization jobs completed at 1,212 residences. The EPY5/GPY2 program had 2,438 total ComEd participants with weatherization jobs completed at 823 residences. The EPY6/GPY3 HES program had a 32 percent increase in weatherization jobs completed for ComEd customers.