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| To: | Kimberly Brown, ComEd |
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| CC: | Elizabeth Horne, ICC; Jeff Erickson, Neil Curtis, Lorraine Renta, Guidehouse |
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| From: | Christopher Frye, Ridhi Kalra, Guidehouse; Sharon Mullen, Jenna Bagnall, EcoMetric Consulting |
|  |  |
| Date: | August 28, 2024 |
|  |  |
| Re: | Net-to-Gross Research Results for ComEd Single-Family Upgrades Program, MR Single-Family (HEA) Program Component Participant Free Ridership and Spillover Survey  |

# Executive Summary

This memo presents findings from the net-to-gross (NTG) study of the ComEd Single-Family Upgrades Program Market Rate (MR) Single-Family (HEA) Program Component. The NTG results for this program are based on the NTG algorithms specified in the Illinois Technical Reference Manual (IL-TRM) version 12.0 and rely on free ridership (FR) and spillover (SO) research gathered via an online survey. The survey was administered to non-income-eligible participants in the Single-Family Upgrades Program, MR Single-Family (HEA) Program Component. The participant FR survey covered participants in the program for CY2023 and the first quarter of 2024. The participant SO survey covered customers who participated in CY2022.

Table 1 (Page 2) summarizes the Single-Family Upgrades Program FR and SO research findings based on the participant research. Note that we are presenting a program-level estimate as the response to the survey did not allow for development of measure-level NTG estimates as was used for CY2024. The NTG ratio of 0.70 for all measures2 is weighted based on the proportion of energy savings delivered by each measure offered through the program[[1]](#footnote-2). Guidehouse expects to recommend to the Illinois Stakeholders Advisory Group (SAG) these values be used for this program’s non-income-eligible participants in CY2025.

Table 1. Net-to-Gross Research Results for Single-Family Upgrades Program MR Single-Family (HEA) Program Component

|  |  |  |  |
| --- | --- | --- | --- |
| Program Measure |  Free Ridership |  Spillover | NTG Ratio\* |
| All other measures[[2]](#footnote-3) † | 0.39 | 0.09 | 0.70 |

\* Numbers may not sum due to rounding.

† Measures covered by their own NTG ratio and therefore not part of “All other measures” include bathroom aerator, kitchen aerator, stationary showerhead, and advanced thermostat. Source: Evaluation team analysis

# FreeRidership and Spillover Research Sample Disposition

The participant web survey was fielded by Guidehouse using web survey software. Survey invitations were emailed to Single-Family Program MR Single-Family (HEA) Component participants who were provided program-incentivized measures between January 2022 and March 2024. Participants who received measures between January 2022 and December 2022 were presented with SO questions and those who received measures between January 2023 and March 2024 were presented with FR questions.

To facilitate response, a $10 incentive was provided to respondents who qualified for and completed the survey[[3]](#footnote-4). After the initial survey invitation, four additional reminders were emailed to encourage completion of the web survey. Faced with lower than the anticipated response, the final (fourth) reminder also included a notice that the incentive was increased from $10 to $50. The survey opened on June 28, 2024, and was closed on July 29, 2024.

Tables 2 and 3 (Page 3) present the sample disposition. Note that completes as indicated in these tables also include partial surveys in the event the respondent answered the required questions.

Table 2. Free Ridership Sample Disposition

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | Sample of Unique Participants | Target Completes | Actual Completes | Analyzed Completes[[4]](#footnote-5) | ResponseRate | Respondent Share of Program Savings (kWh) |
| Participant | 60 | 55 | 26 | 18 | 43% | 14% |

Source: Evaluation team analysis.

Table 3. Spillover Sample Disposition

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | Sample of Unique Participants | Target Completes | Actual Completes | Made Additional Efficiency Improvements | Qualified for Spillover | Share of Program Savings (kWh) Represented by Qualified Spillover Savings |
| Participant | 194 | 55 | 53 | 27 | 5 | 2.2% |

Source: Evaluation team analysis

# Free Ridership and Spillover Protocols

The evaluation team applied the participant FR and SO protocols from the TRM v12.0, developed by the Illinois SAG NTG Working Group. The program delivery method changed in October 2023 from a process whereby an energy advisor visited the participant’s residence to install the measures, to one in which the participant was mailed the measures following a self-assessment. Given the nature of the program and the lack of involvement among trade allies, a separate survey targeting the trade ally population was not executed.

## Participant Free Ridership Estimation

Figure 1 (Page 4) describes the Core Free Ridership Algorithm for participant FR as indicated in the IL-TRM under Section 4.5, “Single-Family Home Energy Audit Protocol”, that the evaluation team used to calculate FR for the Single-Family participant surveys. The quantity portion of the algorithm was only applied when the respondent received more than one item within a measure category. If the respondent received a single measure of that type, then the final FR value for that measure and respondent combination was selected as the minimum of the Timing and Efficiency scores.

Figure 1. Single-Family Core Free Ridership Algorithm



Source: IL-TRM v12.0, Volume 4, page 81 of 149, Figure 4-7.

## Participant Spillover Estimation

Guidehouse calculated participant spillover based on TRM v12.0 Section 3.2.1, “Core Non-Residential Participant Spillover Protocol,” summarized in Figure 2. Participants qualified for spillover if they reported installing measures outside of the program, specifically after they had participated in the Single-Family Upgrades Market Rate Program, and if they also confirmed they did not receive an incentive from ComEd for the measure. To further verify the existence of spillover, participants who installed the additional equipment that qualified as spillover, where then asked the attribution questions 1 and 2 as outlined in Figure 2 regarding the influence of the program on their decision to purchase and install the additional equipment.

For those respondents that met the condition of SO present were then asked follow-up questions about the measures they installed. This information was used to perform savings calculations using v12 of the IL TRM for each “spillover” measure as applicable. Guidehouse then calculated the final spillover ratio as the proportion of spillover savings attributed to qualified measures over the total amount of program savings achieved by SO survey participants.

Figure 2. Single-Family Core Spillover Algorithm[[5]](#footnote-6)



Source: Evaluation team representation of IL-TRM, v12.0, Volume 4, Section 3.2.1.

## Final NTG Results and Recommendations

The final NTG value is calculated as 1- free ridership + spillover, using savings-weighted values from participants using the following formula:

$$NTG=1-\left[\left(Participant Measure Level FR\*Program Level Measure Savings\right)\right]+Participant Spillover$$

The final, combined components of the NTG are shown in Table 4. As bathroom faucet aerators, kitchen faucet aerators and stationary showerheads are provided an FR of 0 per the TRM[[6]](#footnote-7), these were removed from the program-level analysis of all other measures in the final NTG calculation. Advanced thermostats were also removed as the NTG for these measures are based on default values. Given the change from measure-specific to a program-level NTG value with this recommendation, it is difficult to compare past NTG values with the current recommendation. One thing to keep in mind is that the program delivery method changed in October 2023 from a process whereby an energy advisor visited the participant’s residence to install the measures, to one in which the participant was mailed the measures following a self-assessment.

Table 4. Summary of Free Ridership, Spillover, and NTG Research Results for the Single-Family Upgrades Program MR Single-Family (HEA) Program Component

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Program Measure | Participant Free Ridership | Participant Spillover | NTG Ratio\* | Relative Precision |
| All other measures† | 0.39 | 0.09 | 0.70 | 13% |

\* Numbers may not sum due to rounding.

† Measures covered by their own NTG ratio and therefore not include in this category include bathroom faucet aerators, kitchen faucet aerators, stationary showerheads and advanced thermostats.
Source: Evaluation team analysis

##### Single-Family Upgrades NTG History

|  | **Single-Family Upgrades** |
| --- | --- |
|  | (FKA: Single Family Assessments, Home Energy Assessments (HEA), Single Family Retrofit) |
| EPY1 | **NTG** 0.80**Free-Ridership** 0.20**Spillover** NA**Method**: ComEd Program Assumption. The EPY1 evaluation did not estimate the net to gross ratio. The value of 80% is drawn from the program plan presented in ComEd’s 2008-2010 Energy Efficiency and Demand Response Plan (November 15, 2007). Page D-2 of the ComEd plan provides a footnote stating the net to gross ratio of 80% is drawn from the California Energy Efficiency Policy Manual, version 2 (2003). |
| EPY2 | **NTG** 0.87**Free-Ridership** 26%**Spillover** 3.5%**Method**: Customer self-reports. 130 surveys completed from a population of 760.

|  |  |  |  |
| --- | --- | --- | --- |
| Measure | NTG Ratio | FR | SO |
|  CFL |  0.72  | 34% | 6.4% |
|  Kitchen Aerators |  0.97  | 3% | 0.0% |
|  Bathroom Aerators |  0.97  | 3% | 0.0% |
|  Showerheads |  0.93  | 8% | 0.5% |
|  Pipe Insulation |  1.02  | 7% | 9.0% |
| **Total Direct Install** |  0.87  | 26% | 3.5% |

 |
| EPY3 | **NTG** 0.74**Free-Ridership** 27%**Spillover** 4%**Method**: Customer self-reports. 122 full participant (direct install and weatherization measures) and direct install-only participant surveys completed from a population of 413 full participants and 962 direct install-only participants.

|  |  |  |  |
| --- | --- | --- | --- |
| Measure  | NTG | FR | SO |
| Compact Fluorescent Bulbs | 0.68 | 34% | 3% |
| Air Sealing  | 0.99 | 8% | 7% |
| Attic Insulation  | 0.98 | 9% |
| Floored Attic Insulation  | 0.98 | 9% |
| Exterior Wall Insulation  | 0.96 | 11% |
| Sloped Insulation  | 0.96 | 11% |
| Knee Wall Insulation  | 0.96 | 11% |
| Crawl Space Insulation  | 0.96 | 11% |
| Duct Insulation  | 0.99 | 8% |
| Rim Joist Insulation  | 0.96 | 11% |
| Seal and Repair Ducts  | 0.93 | - |
| **Overall** | 0.74 | 27% | 4% |

 |
| EPY4 | **Retroactive application of NTG\*** 0.83 (Preliminary)**Overall Free-Ridership\*** 18% (Preliminary)**Overall Spillover\*** 1% (Preliminary)*\*A final draft of the report has not been submitted yet, thus these values may change.***Method**: Customer self-reports. 54 full-participant (direct Install and weatherization measures) surveys completed from a population of 1,081 audits and 320 full-participants.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Measure | NTG\* | Free Ridership\* | Spillover\* |
| Direct- Install Measures | 9 Watt CFL | 0.79 | 0.25 | 0.04 |
| 14 Watt CFL | 0.79 | 0.25 | 0.04 |
| 19 Watt CFL | 0.79 | 0.25 | 0.04 |
| 23 Watt CFL | 0.79 | 0.25 | 0.04 |
| 9 Watt Globe CFL | 0.79 | 0.25 | 0.04 |
| Low Flow Shower Head | 0.93 | 0.07 | 0.00 |
| Kitchen Aerator | 1.00 | 0.01 | 0.01 |
| Bathroom Aerator | 1.00 | 0.01 | 0.01 |
| Hot Water Temperature Setback | 0.88 | 0.12 | 0.00 |
| Pipe Insulation | 0.89 | 0.18 | 0.07 |
| Programmable Thermostat | 0.85 | - | - |
| Programmable Thermostat Education | 0.85 | - | - |
| Retrofit Measures | Attic Insulation | 0.75 | 0.27 | 0.02 |
| Wall Insulation | 0.78 | 0.22 | 0.00 |
| Floor Insulation (Other) | 0.76 | 0.24 | 0.00 |
| Duct Insulation & Sealing | 0.80 | - | - |
| Air Sealing | 0.84 | 0.16 | 0.00 |
| **Overall Program** |  | 0.83 | 0.18 | 0.01 |

*\*A final draft of the report has not been submitted yet, thus these values may change.* |
| EPY5EPY6 | Sag Consensus:

|  |  |  |
| --- | --- | --- |
|  | EPY5 | EPY6 |
| Lighting | 0.89 | 0.79 |
| Single Family with Gas \_ Showerhead | 0.94 | 0.75 |
| Single Family with Gas\_ Kitchen Aerator | 0.94 |   |
| Single Family with Gas \_ Bath Aerator | 0.94 |   |
| Single Family with Gas \_ Water Heater Temp Setback | 0.94 |   |
| Single Family with Gas \_ Pipe Insulation | 0.94 |   |
| Weatherization Measures  | 0.80 | 0.80 |
| Attic Insulation | 0.80 |   |
| Wall Insulation | 0.80 |   |
| Floor Insulation (other) | 0.80 |   |
| Duct Sealing  | 0.80 |   |
| Air Sealing | 0.80 |   |

 |
| EPY7 | **Direct Install NTG: 0.80****Weatherization NTG: 1.02****Source:** Participant surveys in EPY4 and EPY5, Trade ally surveys in EPY5. For Weatherization free ridership, trade ally value was weighted 75% and participants 25%.**Supporting Information**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Free Ridership | Participant Spillover | NTG |
| Direct Install | 0.23 | 0.03 | 0.80 |
| Weatherization | 0.10 | 0.11 | 1.02 |
| Program Wide | 0.20 | 0.05 | 0.85 |

 |
| EPY8 | Recommendation (based upon PY7 NTG recommended values):NTG CFL: 0.79 – *(used in PY6 Report based upon PY4 research)*NTG Hot Water Measures with gas: 0.75 – *(used in PY6 Report based upon PY4 research)*NTG Direct Install Measures: 0.80 – *(from PY7 Recommendation based upon PY5 research)*NTG Weatherization Measures: 1.02 – *(from PY7 Recommendation based upon PY5 research)*NTG Thermostat: 0.90 – *(secondary 2010 MA and VT research)*FR CFL: NAFR Hot Water: NAFR Direct Install: 0.23 FR Weatherization: 0.10 FR Thermostat: NA MA/VT secondary researchSO CFL: naSO Hot Water: NASO Direct Install: 0.03 SO Weatherization: 0.11SO Thermostat: NA MA/VT secondary researchEPY6 research on thermostat NTG was based on secondary research. There was no EPY6 research for other measures, thus the evaluation team recommends using the EPY7 values – see detail above for EPY7.  |
| EPY9 | NTG CFL: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Hot Water Measures with gas: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Direct Install Measures: 0.80 – *(from PY7 Recommendation based upon PY5 research)*NTG Weatherization Measures: 1.01 – *(from PY7 Recommendation based upon PY5 research)*NTG Thermostat: 0.90 – *(secondary 2010 MA and VT research)*FR CFL: NAFR Hot Water: NAFR Direct Install: 0.23 FR Weatherization: 0.10 FR Thermostat: NA SO CFL: NASO Hot Water: NASO Direct Install: 0.03 SO Weatherization: 0.11SO Thermostat: NA NTG Source:PY6 SAG consensus value (no new research) |
| CY2018 | NTG Lighting: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Showerheads: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Faucet Aerators: 1.03 – (*TRM version 6.0 specifies that the free ridership for faucet aerators be set at zero when estimating gross savings using the TRM specified baseline average water flow rate.)* NTG Other Direct Install Measures: 0.80 – *(from PY7 Recommendation based upon PY5 research)*NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Power Strips: 0.95 – *(based on MF Elevate and PY6 Desktop Power Management)*NTG Advanced Thermostat: NA. The savings value in the IL TRM is based on regression analysis on consumption data and thus is a net savings number.FR Lighting: NAFR Showerheads: 0.23FR Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 FR Thermostat: 0.23 FR Advanced Power Strips: NASO Lighting: NASO Showerheads: 0.03SO Kitchen and Bathroom Faucet Aerator: 0.03SO Other Direct Install: 0.03 SO Thermostat: 0.03 SO Advanced Power Strips: NANTG Source:For faucet aerators: TRM version 6.0 specifies that the free ridership for faucet aerators be set at zero when estimating gross savings using the TRM specified baseline average water flow rate.For other measures: PY6 SAG consensus value (no new research) |
| CY2019 | NTG Pipe Insulation: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Showerhead and Kitchen and Bathroom Faucet Aerator: 1.04NTG Other Direct Install Measures: 0.81 – *(from PY7 Recommendation based upon PY5 research)*NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Power Strips: 0.85 – *(based on PY9 participant survey for FR and PY8 participant survey for SO)*NTG Advanced Thermostat: NA. The savings value in the IL TRM is based on regression analysis on consumption data and thus is a net savings number.NTG LEDs – Copay: 0.92NTG LEDs – Free: 0.84FR Showerhead and Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 FR Thermostat: NA FR Advanced Power Strips: 0.19FR LEDs – Copay: 0.12FR LEDs – Free: 0.20SO Showerhead and Kitchen and Bathroom Faucet Aerator: 0.04SO Other Direct Install: 0.04 SO Thermostat: NA SO Advanced Power Strips: 0.04SO LEDs – Copay: 0.04SO LEDs – Free: 0.04NTG Source:Showerhead and Kitchen and Bathroom Faucet Aerator FR: TRM version 7.0 specifies that the free ridership for faucet aerators and showerheads be set at zero when estimating gross savings using the TRM specified baseline average water flow rate. LED and APS FR: PY9 participant surveyThermostat: 2010 MA VT Evaluation ResearchOther Direct Install FR: PY6 SAG consensus value (no new research)SO: PY8 participant survey |
| CY2020 | NTG Pipe Insulation: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Showerhead and Kitchen and Bathroom Faucet Aerator: 1.04NTG Other Direct Install Measures: 0.81 – *(from PY7 Recommendation based upon PY5 research)*NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Power Strips: 0.85 – *(based on PY9 participant survey for FR and PY8 participant survey for SO)*NTG Advanced Thermostat: NA. The savings value in the IL TRM is based on regression analysis on consumption data and thus is a net savings number.NTG LEDs – Copay: 0.92NTG LEDs – Free: 0.84FR Showerhead and Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 FR Thermostat: NA FR Advanced Power Strips: 0.19FR LEDs – Copay: 0.12FR LEDs – Free: 0.20SO Showerhead and Kitchen and Bathroom Faucet Aerator: 0.04SO Other Direct Install: 0.04 SO Thermostat: NA SO Advanced Power Strips: 0.04SO LEDs – Copay: 0.04SO LEDs – Free: 0.04NTG Source:Showerhead and Kitchen and Bathroom Faucet Aerator FR: TRM version 7.0 specifies that the free ridership for faucet aerators and showerheads be set at zero when estimating gross savings using the TRM specified baseline average water flow rate. LED and APS FR: PY9 participant surveyThermostat: 2010 MA VT Evaluation ResearchOther Direct Install FR: PY6 SAG consensus value (no new research)SO: PY8 participant survey |
| CY2021 | **All but advanced Thermostat Unchanged from CY2020**NTG Pipe Insulation: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Showerhead and Kitchen and Bathroom Faucet Aerator: 1.04NTG Other Direct Install Measures: 0.81 – *(from PY7 Recommendation based upon PY5 research)*NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Power Strips: 0.85 – *(based on PY9 participant survey for FR and PY8 participant survey for SO)*NTG Advanced Thermostat - cooling: 0.80NTG Advanced Thermostat - heating: 0.90NTG LEDs – Copay: 0.92NTG LEDs – Free: 0.84FR Showerhead and Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 NTG Thermostat - Cooling: Policy Manual defaultNTG Thermostat – Heating: SAG decision. TRM savings are between net and gross therefore NTG should be between the default value (0.8) and 1.0.FR Advanced Power Strips: 0.19FR LEDs – Copay: 0.12FR LEDs – Free: 0.20SO Showerhead and Kitchen and Bathroom Faucet Aerator: 0.04SO Other Direct Install: 0.04 SO Thermostat: See FR.SO Advanced Power Strips: 0.04SO LEDs – Copay: 0.04SO LEDs – Free: 0.04NTG Source:Showerhead and Kitchen and Bathroom Faucet Aerator FR: TRM version 7.0 specifies that the free ridership for faucet aerators and showerheads be set at zero when estimating gross savings using the TRM specified baseline average water flow rate. LED and APS FR: PY9 participant surveyOther Direct Install FR: PY6 SAG consensus value (no new research)SO: PY8 participant survey |
| CY2022 | **Updates for 2022:** **NTG Advanced Power Strips (Tier 1): 0.84****FR 0.19****SO 0.03****NTG Bathroom Faucet Aerator: 1.03****FR 0.00****SO 0.03****NTG Kitchen Faucet Aerator: 1.03****FR 0.00****SO 0.03****NTG LED: 0.77****FR 0.26****SO 0.03****NTG Showerhead: 1.03****FR 0.00****SO 0.03****Values carried over from 2021:**NTG Pipe Insulation: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Other Direct Install Measures: 0.81NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Thermostat - cooling: 0.80NTG Advanced Thermostat - heating: 0.90FR Showerhead and Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 NTG Thermostat - Cooling: Policy Manual defaultNTG Thermostat – Heating: SAG decision. TRM savings are between net and gross therefore NTG should be between the default value (0.8) and 1.0.SO Other Direct Install: 0.04SO Thermostat: See FR.SO Advanced Power Strips: 0.03**NTG Source:**Advanced Power Strip: FR PY9 participating customer survey; SO, CY2020 participating customer surveyBathroom and Kitchen aerator and Showerhead: FR, TRM v 7; SO, CY2020 participating customer surveyLED: FR and SO, CY2020 participating customer surveyAdvanced thermostat: Cooling: Policy Manual default; Heating: SAG Consensus. TRM savings are between net and gross therefore NTG should be between the default valueHot water pipe insulation, and all other measures: SAG ConsensusOther Direct Install: FR, SAG consensus; SO, PY8 participating customer surveyProgrammable thermostat and education: 2010 MA VT Evaluation researchKitchen faucet aerator: FR, TRM v 7 PY9; SO, PY9 and CY2018 customer survey  |
| CY2023 | **NTG Advanced Power Strips (Tier 1): 0.84****FR 0.19****SO 0.03****NTG Bathroom Faucet Aerator: 1.03****FR 0.00****SO 0.03****NTG Kitchen Faucet Aerator: 1.03****FR 0.00****SO 0.03****NTG LED: 0.77****FR 0.26****SO 0.03****NTG Showerhead: 1.03****FR 0.00****SO 0.03****Values carried over from 2021:**NTG Pipe Insulation: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Other Direct Install Measures: 0.81NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Thermostat - cooling: 0.80NTG Advanced Thermostat - heating: 0.90FR Showerhead and Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 NTG Thermostat - Cooling: Policy Manual defaultNTG Thermostat – Heating: SAG decision. TRM savings are between net and gross therefore NTG should be between the default value (0.8) and 1.0.SO Other Direct Install: 0.04SO Thermostat: See FR.SO Advanced Power Strips: 0.03**NTG Source:**Advanced Power Strip: FR PY9 participating customer survey; SO, CY2020 participating customer surveyBathroom and Kitchen aerator and Showerhead: FR, TRM v 7; SO, CY2020 participating customer surveyLED: FR and SO, CY2020 participating customer surveyAdvanced thermostat: Cooling: Policy Manual default; Heating: SAG Consensus. TRM savings are between net and gross therefore NTG should be between the default valueHot water pipe insulation, and all other measures: SAG ConsensusOther Direct Install: FR, SAG consensus; SO, PY8 participating customer surveyProgrammable thermostat and education: 2010 MA VT Evaluation researchKitchen faucet aerator: FR, TRM v 7 PY9; SO, PY9 and CY2018 customer survey  |
| CY2024 | **NTG Advanced Power Strips (Tier 1): 0.84****FR 0.19****SO 0.03****NTG Bathroom Faucet Aerator: 1.03****FR 0.00****SO 0.03****NTG Kitchen Faucet Aerator: 1.03****FR 0.00****SO 0.03****NTG LED: 0.77****FR 0.26****SO 0.03****NTG Showerhead: 1.03****FR 0.00****SO 0.03****Values carried over from 2021:**NTG Pipe Insulation: 0.80 – *(used in PY6 Report based upon PY4 research)*NTG Other Direct Install Measures: 0.81NTG Programmable Thermostat and Programmable Thermostat Education: 0.90 – *(secondary 2010 MA and VT research)*NTG Advanced Thermostat - cooling: 0.80NTG Advanced Thermostat - heating: 0.90FR Showerhead and Kitchen and Bathroom Faucet Aerator: 0.00FR Other Direct Install: 0.23 NTG Thermostat - Cooling: Policy Manual defaultNTG Thermostat – Heating: SAG decision. TRM savings are between net and gross therefore NTG should be between the default value (0.8) and 1.0.SO Other Direct Install: 0.04SO Thermostat: See FR.SO Advanced Power Strips: 0.03**NTG Source:**Advanced Power Strip: FR PY9 participating customer survey; SO, CY2020 participating customer surveyBathroom and Kitchen aerator and Showerhead: FR, TRM v 7; SO, CY2020 participating customer surveyLED: FR and SO, CY2020 participating customer surveyAdvanced thermostat: Cooling: Policy Manual default; Heating: SAG Consensus. TRM savings are between net and gross therefore NTG should be between the default valueHot water pipe insulation, and all other measures: SAG ConsensusOther Direct Install: FR, SAG consensus; SO, PY8 participating customer surveyProgrammable thermostat and education: 2010 MA VT Evaluation researchKitchen faucet aerator: FR, TRM v 7 PY9; SO, PY9 and CY2018 customer survey  |

Source: <https://www.ilsag.info/wp-content/uploads/ComEd-NTG-CY2023-Recommendations-Final-2022-09-30.xlsx>

1. Source: ComEd Single Family Upgrades CY2023 Impact Data 2024-04-23 Final. [↑](#footnote-ref-2)
2. Does not include measures for which the TRM currently indicates a deemed free ridership score of 0. This includes bathroom aerator, kitchen aerator, and stationary showerhead. This also does not include advanced thermostat which is based on default NTG values for cooling (0.80) and heating (0.90). [↑](#footnote-ref-3)
3. Incentive provided as an e-gift card through Tango, an incentive provision platform. Qualification for the survey included answering the initial screener in the affirmative (establishing that they participated in the program in Month and Year based on program tracking data). [↑](#footnote-ref-4)
4. Eight respondents not included in the analyzed completes include those who indicated they received none of the measures (1), those who had since removed the measures and were not asked free ridership questions (4), and three partials that did not answer the required free ridership questions. The verification question was not asked for respondents who received a smart socket, therefore the evaluation team assumed that all respondents who received that measure category and answered the corresponding freeridership questions had installed the measure. [↑](#footnote-ref-5)
5. Note: Energy Efficiency Service Providers (EESP) were not surveyed as these entities play little to no role in the delivery of this program component. [↑](#footnote-ref-6)
6. As indicated in IL-TRM, v12, Volume 3, Sections 5.4.4 (Low Flow Faucet Aerators) and 5.4.5 (Low Flow Showerheads). [↑](#footnote-ref-7)