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| Ameren Illinois Company  Net-to-Gross Ratios from PY1 to PY7 |

Prepared for:

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Prepared by:

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# Introduction

This document provides the Ameren Illinois Company (AIC) Net-to-Gross Ratios (NTGRs) used within past program year (PY) evaluations (i.e., PY1 to PY5), as well as recommended NTGRs for PY7 and in some cases beyond. This data is presented to facilitate discussion during the planned Stakeholder Advisory Group (SAG) meeting on February 11, 2014.

The Opinion Dynamics evaluation team (The Cadmus Group, Navigant, and Michael’s Energy) put together this data at the request of Illinois Commerce Commission staff. The format of the tables presented in subsequent sections of this document was agreed upon by the evaluation teams for AIC, ComEd, Integrys, and Nicor during 2013, and includes the specific information requested.

For context specific to AIC, we note that the Illinois Commerce Commission (ICC) Order for Docket 13-0498 dated January 28, 2014, states that the NTG Framework adopted from Plan 2 should be implemented during Plan 3 with a small change. As previously described, the framework has five points. However, note that the fifth point below reflects recent changes based on the ICC Order:

* 1. Where a program design and delivery methods are relatively stable over time, and an Illinois evaluation of that program has an estimated NTG ratio, that ratio can be used prospectively until a new evaluation estimates a new NTG ratio.
  2. In cases that fall under point 1, once a new evaluation results exists, these would be used going forward, to be applied in subsequent program years following their determination until the next evaluation, and so on.
  3. For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes - either in the program design or delivery, or changes the market itself - NTG ratios established through evaluations would be used retroactively, but could also then be use prospectively if the program does not undergo continued significant changes, similar to the first paragraph above.
  4. For programs falling under point 3, deeming a NTG ratio prospectively may be appropriate if: the program design and market are understood well enough to estimate with reasonable accuracy and initial NTG (e.g., based on evaluated programs elsewhere); or it is determined that the savings and benefits of the program are not sufficient to devote the evaluation resources necessary to better estimate a NTG ratio.
  5. In order to provide additional certainty, which all parties advocate, prior to March 1 of each year, the independent evaluator will present its proposed NTG values for each program to the SAG. The purpose of this meeting will be for the independent evaluator to present their rationale for each value and provide the SAG, in their advisory role, with an opportunity to question, challenge and suggest modifications to the independent evaluator’s values. The independent evaluator will then review this feedback and make the final determination of values to be used for the upcoming year.

Next, we provide a summary of recommended PY7 NTGRs.

# Residential Lighting

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| Program | Residential Lighting Program |
| NTG PY1 | **NTGR:** N/A |
| NTG PY2 | **NTGR:** 1.0(includes free ridership and spillover although not measured separately)  **Source**: Applied retrospectively.  **Method:** Customer self-report of CFL purchase rates of AIC customers and customers in non-program areas. |
| NTG PY3 | **NTGR:** 0.83 (includes free ridership and spillover although not measured separately)  **Source**: Applied retrospectively.  **Method:** Average NTG results from two methods: 1) supplier self-report surveys from 16 suppliers representing 97% of CFL sales and 2) a multistate model based on 92 site visits of random Ameren Illinois customers using CFLs compared to site visits in areas without programs or programs with different levels of maturity. |
| NTG PY4 | **NTGR:** 0.83  **Source**: PY3 |
| NTG PY5 | **NTGR:** 0.83  **Source**: PY3  **PY5 Research Findings for application in PY6:**  **NTGR: 0.47**  **Free ridership** 0.53  **Spillover** 0.00  **Source**: PY5 Report, Table 29  **Method**: Free-ridership estimated from in-store lighting customer interviews conducted in January 2013, and spillover estimated from 2012 in-home lighting study. |
| PY6 EM&V Recommendation | **NTGR: 0.47**  **Free ridership** 0.53  **Spillover** 0.00  **Source**: PY5  **Justification:**   * Program change: No material change. * Market change: Market change is not rapid enough to justify yearly retrospective NTG. * New Program: No * Previous EM&V NTG exists: Yes |
| PY7 EM&V Recommendation | **NTGR: 0.47**  **Free ridership** 0.53  **Spillover** 0.00  **Source**: PY5  **Method**: See PY5 entry above.  **Justification**:   * Program change: No material change. * Market change: Market change is not rapid enough to justify yearly retrospective NTG. * New Program: No * Previous EM&V NTG exists: Yes; we recommend using this value as it is the most recent value available for the program based on primary data. |

# Residential Multifamily

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| Program | Multifamily Program |
| NTG PY1 | **NTGR** 0.76  **Free ridership** Not measured  **Spillover** Not measured  **Source**: Applied retrospectively  **Method**: Default value |
| NTG PY2 | **NTGR:** In-Unit 1.0, Common Areas: 0.8  **Free ridership** In unit 0.0; Common Area 0.20  **Spillover** Not measured  **Source**: Applied retrospectively  **Method**: Deemed for in-unit measures since they are giveaways. For common areas, surveyed 10 participants from a population of 12 common area projects. |
| NTG PY3 | **NTGR:** In-Unit 1.0, Common Areas: 0.8  **Free ridership** In unit 0.0; Common Area 0.20  **Spillover** Not measured  **Source**: PY2 |
| NTG PY4 | **NTGR:** In-Unit 1.0, Common Areas 0.8, Major Measures 0.93  **Free ridership** In unit 0.0; Common Area 0.20, Major Measures 0.07  **Spillover** Not measured  **Source**: In-unit measures from PY2 and Major Measures from PY3 HEP.  **Method**: Deemed for in-unit measures since they are giveaways. Used PY2 value for Common Area. Major Measures Component values are based on secondary research performed for the HEP program in PY3 of free ridership in other jurisdictions.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Measure** | **Responses (n)** | **FR** | **SO** | **NTGR** | | In-Unit Component | NA | 0.00 | 0.00 | 1.00 | | Common Area Lighting Component | 10 | 0.20 | 0.00 | 0.80 | | Major Measures Component | See below. | | | | | *Air Sealing* | *NA* | *0.003* | *0.00* | *0.997* | | *Attic Insulation* | *NA* | *0.070* | *0.00* | *0.93* | | *Wall Insulation* | *NA* | *0.070* | *0.00* | *0.93* | | *Programmable Thermostat* | *NA* | *0.130* | *0.00* | *0.87* | | Major Measures Component Overall | NA | 0.070 | 0.00 | 0.93 | | **Program Total** | **10** | **0.09** | **0.00** | **0.91** | |
| NTG PY5 | **NTGR:** In-Unit 1.0, Common Areas 0.8, Major Measures 0.94  **Free ridership** In unit 0.0; Common Area 0.20, Major Measures 0.06  **Spillover** Not measured for Common Area or In-Unit, and none for Major Measures  **Source**: Common Area and In Unit from PY2; Major Measures retrospective application  **Method**: Property manager survey (n=14) and participant self-report.  **Justification**:   * Program change: Yes, in PY4 the program began offering the Major Measures Component * Market change: No material change * New Program: No * Previous IL EM&V NTG exists: An EM&V NTG estimate exists for the Common Area Lighting Component, but not the Major Measures Component |
| PY6 EM&V Recommendation | **NTGR**: Common Areas 0.80; In Unit 1.00; Major Measures 0.94  **Free ridership** In unit 0.0; Common Area 0.20, Major Measures 0.06  **Spillover** Not measured for Common Area or In-Unit, and none for Major Measures  **Source**: Common Area and In Unit from PY2; Major Measures from PY5  **Justification**:   * Program change: No material change * Market change: No material change * New Program: No * Previous IL EM&V NTG exists: Yes   The team plans to conduct NTG research in PY6 for In Unit and Common Area. |
| PY7 EM&V Recommendation | **NTGR:** Common Areas 0.56; In Unit see Table below; Major Measures 0.94  **Free ridership** See below forIn unit; Common Area 0.44, Major Measures 0.06  **Spillover** Not measured for Common Area, and none for Major Measures or or In-Unit  **In-Unit NTGRS**   |  |  |  |  | | --- | --- | --- | --- | | **Measure** | **Overall NTGR** | **FR** | **SO** | | CFLs | 98% | 2% | 0% | | Faucet Aerators | 92% | 8% | 0% | | Showerheads | 92% | 8% | 0% | | Water Temp. Setback | 100% | 0% | 0% | | Programmable T-Stat | 100% | 0% | 0% |   **Source**: Common Area from PY2; Major Measures from PY5; In Unit from ComEd’s EPY5 Evaluation, as well as PY2  Justification:   * Program change: No material change * Market change: No material change * New Program: No * Previous IL EM&V NTG exists: Yes |

# Residential Home Energy Performance

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| Program | Home Energy Performance (HEP) & Electric Space Heat Pilot (ESHP) |
| NTG PY1 | **NTGR** 0.76  **Source**: Applied retrospectively  **Free ridership** Not measured  **Spillover** Not measured  **Method**: Default value |
| NTG PY2 | **NTGR** Insulation 0.63; Air Sealing 1.0; CFLs 0.75; faucet aerators, 0.99; Low flow showerheads, 0.97; Pipe wrap, 0.93;  **Source**: Applied retrospectively  **Free ridership** Insulation 0.37; Air Sealing 0; CFLs 0.32; Faucet aerators, 0.01; Low flow showerheads, 0.03; Pipe wrap, 0.07  **Spillover** Electric: CFLs 43%, other electric measures: Not measured; Gas measures 4%.  **Method**: Customer self-report for CFLs, faucet aerators, low flow showerheads, pipe wrap; 72 surveys completed from a population of 2,987. Secondary research for insulation and air sealing. |
| NTG PY3 | **NTGR** Insulation 0.927-electric, 0.97-gas; Air Sealing 99.5-electric, 1.04 gas; CFLs 0.75; faucet aerators 0.99-electric, 1.04-gas; Low flow showerheads 0.97-electric, 1.01-gas; Pipe wrap 0.93-electric, 0.98 gas.  **Source**: Applied prospectively for some measures (known part-way through PY3), and retrospective  **Free ridership** Insulation 0.266-electric, 0.26-gas; Air Sealing 0.04; CFLs 0.32; Faucet aerators, 0.01; Low flow showerheads, 0.03; Pipe wrap, 0.07  **Spillover** Insulation 19%-electric, 23%-gas; Air sealing 3.5%-electric, 8%-gas; CFLs 43%, other electric measures: Not measured; Other gas measures 4%.  **Method**: Deemed from PY2 for CFLs, faucet aerators, low flow showerheads, pipe wrap; Secondary research for insulation and air sealing. |
| NTG PY4 | **HEP NTGR** MW: 0.98; MWh: 0.92; Therm: 0.81  **Source**: Applied retrospectively  **HEP Free ridership** MW: 20% MWh: 17% Therm: 21%  **HEP Spillover** MW: 18%; MWh: 9%; Therm: 0.025%  **HEP Method**: Customer self-report. 201 surveys completed from a population of 4,627 to determine a program-level net-to-gross ratio along with end-use or measure-level net-to-gross ratios, where possible. Spillover was measured and applied at the program level.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Measure | Responses (n) | Impact type | FR | NTGR  (1-FR) | | 15W CFL | 63 | kW/kWh | 0.12 | 0.88 | | therms | n/a | n/a | | 20W CFL | 36 | kW/kWh | 0.12 | 0.88 | | therms | n/a | n/a | | 23W CFL | 40 | kW/kWh | 0.12 | 0.88 | | therms | n/a | n/a | | Faucet aerator | 65 | kW/kWh | 0.23 | 0.77 | | therms | 0.28 | 0.72 | | Showerhead | 69 | kW/kWh | 0.04 | 0.96 | | therms | 0.21 | 0.79 | | Air sealing | 113 | kW/kWh | 0.21 | 0.79 | | therms | 0.20 | 0.80 | | Insulation | 103 | kW/kWh | 0.21 | 0.79 | | therms | 0.23 | 0.77 | | Thermostat: did not survey for this measure as there were so few participants receiving it. Instead, we used the following agreed fixed value from the Ameren PY4 Evaluation Plan, Appendix A | | kW/kWh | n/a | n/a | | therms | 0.13 | 0.87 |   **ESHP NTGR** MW: 1.01; MWh: 0.92; Therm: 0.80  **ESHP Free ridership** MW: 17% MWh: 17% Therm: 20%  **ESHP Spillover** MW: 18%; MWh: 9%; Therm: n/a  **ESHP Method**: Used the HEP measure-level NTGRs and applied them to the ex post gross savings. Also applied the HEP spillover percents to the ex post gross savings to determine a final program-level electricity savings NTGR. |
| PY5 EM&V Recommendation | **NTGR: See PY4 values**  **Source**: PY4  **Method:** Participant self-report survey  **Justificatio**n:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |
| PY6 EM&V Recommendation | **NTGR:** See PY4 values  **Source:** PY4 analyses  **Method:** Participant self-report survey  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |

## Home Performance with ENERGY STAR

Beginning in PY7, the HEP Program will transition to a full Home Performance with ENERGY STAR (HPwES) program.

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| Program | HPwES |
| PY7 EM&V Recommendation | **NTGR:** Measure specific values shown below  **Free ridership** Measure specific values as show below  **Spillover:** MWh: 9%; Therm: 0.025% (Program-level)   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Measure | Responses (n) | Impact type | FR | NTGR  (1-FR) | | 15W CFL | 63 | kW/kWh | 0.12 | 0.88 | | therms | n/a | n/a | | 20W CFL | 36 | kW/kWh | 0.12 | 0.88 | | therms | n/a | n/a | | 23W CFL | 40 | kW/kWh | 0.12 | 0.88 | | therms | n/a | n/a | | Faucet aerator | 65 | kW/kWh | 0.23 | 0.77 | | therms | 0.28 | 0.72 | | Showerhead | 69 | kW/kWh | 0.04 | 0.96 | | therms | 0.21 | 0.79 | | Air sealing | 113 | kW/kWh | 0.21 | 0.79 | | therms | 0.20 | 0.80 | | Insulation | 103 | kW/kWh | 0.21 | 0.79 | | therms | 0.23 | 0.77 | | Thermostat: | N/A | kW/kWh | n/a | n/a | | therms | 0.13 | 0.87 |   **Source:** PY4 NTG ratio from HEP.  **Method:** Participant self-report survey. Detailed method provided under the PY4 HEP entry above.  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes * Other: We recommend using this value as it is the most recent value available for the program based on primary data. |

# Residential Moderate Income

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| Program | Moderate Income |
| NTG PY1 | N/A (no program) |
| NTG PY2 | N/A (no program) |
| NTG PY3 | N/A (no program) |
| NTG PY4 | **NTGR** MWh: 1.0; Therm: 1.0  **Free ridership** MWh: 0 Therm: 0  **Spillover** MWh: 0; Therm: 0  **Source**: Deemed NTGR of 1.0.  **Justification**:   * Other: Consensus reached between ICC and AIC that program design merits NTGR of 1.0 |
| NTG PY5 | **NTGR** MWh: 1.0; Therm: 1.0  **Source**: PY4  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: No * Other: Consensus reached between ICC and AIC that program design merits NTGR of 1.0 |
| PY6 EM&V Recommendation | **NTGR** MWh: 1.0; Therm: 1.0  **Source**: PY4  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: No * Other: Consensus reached between ICC and AIC that program design merits NTGR of 1.0 |
| PY7 EM&V Recommendation | **NTGR:** MWh: 1.0; Therm: 1.0  **Source**: PY4  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: No * Other: Consensus reached between ICC and AIC that program design merits NTGR of 1.0 |

# Residential Efficient Products

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| Program | Residential Efficient Products |
| NTG PY1 | **NTGR:** N/A – no program |
| NTG PY2 | **NTGR:** N/A – no program |
| NTG PY3 | **NTGR:** In PY3 this program was part of Lighting and Appliances, and NTG was deemed at 0.80 for appliances. |
| NTG PY4 | **NTGR:** Measure specific in table below  **Free ridership** Measure specific in table below  **Spillover** Measure specific in table below  **Source:** PY4  **Method**: Customer self-report. 190 surveys completed from a population of 12,117.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Measure** | **Responses (n)** | **FR** | **SO** | **NTGR** | | Room AC / Dehumidifier /  Air Purifier | 65 | .31 | 0.09 | 0.78 | | Thermostat—Elec Heat / Thermostat—AC / Power Strips /  H.P. Water Heater | 97 | 0.23 | 0.09 | 0.86 | | Gas Measures | 28 | 0.32 | 0.21 | 0.90 | | **Total** | **190** | **0.30** | **0.14** | **0.84** | |
| PY5 EM&V | **NTGR**: Measure specific in table above from PY4  **Free ridership** Measure specific in table above from PY4  **Spillover** Measure specific in table above from PY4  **Source:** PY4  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |
| PY6 EM&V Recommendation | **NTGR**: Measure specific in table above from PY4  **Free ridership** Measure specific in table above from PY4  **Spillover** Measure specific in table above from PY4  **Source:** PY4 (see table above)  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |

# Residential Appliance Recycling

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| Program | Residential Appliance Recycling |
| NTG PY1 | **NTGR:** Refrigerator 0.51, Freezer 0.53  **Free ridership** Refrigerator, 49%, Freezer, 47%  **Spillover** Not measured  **Source:** Retrospective application  **Method**: Customer self-report. 93 surveys completed from a population of 2,876. |
| NTG PY2 | **NTGR:** Refrigerator 0.79, Freezer 0.82, Room Air Conditioner 1.0  **Free ridership** Refrigerator**,** 21%, Freezer, 18%  **Spillover** Not measured  **Source:** Retrospective application  **Method**: Customer self-report. 159 surveys completed from a population of 11,211. |
| NTG PY3 | **NTGR:** Refrigerator 0.79, Freezer 0.82, Room Air Conditioner 1.0  **Free ridership** Refrigerator**,** 21%, Freezer, 18%  **Spillover** Not measured  **Source:** PY2 |
| NTG PY4 | **NTGR:** Refrigerator 0.64, Freezer 0.65, Room Air Conditioner 1.0  **Free ridership** Refrigerator**,** 37%, Freezer, 36%  **Spillover** 0.9%  **Source:** Retrospective NTG  **Method**: Customer self-report. 141 surveys completed from a population of 14,232. |
| NTG PY5 | **NTGR:** Refrigerator 0.79, Freezer 0.82, Room Air Conditioner 1.0  **Free ridership** Refrigerator, 21%, Freezer, 18%  **Spillover** 0.9%  **Source:** PY2.  Justification:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |
| PY6 EM&V Recommendation | **NTGR:** Refrigerator 0.62, Freezer 0.62, Room Air Conditioner 1.0  **Free ridership** Refrigerator**,** 37%, Freezer, 36%  **Spillover** 0.9%  Induced Replacement: Refrigerator, 1%, Freezer, 2%  **Source:** PY4 NTG ratio except to adjust it for induced replacement as measured in the PY5 evaluation.  Justification:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |
| PY7 EM&V Recommendation | **NTGR:** Refrigerator 0.56, Freezer 0.62, Room Air Conditioner 0.50  **Free ridership** Refrigerator, 42%, Freezer, 36%, AC, 50%  **Induced Replacement** Refrigerator, 5%, Freezer, 3% (included under FR in the Excel file)  **Spillover** Refrigerator, 3%, Freezer, 1%  **Source**: Deemed PY5 NTGR for Refrigerators, Deemed PY4 NTGR for Freezers, and ComEd EPY5 NTGR for AC units  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |

# Residential ENERGY STAR New Homes

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| Program | Residential ENERGY STAR New Homes |
| NTG PY1 | NTGR N/A – no program |
| NTG PY2 | NTGR N/A – no program |
| NTG PY3 | **NTGR: 0.80**  **Free ridership** – Not measured  **Spillover** – Not measured  **Source:** Deemed |
| NTG PY4 | **NTGR: 0.80**  **Free ridership** – Not measured  **Spillover** – Not measured  **Source:** Deemed |
| NTGR PY5 | **NTGR: 0.80**  **Free ridership** – Not measured  **Spillover** – Not measured  **Source:** Deemed from Plan 2 filing  **Justification**:   * Program change: No material change * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: No * Other: Program is a small percentage of the portfolio and does not justify EM&V dollars to estimate NTG. |
| PY6 EM&V Recommendation | **NTGR: 0.80**  **Free ridership** – Not measured  **Spillover** – Not measured  **Source:** Deemed from Plan 2 filing  **Justification**:   * Program change: No material change * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: No * Other: Program is a small percentage of the portfolio and does not justify EM&V dollars to estimate NTG. |
| PY7 EM&V Recommendation | **NTGR: 0.80 Electric and Gas**  **Free ridership** – Not measured  **Spillover** – Not measured  **Source:** Deemed  **Justification**:   * Program change: No material change * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: No * Other: We recommend the continued use of the deemed value given the low share of portfolio savings. |

# Residential HVAC

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| Program | HVAC |
| NTG PY1 | **NTGR** N/A |
| NTG PY2 | **NTGR:** 0.63 Electric, 0.49 Gas  **Free ridership** Not measured  **Spillover** Not measured  **Source:** Retrospective application  **Method:** Secondary research |
| NTG PY3 | **NTGR:** 0.59 Electric, 1.01 Furnaces, 1.02 Boilers  **Free ridership** 60% Electric, 47% Furnace, 46% Boiler  **Spillover** 19% Electric, 14% Furnace, 15% Boiler  **Source:** Retrospective application  **Method**: Customer self-report for free ridership and participant spillover, 150 surveys completed from a population of 14,127. Drop out contractor self-report for non-participant spillover, 20 surveys completed from a population of 165. |
| NTG PY4 | **NTGR:** 0.59 Electric, 1.01 Furnaces, 1.02 Boilers  **Free ridership** 60% Electric, 47% Furnace, 46% Boiler  **Spillover** 19% Electric, 14% Furnace, 15% Boiler  **Source:** PY3 NTG  **Method** Application of PY3 value (see above) |
| NTG PY5 | **NTGR:** 0.59 Electric, 1.01 Furnaces, 1.02 Boilers  **Free ridership** 60% Electric, 47% Furnace, 46% Boiler  **Spillover** 19% Electric, 14% Furnace, 15% Boiler  **Source:** PY3 NTG  **Method** Application of PY3 value (see above) |
| PY6 EM&V Recommendation | **NTGR: 0.59**  **Source:** PY5  **Method**: Participant customer surveys for free ridership and participant spillover, Non-participant contractor surveys for non-participant spillover.  **Justification**:   * Program change: Efficiency levels and incentive amounts have changed; gas measures dropped * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes |
| PY7 EM&V Recommendation | **NTGR:** Measure specific NTGRs as shown below.  **Free ridership**: See table  **Spillover**: See table   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Measure | Fuel | Overall NTGR | FR | Part SO | Non-Part SO | | <SEER 16 CAC/HP (RB) | Electric | 69% | 60% | 0.1% | 22% | | SEER 16+ CAC/HP (RB) | Electric | 76% | 53% | 0.1% | 22% | | <SEER 16 CAC/HP (ER) | Electric | 57% | 62% | 0.1% | 22% | | SEER 16+ CAC/HP (ER) | Electric | 82% | 51% | 0.1% | 22% | | Brushless Motors | Electric | 70% | 42% | 0.1% | 22% |   **Source**: PY5 HVAC Report, Table 26  **Method**: Participant customer surveys for free ridership and participant spillover (n=210), and a non-participant contractor survey (n=65) for non-participant spillover.  **Justification**:   * Program change: Efficiency levels and incentive amounts have changed; gas measures dropped * Market change: No material change. * New Program: No * Previous IL EM&V NTG exists: Yes; we recommend using this value as it is the most recent value available for the program based on primary data. |

# Residential Behavioral Modification

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| Program | Behavioral Modification |
| NTG PY1 | N/A – no program |
| NTG PY2 | N/A – no program |
| NTG PY3 | **NTGR** N/A  **Free ridership** N/A  **Spillover** N/A  **Method**: Net savings are determined through a billing analysis that compares treatment and control groups. A Difference-in-Differences (D-in-D) approach is employed, which is a fixed effects regression analysis of the monthly gas and electric bills of treatment and control group customers. The D-in-D refers to the model’s implicit comparison of consumption before and after treatment of treatment and control group customers. The model includes customer-specific intercepts (i.e., fixed effects) to capture differences between customers in their non-weather sensitive consumption.  Additionally, savings from measures that were rebated through AIC’s energy-efficiency programs are counted in both the Behavioral Modification Program and the rebate programs. To avoid double counting, we determined the amount of Behavioral Modification Program gas and electric savings that were counted in other AIC rebate programs using tracking data provided by AIC, and adjust the net Behavioral Modification savings accordingly. |
| NTG PY4 | N/A as performed analysis similar to PY3, leading to a net impacts result. |
| NTG PY5 | N/A as performed analysis similar to PY3, leading to a net impacts result. |
| PY6 EM&V Recommendation | N/A as will perform billing analysis, leading to a net impacts result. |
| PY7 EM&V Recommendation | N/A as will perform billing analysis, leading to a net impacts result. |

# School Efficiency Kits

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| Program | School Efficiency Kits |
| PY7 EM&V Recommendation | **NTGR:** CFLs 0.854; Showerheads 0.945; Faucet aerators 1.009  **Free ridership:** CFLs 22.2%; Showerheads 13.1%; Faucet aerators 6.7%  **Spillover:** 7.1%  **Source:** A 2013 unpublished Midwest utility’s evaluation of a very similar program (participant survey, n=91) |

# PY8 Residential IPA Programs

Below we provide recommendations for stand-alone IPA programs in PY8.[[1]](#footnote-1) In addition to these programs, AIC will offer the Multifamily Common Area and Major Measures programs through the IPA. Detailed information about NTG for those programs is located in Section 3.

## Specialty CFLs

At present, the evaluation team is working to develop a recommendation for this IPA program.

## All Electric Homes

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| --- | --- |
| Program | All Electric Homes |
| NTG PY7 | **NTGR:** See measure specific values below  **Source**: AIC planning value   |  |  | | --- | --- | | **Measure** | **NTGR** | | CFLs | 0.88 | | Showerhead | 0.82 | | Faucet Aerator | 0.73 | | Water Heater Setback | 1.00 | | Air sealing | 1.00 (at audit) and 0.80 | | Insulation | 0.77 | | HVAC Measures | 0.90 | |
| PY8 EM&V Recommendation | **NTGR:** Forthcoming – will be available by March 1st  **Free ridership**: TBD  **Spillover**: TBD  **Source:** PY6 participant survey.  **Method**: Participant self-report. |

## Rural Efficiency Kits

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| Program | Rural Efficiency Kits |
| NTG PY7 | **NTGR:** See measure specific values below  **Source**: AIC planning value   |  |  | | --- | --- | | **Measure** | **NTGR** | | CFLs | 0.88 | | Showerhead | 0.82 | | Faucet Aerator | 0.73 | | Water Heater Setback | 1.00 | |
| PY8 EM&V Recommendation | **NTGR:** CFLs, 0.854; Showerheads, 0.945; Faucet aerators, 1.009;  **Free ridership:** CFLs, 22.2%; Showerheads, 13.1%; Faucet aerators, 6.7%;  **Spillover**: 7.1%  **Source:** A 2013 unpublished Midwest utility’s evaluation of a very similar program (participant survey, n=91). |

# C&I Custom

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| Program | C&I Custom |
| NTG PY1 | **NTGR:** 0.77  **Free ridership** 23%  **Spillover** 0%  **Source:** Retrospective application  **Method**: Customer self-report. 14 surveys completed from a population of 34. Basic method. |
| NTG PY2 | **NTGR:** 0.69  **Free ridership** 31%  **Spillover** 0%  **Source:** Retrospective application  **Method**: Customer self-report. 56 surveys completed from a population of 146. Enhanced method. Trade allies and key account executives called for 7 participants and their responses factored in to the customer free ridership calculation. |
| NTG PY3 | **NTGR:** 0.75  **Free ridership** 26%  **Spillover** 1%  **Source:** Retrospective application  **Method**: Customer self-report. 47 surveys completed from a population of 125. Enhanced method. Trade allies and key account executives called for 5 participants and their responses factored in to the customer free ridership calculation. |
| NTG PY4 | **NTGR:** 0.69  **Free ridership** 31%  **Spillover** 0%  **Source:** PY2 |
| NTG PY5 | **NTGR:** 0.75  **Free ridership** 26%  **Spillover** 1%  **Source:** PY3  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes   Also, determining a NTG to be applied prospectively to PY7. |
| PY6 EM&V Recommendation | **NTGR:** 0.75  **Free ridership** 26%  **Spillover** 1%  **Source:** PY3  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes   Also, determining a gas NTG to be applied prospectively to PY8. |
| PY7 EM&V Recommendation | **NTGR:** 0.74 **(**electric and gas)  **Free ridership** 26%  **Spillover** 0.1% (participant)  **Source:** PY5 participant research  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes for electric * Other: The team recommends applying the electric NTGR to gas projects in PY7 given the absence of better Illinois specific data that is consistent with the AIC program design. |

# C&I Standard

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| Program | C&I Standard |
| NTG PY1 | **NTGR: 0.62**  **Free ridership** 38%  **Spillover** <1%  **Source:** Retrospective application  **Method**: Customer self-report. 17 surveys completed from a population of 34.  Basic method. |
| NTG PY2 | **NTGR:** 0.76 Standard Core; 0.78 Standard Overall (including Online Store and SB HVAC)  **Free ridership** 24% Core; 22% Overall  **Spillover** 0%  **Source:** Retrospective application  **Method**: Customer self-report. 80 surveys completed from a population of 414.  Enhanced method. Trade allies and key account executives called for 7 participants and their responses factored in to the customer free ridership calculation.   |  |  | | --- | --- | | Category | NTGR | | Lighting | 0.78 | | Grocery | 0.76 | | HVAC | 0.47 | | Motors | 0.63 | | Refrigeration | 0.90 | | Overall Program | 0.76 |     The following NTGRs were also applied based on ex ante values.   |  |  | | --- | --- | | Category | NTGR | | Online Store | 0.80 | | Small Business HVAC | 1.00 | |
| NTG PY3 | **NTGR:** 0.77 Standard Core; 0.75 Standard Overall (including Online Store and DI)  **Free ridership** 24%Core; 26% Overall  **Spillover** 1% (non-participant)  **Source:** Retrospective NTG  **Method**: Customer self-report. 178 Standard surveys completed from a population of 913. Enhanced method. Trade allies and key account executives called for 3 participants and their responses factored in to the customer free ridership calculation. For Online Store, customer self-report. 88 surveys completed from a population of 17,596. Basic method. Direct Install was not evaluated.   |  |  | | --- | --- | | Category | NTGR | | Lighting | 0.76 | | Agriculture | 0.76 | | HVAC | 0.78 | | Motors | 0.76 | | Refrigeration | 0.82 | | Online Store | 0.64 | | Direct Install Aerators | 0.76 | | Overall Program | 0.75 | |
| NTG PY4 | **NTGR:** 0.76 for Standard Core and 0.80 for Online Store and DI  **Free ridership** 24%  **Spillover** 0%  **Source:** PY2  **Method**: Application of the PY2 NTGR based on customer self-report.  New NTG determined for application to Y6 (see PY6 recommendation below). |
| NTG PY5 | **NTGR:** 0.77 Standard Core; 0.75 Standard Overall (including Online Store and DI) **Free ridership** 24%Core; 26% Overall  **Spillover** 1% (non-participant)  **Source**: PY3  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes   New NTG determined for application to Y7 (see PY7 recommendation below). |
| PY6 EM&V Recommendation | **NTGR**: 0.74 electric and 0.91 gas Standard Overall (including Online Store and Green Nozzle)  **Free ridership** 0.34 electric and 0.22 therms overall  **Spillover** 0.08 electric and 0.13 therms overall  **Source**: PY4  **Method**: Customer self-report. 195 Standard surveys completed from a population of 933. Enhanced method utilizing 2 interviews with key account executives and trade allies.  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes |
| PY7 EM&V Recommendation | **NTGR:** End-use values presented below  **Free ridership** See below  **Spillover** See below   |  |  |  |  |  | | --- | --- | --- | --- | --- | | End-Use | Fuel | Overall NTGR | FR | Part SO | | Lighting | Electric | 77% | 26% | 3% | | Motor | Electric | 80% | 20% | 0% | | HVAC | Electric | 43% | 57% | 0% | | Specialty | Electric | 82% | 18% | 0% | | Steam Trap | Gas | 90% | 10% | 0% | | HVAC | Gas | 60% | 40% | 20% | | Specialty | Gas | 70% | 30% | 20% |   **Source**: PY4 (Motor, HVAC and Specialty) and PY5 (lighting and steam traps) NTGRs  **Method**: See PY6 for the PY4 method. For PY5, we used the customer self-report method. Lighting surveys (n=68) completed from a population of 560 contacts and steam traps (n=6) completed from a population of 21 contacts. Enhanced method utilizing interviews with trade allies.  Justification:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes |

# C&I Retro-Commissioning

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| Program | Retro-Commissioning |
| NTG PY1 | **NTGR: 1**  **Free ridership** 0%  **Spillover** 0%  **Source:** Deemed  **Method**: Pilot with only 1 project. No evaluation conducted. |
| NTG PY2 | **NTGR:** 0.8  **Source:** Retrospective NTG  **Free ridership** 20%  **Spillover** 0%  **Method**: AIC planning value used. |
| NTG PY3 | **NTGR:** 0.58  **Free ridership** 42%  **Spillover** 0%  **Source:** Retrospective NTG  **Method**: Customer self-report. 17 surveys completed from a population of 18 participant contacts. Basic method. |
| NTG PY4 | **NTGR:** 0.95 electric and natural gas  **Free ridership** 15%  **Spillover** 10%  **Source:** Retrospective NTG  **Method**: Customer self-report. 14 surveys completed from a population of 32 participants. Service Provider self-report. 9 surveys completed from a population of 12 participants. Enhanced method. Participant and Service Provider spillover researched. |
| NTG PY5 | **NTGR:** 0.95  **Free ridership** 15%  **Spillover** 10%  **Source:** PY4  **Justification**:   * Program change: No material change. * Market change: Market evolving with service providers reaching outside of the program for work and increasing resources to deliver. * New Program: No * Previous EM&V NTG exists: Yes |
| PY6 EM&V Recommendation | **NTGR:** 0.95  **Free ridership** 15%  **Spillover** 10%  **Source:** PY4  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes |
| PY7 EM&V Recommendation | **NTGR:** 0.95  **Free ridership** 15%  **Spillover** 10%  **Source:** PY4  **Justification**:   * Program change: No material change. * Market change: No material change. * New Program: No * Previous EM&V NTG exists: Yes |

# Large C&I

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| Program | Large C&I |
| PY7 EM&V Recommendation | **NTGR:** 0.72  **Free ridership** 28%  **Spillover** 0%  **Source**: PY3 and PY5  **Method**: Developed NTGR based on existing values from large customers who participated in the C&I Custom Program in PY3 and PY5. Original values are based on participant self-report. Overall, the data are from 28 surveys completed from a population of 96. See the Custom section for additional details on the overall methodology.  **Justification**:   * New Program: Yes * Previous EM&V NTG exists: No |

# C&I Portfolio Non-Participant Spillover

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| Program | C&I Portfolio |
| PY7 EM&V Recommendation | **Non-Participant Spillover:** 0.16  **Source:** PY5 and PY3  **Method**: During the PY5 Standard Evaluation, we examined spillover using responses to the non-participant telephone survey, and found that 1.2% of the decision-makers took action and attributed it to the ActOnEnergy Business Program. Overall, we completed surveys with 251 respondents from a sample frame of 5,500. We conducted a similar study during PY3 and completed surveys with 245 respondents.  For both studies, we developed estimates of the savings associated with these measures based on an engineering analysis of participant survey responses, as well as follow-up interviews performed by engineering staff. Based on the information gathered, we were able to perform engineering-based calculations or use the Statewide TRM to calculate savings. The most common type of equipment installed outside the program was efficient lighting, followed by water heating and cooling equipment.  **Justification**   * Based on IL specific primary data collection * Plan to verify findings through onsite assessment * Thoroughly reviewed by QA/QC consultant |

# PY8 C&I IPA Programs

The evaluation team provides the following recommendation for the C&I IPA program to be offered in PY8.

## Small Business Direct Install (SBDI)

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| Program | SBDI |
| NTG PY7 | **NTGR:** 0.90 (all measures)  **Source:** AIC planning value |
| PY8 EM&V Recommendation | **NTGR:** Forthcoming – expected by March 1st  **Free ridership** TBD  **Spillover** TBD  **Method**: Participant self-report. Additional details will be provided at the conclusion of fielding.  **Justification**:   * New Program: Yes * Previous EM&V NTG exists: No |

1. The NTGRs for these programs are already established for PY6 and PY7. [↑](#footnote-ref-1)