**ComEd Programs NTG Approach for EPY7**

**DRAFT**

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Business Programs

|  | Business Standard Incentive |
| --- | --- |
| EPY1 | **NTG 0.67****Free ridership 33**%**Participant Spillover** 0% (qualitative evidence observed, not quantified)**Method**: Customer self-report. 95 interviews completed covering 101 projects from a population of 455 projects. |
| EPY2 | **NTG 0.74****Free ridership 27**%**Participant Spillover** 1%**Method**: Customer self-report. 90 interviews completed covering 114 projects from a population of 1,739 projects.Enhanced method. Ten trade allies called for 11 participants and their responses factored in to the customer free ridership calculation. |
| EPY3 | **NTG 0.72****Free ridership 28**%**Participant Spillover** 0% (qualitative evidence observed, not quantified)**Method**: Customer self-report. 108 interviews completed covering 292 projects from a population of 3,794 projects.Enhanced method. Two trade allies and three account managers were called for five participants and their responses factored in to the customer free ridership calculation. |
| EPY4 | **Deemed using PY2 values.****PY4 Research NTG 0.70****Free ridership 31**%**Participant Spillover** 1%**Method**: Customer self-report. 110 interviews completed covering 166 projects from a population of 4,603 projects.Enhanced method. Two trade allies called for two participants and their responses factored in to the customer free ridership calculation.NTGR (free-ridership only): All lighting =0.70 (90/±5%); Lighting, no T12s reported in base case 0.66 (90/±9%); Lighting, T12s reported in base case 0.80 (90/±14%) Non-Lighting = 0.63 (90/±16%). |
| EPY5 | SAG Consensus:* Lighting: 0.72
* Non-Lighting: 0.62
 |
| EPY6 | SAG Consensus:* Lighting: 0.70
* Non-Lighting: 0.63
 |
| EPY7 | **Recommendation Justification:** **Lighting****NTG: 0.81**Free Ridership: Measured and equal to 0.26Justification: EPY5 ComEd Standard Program research, 63 participantsTotal Recommended Spillover = 0.07Participant and Non-Participant Spillover Identified by Participating Standard Program Trade Allies: Measured and equal to 0.05Justification: EPY5 ComEd Standard Program research, participating trade ally sample 55Participant and Non-Participant Spillover Identified by Non-Participating Standard Program Trade Allies: Not measured for ComEd; a value of 0.02 is recommendedJustification: Based on GPY2 results from Nicor Gas (0.02), and Peoples Gas and North Shore Gas (0.02).**Non-Lighting****NTG: 0.77**Free Ridership: Measured and equal to 0.31Justification: EPY5 ComEd Standard Program research, 64 participantsTotal Recommended Spillover = 0.08Participant and Non-Participant Spillover Identified by Participating Standard Program Trade Allies: Measured and equal to 0.06Justification: EPY5 ComEd Standard Program research, participating trade ally sample 10.Participant and Non-Participant Spillover Identified by Non-Participating Standard Program Trade Allies: Not measured for ComEd; a value of 0.02 is recommendedJustification: Based on GPY2 results from Nicor Gas (0.02), and Peoples Gas and North Shore Gas (0.02).  |

|  | Business Custom (includes Data Centers) |
| --- | --- |
| EPY1 | **NTG** 0.72**Free ridership** 28%**Spillover** 0%**Method**: Customer self-reports. 24 surveys completed from a population of 88. |
| EPY2 | **NTG** 0.76**Free ridership** 24%**Spillover** 0%**Method**: Customer self-reports. 20 surveys completed from a population of 345. |
| EPY3 | **NTG** 0.56 for kWh and 0.46 for kW**Free ridership** 28%**Spillover** 0%**Method**: Customer self-reports. 67 surveys completed from a population of 887. |
| EPY4 | **Deemed using PY2****PY4 Research NTG** 0.61 for kWh and 0.64 for kW**Free ridership** 39%**Spillover** 0%**Method**: Customer self-reports. 63 surveys completed from a population of 367. |
| EPY5 | SAG Consensus:* 0.56
 |
| EPY6 | SAG Consensus:* 0.61
 |
| EPY7 | **Custom NTG: 0.64****Free ridership: 0.36****Participants Spillover: Negligible****Nonparticipants Spillover: Negligible****Data Centers NTG: 0.48****Free ridership 0.52****Participants Spillover: Negligible****Nonparticipants Spillover: Negligible**Source: Participant telephone survey. The spillover effects were examined in this evaluation and their magnitude was found to be quite small as discussed below in the spillover section. Therefore, a quantification of spillover was not included in the calculation of NTGR for EPY5.Notes: In PY5, Data Centers was combined with Custom |

|  | Industrial Systems (Compressed Air in EPY4) |
| --- | --- |
| EPY1 | Program did not exist |
| EPY2 | Program did not exist |
| EPY3 | Program did not exist |
| EPY4 | **Retroactive application of NTG** of 0.67 for kWh and 0.72 for kW (EPY4 Compressed Air)**Free ridership** 33%**Spillover** 0%**Method**: Customer self-report. 7 surveys completed from a population of 9. |
| EPY5 | SAG Consensus:* 0.67
 |
| EPY6 | SAG Consensus:* 0..67
 |
| EPY7 | **NTG: 0.68****Free ridership: 0.33** **Participant Spillover: 0.01****Nonparticipant Spillover: Negligible**Free Ridership and participants spillover measured in a participant survey on 35 projects. Interviews were completed with 5 of 11 Data Center projects. |

|  | Retro-Commissioning (Joint) |
| --- | --- |
| EPY1 | **NTG** 0.8**Free ridership** 0%**Spillover** 0%**Method**: Program *ex ante* assumption.Customer self-report. Two completed surveys from a population of four participants bracketed the assumed NTG. Basic method.  |
| EPY2 | **NTG** 0.916**Free ridership** 8.4%**Spillover** 0%**Method**: Customer self-report. Five surveys completed from an attempted census of a population of thirteen. Basic method.  |
| EPY3 | **NTG** 0.713**Free ridership** 28.7%**Spillover** 0%**Method**: Customer self-report. Eight surveys completed from an attempted census of a population of 34 participants. Basic method.  |
| EPY4 | **Deemed NTG of 0.916 from EPY3****Research NTG** 1.04**Free ridership** 10%**Spillover** 11%**Method**: Program *ex ante* assumption and stipulated for EPY4. NTG based on EPY2 research. EPY3 research rejected due to small ratio of completed surveys. |
| EPY5 | SAG Consensus:* 0.71
 |
| EPY6 | SAG Consensus:* 1.04
 |
| EPY7 | **NTG: 1.04** There was no new NTG research in EPY5. The most NTG research is from PY4. **Free ridership: 0.10.** The PY4 free-ridership ratio is an equally weighted average of savings-weighted participant and service provider free-ridership scores.**Participant spillover: 0.14.** Source: Participant and trade ally surveys.**Nonparticipant spillover: Negligible.** There is no evidence of non-participant spillover. Service providers are dropped from the program if they are not generating projects. If they are not generating projects in the program, they are probably not generating them outside the program. |

|  | Business New Construction Service (Joint) |
| --- | --- |
| EPY1 | NTG was not evaluated for EPY1 because program began in EPY2. |
| EPY2 | **NTG** 0.59**Free ridership** 41%**Spillover** 0%**Method**: Customer self-report. 14 projects were assessed from a population of 16.Enhanced method. NTG scores were adjusted for standard design national retail stores.  |
| EPY3 | **NTG** 0.65 (0.69 for Systems Track and 0.54 for Comprehensive Track)**Free ridership** 35%**Spillover** 0%**Method**: Customer self-report. 13 interviews with individuals representing 15 projects out of population of 37 projects.Enhanced method. NTG scores were adjusted for standard design national retail stores.  |
| EPY4 | **Retroactive application of NTG of 0.54 for Comprehensive Track****Deemed using PY3 values for Systems Track of 0.59****NTG** 0.57 (0.69 for Systems Track and 0.52 for Comprehensive Track)**EPY4 Research Comprehensive Track 0.52 Draft****EPY4 Research Systems Track 0.57 Draft****Free ridership** 43%**Spillover** 0%**Method**: EPY3 deemed value for Systems Track projects. Customer self-report for Comprehensive Track projects. Interviews with individuals representing 5 of 6 Comprehensive Track projects.Enhanced method. NTG scores were adjusted for standard design national retail stores and LEED projects.  |
| EPY5 | SAG Consensus:* 0.65
 |
| EPY6 | SAG Consensus:* 0.52
 |
| EPY7 | Recommendation:Full Program NTG: 0.59Comprehensive NTG: 0.59Systems Projects NTG: 0.64Free ridership 0.43Spillover (all types) 0.05**Source**. The NTG from estimate is from the EM&V EPY4 participant survey.Spillover is an EM&V estimate based on our literature review. In 50 participant interviews from EPY2-4 we found 2 spillover projects. Some of those interviews were early in the program’s life when spillover is less likely. We also looked at existing literature on past studies and a wide range of spillover values. For example, in September of 2012, National Grid Rhode Island published a study: "2011 Commercial and Industrial Programs Free-ridership and Spillover Study." For commercial new construction, they found 78% participant spillover and 0% non-participant spillover. Southern California Gas recently did a study to estimate spillover for its 2013 and 2014 Savings By Design program by looking at past studies. They only found a couple of older California studies relevant to commercial new construction. The 2003 BEA reported 11% participant spillover and 1% non-participant spillover. A 2002 study by the same evaluator showed 13% participant spillover and 5% non-participant spillover. Finally, they also looked at the NYSERDA New Construction Program Impact Evaluation Report from 2007-2008, which found participant spillover of 20% and non-participant spillover of 61%. This study has been questioned and we understand that NYSERDA is reevaluating its validity.Our conclusion is that, given the ComEd program design and implementation approach, it is reasonable to expect that a meaningful amount of spillover is being created and should be credited to the program. Given the range of spillover amounts we found in our literature review, we believe a spillover amount of 5% is probably a realistic and probably conservative estimate. That spillover is probably occurring through the action of architects, engineers, and builders who have had exposure to the program and, to a lesser degree, building owners who had a building go through the program. Given that mix, we have not tried to differentiate between participant and nonparticipant spillover. |

|  | BILD (previously MidStream Incentives Lighting) |
| --- | --- |
| EPY1 | N/A No Program |
| EPY2 | N/A No Program |
| EPY3 | N/A Pilot Program – no data collection |
| EPY4 | **Retroactive application of NTG** of 0.63**Free ridership** 39%**Spillover** 2%**Method**: Customer self-report. 51 surveys completed from a population of about 5,000 (contact information available for only a small subset of participants).11 Trade ally surveys also conducted resulting in a NTG of 0.56 but this result was not factored in to the customer free ridership calculation.  |
| EPY5 | SAG Consensus:* 0.74
 |
| EPY6 | SAG Consensus:* 0.63
 |
| EPY7 | **NTG CFL: 0.64** (EPY4 and EPY5 weighted average. EPY5 CFL NTG is 0.66)**NTG LED/HID: 0.70****NTG Linear FL: 0.56****NTG Other: 0.67****Free Ridership:** CFLs 0.41; LEDs 0.38; Linear Fluorescents 0.47; other 0.40.**Participant Spillover:** CFLs 0.07; LEDs 0.08; Linear Fluorescents 0.03; Other 0.07**Nonparticipant Spillover:** Negligible.There are very few (perhaps as few as 1 or 2) midstream lighting programs offered around the country and the others are very small and new, have not yet been evaluated, and thus provide no research on nonparticipant spillover. Given how this program is administered it is likely that nonparticipant spillover would be very small.Source: PY5 participant and distributor self-report surveys.Notes: In PY5, Midstream Incentive Lighting was renamed BILD. |

|  | Small Business Energy Savings (Joint) |
| --- | --- |
| EPY1 | No Program |
| EPY2 | No Program |
| EPY3 | No Program |
| EPY4 | **Retroactive application of NTG** of 0.95**Free ridership** 5%**Spillover** 0%**Method**: Customer self-report. 84 NTG surveys completed from a population of 181. Basic method of NTG analysis was used. No spillover was found. Customer participant self-reported free-ridership was 17 percent for ComEd. Individual trade ally responses to free-ridership questions were weighted by their respective fuel-specific program savings contributions and combined for a fuel-specific overall free-ridership rate. This approach resulted in an evaluation estimate of 5 percent free-ridership for electric measures and was used to calculate the NTG of 0.95 for this ComEd program. |
| EPY5 | SAG Consensus:* 0.90
 |
| EPY6 | SAG Consensus:* 0.95
 |
| EPY7 | **NTG: 0.95**No new NTG research in PY5.**Free Ridership: 5%.** Customer self-report survey.**Participant Spillover: 0%** Customer and trade ally self-report survey. **Nonparticipant Spillover: 0%** Trade ally surveyThree small participant spillover projects were included in the ComEd NTGR, but the impact (about 0.003 added) was not significant at the two-digit level. Trade allies provided anecdotal evidence of non-participant spillover for electric measures, but they did not provide enough information to quantify it. |

Residential Programs

|  | Residential Lighting – Smart Lighting Discounts |
| --- | --- |
| EPY1 | **NTG** 0.69**Free ridership** 38%**Spillover** 7%**Method**: Customer self-report. Based on phone surveys with 100 coupon participants and 56 Gen Pop identified participants.  |
| EPY2 | **NTG** 0.58**Free ridership** 48%**Spillover** 6%**Method**: Average of two customer self-report methods (based on general population survey [201 completes] and in-store intercept surveys [381 completes]). A supplier self-report method (22 surveys) and a revealed preference demand model method were also employed and resulted in lower NTGR estimates but were believed to be less accurate methods. |
| EPY3 | **NTG** 0.71**Free ridership** 31%**Spillover** 2%**Method**: A customer self-report method based on in-store intercept surveys [496 completes]. A supplier self-report method (13 surveys) and a multi-state regression model was also employed and resulted in lower NTGR estimates but were believed to be less accurate methods. |
| EPY4 | **Deemed using PY2 values****EPY4 Research NTG** 0.54 Total, 0.55 Standard, 0.44 Specialty, 0.54 Other - Fixture/LEDs**Free ridership** 47% Standard, 58% Specialty, 48% Other - Fixture/LEDs**Spillover** 2%**Method**: Customer self-report method based on in-store intercept surveys (719 intercept surveys).  |
| PY5 | SAG Consensus:* Standard CFL: 0.72
* Specialty CFL: 0.80
* CFL Fixtures: 0.79
 |
| EPY6 | SAG Consensus:* Standard CFL: 0.54
* Specialty CFL: 0.80
* CFL Fixtures: 0.54
 |
| EPY7 | **Recommended NTG:** **Standard CFL: 0.60****Specialty CFL: 0.55****CFL Fixtures: 0.75****LED Bulbs: 0.48****LED Fixtures: 0.54****Coupon: 0.55** **Source:** EPY5 in-store intercept surveys. 3 year average NTG for Standard and Specialty CFLs. EM&V estimate for CFL Fixtures, LED Bulbs, and LED Fixtures.**Participant Spillover:** 0.01 all bulb types. Source: EPY5 in-store intercept surveys.**Nonparticipant Spillover:** 0.003 all bulb types. Source: EPY5 in-store intercept surveys. 477 nonparticipants interviewed.**EPY5 Researched NTG**Table ‑. EPY5 Evaluation Research Net Savings Parameters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EPY5 Evaluation Research Net Savings Parameters** | **Stan. CFLs** | **Spec. CFLs** | **CFL Fixtures** | **LED Bulbs** | **LED Fixtures** | **Coupon Sales** | **Total** |
|
| Free Ridership | 0.47 | 0.53 | 0.48 | 0.53 | 0.48 | 0.47 | 0.48 |
| Part Spillover | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| NonPart Spillover | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 |
| Total Spillover | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Eval Research NTGR | 0.55 | 0.48 | 0.54 | 0.48 | 0.54 | 0.55 | 0.54 |

Table ‑. EPY5 Evaluation Research Net Impact Savings Estimates

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Evaluation Research NTGR Estimates** | **Stan. CFLs** | **Spec. CFLs** | **CFL Fixtures** | **LED Bulbs** | **LED Fixtures** | **Coupon Sales** | **Total** |
|
| EPY5 Eval Research NTGR | 0.55 | 0.48 | 0.54 | 0.48 | 0.54 | 0.55 | 0.54 |
| EPY4 Eval Research NTGR | 0.55 | 0.44 | 0.54 | 0.54 | 0.54 | 0.55 | 0.54 |
| EPY3 Eval Research NTGR | 0.71 | 0.71 | 0.71 |  |  |  | 0.71 |
| EPY5 Deemed NTGR | 0.72 | 0.80 | 0.79 | 0.80 | 0.79 | 0.72 | 0.73 |

Source: EPY5 Residential Lighting draft report, 2014-01-13 |

|  | Fridge Freezer Recycling Rewards |
| --- | --- |
| EPY1 | **NTG** 0.70 for refrigerators, 0.83 for freezers, 1.0 for Room AC units**Free ridership** 30% for refrigerators, 17% for freezers, 0% for Room AC units**Spillover** 0% for all measure types**Method**: Customer self-report. 100 surveys completed (70 refrigerator respondents, 30 freezers), from attempted calls with 498 respondents |
| EPY2 | **NTG** 0.73 for refrigerators, 0.82 for freezers, 0.72 for Room AC units**Free ridership** 27% for refrigerators, 18% for freezers, 28% for Room AC units**Spillover** 0% for all measure types**Method**: Customer self-report. 152 surveys completed – 114 Refrigerator, 38 Freezer, 30 Room AC Recyclers, from attempted calls with 744 respondents |
| EPY3 | **NTG** 0.67 for refrigerators, 0.75 for freezers, 0.70 for Room AC units**Free ridership** 33% for refrigerators, 25% for freezers, 30% for Room AC units**Spillover** 0% for all measure types**Method**: Customer self-report. 202 surveys completed – 151 Refrig., 51 Freezer, 30 Room AC Recyclers, from attempted calls with 1,369 respondents |
| EPY4 | **Deemed using PY2 values NTG** 0.73 for refrigerators, 0.77 for freezers, and 0.58 for Room AC units**EPY4 Research NTG of 0.77 for refrigerators and freezers, 0.58 for Room AC.****Free ridership** 27% for refrigerators, 23% for freezers, 42% for Room AC units**Spillover** 0% for all measure types**Method**: Customer and participating retailer self-reports. Weighted average from combining results from both sources. 200 surveys completed with participating customers –150 Refrig., 50 Freezer, 19 Room AC Recyclers, from attempted calls with 2,225 respondents |
| EPY5 | SAG Consensus:* Refrigerators: 0.67
* Freezers: 0.75
* Room AC: 0.70
 |
| EPY6 | SAG Consensus:* Refrigerators: 0.73
* Freezers: 0.82
* Room AC: 0.72
 |
| EPY7 | **NTG Recommendation:**

|  |  |  |
| --- | --- | --- |
| **Unit Type** | **Non-Retailer** | **Retailer** |
| Refrigerator | 79% | 17% |
| Freezer | 59% | 21% |
| Room ACs | 50% |   |

Source: EPY5 participant surveys, participating retailer surveys, nonparticipating retailer surveys **Participant Spillover: Negligible****Nonparticipant spillover: Negligible**No spillover primary research done in EPY5. A literature review of other research does not support meaningful spillover.Source of recommendation, Table 7-6 in EPY5 report: Table ‑. PY5 Research Findings Net-to-Gross for Retailer and Non-Retailer Participants

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit Type** | **NTGR Non-Retailer** | **NTGR Retailer** | **NTGR Weighted Average** |
| Refrigerator | 79% | 17% | 63% |
| Freezer | 59% | 21% | 56% |
| Room ACs | 50% |   | 50% |

Source: EPY5 RFRR draft report 2014-02-14 |

|  | Multi-Family Comprehensive (Joint) |
| --- | --- |
| EPY1 | **NTG** 0.80**Free ridership** n/a**Spillover** n/a**Method**: ComEd planning documents. (No EMV NTG analysis).  |
| EPY2 | **Program NTG 0.88****Measure Specific:****CFLs NTG 0.81****CFLs Free Ridership 27%****CFLs Spillover 18%****Water Efficient Showerheads NTG 0.93****Water Efficient Showerheads Free Ridership 9%****Water Efficient Showerheads Spillover 2%****Water Efficient Aerators NTG 0.94****Water Efficient Aerators Free Ridership 6%****Water Efficient Aerators Spillover 0%****Method**: Participant Self-Report. CATI telephone survey with 75 participating tenants (90/9). |
| EPY3 | **Program NTG 0.90****Measure Specific:****CFLs NTG 0.81****CFLs Free Ridership 20%****CFLs Spillover 1%****Water Efficient Showerheads NTG 0.93****Water Efficient Showerheads Free Ridership 7%****Water Efficient Showerheads Spillover 0%****Water Efficient Aerators NTG 0.94****Water Efficient Aerators Free Ridership 6%****Water Efficient Aerators Spillover 0%****Method**: Participant self-report. CATI telephone survey with 140 participating tenants (90/10). |
| EPY4 | **Deemed using EPY2 values:****Program NTG** **0.83****Measure Specific:****CFLs NTG 0.81****Water Efficiency Measures (Aerators + Showerheads) NTG 0.93****Verification Method**: Applied EPY2 evaluation findings according to NTG Framework.**EPY4 Research Findings:****Program NTG** **0.97****CFLs NTG 0.98****Water Efficiency Measures (Aerators + Showerheads) NTG 0.92****Water Efficient Showerheads NTG 0.91****Water Efficient Aerators NTG 0.93****Research Method**: Participant self-report. CATI telephone survey with participating decision-makers (37 property managers) |
| EPY5 | SAG Consensus:

|  |  |
| --- | --- |
| Multi-Family – Lighting  | 0.81 |
| Multi-Family – Water Measures | 0.93 |

 |
| EPY6 | SAG Consensus:

|  |  |
| --- | --- |
| Multi-Family - CFLs | 0.98 |
| Multi-Family - Showerhead | 0.92 |
| Multi-Family – Common Areas | 0.80 |

 |
| EPY7 | **Evaluation recommends using EPY4 research finding**s**:****Program NTG** **0.98****CFLs NTG 0.98****Water Efficient - Showerheads NTG 0.92****Water Efficient – Bath Aerators NTG 0.94****Water Efficient – Kitchen Aerators NTG 1.00****Participant spillover:** Comprehensive spillover is in the estimated NTG. Other measures: No participant spillover is likely for any measures given the program approach and program theory.**Nonparticipant spillover:** No nonparticipant spillover is likely for any measures given the program approach and program theory.**Research Method**: Participant self-report. CATI telephone survey with participating decision-makers (37 property managers).For EPY7 comprehensive projects, Navigant recommends a NTGR of 0.95. These are new measures, and Navigant’s research indicates that the target market for this program is unlikely to install these measures without the existence of the program, similar to PY4 ComEd Small Business Energy Savings program evaluation research findings.For EPY7 CFL direct install free-ridership, Navigant recommends the PY4 evaluation research finding NTGR of 0.98, based on survey self-report data from participating property managers. Navigant recommends the PY4 values for each of the water efficient measures (showerheads, bath aerators and kitchen aerators).  |

|  | Home Energy Savings (Single Family Retrofit) (Joint) |
| --- | --- |
| 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 | **Recommendation:****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 |

 |

|  | Complete System Replacement (HEER) (Joint) |
| --- | --- |
| EPY1 | CSR program not offered in EPY1 |
| EPY2 | CSR program not offered in EPY1 |
| EPY3 | CSR program not offered in EPY1 |
| EPY4 | **Retroactive application of** NTG of 59%Free-ridership: 41%Spillover: 0%Method: Customer self-report.  |
| EPY5 | SAG consensus: Retrospective evaluation |
| EPY6 | SAG consensus:* 0.59
 |
| EPY7 | **NTG: 0.99****Free Ridership:** **Participant 0.41; Trade ally 0.25; Average = 0.33** **(**EPY4 participant survey and EPY5 participating trade ally surveys)**Participant Spillover:** **0.12** from participating trade ally survey**Nonparticipant Spillover: 0.20** from nonparticipant trade ally survey. |

|  | Residential New Construction (Joint) |
| --- | --- |
| EPY1 | No Program |
| EPY2 | No Program |
| EPY3 | No Program |
| EPY4 | NTG not evaluated. Program just launched. No impact evaluation. No kWh savings |
| EPY5 | SAG Consensus: Retrospective evaluation |
| EPY6 | SAG Consensus* 0.80
 |
| EPY7 | **NTG: 0.80** **Free ridership 0.20****Participants Spillover: negligible****Nonparticipants Spillover: negligible**Source: Planning value used in each prior year. There are no evaluation NTG has been conducted yet. The program is so young it is unlikely to be creating meaningful spillover. |

|  | Elementary Energy Education (Joint) |
| --- | --- |
| EPY4 |

| **Measure** | **Research Findings Nicor Gas-only** **FR** | **Research Findings Nicor Gas-only** **SO** | **Research Findings Nicor Gas-only NTG** | **Research Findings Nicor Gas-ComEd FR** | **Research Findings Nicor Gas-ComEd SO** | **Research Findings Nicor Gas-ComEd NTG** |
| --- | --- | --- | --- | --- | --- | --- |
| Showerheads | 39% | 7% | **68%** | 22% | 19% | **96%** |
| Kitchen Aerators | 33% | 2% | **69%** | 18% | 14% | **97%** |
| Bathroom Aerators | 35% | 7% | **71%** | 22% | 9% | **87%** |
| CFLs | NA | NA | **NA** | 53% | 31% | **78%** |

**Retroactive application of NTG** of 0.68 - 0.96 (varies by measure and participant group)**Free ridership** 18-53%**Spillover** 7-19%**Method**: Customer self-report, 223 surveys completed from a population of 9,972. |
| EPY5 | SAG Consensus* 0.76
 |
| EPY6 | SAG Consensus* 0.76
 |
| EPY7 | **NTG: 0.76** **Free ridership: See EPY4 table****Participant spillover: see EPY4 table****Nonparticipant spillover: negligible**Source: EPY4 participant survey. No new evaluation research in EPY5.No material changes to market or program. |

Other Programs

# Regression Based EM&V Analysis

EM&V impact analysis (regression) will create net savings, not adjusted gross therefore it EM&V does not calculate a NTG ratio that could be applied prospectively for the following programs:

* C&I Behavioral (Agentis)
* Home Energy Report

# Third Party Programs Paid on Net Savings

ComEd has some third party programs where the contractor is paid on net savings and so NTG will always be retrospective:

* RLD C&I Thermostats
* RSG Computers
* C3 (FKA Efficiency 2.0)

# IPA Programs

We will cover them at a later time.