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| ComEd CY2024 Cost-Effectiveness Research ReportEnergy Efficiency/Demand Response Plan: Program Year 2024 (CY2024) (1/1/2024-12/31/2024) |
| Prepared for:ComEdDRAFTApril 30, 2025 |
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# Overview

As part of ComEd’s energy efficiency program evaluation for calendar year 2024 (CY2024), Guidehouse determined program- and portfolio-level cost-effectiveness using the utility cost test (UCT) and the Illinois total resource cost (TRC) test. This analysis included quantifying the program, measure, and portfolio costs for implementing the energy efficiency programs, along with the benefits derived from these investments. This report contains TRC values with and without Societal non-energy impacts (Societal NEIs). The following sections include the results of the cost-effectiveness analysis for each program in ComEd’s portfolio and a detailed breakdown of all the costs and benefits included in the analysis. Guidehouse conducted the analysis using spreadsheet and Analytica tools.

The savings numbers and results included in this report are reflective of only ComEd’s Energy Efficiency Portfolio Standard (EEPS) programs. For programs that are jointly implemented by ComEd and one or more Illinois gas utilities (including Nicor Gas, Peoples Gas [PG], and North Shore Gas [NSG]), only ComEd’s portion of the program savings and costs are included in this report.[[1]](#footnote-2) The combined joint TRC and UCT values for these programs will be shared in a separate memo.

The Illinois TRC test is defined in the Illinois Power Agency Act (see 20 ILCS 3855/1-10) as follows:[[2]](#footnote-3)

“Total resource cost test” or “TRC test” means a standard that is met if, for an investment in energy efficiency or demand-response measures, the benefit-cost ratio is greater than one. The benefit-cost ratio is the ratio of the net present value of the total benefits of the program to the net present value of the total costs as calculated over the lifetime of the measures. A total resource cost test compares the sum of avoided electric utility costs, representing the benefits that accrue to the system and the participant in the delivery of those efficiency measures and including avoided costs associated with reduced use of natural gas or other fuels, avoided costs associated with reduced water consumption, and avoided costs associated with reduced operation and maintenance costs, as well as other quantifiable societal benefits, to the sum of all incremental costs of end-use measures that are implemented due to the program (including both utility and participant contributions), plus costs to administer, deliver, and evaluate each demand-side program, to quantify the net savings obtained by substituting the demand-side program for supply resources. In calculating avoided costs of power and energy that an electric utility would otherwise have had to acquire; reasonable estimates shall be included of financial costs likely to be imposed by future regulations and legislation on emissions of greenhouse gases. In discounting future societal costs and benefits for the purpose of calculating net present values, a societal discount rate based on actual, long-term Treasury bond yields should be used. Notwithstanding anything to the contrary, the TRC test shall not include or consider a calculation of market price suppression effects or demand reduction induced price effects.

The Illinois TRC test differs from traditional TRC tests due to its requirement to include a reasonable estimate of the financial costs associated with future regulations and legislation on the emissions of greenhouse gases (GHG) and the use of the societal discount rate. These differences add a benefit to investments in efficiency programs that are typically included in the societal cost test in other jurisdictions.

Table 1‑1 summarizes the CY2024 TRC and UCT values for all EEPS programs in ComEd’s CY2024 portfolio. Overall, the CY2024 portfolio aggregate TRCs and UCTs show the portfolio was cost-effective, with aggregate TRC values of 5.35 (with Societal NEIs) and 3.03 (without Societal NEIs), and a UCT value of 2.13.

Table 1‑1. Summary of CY2024 TRC and UCT Values for ComEd Programs

| **Program** | **Illinois TRC Test** | **Illinois TRC Test** | **UCT** |
| --- | --- | --- | --- |
| **(With Societal NEIs)** | **(Without Societal NEIs)** |
| ASI kWh Purchase | 4.86 | 3.13 | 4.25 |
| Behavior - Res/IE | 14.64 | 10.58 | 6.59 |
| Contractor/Midstream Rebates | 5.68 | 4.48 | 2.66 |
| Electric Home New Construction | 1.69 | 0.98 | 0.76 |
| Multifamily Upgrades | 1.46 | 0.86 | 0.63 |
| New Construction - IE | 1.41 | 1.05 | 0.70 |
| Product Distribution | 17.35 | 8.49 | 5.43 |
| Retail/Online | 11.43 | 7.20 | 10.51 |
| Single Family Upgrades | 1.62 | 1.10 | 0.50 |
| Whole Home Electric | 0.69 | 0.66 | 0.34 |
| **Residential & Income Eligible Total\*** | **7.52** | **4.63** | **3.77** |
| Assessments † | 0.00 | 0.00 | 0.00 |
| Behavior Bus/Pub | 4.13 | 1.75 | 0.91 |
| EMS - Small Business - Pilot | 0.27 | 0.12 | 0.07 |
| Incentives | 4.33 | 2.24 | 1.72 |
| Midstream/Upstream | 9.47 | 5.17 | 4.84 |
| New Construction - Bus/Pub | 2.11 | 1.31 | 1.98 |
| Small Business | 5.00 | 2.66 | 1.60 |
| Targeted Systems | 3.57 | 1.68 | 0.90 |
| **Business & Public Sector Total\*** | **5.09** | **2.67** | **1.85** |
| Voltage Optimization | 4.32 | 2.13 | 1.31 |
| **Portfolio Total without IE & with VO** | **5.78** | **2.85** | **1.96** |
| **Portfolio Total with IE & without VO** | **5.44** | **3.11** | **2.21** |
| **Portfolio Total without IE, VO**  | **5.95** | **2.93** | **2.05** |
| **Portfolio Total with IE & VO** | **5.35** | **3.03** | **2.13** |

Notes: This table contains only ComEd programs. In CY2024, ComEd purchased kilowatt-hour savings from Nicor Gas’ Air Sealing and Insulation (ASI) offering. ComEd’s purchase of therms from the Nicor ASI program is not a ComEd program, but the savings and TRC results are counted in ComEd’s residential sector.

\*The TRC and UCT values are calculated using the sum of all the offerings’ benefits and costs.

† No TRC/UCT value estimated for the Assessment program as there were no program savings in CY2024 although some costs were incurred and included in the overall cost analysis.

Source: Guidehouse analysis

## Total Resource Cost Equation

Guidehouse used Equation 1 to calculate the Illinois TRC.

Equation 1. Illinois TRC

*BCRILTRC = BILTRC / CILTRC*

Where:

**BCR*ILTRC*** = Benefit-cost ratio of the Illinois TRC test

**B*ILTRC***  = Present value of benefits of an Illinois program or portfolio

**C*ILTRC*** = Present value of costs of an Illinois program or portfolio

The evaluation team calculated the benefits of the Illinois TRC using Equation 2.

Equation 2. Illinois TRC Benefits

$$B\_{ILTRC}=\sum\_{t=1}^{N}\frac{UAEP\_{t}+UATD\_{t}+UAA\_{t}+EB\_{t}+RC+ S NEI}{(1+d)^{t-1}}+\sum\_{t=1}^{N}\frac{UAC\_{at}}{(1+d)^{t-1}}$$

Guidehouse calculated the costs of the Illinois TRC using Equation 3.

Equation 3. Illinois TRC Costs

$$C\_{ILTRC}=\sum\_{t=1}^{N}\frac{PNIC\_{t}+IMCN\_{t}+UIC\_{t}}{(1+d)^{t-1}}$$

Where benefits are defined as:

UAEPt = Utility avoided electric and capacity production costs in year t

UATDt = Utility avoided transmission and distribution (T&D) costs in year t

UAAt = Utility avoided ancillary costs in year t

EBt = Environmental benefits in year t

UACat = Utility avoided supply costs for the alternate fuel in year t

RC = Net present value (NPV) of replacement costs of baseline bulbs

S NEI = NPV societal NEI benefit

And costs are defined as:

PNICt = Program non-incentive costs in year t

IMCNt = Net incremental costs in year t

UICt = Utility increased supply costs in year t

And:

d = Societal discount rate

The Illinois TRC test allows for utilities to account for the NPV of the avoided cost of purchasing shorter lifetime bulbs, which accrue to program participants because of the significantly longer lifetimes of efficient LED light bulbs. In general, the avoided cost per bulb is determined by comparing the estimated useful life of efficient and baseline bulbs to determine the number of baseline bulb purchases that are avoided. Based on the average purchase price of baseline bulbs, NPV is determined by discounting the value of these avoided purchases over the course of the lifetime of the efficient bulb. Illinois Technical Reference Manual version 12.0 (IL TRM v12.0) provides deemed NPVs per bulb based on efficient bulb type, socket type (commercial or residential), and lumen range. These benefits were included in the program calculations.

Policy Manual Version 3.0[[3]](#footnote-4) asserts that negative avoided costs (accrued through electrification or other impacts) be treated as increases in TRC costs rather than decreases in TRC benefits, as was previously treated. Additionally, electricity avoided cost impacts (energy and demand) are grouped to create a net cost change due to electricity. These updates are reflected in the TRC ratios and report tables.

## Utility Cost Test Equation

The Utility Cost Test (UCT) approaches cost-effectiveness from the perspective of the utility, in this case ComEd. The UCT determines whether the energy supply and capacity costs avoided by the utility exceed the overhead and cost outlays that the utility incurred to implement energy efficiency programs. The structure of the calculation is similar to the Illinois TRC with a few key changes. As the UCT is primarily focused on utility outlays, incentives paid by the utility to either participants or third-party implementers are included in the calculation in place of incremental or participant costs. Additionally, as non-energy benefits accrue to society rather than to the utility implementing energy efficiency programs, these benefits are not included in the UCT formula. The UCT, however, accounts for water benefits defined in the IL TRM.

Using the equation terms previously defined for the Illinois TRC equation, Equation 4 shows the UCT equation.

Equation 4. UCT

*BCRUCT = BUCT / CUCT*

Where:

**BCR*UCT*** = Benefit-cost ratio of the UCT

**B*UCT***  = Present value of benefits to a utility of a program or portfolio

**C*UCT*** = Present value of costs to a utility of a program or portfolio

The benefits of the UCT are calculated using Equation 5.

Equation 5. UCT Benefits

$$B\_{UCT}=\sum\_{t=1}^{N}\frac{UAEP\_{t}+UATD\_{t}+UAA\_{t}}{(1+d)^{t-1}}+\sum\_{t=1}^{N}\frac{UAC\_{at}}{(1+d)^{t-1}}$$

The costs of the UCT are calculated using Equation 6.

Equation 6. UCT Costs

$$C\_{UCT}=\sum\_{t=1}^{N}\frac{PNIC\_{t}+UIC\_{t}+PIN\_{t}}{(1+d)^{t-1}}$$

Where the new term, *PINt*, is defined as the program incentives provided by the utility in year t.

Similar cost test changes from the final draft policy in Policy Manual Version 3.0 apply to the UCT as described in Section 1.1.

## Cost-Effectiveness Data Requirements

Table 1‑2 outlines the data points collected from different stakeholders to conduct cost-effectiveness analysis. The data is categorized into generic and program-specific categories.

Table 1‑2. Data Points Needed to Conduct EEPS Cost-Effectiveness

| Category | Data Point | Source |
| --- | --- | --- |
| Generic | * Avoided Energy Costs ($/kWh)
* Avoided Capacity Costs ($/kW)
* Avoided T&D Electric ($/kWh)
* Avoided Gas Production ($/therm)[[4]](#footnote-5)
* Avoided Water Costs ($/gallon)
* Escalation Rates
* Environmental Damages (GHG Adders)
* Discount Rate
 | ComEd |
| Program Specific | * Participants/Measure Count
* Verified Energy and Demand Savings
* Realization Rate
* Net-to-Gross Ratio
* Measure Life
* Incremental Measure Costs[[5]](#footnote-6)
* NPV Replacement Costs
* Societal NEI Benefit
 | Guidehouse Evaluation of ComEd Reports |
| * Non-Incentive Costs
* Utility Incentive Costs
* Direct Install Costs
* Incremental Measure Costs
 | ComEd |

Source: Guidehouse analysis

# Summary of Results and Portfolio-Level Data Inputs

Table 2‑1 summarizes the CY2024 cost-effectiveness analysis results by benefit and cost components relevant to each cost test for the portfolio without the inclusion of income eligible components, or voltage optimization. The results indicate that ComEd’s CY2024 EEPS portfolio is cost-effective under both the UCT and the TRC tests for the Residential and Business sectors.

Table 2‑1. Summary of ComEd CY2024 Residential and Business Sectors’ Cost-Effectiveness Test Values ($ Thousands)

|  |  |  |
| --- | --- | --- |
| **Data Point** | **UCT** | **Illinois TRC Test** |
| **UCT Benefits** | **UCT** **Costs** | **Illinois TRC Benefits** | **Illinois TRC Costs** |
| Electricity Cost Changes  | $566,009  | $15  | $566,009  | $15  |
| Fossil Fuel Cost Changes | $114,054  | $4,037  | $114,054  | $4,037  |
| Water Cost Changes | N/A | N/A | $27,632  | $0  |
| Environmental Adder (GHGs) | N/A | N/A | $384,820  | $0  |
| Societal NEI Benefit | N/A | N/A | $1,127,862  | $0  |
| NPV Replacement Costs | N/A | N/A | $0  | $0  |
| Non-Incentive Costs | N/A | $130,589  | N/A | $130,589  |
| Incentive Costs | N/A | $0  | N/A | N/A |
| Net Participant Costs | N/A | N/A | $0  | $238,447  |
| Present Value Totals (with Societal NEI) | $680,063  | $134,641  | $2,220,376  | $373,089  |
| Present Value Totals (without Societal NEI) | $680,063  | $134,641  | $1,092,515  | $373,089  |
| Ratio (with Societal NEI) | 5.05 | 5.95 |
| Ratio (without Societal NEI) | 5.05 | 2.93 |

Note: All categories exclude income eligible and voltage optimization.

Source: Guidehouse analysis

On the cost side, net participant costs represent the largest component followed by the incentive costs of program implementation. For the UCT, the sum of all incentives provided is used in place of net participant costs. The sum of all incentives is less than the sum of all incremental costs.

## Avoided Costs

As discussed in Section 1.3, avoided cost data is provided by ComEd and is typically updated annually. The definitions of each avoided cost data point used in the analysis and their respective sources are as follows:

* **Avoided Energy Costs ($/kWh):** Avoided electric production costs are those associated with purchasing energy from Pennsylvania-New Jersey-Maryland Interconnection (PJM).
* **Avoided Electric Capacity Costs ($/kW):** Avoided electric capacity costs are those associated with the construction of additional electricity generation facilities to meet peak demand. Incremental reductions in the amount of electricity demand during peak hours can delay or eliminate the need to build additional generation. ComEd is a participant in the Reliability Pricing Model, which is PJM’s forward capacity market.
* **Avoided T&D Electric ($/kW):** Avoided T&D costs are a benefit associated with not needing to build T&D infrastructure to meet demand at peak times.
* **Avoided Electric Ancillary ($/kWh):** Avoided ancillary is a benefit associated with avoided costs attributable to the Open Access Transmission Tariff that applies to utilities that participate in the PJM market.
* **Avoided Gas Costs ($/therm):** This value is from Nicor Gas and is used to account for gas interactive effects due to lighting.
* **Avoided Water Costs ($/gal):** This value accounts for savings associated with efficient water fixtures and clothes washers. The avoided water costs of $8.59/1,000 gallons (as provided by ComEd) was used for the analysis.

## Non-Incentive Costs

Non-incentive costs are program administrator costs (related to energy efficiency) that are not otherwise classified as financial incentives paid to customers or incentives paid to third parties. In other words, non-incentive costs are equal to all program administrator costs minus incentives.

Examples of non-incentive costs include:

* Costs for overhead, labor, and materials required to develop, deliver, and administer functions related to the implementation of energy efficiency programs or portfolios such as rebate processing, measurement and verification (M&V), quality assurance, advertising and marketing, and customer relations
* Program administrator payment to a third party whose principal purpose is not to reduce the cost of the efficient measure to the customer
* Program administrator payment to a third party to cover the cost of services that are principally intended to be a form of marketing, as opposed to being truly necessary for any customer implementation of efficient measures
* Sales performance incentive fund formula (SPIFF) paid out to a third party

There are currently some performance-based programs where the third-party program implementer is paid an amount per kilowatt-hour that includes incentives and non-incentives. Guidehouse worked with ComEd to separate out the costs appropriately.

## Incentives

Incentives[[6]](#footnote-7) include financial incentives paid to customers plus incentives paid to third parties. Financial incentives paid to customers are payments[[7]](#footnote-8) made by a program administrator directly to an end-use customer to encourage the customer to participate in an efficiency program and offset some or all the customer’s costs to purchase and install a qualifying efficient measure, ultimately resulting in a reduction in the net price paid by the customer for the efficient measure. This rebate type of incentive is often referred to as a downstream incentive, which has the result that the net price to the customer of an energy efficiency program-sponsored measure is reduced by the amount of the incentive.

Incentives paid to third parties are payments made by a program administrator to a third party that is principally intended to reduce the net price to the customer of purchasing and installing a qualifying efficient measure. These incentives include payments made by a program administrator to service providers, manufacturers, wholesalers, distributors, contractors, builders, retailers, implementation contractors, or other non-customer stakeholders that are principally intended to defray the incremental cost to the customer of purchasing and installing an efficient measure. They also include payments made by a program administrator to an implementation contractor to cover the full cost of direct installation measures (materials and labor) for the portion not covered by the customer. Incentives paid to third parties also include payment by a program administrator to a third party to cover the full cost of study-based services (e.g., facility energy audits, energy surveys, energy assessments, retro-commissioning) that are truly necessary for a customer to implement efficient measures, as opposed to being principally a form of marketing. Incentives paid to third parties also include payment made by a program administrator to an implementation contractor to cover the cost of pickup and recycling of duplicative functioning equipment before its expected life is over (e.g., appliance recycling programs). The portion of the payments covered by the customers are not included in the incentives paid to third parties.

## Incremental Costs

Incremental costs are the difference between the cost of the efficient measure and the cost of the most relevant baseline measure that would have been installed (if any) in the absence of the efficiency program. Installation costs (material and labor) and operations and maintenance (O&M) costs are included if there is a difference between the efficient measure and the baseline measure. In cases where the efficient measure has a significantly shorter or longer life than the relevant baseline measure (e.g., LEDs versus halogens), the avoided baseline replacement measure costs are accounted for in the TRC analysis as a benefit. The incremental cost input in the TRC analysis is not reduced by the amount of incentives.

Examples of incremental cost calculations include:

* The incremental cost for an efficient measure that is installed in new construction or is being purchased at the time of natural installation, investment, or replacement is the additional cost incurred to purchase an efficient measure over and above the cost of the baseline or standard (i.e., less efficient) measure (including any incremental installation, replacement, or O&M costs if there is a difference between the efficient measure and baseline measure).
* For a retrofit measure where the efficiency program caused the customer to update their existing equipment, facility, or processes, where the customer would not have otherwise made a purchase, the appropriate baseline is zero expenditure and the incremental cost is the full cost of the new retrofit measure (including installation costs).
* For the early replacement of a functioning measure with a new efficient measure, where the customer would not have otherwise made a purchase for several years, the appropriate baseline is a dual baseline that begins as the existing measure and shifts to the new standard measure after the expected remaining useful life of the existing measure ends. The incremental cost is the full cost of the new efficient measure (including installation costs) being purchased to replace a still-functioning measure less the present value of the assumed deferred replacement cost of replacing the existing measure with a new baseline measure at the end of the existing measure’s life.
* For study-based services that are truly necessary for a customer to implement efficient measures, as opposed to being principally intended to be a form of marketing, the incremental cost is the full cost of the study-based service.

## Discount Rate

Guidehouse applied the discount rate to determine the present value of the cumulative benefits (e.g., avoided electric production, capacity, T&D, and ancillary) that accrue over the life of the measures included in each program. The discount rate should reflect the societal discount rate as defined in the legislation to be the actual, long-term treasury bond yields. The societal discount rate of 2.40% is used to calculate the TRC and UCT values.

## Line Losses

Line losses were incorporated in the calculation of the benefits. The energy and demand savings calculated by the evaluation are estimated at the customer or meter level. The savings that are accrued to ComEd ratepayers are those at the generator level and so the estimated savings are increased by the line losses within ComEd’s T&D network. Guidehouse calculated total benefits using the energy line losses of 10.07% and the peak line losses of 10.66% as provided by ComEd.

## Miscellaneous EEPS Portfolio Costs

In addition to costs allocated directly to energy efficiency programs, the cost-effectiveness analysis included portfolio-level costs that are not directly incurred by specific programs. These costs may include administrative, R&D, outreach, advertising, evaluation, M&V, legal, and other expenses. As statutory cost-effectiveness is measured at the portfolio level, ComEd does not allocate these costs to individual programs. Table 2‑2 outlines the portfolio-level costs included in the analysis.

Table 2‑2. Breakdown of Portfolio-Level Costs

|  |  |
| --- | --- |
| Portfolio-Level Cost Component | Value ($) |
| M&V | $8,390,062  |
| R&D | $7,196,231  |
| Market Development | $5,148,628  |
| Legal | $22,387  |
| Tracking System | $998,194  |
| Labor (Non-Program-Specific) | $5,060,348  |
| General Program Costs | $6,985,393  |
| Residential Outreach | $3,689,762  |
| Business Outreach | $12,626,959  |
| Income Eligible Outreach | $300,461  |
| General Education & Awareness | $5,517,138  |
| **Total** | **$55,935,563**  |

## Societal NEIs

Societal NEIs occur when energy efficiency programs reduce electricity generated from fossil fuels, which reduces emissions including PM2.5, SO2, NOx, and CO2. This reduction in emissions causes reduced adverse health impacts, which are monetizable. The Societal NEIs were incorporated in the CY2024 analysis for the TRC values only. As discussed in previous sections, this report provides TRC results both with and without NEIs included.

Guidehouse quantified and monetized these Societal NEIs using the U.S. Environmental Protection Agency (EPA) AVoided Emissions and geneRation Tool (AVERT) and CO–Benefits Risk Assessment (COBRA) Health Impacts Screening and Mapping Tool. The EPA had updated COBRA in 2024 to estimate changes in annual ambient concentrations of both particulate matter (PM2.5) and ozone. In previous years COBRA only estimated the health impacts of PM2.5. The COBRA update included additional health incidents (Hospital Admissions related to Alzheimer’s and Parkinson’s Disease, Incidence of Stroke and Lung Cancer, and Hay Fever/Rhinitis).

# Program-Specific Data

Table 3‑1 and Table 3‑2 summarize the CY2024 cost-effectiveness calculations and results for each program. These tables include the value of each benefit and cost component for each program and EEPS totals for each sector (e.g., residential & income eligible [IE] and business). For programs jointly implemented by ComEd and one or more Illinois gas utility, the table includes only the electric portion of the program savings (unless ComEd claims the gas savings) and cost-benefit calculations.

Table 3‑3 summarizes the CY2024 ComEd Electrification Measures’ energy consumption, savings, and costs (total cost, total utility cost, average cost, average utility cost).

Table 3‑1. ComEd Program-Level Benefits, Costs, and Illinois TRC without Gas Data from Joint Programs ($ Thousands)

|  |  |  |  |
| --- | --- | --- | --- |
| **Program** | **Benefits** | **Costs** | **IL TRC Test (NPV replacement cost as benefit)** |
| **Electricity Cost Changes** | **Fossil Fuel Cost Changes** | **Water Cost Changes** | **Environmental Adder (GHGs)** | **Societal NEI** | **NPV Replacement Costs** | **Incremental Costs (Net)** | **Electricity Cost Changes** | **Fossil Fuel Cost Changes‡** | **Water Cost Changes** | **Environmental Adder (GHGs)** | **Societal NEI** | **NPV Replacement Costs** | **Non-Incentive Costs** | **Incentive Costs** | **Incremental Costs (Net)** | **IL TRC Benefits (w/o NEI)** | **IL TRC Costs (w/o NEI)** | **IL TRC Test Net Benefits (w/o NEI)** | **IL TRC Test (w/NEI)** | **IL TRC Test (w/o NEI)** |
|  | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | (q )= a+b+c+d+f+g | (r) = h+i+j+k+m+n+p | (s) = q-r | (t) = (q+e)/(r+l) | (u) = r / s |
| ASI kWh Purchase | $1,062  | $0  | $0  | $469  | $850  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $250  | $0  | $240  | $1,531  | $490  | $1,041  | 4.86 | 3.13 |
| Behavior - Res/IE | $42,563  | $0  | $0  | $25,774  | $26,219  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $6,457  | $0  | $0  | $68,337  | $6,457  | $61,879  | 14.64 | 10.58 |
| Contractor/Midstream Rebates | $32,643  | $1  | $0  | $29,402  | $16,687  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $2,520  | $9,747  | $11,332  | $62,046  | $13,852  | $48,194  | 5.68 | 4.48 |
| Electric Home New Construction | $639  | $0  | $52  | $607  | $943  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $829  | $80  | $498  | $1,298  | $1,327  | ($29) | 1.69 | 0.98 |
| Multifamily Upgrades | $17,828  | $2,253  | $2,312  | $12,005  | $24,263  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $11,875  | $23,847  | $28,209  | $34,397  | $40,083  | ($5,686) | 1.46 | 0.86 |
| New Construction - IE | $3,626  | $729  | $751  | $3,038  | $2,799  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $3,046  | $4,284  | $4,741  | $8,145  | $7,787  | $358  | 1.41 | 1.05 |
| Product Distribution | $85,591  | $0  | $10,943  | $57,839  | $161,079  | $0  | $0  | $0  | $1,230  | $0  | $0  | $0  | $0  | $3,988  | $12,552  | $12,966  | $154,373  | $18,184  | $136,189  | 17.35 | 8.49 |
| Retail/Online | $159,938  | $198,170  | $25,123  | $133,610  | $303,476  | $0  | $0  | $15  | $0  | $0  | $0  | $0  | $0  | $13,470  | $22,988  | $58,314  | $516,841  | $71,799  | $445,043  | 11.43 | 7.20 |
| Single Family Upgrades | $8,121  | $6,279  | $1,904  | $4,571  | $9,785  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $8,777  | $24,109  | $10,169  | $20,876  | $18,945  | $1,931  | 1.62 | 1.10 |
| Whole Home Electric | $3,374  | $0  | $10  | $3,186  | $335  | $0  | $0  | $64  | $0  | $0  | $0  | $0  | $0  | $2,432  | $7,488  | $7,488  | $6,570  | $9,984  | ($3,414) | 0.69 | 0.66 |
| **Res & IE Total** | **$355,387**  | **$207,432**  | **$41,094**  | **$270,501**  | **$546,435**  | **$0**  | **$0**  | **$79**  | **$1,230**  | **$0**  | **$0**  | **$0**  | **$0**  | **$57,634**  | **$105,095**  | **$133,956**  | **$874,414**  | **$188,909**  | **$685,505**  | **7.52** | **4.63** |
| Assessments | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $1,431  | $0  | $0  | $0  | $1,431  | ($1,431) | 0.00 | 0.00 |
| Behavior Bus/Pub | $8,748  | $0  | $0  | $8,047  | $22,933  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $7,063  | $2,546  | $2,546  | $16,795  | $9,609  | $7,185  | 4.13 | 1.75 |
| EMS - Small Business - Pilot | $24  | $0  | $0  | $25  | $59  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $353  | $0  | $45  | $49  | $397  | ($348) | 0.27 | 0.12 |
| Incentives | $123,479  | $5,673  | $0  | $76,237  | $192,063  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $14,467  | $60,779  | $77,400  | $205,389  | $91,866  | $113,523  | 4.33 | 2.24 |
| Midstream/Upstream | $114,375  | $0  | $67  | $71,302  | $154,500  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $3,719  | $19,931  | $32,193  | $185,744  | $35,912  | $149,832  | 9.47 | 5.17 |
| New Construction - Bus/Pub | $3,823  | $225  | $2,335  | $2,655  | $5,588  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $2,171  | $1,050  | $4,747  | $9,037  | $6,917  | $2,120  | 2.11 | 1.31 |
| Small Business | $130,358  | $0  | $91  | $78,562  | $184,412  | $0  | $0  | $0  | $4,018  | $0  | $0  | $0  | $0  | $10,491  | $67,252  | $64,105  | $209,011  | $78,614  | $130,397  | 5.00 | 2.66 |
| Targeted Systems | $26,643  | $184  | $0  | $19,298  | $51,712  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $9,701  | $20,092  | $17,718  | $46,126  | $27,419  | $18,706  | 3.57 | 1.68 |
| **Business & Public Sector Total** | **$407,450**  | **$6,082**  | **$2,492**  | **$256,126**  | **$611,268**  | **$0**  | **$0**  | **$0**  | **$4,018**  | **$0**  | **$0**  | **$0**  | **$0**  | **$62,023**  | **$171,650**  | **$198,753**  | **$672,150**  | **$252,167**  | **$419,983**  | **5.09** | **2.67** |
| Voltage Optimization | $56,309  | $0  | $0  | $35,532  | $94,287  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $43,054  | $0  | $0  | $91,841  | $43,054  | $48,787  | 4.32 | 2.13 |
| **Portfolio Total without IE & with VO** | **$622,318**  | **$114,054**  | **$27,632**  | **$420,352**  | **$1,222,148**  | **$0**  | **$0**  | **$15**  | **$4,037**  | **$0**  | **$0**  | **$0**  | **$0**  | **$173,643**  | **$197,677**  | **$238,447**  | **$1,184,356**  | **$416,143**  | **$768,213**  | **5.78** | **2.85** |
| **Portfolio Total with IE & without VO** | **$762,837**  | **$213,513**  | **$43,587**  | **$526,628**  | **$1,157,704**  | **$0**  | **$0**  | **$79**  | **$5,247**  | **$0**  | **$0**  | **$0**  | **$0**  | **$158,976**  | **$276,745**  | **$332,709**  | **$1,546,564**  | **$497,012**  | **$1,049,552**  | **5.44** | **3.11** |
| **Portfolio Total without IE & VO** | **$566,009**  | **$114,054**  | **$27,632**  | **$384,820**  | **$1,127,862**  | **$0**  | **$0**  | **$15**  | **$4,037**  | **$0**  | **$0**  | **$0**  | **$0**  | **$130,589**  | **$197,677**  | **$238,447**  | **$1,092,515**  | **$373,089**  | **$719,426**  | **5.95** | **2.93** |
| **Portfolio Total with IE & VO** | **$819,146**  | **$213,513**  | **$43,587**  | **$562,160**  | **$1,251,990**  | **$0**  | **$0**  | **$79**  | **$5,247**  | **$0**  | **$0**  | **$0**  | **$0**  | **$202,030**  | **$276,745**  | **$332,709**  | **$1,638,405**  | **$540,066**  | **$1,098,340**  | **5.35** | **3.03** |

\*The TRC and UCT values are calculated using the sum of all the offerings’ benefits and costs.

‡Gas heating penalties from energy efficiency measures designed to save electricity are being calculated as part of the overall fossil fuel cost changes.

Source: Guidehouse analysis

Table 3‑2. ComEd Program-Level Benefits, Costs, and UCT without Gas Data from Joint Programs ($ Thousands)

|  |  |  |  |
| --- | --- | --- | --- |
| **Program** | **Benefits** | **Costs** | **IL UCT** |
| **Electricity Cost Changes** | **Fossil Fuel Cost Changes** | **Water Cost Changes** | **Environmental Adder (GHGs)** | **Societal NEI** | **NPV Replacement costs** | **Incremental Costs (Net)** | **Electricity Cost Changes** | **Fossil Fuel Cost Changes‡** | **Water Cost Changes** | **Environmental Adder (GHGs)** | **Societal NEI** | **NPV Replacement costs** | **Non-Incentive Costs** | **Incentive Costs** | **Incremental Costs (Net)** | **IL UCT Benefits** | **IL UCT Costs** | **IL UCT Test Net Benefits** | **IL UCT Test** |
|  | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | (v) = a+b | (w) = h+i+n+o | (x) = v-w | (y) = v/w |
| ASI kWh Purchase | $1,062  | $0  | $0  | $469  | $850  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $250  | $0  | $240  | $1,062  | $250  | $812  | 4.25 |
| Behavior - Res/IE | $42,563  | $0  | $0  | $25,774  | $26,219  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $6,457  | $0  | $0  | $42,563  | $6,457  | $36,106  | 6.59 |
| Contractor/Midstream Rebates | $32,643  | $1  | $0  | $29,402  | $16,687  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $2,520  | $9,747  | $11,332  | $32,643  | $12,267  | $20,376  | 2.66 |
| Electric Home New Construction | $639  | $0  | $52  | $607  | $943  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $829  | $80  | $498  | $691  | $908  | ($217) | 0.76 |
| Multifamily Upgrades | $17,828  | $2,253  | $2,312  | $12,005  | $24,263  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $11,875  | $23,847  | $28,209  | $22,392  | $35,722  | ($13,330) | 0.63 |
| New Construction - IE | $3,626  | $729  | $751  | $3,038  | $2,799  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $3,046  | $4,284  | $4,741  | $5,107  | $7,330  | ($2,223) | 0.70 |
| Product Distribution | $85,591  | $0  | $10,943  | $57,839  | $161,079  | $0  | $0  | $0  | $1,230  | $0  | $0  | $0  | $0  | $3,988  | $12,552  | $12,966  | $96,534  | $17,770  | $78,764  | 5.43 |
| Retail/Online | $159,938  | $198,170  | $25,123  | $133,610  | $303,476  | $0  | $0  | $15  | $0  | $0  | $0  | $0  | $0  | $13,470  | $22,988  | $58,314  | $383,231  | $36,473  | $346,758  | 10.51 |
| Single Family Upgrades | $8,121  | $6,279  | $1,904  | $4,571  | $9,785  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $8,777  | $24,109  | $10,169  | $16,305  | $32,885  | ($16,581) | 0.50 |
| Whole Home Electric | $3,374  | $0  | $10  | $3,186  | $335  | $0  | $0  | $64  | $0  | $0  | $0  | $0  | $0  | $2,432  | $7,488  | $7,488  | $3,384  | $9,984  | ($6,600) | 0.34 |
| **Res & IE Total** | **$355,387**  | **$207,432**  | **$41,094**  | **$270,501**  | **$546,435**  | **$0**  | **$0**  | **$79**  | **$1,230**  | **$0**  | **$0**  | **$0**  | **$0**  | **$57,634**  | **$105,095**  | **$133,956**  | **$603,912**  | **$160,048**  | **$443,865**  | **3.77** |
| Assessments | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $1,431  | $0  | $0  | $0  | $1,431  | ($1,431) | 0.00 |
| Behavior Bus/Pub | $8,748  | $0  | $0  | $8,047  | $22,933  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $7,063  | $2,546  | $2,546  | $8,748  | $9,609  | ($862) | 0.91 |
| EMS - Small Business - Pilot | $24  | $0  | $0  | $25  | $59  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $353  | $0  | $45  | $24  | $353  | ($328) | 0.07 |
| Incentives | $123,479  | $5,673  | $0  | $76,237  | $192,063  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $14,467  | $60,779  | $77,400  | $129,152  | $75,245  | $53,906  | 1.72 |
| Midstream/Upstream | $114,375  | $0  | $67  | $71,302  | $154,500  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $3,719  | $19,931  | $32,193  | $114,442  | $23,651  | $90,791  | 4.84 |
| New Construction - Bus/Pub | $3,823  | $225  | $2,335  | $2,655  | $5,588  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $2,171  | $1,050  | $4,747  | $6,382  | $3,221  | $3,161  | 1.98 |
| Small Business | $130,358  | $0  | $91  | $78,562  | $184,412  | $0  | $0  | $0  | $4,018  | $0  | $0  | $0  | $0  | $10,491  | $67,252  | $64,105  | $130,449  | $81,760  | $48,689  | 1.60 |
| Targeted Systems | $26,643  | $184  | $0  | $19,298  | $51,712  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $9,701  | $20,092  | $17,718  | $26,828  | $29,794  | ($2,966) | 0.90 |
| **Business & Public Sector Total** | **$407,450**  | **$6,082**  | **$2,492**  | **$256,126**  | **$611,268**  | **$0**  | **$0**  | **$0**  | **$4,018**  | **$0**  | **$0**  | **$0**  | **$0**  | **$62,023**  | **$171,650**  | **$198,753**  | **$416,024**  | **$225,064**  | **$190,960**  | **1.85** |
| Voltage Optimization | $56,309  | $0  | $0  | $35,532  | $94,287  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $0  | $43,054  | $0  | $0  | $56,309  | $43,054  | $13,255  | 1.31 |
| **Portfolio Total without IE & with VO** | **$622,318**  | **$114,054**  | **$27,632**  | **$420,352**  | **$1,222,148**  | **$0**  | **$0**  | **$15**  | **$4,037**  | **$0**  | **$0**  | **$0**  | **$0**  | **$173,643**  | **$197,677**  | **$238,447**  | **$736,372**  | **$375,372**  | **$361,000**  | **1.96** |
| **Portfolio Total with IE & without VO** | **$762,837**  | **$213,513**  | **$43,587**  | **$526,628**  | **$1,157,704**  | **$0**  | **$0**  | **$79**  | **$5,247**  | **$0**  | **$0**  | **$0**  | **$0**  | **$158,976**  | **$276,745**  | **$332,709**  | **$976,350**  | **$441,047**  | **$535,303**  | **2.21** |
| **Portfolio Total without IE & VO** | **$566,009**  | **$114,054**  | **$27,632**  | **$384,820**  | **$1,127,862**  | **$0**  | **$0**  | **$15**  | **$4,037**  | **$0**  | **$0**  | **$0**  | **$0**  | **$130,589**  | **$197,677**  | **$238,447**  | **$680,063**  | **$332,318**  | **$347,745**  | **2.05** |
| **Portfolio Total with IE & VO** | **$819,146**  | **$213,513**  | **$43,587**  | **$562,160**  | **$1,251,990**  | **$0**  | **$0**  | **$79**  | **$5,247**  | **$0**  | **$0**  | **$0**  | **$0**  | **$202,030**  | **$276,745**  | **$332,709**  | **$1,032,659**  | **$484,101**  | **$548,558**  | **2.13** |

\*The TRC and UCT values are calculated using the sum of all the offerings’ benefits and costs.

‡Gas heating penalties from energy efficiency measures designed to save electricity are being calculated as part of the overall fossil fuel cost changes.

Source: Guidehouse analysis

Table 3‑3. ComEd Electrification Measure Costs

| **Program** | **Component** | **IE** | **End Use Type** | **Savings Category** | **Qty** | **Increase in Electricity Consumption (kWh)** | **Average Increase in Electricity Consumption (kWh)** | **Decrease in Gas Consumption (therms)** | **Average Decrease in Gas Consumption (therms)** | **Decrease in Gas Consumption (kWh)** | **Net Change in Electricity Consumption (kWh)** | **Ex Ante Gross Savings (kWh)** | **Program Gross Realization Rate** | **Verified Gross Savings (kWh)** | **Program Net-to-Gross Ratio (NTG)** | **Verified Net Savings (kWh)** | **EUL** | **Total Cost** | **Total Utility Cost** | **Average Cost** | **Average Utility Cost** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Contractor/Midstream Rebates | Midstream | TRUE | HVAC | Ground Source Heat Pump - Electrification (Income Eligible) | 2 | 9,621 | 5,064 | 1,843 | 970 | 54,016 | 44,395 | 42,287 | 1.16 | 49,129 | 0.93 | 45,690 | 25.0 | $134,221 | $1,566 | $70,643 | $824 |
| Contractor/Midstream Rebates | Midstream | TRUE | HVAC | Ground Source Heat Pump - Electrification - DAC (Income Eligible) | 0 | 692 | 3,459 | 112 | 562 | 3,294 | 2,602 | 2,773 | 1.00 | 2,773 | 1.00 | 2,773 | 25.0 | $14,129 | $139 | $70,643 | $694 |
| Whole Home Electric | SF | TRUE | Other | Custom Measure: Fireplace - Electrification - DAC | 4 | 818 | 205 | 313 | 78 | 9,174 | 8,356 | 10,437 | 0.80 | 8,341 | 1.00 | 8,341 | 20.0 | $8,298 | $8,298 | $2,074 | $2,075 |
| Whole Home Electric | SF | TRUE | Other | Custom Measure: Fireplace - Electrification | 3 | 614 | 205 | 234 | 78 | 6,858 | 6,244 | 6,245 | 1.00 | 6,245 | 1.00 | 6,245 | 20.0 | $6,212 | $6,213 | $2,071 | $2,071 |
| Contractor/Midstream Rebates | Midstream | TRUE | HVAC | Midstream ASHP - Electrification (Income Eligible) | 284 | 3,072,369 | 10,805 | 237,313 | 835 | 6,955,633 | 3,883,264 | 3,883,264 | 1.00 | 3,883,264 | 0.93 | 3,611,436 | 16.0 | $509,354 | $509,354 | $1,791 | $1,791 |
| Contractor/Midstream Rebates | Midstream | TRUE | HVAC | Midstream ASHP - Electrification - DAC (Income Eligible) | 35 | 333,115 | 9,553 | 26,737 | 767 | 783,669 | 450,555 | 450,555 | 1.00 | 450,555 | 1.00 | 450,555 | 16.0 | $59,098 | $59,098 | $1,695 | $1,695 |
| New Construction - IE | Affordable Housing New Construction | TRUE | HVAC | VRF | 99 | 608,187 | 6,143 | 117,295 | 1,185 | 3,437,903 | 2,829,715 | 2,816,747 | 1.00 | 2,829,715 | 1.00 | 2,829,715 | 16.0 | $0 | $0 | $0 | $0 |
| Retail/Online | Income Eligible Retail | TRUE | Appliances | Electric Clothes Dryer EEE DAC IE | 4 | -201 | -50 | 4 | 1 | 1,056 | 1,257 | 934 | 1.35 | 1,257 | 1.00 | 1,257 | 16.0 | $556 | $556 | $139 | $139 |
| Retail/Online | Income Eligible Retail | TRUE | Appliances | Electric Clothes Dryer EEE IE | 8 | -336 | -42 | 6 | 1 | 1,764 | 2,100 | 1,868 | 1.12 | 2,100 | 1.00 | 2,100 | 16.0 | $1,249 | $1,249 | $156 | $156 |
| Retail/Online | Income Eligible Retail | TRUE | Appliances | Heat Pump Dryer EEE DAC IE | 16 | -1,183 | -74 | 21 | 1 | 6,210 | 7,393 | 5,421 | 1.36 | 7,393 | 1.00 | 7,393 | 16.0 | $2,432 | $2,432 | $152 | $152 |
| Retail/Online | Income Eligible Retail | TRUE | Appliances | Heat Pump Dryer EEE IE | 21 | -1,684 | -80 | 30 | 1 | 8,839 | 10,523 | 7,551 | 1.39 | 10,523 | 1.00 | 10,523 | 16.0 | $7,661 | $7,661 | $365 | $365 |
| Retail/Online | Income Eligible Retail | TRUE | Appliances | Induction Cooktop EEE DAC IE | 9 | 999 | 111 | 11 | 1 | 3,350 | 1,881 | 1,881 | 1.00 | 1,881 | 1.00 | 1,881 | 16.0 | $8,626 | $8,626 | $958 | $958 |
| Retail/Online | Income Eligible Retail | TRUE | Appliances | Induction Cooktop EEE IE | 30 | 3,502 | 117 | 39 | 1 | 11,419 | 6,377 | 6,269 | 1.02 | 6,377 | 1.00 | 6,377 | 16.0 | $30,018 | $30,018 | $1,001 | $1,001 |
| Whole Home Electric | SF | TRUE | HVAC | Ductless Heat Pump - Electrification - DAC | 2 | 12,569 | 6,285 | 1,729 | 865 | 50,674 | 38,105 | 38,094 | 1.00 | 38,094 | 1.00 | 38,094 | 16.0 | $37,897 | $37,899 | $18,949 | $18,950 |
| Whole Home Electric | SF | TRUE | HVAC | Ductless Heat Pump - Electrification | 2 | 10,265 | 5,133 | 1,490 | 745 | 43,669 | 33,404 | 32,975 | 1.01 | 33,417 | 1.00 | 33,417 | 16.0 | $33,244 | $33,246 | $16,622 | $16,623 |
| Whole Home Electric | MF | TRUE | HVAC | Ductless Heat Pump - Electrification - DAC | 8 | 47,613 | 5,952 | 6,346 | 793 | 185,991 | 138,378 | 138,366 | 1.00 | 138,366 | 1.00 | 138,366 | 16.0 | $137,650 | $137,658 | $17,206 | $17,207 |
| Whole Home Electric | SF | TRUE | HVAC | Air Source Heat Pump - Electrification - DAC | 87 | 920,036 | 10,575 | 100,220 | 1,152 | 2,937,280 | 2,017,244 | 1,998,555 | 1.01 | 2,017,255 | 1.00 | 2,017,255 | 16.0 | $2,006,820 | $2,006,935 | $23,067 | $23,068 |
| Whole Home Electric | SF | TRUE | HVAC | Air Source Heat Pump - Electrification | 34 | 383,313 | 11,274 | 42,861 | 1,261 | 1,256,184 | 872,871 | 847,925 | 1.03 | 872,859 | 1.00 | 872,859 | 16.0 | $868,343 | $868,394 | $25,540 | $25,541 |
| Whole Home Electric | MF | TRUE | HVAC | Air Source Heat Pump - Electrification - DAC | 3 | 26,899 | 8,966 | 2,549 | 850 | 74,707 | 47,808 | 47,523 | 1.01 | 47,810 | 1.00 | 47,810 | 16.0 | $47,563 | $47,565 | $15,854 | $15,855 |
| Whole Home Electric | MF | TRUE | HVAC | Air Source Heat Pump - Electrification | 244 | 1,061,297 | 4,350 | 121,074 | 496 | 3,548,476 | 2,487,179 | 2,462,733 | 1.01 | 2,487,193 | 1.00 | 2,487,193 | 16.0 | $2,474,331 | $2,474,469 | $10,141 | $10,141 |
| Whole Home Electric | SF | TRUE | Appliances | Clothes Dryer - Electrification - DAC | 74 | 42,838 | 579 | 1,845 | 25 | 54,074 | 11,236 | 11,229 | 1.00 | 11,229 | 1.00 | 11,229 | 16.0 | $11,174 | $11,172 | $151 | $151 |
| Whole Home Electric | SF | TRUE | Appliances | Clothes Dryer - Electrification | 30 | 16,721 | 557 | 732 | 24 | 21,454 | 4,733 | 4,727 | 1.00 | 4,727 | 1.00 | 4,727 | 16.0 | $4,704 | $4,703 | $157 | $157 |
| Whole Home Electric | MF | TRUE | Appliances | Clothes Dryer - Electrification - DAC | 2 | 1,022 | 511 | 50 | 25 | 1,465 | 443 | 439 | 1.00 | 439 | 1.00 | 439 | 16.0 | $437 | $437 | $218 | $218 |
| Whole Home Electric | MF | TRUE | Appliances | Clothes Dryer - Electrification | 16 | 7,474 | 467 | 399 | 25 | 11,694 | 4,220 | 4,216 | 1.00 | 4,216 | 1.00 | 4,216 | 16.0 | $4,194 | $4,194 | $262 | $262 |
| Whole Home Electric | SF | TRUE | Appliances | Cooktop - Electrification - DAC | 79 | 20,781 | 263 | 1,605 | 20 | 47,040 | 26,259 | 26,256 | 1.00 | 26,268 | 1.00 | 26,268 | 16.0 | $26,133 | $26,133 | $331 | $331 |
| Whole Home Electric | SF | TRUE | Appliances | Cooktop - Electrification | 31 | 8,246 | 266 | 635 | 20 | 18,611 | 10,365 | 10,350 | 1.00 | 10,350 | 1.00 | 10,350 | 16.0 | $10,298 | $10,297 | $332 | $332 |
| Whole Home Electric | MF | TRUE | Appliances | Cooktop - Electrification - DAC | 9 | 2,543 | 283 | 192 | 21 | 5,627 | 3,084 | 3,052 | 1.01 | 3,075 | 1.00 | 3,075 | 16.0 | $3,059 | $3,059 | $340 | $340 |
| New Construction - IE | Affordable Housing New Construction | TRUE | HVAC | Ducted Heat Pump | 68 | 348,466 | 5,125 | 35,640 | 524 | 1,044,611 | 696,145 | 695,053 | 1.00 | 696,145 | 1.00 | 696,145 | 15.8 | $33,691 | $33,691 | $495 | $495 |
| Contractor/Midstream Rebates | Midstream | TRUE | HVAC | Midstream DMSHP - Electrification (Income Eligible) | 70 | 226,449 | 3,244 | 29,244 | 419 | 857,153 | 630,704 | 630,704 | 1.00 | 630,704 | 0.93 | 586,554 | 15.0 | $82,727 | $82,727 | $1,185 | $1,185 |
| Contractor/Midstream Rebates | Midstream | TRUE | HVAC | Midstream DMSHP - Electrification - DAC (Income Eligible) | 15 | 53,327 | 3,591 | 6,691 | 451 | 196,119 | 142,792 | 142,792 | 1.00 | 142,792 | 1.00 | 142,792 | 15.0 | $18,730 | $18,730 | $1,261 | $1,261 |
| Midstream/Upstream | Instant Discounts | TRUE | HVAC | ASHP HVAC EEE IE | 0 | 3,787 | 8,607 | 36 | 81 | 10,444 | 6,657 |  |  | 6,657 | 0.80 | 5,326 | 15.0 | $5,157 | $594 | $11,721 | $1,350 |
| Midstream/Upstream | Instant Discounts | TRUE | HVAC | ASHP HVAC DAC EEE IE | 3 | 14,607 | 5,774 | 120 | 47 | 35,086 | 20,479 |  |  | 20,479 | 1.00 | 20,479 | 15.0 | $15,865 | $1,827 | $6,271 | $722 |
| Midstream/Upstream | Instant Discounts | TRUE | HVAC | MSHP HVAC EEE IE | 2 | 15,008 | 6,202 | 152 | 63 | 44,466 | 29,458 |  |  | 29,458 | 0.80 | 23,566 | 15.0 | $22,821 | $2,628 | $9,430 | $1,086 |
| Midstream/Upstream | Instant Discounts | TRUE | HVAC | MSHP HVAC DAC EEE IE | 0 | 2,599 | 5,250 | 28 | 56 | 8,170 | 5,572 |  |  | 5,572 | 1.00 | 5,572 | 15.0 | $4,316 | $497 | $8,720 | $1,004 |
| Midstream/Upstream | Instant Discounts | TRUE | Other | Fork Truck EEE IE | 22 | 1,016,676 | 46,359 | 12,413 | 566 | 3,638,105 | 2,621,429 |  |  | 2,621,429 | 0.80 | 2,097,143 | 15.0 | $511,048 | $233,840 | $23,303 | $10,663 |
| New Construction - IE | Affordable Housing New Construction | TRUE | HVAC | Ductless Heat Pump | 44 | 62,402 | 1,418 | 5,533 | 126 | 162,164 | 99,762 | 99,762 | 1.00 | 99,762 | 1.00 | 99,762 | 15.0 | $21,800 | $21,800 | $495 | $495 |
| Whole Home Electric | SF | TRUE | Hot Water | Heat Pump Water Heater - Electrification - DAC | 81 | 72,204 | 891 | 14,794 | 183 | 433,587 | 361,383 | 383,482 | 0.94 | 361,396 | 1.00 | 361,396 | 15.0 | $359,527 | $359,547 | $4,439 | $4,439 |
| Whole Home Electric | SF | TRUE | Hot Water | Heat Pump Water Heater - Electrification | 32 | 33,685 | 1,053 | 6,844 | 214 | 200,586 | 166,901 | 170,005 | 0.98 | 166,902 | 1.00 | 166,902 | 15.0 | $166,038 | $166,048 | $5,189 | $5,189 |
| Whole Home Electric | MF | TRUE | Hot Water | Heat Pump Water Heater - Electrification - DAC | 2 | 3,610 | 1,805 | 796 | 398 | 23,329 | 19,719 | 19,712 | 1.00 | 19,712 | 1.00 | 19,712 | 15.0 | $19,610 | $19,611 | $9,805 | $9,805 |
| Whole Home Electric | MF | TRUE | Hot Water | Heat Pump Water Heater - Electrification | 16 | 10,098 | 631 | 2,237 | 140 | 65,563 | 55,465 | 55,475 | 1.00 | 55,475 | 1.00 | 55,475 | 15.0 | $55,187 | $55,191 | $3,449 | $3,449 |
| Whole Home Electric | MF | TRUE | Hot Water | Electric Water Heater - Electrification - DAC | 3 | 8,163 | 2,721 | 386 | 129 | 11,313 | 3,150 | 3,644 | 0.87 | 3,155 | 1.00 | 3,155 | 13.3 | $3,139 | $3,139 | $1,046 | $1,046 |
| New Construction - IE | Affordable Housing New Construction | TRUE | Appliances | Electric Dryers | 115 | 73,132 | 636 | 3,453 | 30 | 101,206 | 28,074 | 19,480 | 1.44 | 28,074 | 1.00 | 28,074 | 11.1 | $15,824 | $15,824 | $138 | $138 |
| New Construction - IE | Affordable Housing New Construction | TRUE | HVAC | PTHP | 353 | 348,086 | 986 | 44,709 | 127 | 1,310,407 | 962,321 | 962,321 | 1.00 | 962,321 | 1.00 | 962,321 | 8.0 | $1,469,955 | $1,469,955 | $4,164 | $4,164 |
| Contractor/Midstream Rebates | Midstream | FALSE | HVAC | Ground Source Heat Pump - Electrification (Non - Income Eligible) | 17 | 86,589 | 5,064 | 16,586 | 970 | 486,146 | 399,557 | 380,580 | 1.16 | 442,164 | 0.93 | 411,212 | 25.0 | $57,997 | $57,997 | $3,392 | $3,392 |
| Contractor/Midstream Rebates | Midstream | FALSE | HVAC | Ground Source Heat Pump - Electrification - DAC (Non - Income Eligible) | 2 | 6,226 | 3,459 | 1,012 | 562 | 29,647 | 23,421 | 24,954 | 1.00 | 24,954 | 1.00 | 24,954 | 25.0 | $3,273 | $3,273 | $1,818 | $1,818 |
| Contractor/Midstream Rebates | Midstream | FALSE | HVAC | Midstream ASHP - Electrification (Non - Income Eligible) | 2,559 | 27,651,319 | 10,805 | 2,135,814 | 835 | 62,600,696 | 34,949,377 | 34,949,377 | 1.00 | 34,949,377 | 0.93 | 32,502,921 | 16.0 | $4,584,186 | $4,584,186 | $1,791 | $1,791 |
| Contractor/Midstream Rebates | Midstream | FALSE | HVAC | Midstream ASHP - Electrification - DAC (Non - Income Eligible) | 314 | 2,998,031 | 9,553 | 240,635 | 767 | 7,053,024 | 4,054,993 | 4,054,993 | 1.00 | 4,054,993 | 1.00 | 4,054,993 | 16.0 | $531,879 | $531,879 | $1,695 | $1,695 |
| Electric Homes New Construction | EHNC | FALSE | HVAC | Ductless Mini Split Heat Pumps (DAC) | 17 | 168,371 | 9,904 | 16,662 | 980 | 494,989 | 326,618 | 465,751 | 0.70 | 326,475 | 1.00 | 326,475 | 16.0 | $17,314 | $17,314 | $1,018 | $1,018 |
| Electric Homes New Construction | EHNC | FALSE | HVAC | Ductless Mini Split Heat Pumps | 9 | 96,212 | 10,690 | 9,521 | 1,058 | 282,847 | 186,635 | 266,143 | 0.70 | 186,557 | 0.80 | 149,246 | 16.0 | $9,166 | $9,166 | $1,018 | $1,018 |
| Electric Homes New Construction | EHNC | FALSE | HVAC | Central Air Source Heat Pumps (DAC) | 12 | 164,231 | 13,686 | 13,662 | 1,139 | 405,324 | 241,093 | 276,651 | 0.87 | 240,980 | 1.00 | 240,980 | 16.0 | $12,222 | $12,222 | $1,018 | $1,018 |
| Electric Homes New Construction | EHNC | FALSE | HVAC | Central Air Source Heat Pumps | 6 | 93,846 | 15,641 | 7,807 | 1,301 | 231,618 | 137,772 | 158,087 | 0.87 | 137,703 | 0.80 | 110,162 | 16.0 | $6,111 | $6,111 | $1,018 | $1,018 |
| Electric Homes New Construction | EHNC | FALSE | Appliances | Efficient Appliances-Electrification (DAC) | 25 | 15,454 | 618 | 730 | 29 | 21,382 | 5,928 | 5,916 | 1.00 | 5,916 | 1.00 | 5,916 | 16.0 | $297 | $297 | $12 | $12 |
| Electric Homes New Construction | EHNC | FALSE | Appliances | Efficient Appliances-Electrification | 13 | 8,831 | 679 | 417 | 32 | 12,214 | 3,383 | 3,380 | 1.00 | 3,380 | 0.80 | 2,704 | 16.0 | $170 | $170 | $13 | $13 |
| Retail/Online | Appliance Rebates | FALSE | Appliances | Electric Clothes Dryer EEE DAC MR | 10 | -376 | -38 | 7 | 1 | 1,972 | 2,348 | 2,335 | 1.01 | 2,348 | 1.00 | 2,348 | 16.0 | $1,391 | $1,391 | $139 | $139 |
| Retail/Online | Appliance Rebates | FALSE | Appliances | Electric Clothes Dryer EEE MR | 118 | -4,395 | -37 | 79 | 1 | 23,075 | 27,471 | 27,558 | 1.00 | 27,471 | 0.80 | 21,977 | 16.0 | $18,420 | $18,420 | $156 | $156 |
| Retail/Online | Appliance Rebates | FALSE | Appliances | Heat Pump Dryer EEE DAC MR | 34 | -2,529 | -74 | 45 | 1 | 13,275 | 15,804 | 12,030 | 1.31 | 15,804 | 1.00 | 15,804 | 16.0 | $5,168 | $5,168 | $152 | $152 |
| Retail/Online | Appliance Rebates | FALSE | Appliances | Heat Pump Dryer EEE MR | 265 | -20,062 | -76 | 359 | 1 | 105,324 | 125,386 | 98,216 | 1.28 | 125,386 | 0.80 | 100,308 | 16.0 | $96,672 | $96,672 | $365 | $365 |
| Retail/Online | Appliance Rebates | FALSE | Appliances | Induction Cooktop EEE DAC MR | 63 | 6,993 | 111 | 80 | 1 | 23,450 | 13,165 | 13,165 | 1.00 | 13,165 | 1.00 | 13,165 | 16.0 | $60,382 | $60,382 | $958 | $958 |
| Retail/Online | Appliance Rebates | FALSE | Appliances | Induction Cooktop EEE MR | 337 | 37,750 | 112 | 430 | 1 | 125,941 | 70,636 | 70,421 | 1.00 | 70,636 | 0.80 | 56,509 | 16.0 | $337,207 | $337,207 | $1,001 | $1,001 |
| Retail/Online | ESRPP | FALSE | Appliances | Induction Cooktops - Electrification | 136 | 15,049 | 111 | 1,722 | 13 | 50,463 | 35,414 |  |  | 35,414 | 1.00 | 35,414 | 16.0 | $135,658 | $135,658 | $1,001 | $1,001 |
| Electric Homes New Construction | EHNC | FALSE | Hot Water | High-Performance Water Heating Equipment-Electrification (DAC) | 28 | 41,050 | 1,466 | 7,858 | 281 | 233,999 | 192,949 | 189,211 | 1.02 | 192,872 | 1.00 | 192,872 | 15.0 | $82,820 | $82,820 | $2,958 | $2,958 |
| Electric Homes New Construction | EHNC | FALSE | Hot Water | High-Performance Water Heating Equipment-Electrification | 16 | 23,457 | 1,466 | 4,490 | 281 | 133,705 | 110,248 | 108,121 | 1.02 | 110,213 | 0.80 | 88,170 | 15.0 | $25,579 | $25,579 | $1,599 | $1,599 |
| Incentives | Custom | FALSE | Other | Other (Electrification) | 1 | 23,681 | 23,681 | 1,144 | 1,144 | 33,534 | 9,853 | 9,859 | 1.01 | 9,979 | 0.56 | 5,588 | 15.0 | $1,943 | $2,546 | $1,943 | $2,546 |
| Midstream/Upstream | Instant Discounts | FALSE | HVAC | ASHP HVAC EEE | 4 | 34,082 | 8,607 | 321 | 81 | 93,998 | 59,915 | 69,304 | 0.86 | 59,915 | 0.80 | 47,932 | 15.0 | $46,416 | $5,345 | $11,721 | $1,350 |
| Midstream/Upstream | Instant Discounts | FALSE | HVAC | ASHP HVAC DAC EEE | 23 | 131,463 | 5,774 | 1,077 | 47 | 315,776 | 184,312 | 214,347 | 0.86 | 184,312 | 1.00 | 184,312 | 15.0 | $142,786 | $16,441 | $6,271 | $722 |
| Midstream/Upstream | Instant Discounts | FALSE | HVAC | MSHP HVAC EEE | 22 | 135,076 | 6,202 | 1,365 | 63 | 400,195 | 265,119 | 322,129 | 0.82 | 265,119 | 0.80 | 212,095 | 15.0 | $205,388 | $23,649 | $9,430 | $1,086 |
| Midstream/Upstream | Instant Discounts | FALSE | HVAC | MSHP HVAC DAC EEE | 4 | 23,388 | 5,250 | 251 | 56 | 73,533 | 50,145 | 60,920 | 0.82 | 50,145 | 1.00 | 50,145 | 15.0 | $38,847 | $4,473 | $8,720 | $1,004 |
| Midstream/Upstream | Instant Discounts | FALSE | Other | Fork Truck EEE | 148 | 7,274,609 | 49,299 | 88,820 | 602 | 26,031,691 | 18,757,081 | 26,213,534 | 0.72 | 18,757,081 | 0.80 | 15,005,665 | 15.0 | $3,656,693 | $1,673,191 | $24,781 | $11,339 |
| **Total** |  |  |  |  | **6,145** | **47,888,775** | **367,118** | **3,379,654** | **24,603** | **126,960,257** | **79,048,625** | **84,042,081** | **0.94** | **79,097,241** | **0.91** | **71,815,825** | **15.7** | **$19,331,121** | **$16,498,580** |  |  |

Source: Guidehouse analysis

## Incremental and Actual Measure Costs

The guidance from the IL TRM and Illinois Energy Efficiency Policy Manual indicate that it is appropriate to use actual measure-specific costs in the analysis. As a result, Guidehouse compiled the actual cost information from the implementer invoices and the program tracking data provided by ComEd and identified any missing information. The team sourced incremental measure costs from IL TRM v12.0 and different workpapers provided by the implementation contractor.

While conducting the cost review, Guidehouse found instances where the program tracking data and the incremental cost value from the reference sources do not align due to differing definitions of program unit and then made appropriate assumptions to account for these differences. Guidehouse also included O&M costs when there was a difference between the efficient measure and the baseline measure based on the guidance provided in IL TRM v12.0. Where the efficient measure has a significantly shorter or longer life than the relevant baseline measure (e.g., LEDs versus halogens), Guidehouse used the avoided baseline replacement measure costs in the TRC analysis. The incremental cost input in the TRC analysis was not reduced by the amount of incentives. Some of the methodologies used to estimate the measure costs for different programs are listed below:

* **Custom, Industrial Systems, and Retro-Commissioning:** Guidehouse analyzed a sample of all the projects to determine if the actual measure cost or an incremental cost should be used for each project. Based on this analysis, the team developed a $/kWh value that was applied to the entire population of measures installed as a part of this program.
* **Prescriptive Programs (Small Business, Standard, Single Family Upgrades, etc.):** Guidehouse researched the incremental measure cost data from IL TRM v12.0, tracking data, and program invoices. For joint programs, only the ComEd portion of the costs were included.
* **Contractor/Midstream Rebates:** The early replacement HVAC measures installed as a part of this program were treated based on the guidance provided in IL TRM v12.0. The full installation cost subtracted by the NPV deferred future replacement costs was calculated for the analysis.
* **Product Distribution Program (and other similar programs):** Guidehouse used the per measure cost in each kit to perform the analysis.
* **New Construction – IE:** Guidehouse researched the incremental measure cost data from IL TRM v12.0 and cost data from TRM’s in surrounding jurisdictions.
* **Non-Residential New Construction:** Guidehouse calculated the measure cost based on ASHRAE Standard 90.1 2019-Illinois[[8]](#footnote-9) assuming similar cost to one code cycle improvement.

## Data Sources and Assumptions

The analysis used the following sources to compile the relevant data:

* **Program tracking data and evaluation reports** to compile measure-level savings, quantity, and realization rate values
* **IL TRM v12.0** to compile measure life and incremental cost data
* **Project invoices** to compile actual cost data (if available)
* **Project-level costs**, including utility incentives and non-incentive costs provided by ComEd

Table 3‑4 provides the sources and assumptions for the measure costs by program.

Table 3‑4. CY2024 Program Cost Data Sources and Assumptions

| **Program** | **Component** | **Data Source** | **Note** |
| --- | --- | --- | --- |
| ASI kWh Purchase | ASI kWh Purchase | ComEd Electrification Cost Data | Used total IMC $/kWh of ASI from ComEd Electrification Cost data sheet |
| Behavior - Res/IE | Behavior - Res-IE | NA | There are no incentives or measure costs, only program administration costs.  |
| Contractor/Midstream Rebates | Midstream | IL TRM v12.0 & ComEd Electrification Cost Data | IL TRM v12.0 deemed values and cost from ComEd Electrification Cost data were used for the analysis. |
| Electric Homes New Construction | EHNC | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Midstream/Upstream | Instant Discounts | Instant Discounts | IL TRM v12.0 |
| Multifamily Upgrades | IHWAP | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Multifamily Upgrades | MCA | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Multifamily Upgrades | MFLI | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Multifamily Upgrades | Public Housing | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. |
| Multifamily Upgrades | Strategic Energy Management | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. |
| New Construction - IE | Affordable Housing New Construction | ComEd | Guidehouse used an average of the Incremental Capital Cost per project derived from TRM v12.0 costs. |
| Product Distribution | Elementary Ed | Tracking Data and Project Invoices | Implementer invoices were used to obtain the ComEd allocated costs of joint measures, which were then applied to the incremental costs for each measure within the kits.  |
| Product Distribution | Food Bank | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. |
| Product Distribution | IE Kits | Tracking Data and Project Invoices | Implementer invoices were used to obtain the ComEd allocated costs of joint measures, which were then applied to the incremental costs for each measure within the kits. |
| Retail/Online | Appliance Rebates | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Retail/Online | ComEd Marketplace | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Retail/Online | ESRPP | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Retail/Online | Income Eligible Retail | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Retail/Online | Lighting | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Retail/Online | MR Lighting | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Single-Family Upgrades | HEA | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Single-Family Upgrades | IE | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Single-Family Upgrades | IHWAP | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Single-Family Upgrades | MR | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Single-Family Upgrades | SAP | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Single-Family Upgrades | SFLI | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Whole Home Electric | MF | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs. Guidehouse found these incentive amounts accounted for the ComEd allocated costs of joint measures.  |
| Whole Home Electric | SF | ComEd Provided Data Files | Guidehouse assumed the Total EEE Incentive Cost should equal the measure costs. Guidehouse brought out specific costs of measures grouped together using a percentage of savings. |
| Behavior Bus/Pub | Strategic Energy Management | Tracking Data | Guidehouse assumed measure cost equals incentives. |
| EMS - Small Business - Pilot | EMS for Small Business | Tracking Data and Workpapers | Guidehouse leveraged similar measure costs for EMS measures and the workpaper from the Incentives Program. |
| Incentives | Custom | ComEd Project Files | Sample of project files, total $/kWh |
| Incentives | Standard | RI resource workpapers | The workpapers provided reference for incremental measure cost. Guidehouse made assumptions regarding unit definition based on program data. |
| Incentives | Street Lighting | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Midstream/Upstream | CFS | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis. |
| Midstream/Upstream | Instant Discounts | IL TRM v12.0 | IL TRM v12.0 deemed values were used for the analysis.  |
| New Construction - Bus/Pub | Non-Residential New Construction | CY2024 Data | IL TRM v12.0 deemed values were used for individual measures, which were aggregated to the project level for sampled projects. |
| Small Business | Small Business | Tracking Data | Guidehouse assumed the program tracking data incentive amounts should equal measure costs.  |
| Targeted Systems | Industrial Systems | Tracking Data | Sample of project files, total $/kWh |
| Targeted Systems | Retro Commissioning (RCx) | ComEd Project Files | Sample of project files, total $/kWh |
| Targeted Systems | Virtual Commissioning (VCx) | ComEd Project Files | Sample of project files, total $/kWh |
| Voltage Optimization | VO | Project Files | Total costs obtained from ComEd provided documentation.  |

Source: Guidehouse analysis

## Findings

Guidehouse performed a bottom-up analysis for each program in ComEd’s CY2024 portfolio and offers the following findings:

* **Finding 1.** Portfolio TRC (excluding NEIs) increased significantly to 3.03, up from 2.05 in CY2023. When including NEI, the TRC rose from 2.90 to 5.35. This year-over-year improvement was largely driven by increased electric and societal benefits, resulting from increased lifetime savings; the portfolio accumulated over 21.5B kWh in electric verified net lifetime savings this year, up from 17.2B kWh in CY2023.
* **Finding** **2.** TRC costs decreased slightly from CY2023 to CY2024, going from $503M to $484M. While measure-level incremental costs stayed relatively consistent year-over-year at ~$270M, program-level administrative costs dropped from $164M to $146M in CY2024.
* **Finding** **3.** TRC benefits increased significantly in CY2024, leading to the jump in TRC and UCT scores in both the residential and business sectors. The largest benefits increase came from Electricity Avoided Costs, which grew from $595M in CY2023 to $819M in CY2024, and Societal NEIs, which grew from $467M to $1,252M.
* **Finding 4.** When including NEIs, all but one Residential program achieved TRC cost-effectiveness in CY2024. The TRC for Whole Home Electric is 0.69 and the UCT is 0.34. Several other programs came short of UCT cost effectiveness, including Multifamily Upgrades (0.63), New Construction – IE (0.70), and Single-Family Upgrades (0.50).
* **Finding 5.** The Retail/Online program saw the largest year-over-year benefits increase of any program, reaching over $500M in TRC benefits in CY2024. This was largely driven by nearly $200M in fossil fuel benefits, resulting from the 36 million Therms of first-year gas savings achieved by the program. Overall growth of the program was enhanced by the addition of the ESRPP component in CY2024, which contributed 4.87 GWh of net first-year savings.
* **Finding 6.** Cost effectiveness for many programs including Product Distribution and Retail/Online continues to be driven largely by lighting measures which can accumulate significant energy savings at low cost. Additionally, shell measures such as spray foam and insulation and water-saving measures such as showerheads were able to take advantage of additional TRC benefit streams such as societal and water, and low customer incremental costs to achieve high TRC outcomes.
* **Finding 7.**  Excluding Income-Eligible programs causes portfolio TRC (no NEI) to drop from 3.03 to 2.85. The IE portions of relevant programs contribute more than $450B to the total TRC benefits of ComEd’s CY2024 portfolio.
* **Finding 8.** Emissions and societal benefits played an outsized role in TRC growth in CY2024. Emissions benefits grew from $378M to $562M, and Societal from $467M to $1,252M; together, these two benefit streams make up over 62% of portfolio TRC benefits.
* **Finding 9.** CY2024 societal benefits have increased by 168% from CY2023, this is due to COBRA updates in 2024 by the EPA to estimate changes in annual ambient concentrations of both particulate matter (PM2.5) and ozone. In previous years COBRA only estimated the health impacts of PM2.5. The COBRA update included additional health incidents (Hospital Admissions related to Alzheimer’s and Parkinson’s Disease, Incidence of Stroke and Lung Cancer, and Hay Fever/Rhinitis).
1. For programs that are jointly offered by ComEd and gas utilities, the therm savings claimed by ComEd are included in this analysis. [↑](#footnote-ref-2)
2. See Section 1-10 Definitions of the Illinois Power Agency Act: <http://www.ilga.gov/legislation/ilcs/ilcs5.asp?ActID=2934&ChapterID=5> [↑](#footnote-ref-3)
3. https://www.ilsag.info/wp-content/uploads/IL\_EE\_Policy\_Manual\_Version\_3.0\_Final\_11-3-2023.pdf [↑](#footnote-ref-4)
4. From Nicor Gas and Peoples and North Shore Gas. [↑](#footnote-ref-5)
5. Incremental measure costs come from program tracking data, program contractor invoices, and deemed value sources from the IL TRM. [↑](#footnote-ref-6)
6. Incentive definitions can be found in Section 8.4 TRC Costs of the Illinois Energy Efficiency Policy Manual Version 1.1. The Illinois TRC test requires that “all incremental costs of end use measures (including both utility and participant contributions)” should be reflected as costs in the TRC test calculation. As long as “all incremental costs of end-use measures” are included in the TRC test calculation, there is no need to add program administrator contribution costs (i.e., incentives) and participant contribution costs as separate components to the TRC test. However, program administrator contribution costs (i.e., incentives) are needed to calculate the Program Administrator Cost Test (PACT)/UCT because those are a component of the program administrator expenses. Most TRC modeling software requires users to input the incentives as a separate input in addition to providing all incremental costs such that the PACT/UCT can be calculated. For this reason, the separate incentives input in the TRC model is not used when calculating the TRC test because these costs are already reflected in the incremental cost input, and if the model were to use both the incentives input and the incremental cost input, it would result in double counting of costs in the TRC analysis. [↑](#footnote-ref-7)
7. Payments include non-measure items of value that would be treated as transfer payments, e.g., gift cards. [↑](#footnote-ref-8)
8. <https://www.energycodes.gov/sites/default/files/2021-07/Cost-effectiveness_of_ASHRAE_Standard_90-1-2019-Illinois.pdf> [↑](#footnote-ref-9)