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|  |  |
| Date: | December 29, 2021 |
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| Re: | ComEd CY2020 Energy Efficiency Portfolio Economic and Employment Impacts |

# Introduction

This memo presents the results of Guidehouse’s analysis of economic and employment impacts produced by ComEd’s CY2020 energy efficiency portfolio. This analysis was conducted in alignment with Version 2.0 of the Illinois Energy Efficiency Policy Manual (“the Policy Manual”), requiring that each program administrator in Illinois annually report estimates of the economic development and employment impacts of its energy efficiency programs.

The methodology used in this analysis is consistent with that developed by consensus with the Illinois Stakeholder Advisory Group Non-Energy Impacts Working Group used in the previously prepared CY2018 and CY2019 analyses. The evaluation team made minor refinements to the analysis as process improvements from the prior analyses.

# Results

## Summary of Input Data

Table 1 presents a summary of input data used for the CY2020 economic and employment impact analysis. All data was sourced from the evaluation team's CY2020 evaluation of the ComEd energy efficiency portfolio.

Table . Summary of ComEd’s CY2020 Economic and Employment Impact Analysis Input Data

| Impact Category\* | Amount ($M’s) | Description of Impact | Time Period |
| --- | --- | --- | --- |
| Bill Savings | $1.98 B | Positive economic effect on ratepayers | 2020-2045 |
| Program Funding | -$291 M | Negative economic effect on ratepayers | Over WAML period (Electric: 2020-2032) |
| Net Ratepayer Bill Savings | $1.69 B | Net economic effect on ratepayers | 2020-2045 |
| Lost Utility Fuel & Transp. Expenditures | -$78 M | Negative economic impact on fuel production and transportation | 2020-2045 |
| Incentives and Rebates | $212 M | Positive economic effect on ratepayers | 2020 |
| Net Incremental Measure Costs | $556 M | Negative economic effect on ratepayers; positive economic effect on retailers and suppliers | 2020 |
| Program Administration Costs | $79 M | Positive economic effect on utilities | 2020 |
| Voltage Optimization (Capital Expenditures) | $76 M | Positive economic effect on utilities | 2020 |

Source: Guidehouse analysis of ComEd CY2020 tracking data

\*Impact Category descriptions below.

**Bill Savings:** This flow represents the monetized savings program participants realize from their energy efficiency improvements through the utility program. Bill savings are monetized by multiplying the net verified savings values by each customers’ applicable unit energy cost. Bill savings are realized through the lifetime of the measure as a positive cash flow to the participants.

**Program Funding:** This flow represents the bill surcharges realized by participants to fund the utility programs. This flow occurs over the weighted average measure life (WAML) of the measure for traditional electric energy efficiency measures and in the year the measures are implemented for gas energy efficiency measures.

**Net Ratepayer Bill Savings:** This is the net positive bill savings realized by all ratepayers: bill savings less program funding charges.

**Lost Utility Fuel and Transportation Expenditures:** This flow represents decreased expenditures on fuel and transportation (and therefore decreased job creation) due to decreased electric generation as a result of energy efficiency measures.

**Incentives and Rebates:** These flows represent payments made by the utility to program allies and contractors as part of the installation of energy efficiency measures in CY2020 and rebate payments made by the utility to program participants in CY2020.

**Net Incremental Measure Costs:** This flow is the sum of all incremental measure costs that program participants expend on energy efficiency projects through the utility’s programs in CY2020. As in verified cost-effectiveness analysis, incremental measure costs used in this analysis are net costs calculated using SAG-approved NTG values. From the perspective of the participants this is a negative flow as they expend money implementing a project. From the perspective of contractors, trade allies, and equipment providers this is a positive cash flow as they receive income from sales of energy efficiency products and services.

**Program Administration Costs:** This flow models program administration expenditures incurred as part of portfolio operations.

**Voltage Optimization[[1]](#footnote-2): This flow represents utility expenditures on voltage optimization measures; costs are reported** in the year circuits are constructed for voltage optimization measures and on an ongoing basis for operations and maintenance.

## Employment Impacts

Figure 1 presents a visual summary of the employment impacts of the CY2020 energy efficiency portfolio investments over time, separated into direct, indirect, and induced impacts. Because the portfolio produces long-term economic effects as a result of persisting energy savings, employment impacts produced are not confined to a particular year but occur over the 2020-2045 time period.

Figure . ComEd Portfolio Employment Impacts (2020-2045)

Source: Guidehouse analysis of ComEd CY2020 tracking data

The large spike in impacts seen in 2020 results from initial spending triggered by the implementation and management of ComEd’s CY2020 energy efficiency programs, including, but not limited to: program incentives, and administrative spending, and incremental measure spending resulting from the effects of the portfolio. The impacts beyond 2020 are derived almost entirely from the persisting effects of ComEd’s CY2020 energy efficiency programs in the form of net ratepayer bill savings realized by those who participated in ComEd’s CY2020 programs. Impacts persist over a similar period as the cumulative persisting annual savings (CPAS) produced by the ComEd CY2020 portfolio.[[2]](#footnote-3)

## Industry Labor Income and Business Sales

Figure 2 presents direct, indirect, and induced effects on labor income and industry output from the CY2020 ComEd energy efficiency portfolio. The figure also separates these effects into those resulting from 1) program spending and program-induced spending (incentives, rebates, net incremental costs, program administration, fuel/transportation expenditures etc.) and 2) net ratepayer bill savings.

Figure . ComEd CY2020 Energy Efficiency Portfolio Direct, Indirect, and Induced Effects on Labor Income and Industry Output Impacts (2020-2045)3

*Source: Guidehouse analysis of ComEd CY2020 tracking data*

Table 2 presents a summary of the cumulative industry labor income and industry output impacts (“economic impacts”) of the 2020 energy efficiency portfolio investments (2020-2045).

Table . Cumulative 2020-2045 Industry Labor Income and Industry Output Impacts from ComEd’s CY2020 Energy Efficiency Portfolio Investments

| Impact Type | Labor Income | Industry Output |
| --- | --- | --- |
| Direct | $467 M | $1.34 B |
| Indirect | $218 M | $602 M |
| Induced | $497 M | $1.99 B |
| **Total** | $1.18 B | $3.92 B |

Source: Guidehouse analysis of ComEd CY2020 tracking data

# Appendix

Table 3 and Table 4 provide cumulative economic impacts and employment impacts in a format similar to that presented in the CY2018 analysis for the purpose of comparison. The evaluation team advises against use of employment impacts reported in job-years for ongoing reporting moving forward. Employment impacts are long-term effects not confined to a particular year and reporting in job-years can mislead readers as to the effects produced.

Table : ComEd CY2020 Energy Efficiency Portfolio Cumulative Economic Impacts (2020-2045)

| Impact Category | Utility Territory | Rest of State | State Total |
| --- | --- | --- | --- |
| Job Years | 20,153 Job Years | 93 Job Years | 20,246 Job Years |
| Labor Income | $1.21 B | $5 M | $1.21 B |
| Industry Output | $4.02 B | $21 M | $4.04 B |

*Source: Guidehouse analysis of ComEd CY2020 tracking data*

Table : ComEd CY2020 Energy Efficiency Portfolio Job-Year Impacts by Category (2020-2045)

| Impact Type | Utility Territory | Rest of State | State Total |
| --- | --- | --- | --- |
| Direct | 7,823 Job Years | 0 Job Years | 7,823 Job Years |
| Indirect | 3,096 Job Years | 49 Job Years | 3,145 Job Years |
| Induced | 9,235 Job Years | 44 Job Years | 9,278 Job Years |
| Total | 20,153 Job Years | 93 Job Years | 20,246 Job Years |

*Source: Guidehouse analysis of ComEd CY2020 tracking data*

Table 5 provides the supporting data for Tables 3 and 4 in tabular format.

Table . ComEd CY2020 Energy Efficiency Portfolio Employment Impacts (2020-2045)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | Direct Job Years | Induced Job Years | Indirect Job Years | Total Job Years |
| 2020 | 3,119 | 1,176 | 1,527 | 5,822 |
| 2021 | 494 | 207 | 908 | 1,609 |
| 2022 | 495 | 207 | 908 | 1,610 |
| 2023 | 493 | 207 | 906 | 1,606 |
| 2024 | 482 | 202 | 827 | 1,511 |
| 2025 | 378 | 159 | 681 | 1,218 |
| 2026 | 356 | 149 | 657 | 1,163 |
| 2027 | 356 | 149 | 558 | 1,064 |
| 2028 | 336 | 141 | 539 | 1,016 |
| 2029 | 309 | 130 | 511 | 950 |
| 2030 | 290 | 122 | 293 | 705 |
| 2031 | 273 | 114 | 253 | 640 |
| 2032 | 287 | 120 | 276 | 683 |
| 2033 | 269 | 113 | 320 | 701 |
| 2034 | 154 | 65 | 246 | 464 |
| 2035 | 155 | 65 | 99 | 319 |
| 2036 | 25 | 10 | 22 | 57 |
| 2037 | 25 | 10 | 21 | 56 |
| 2038 | 25 | 10 | 20 | 55 |
| 2039 | 13 | 6 | 13 | 32 |
| 2040 | 13 | 6 | 9 | 28 |
| 2041 | 6 | 3 | 4 | 13 |
| 2042 | 6 | 3 | 4 | 13 |
| 2043 | 6 | 3 | 4 | 13 |
| 2044 | 3 | 1 | 3 | 8 |
| 2045 | 0 | 0 | 0 | 0 |

*Source: Guidehouse analysis of ComEd CY2020 tracking data*

## Economic Impact Assessment Methodology

The economic impact assessment for energy efficiency programs follows a three-step process depicted in Figure 3:

1. Data collection of the economic activities associated with the energy efficiency programs
2. Economic modeling of these activities using IMPLAN
3. Analysis of the results – summarizing and assessing the economic measures (e.g., industry output, labor income, and jobs)

Figure . Economic Impact Assessment Methodology



*Source: Guidehouse*

1. Due to a lack of portfolio-level data reflecting costs and energy savings associated with voltage optimization, these were assigned to Commercial, Residential, and Income Eligible customer portfolios in a 50%-25%-25% split, respectively, roughly approximating costs and energy savings associated with each portfolio. [↑](#footnote-ref-2)
2. Direct effects may include but are not limited to the initial changes in employment and demand for regional production triggered by the implementation and management of utility Energy Efficiency Programs. Indirect effects may include but are not limited to secondary impacts generated from business to business spending as firms and households directly impacted by the Energy Efficiency Programs increase purchases from their suppliers who must in turn increase purchases from their suppliers and so forth as the initial expenditure ripples through interconnected industries. Induced effects may include but are not limited to secondary impacts generated from household to business spending as labor income changes that result from both direct and indirect activity affect the local economy. Direct, indirect, and induced effects are defined more fully in Section 6.8 of the Illinois Energy Efficiency Policy Manual Version 2.0.

   3 Background data for this figure is provided in the Appendix to this memo. [↑](#footnote-ref-3)