



Memorandum

To: Erin Daughton, Vince Gutierrez, Molly Lunn, ComEd

From: Patricia Plympton, Bryan Montes, Adam Winston, Guidehouse

CC: Jennifer Morris, ICC; Jeff Erickson, Charlie Maglione, Shaun Fernando, Guidehouse

Date: April 28, 2022

Re: ComEd CY2021 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 CY2021 energy efficiency portfolio. This analysis was conducted in alignment with Version 2.1 of the Illinois Energy Efficiency Policy Manual¹ (“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 Economic Impact Assessment methodology used in this analysis (described in the next section) is consistent with that developed by consensus with the Illinois Stakeholder Advisory Group Non-Energy Impacts Working Group used in the previously prepared CY2018, CY2019, and CY2020 economic analyses. The Illinois Climate and Equitable Jobs Act² includes an annual deadline of April 30 for the economic and employments impact results. For CY2021, the team used CY2021 draft summary report savings and cost information³ as well as CY2020 savings and cost ratios where CY2021 cost data was not available yet. For future economic and employment impacts analyses and results, Guidehouse will align our cost-effectiveness data requests with the annual timing for this memo to use cost and savings data from the program year for our economic analysis. At this time, we do not anticipate that changes between the CY2021 draft and CY2021 final savings estimates will have a material effect on the economic impacts.

¹ https://ilsag.s3.amazonaws.com/IL_EE_Policy_Manual_Version_2.1_Final_12-7-2021-1.pdf

² CEJA (Illinois Climate and Equitable Jobs Act). Public Act 102-0662. <https://www.ilga.gov/legislation/publicacts/102/PDF/102-0662.pdf>. (passed September 15, 2021).

³ ComEd CY2021 Summary Evaluation Report 2022-03-25.docx

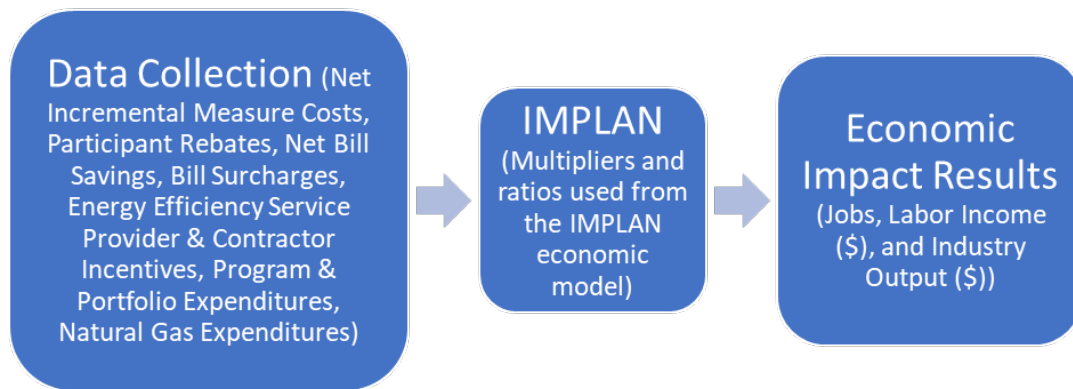
PROCESS

Economic Impact Assessment Methodology

The economic impact assessment for energy efficiency programs follows a three-step process approved by the Illinois Energy Efficiency Stakeholder Advisory Group Non-Energy Impacts Working Group⁴ in November 2019, depicted in Figure 1:

- 1) Collecting data for the economic activities associated with the energy efficiency programs
- 2) Using multipliers and ratios from the IMPLAN economic model to estimate the economic impacts of ComEd's energy efficiency portfolio
- 3) Analyzing the results – summarizing, comparing, and assessing the economic measures (e.g., industry output, labor income, and jobs)

Figure 1. Economic Impact Assessment Methodology



Source: Guidehouse

Following this three-step process, Guidehouse is able to provide reliable estimates on how these energy efficiency portfolios are anticipated to affect the Illinois economy.

RESULTS

Summary of Input Data

Table 1 presents a summary of input data used for the CY2021 economic and employment impact analysis. Data for this analysis comprises both draft CY2021 savings and costs and leverages ratios from the CY2020 cost-effectiveness analysis to fill in remaining data gaps.

⁴ https://ilsag.s3.amazonaws.com/IL_SAG_NEI_Presentation_06-NOV-2019_Final.pdf

Table 1. Summary of ComEd's CY2021 Economic and Employment Impact Analysis Input Data

Impact Category	Amount (\$M's)	Description of Impact	Time Period
Bill Savings	\$2,059 M	Positive economic effect on ratepayers	2021-2045
Program Funding	-\$392 M	Negative economic effect on ratepayers	2021-2045
Net Ratepayer Bill Savings	\$1,667 M	Net economic effect on ratepayers	2021-2045
Lost Utility Fuel & Transp. Expenditures	-\$81 M	Negative economic impact on fuel production and transportation	2021-2045
Incentives and Rebates	\$221 M	Positive economic effect on ratepayers	2021
Net Incremental Measure Costs	\$576 M	Negative economic effect on ratepayers; positive economic effect on retailers and suppliers	2021
Program Administration Costs	\$86 M	Positive economic effect from utility spending	2021
Voltage Optimization (Capital Expenditures)	\$85 M	Positive economic effect from utility spending	2021

Source: Guidehouse analysis of ComEd CY2021 Summary Evaluation Report 2022-03-25.docx

Each impact category is described in more depth below.

- **Bill Savings:** This category represents the monetized savings that program participants realize from their energy efficiency improvements. Bill savings are monetized by multiplying the net verified savings values⁵ by each customers' applicable unit energy cost.⁶ Bill savings are realized through the lifetime of the measure as a positive cash flow to the participants..
- **Program Funding:** This category represents the bill surcharges⁷ collected from all ratepayers to fund the utility programs.
- **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 category represents decreased expenditures on fuel and transportation (and therefore decreased job creation) due to decreased electric generation as a result of energy efficiency measures.⁸
- **Incentives and Rebates:** These categories represent payments made by the utility to program energy efficiency service providers and contractors as part of the installation of

⁵ Net verified savings are the electricity, gas, and water savings presented in the draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx.

⁶ The relevant cost per unit for electricity, gas, and water (e.g., kWh, therms, and gallons) from the CY2020 ComEd economic impact analysis were applied to this CY2021 economic impact analysis.

⁷ Bill surcharges for CY2021 consist of Program Administration and Incentives/Rebates costs which were estimated using CY2020 bill savings and cost data ratios for each program.

⁸ The sum of avoided electric and gas fuel purchases in Illinois were calculated using the draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx.

energy efficiency measures in CY2021 and rebate payments made by the utility to program participants in CY2021.⁹

- **Net Incremental Measure Costs:** This category is the sum of all incremental measure costs that program participants expended on energy efficiency projects through ComEd's energy efficiency portfolio in CY2021. 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 cash flow as they expend money implementing a project. From the perspective of contractors, energy efficiency service providers, and distributors this is a positive cash flow as they receive income from sales of energy efficiency products and services.¹⁰
- **Program Administration Costs:** This category models a positive economic impact generated from utility expenditures on program administration .¹¹
- **Voltage Optimization¹²:** This category represents a positive economic impact from utility expenditures on voltage optimization measures (funded by bill surcharges); the spending amounts are reported in the year circuits are constructed for voltage optimization measures and on an ongoing basis for operations and maintenance.¹³

Employment Impacts

Figure 2 presents a visual summary of the employment impacts of the CY2021 energy efficiency portfolio investments separated into direct, indirect, and induced impacts.¹⁴ 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 2021-2045 time period.

⁹ Incentives and rebates for CY2021 were estimated using the draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx and the CY2020 ComEd savings-cost ratios.

¹⁰ Net incremental measure costs for CY2021 were estimated using the draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx and the CY2020 ComEd savings-cost ratios.

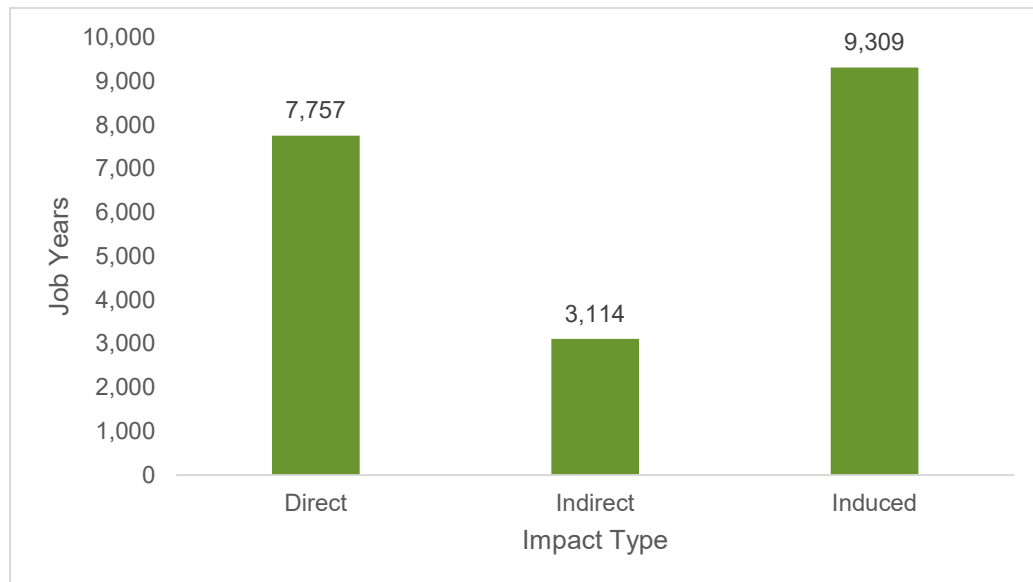
¹¹ Program administration costs are estimated using a ratio reflecting the relationship between the CY2020 program administration costs and the CY2021 portfolio savings.

¹² 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.

¹³ Voltage Optimization costs were estimated using the draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx and the CY2020 ComEd savings-cost ratios.

¹⁴ 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 ComEd's 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 2.1.

Figure 2. ComEd Portfolio Employment Impacts (2021-2045)



Source: Guidehouse analysis of ComEd CY2021 tracking data

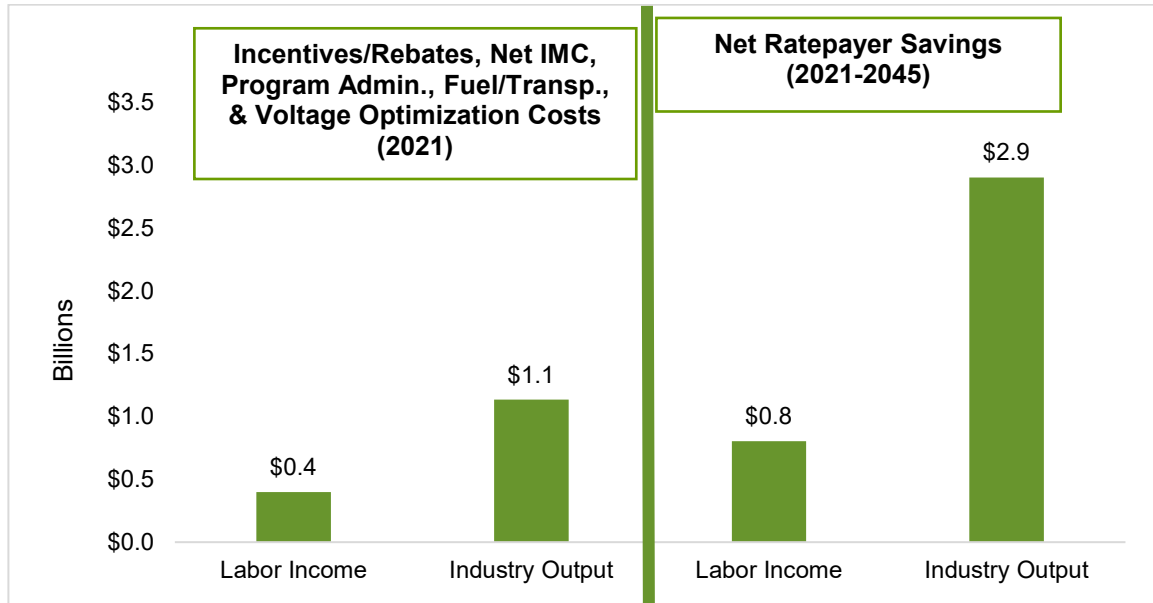
Previous economic analyses included impacts modeled on a year-by-year basis but, given time constraints for the CY2021 report, economic impacts (including employment impacts) are reported cumulatively for the entire state of Illinois. Typically, results followed a trend of large spikes in the initial program year triggered by the implementation and management of ComEd's energy efficiency programs, including, but not limited to, program incentives, administrative spending, and incremental measure spending. The impacts beyond CY2021 are derived almost entirely from net ratepayer bill savings generated from ComEd's energy efficiency programs. These impacts persist over a similar period as the cumulative persisting annual savings (CPAS) produced by the ComEd energy efficiency portfolio.

Industry Labor Income and Business Sales

Figure 3 presents the direct, indirect, and induced impacts associated with labor income and industry output from the CY2021 ComEd energy efficiency portfolio. This figure segments these impacts into two categories:

1. Program spending and program-induced spending (incentives, rebates, net incremental costs, program administration, fuel/transportation expenditures etc.) during 2021, and
2. Net ratepayer bill savings (from 2021-2045).

Figure 3. ComEd CY2021 Energy Efficiency Portfolio Labor Income and Industry Output Impacts (2021-2045)



Source: Guidehouse analysis of draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx

Table 2 presents a summary of the cumulative industry labor income and industry output impacts from the CY2021 energy efficiency portfolio (from 2021 to 2045).

Table 2. Cumulative 2021-2045 Industry Labor Income and Industry Output Impacts from ComEd's CY2021 Energy Efficiency Portfolio Investments

Impact Type	Labor Income	Industry Output
Direct	\$479 M	\$1,400 M
Indirect	\$222 M	\$619 M
Induced	\$503 M	\$2,020 M
Total	\$1,203 M	\$4,039 M

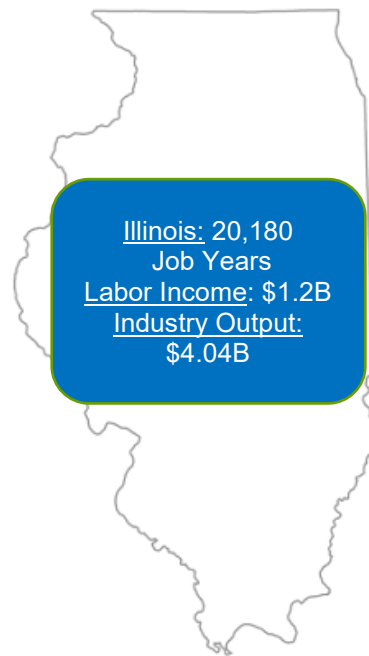
Source: Guidehouse analysis of ComEd CY2021 tracking data

APPENDIX

Figure 4 and Table 3 provide cumulative economic impacts in a format similar to the CY2018-CY2020 analyses for the purpose of comparison. However, due to time constraints in preparing the analysis for the CY2021 economic report, impacts were estimated at the state level.

Employment impacts are long-term effects and not confined to a particular year; job-years represent the cumulative employment impacts.

Figure 4: Cumulative Economic Impacts (2021-2045)



Source: Guidehouse analysis of draft ComEd CY2021 Summary Evaluation Report 2022-03-25.docx

Table 3: ComEd Energy Efficiency Portfolio Economic Impacts by Periods (2018 - 2021)

Time Period	Impact Type	Job Years State Total	Labor Income State Total	Industry Output State Total
2021 – 2045	Direct	7,757	\$479M	\$1.4B
2021 – 2045	Indirect	3,114	\$222M	\$619M
2021 – 2045	Induced	9,309	\$503M	\$2.02B
2021 – 2045	Total	20,180	\$1.2B	\$4.04B
2020 – 2044	Direct	7,823	\$484M	\$1.41B
2020 – 2044	Indirect	3,145	\$224M	\$623M
2020 – 2044	Induced	9,278	\$501M	\$2.01B
2020 – 2044	Total	20,246	\$1.21B	\$4.04B
2019 – 2043	Direct	6,583	\$414M	\$1.23B
2019 – 2043	Indirect	2,706	\$195M	\$549M
2019 – 2043	Induced	7,458	\$403M	\$1.59B
2019 – 2043	Total	16,747	\$1.01B	\$3.37B
2018 – 2042	Direct	5,562	\$340M	\$965M
2018 – 2042	Indirect	2,241	\$161M	\$452M
2018 – 2042	Induced	6,904	\$375M	\$1.53B
2018 – 2042	Total	14,707	\$876M	\$2.94B

Source: Guidehouse analysis of ComEd CY2021 Summary Evaluation Report 2022-03-25.docx