Guidehouse

Illinois DSM Portfolio Non-Energy Impacts Economic Analysis

Nicor Gas

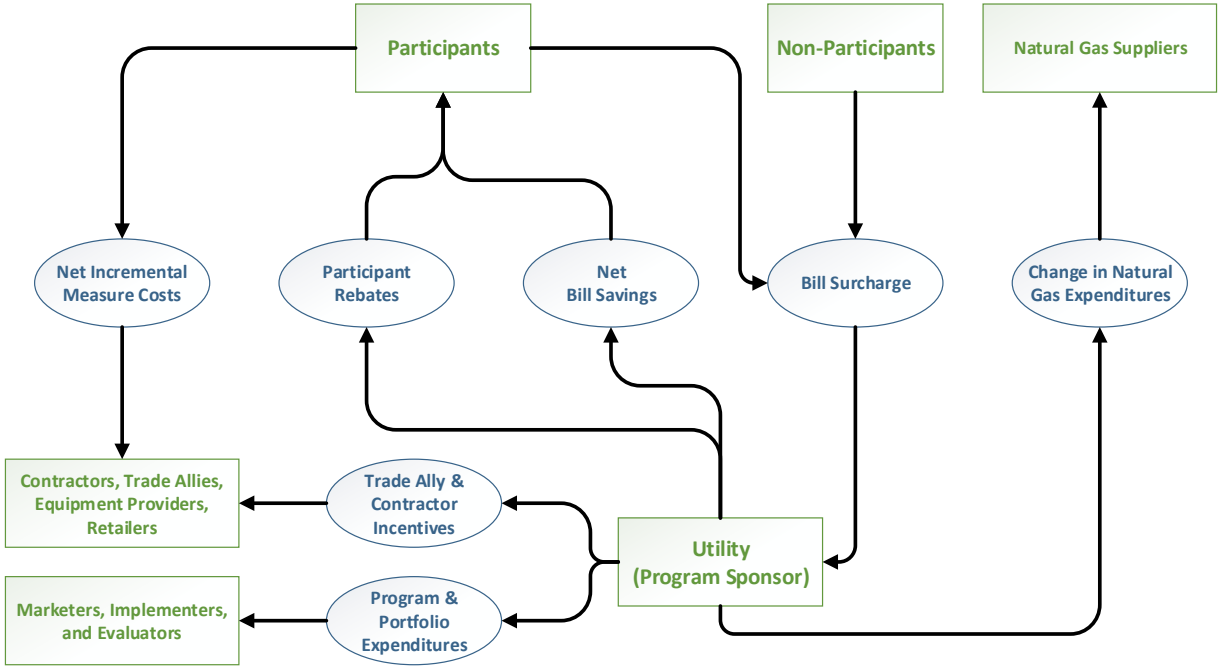
June 3, 2020

Economic Impact Methodology

Overview of NEI Economic Impact Analysis

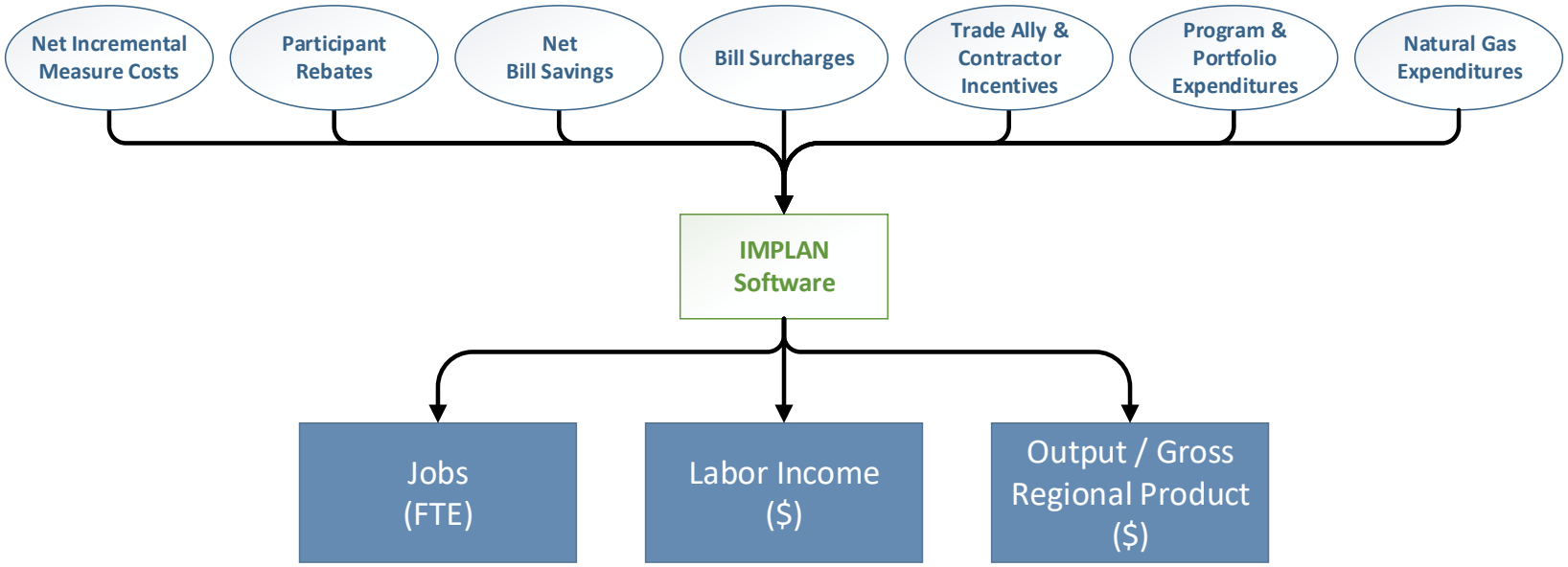
- Objectives:
  - Assessment of economic impacts, including employment, from EE programs on the Illinois economy
  - Assessment of the statewide impacts from utility programs on Illinois
  - To the degree possible, assessment of localized impacts of Illinois EE programs
- Economic Impacts (including job creation) are only part of the overall impact that EE programs have on the State of Illinois and utility customers – participants and non-participants. This analysis is specific to the economic aspects of EE programs and does not encompass societal impacts or utility-specific financial metrics (benefit-cost metrics). This analysis strictly provides insight into the effects that EE programs have on the Illinois economy.
- Analysis is based on the portfolio of programs implemented during the 2018 calendar year with impacts occurring over the life of each measure – up to 25 years. All impacts are based on the Net Present Value of those impacts.

Overview of NEI Economic Impact Analysis



- Comprehensive approach to the economic transactions throughout the lifecycle of EE programs
- Includes **positive** economic impacts (e.g., Net Bill Savings) and **negative** economic impacts (e.g., Bill Surcharge)
- Economic impacts are associated with the applicable industry classification

Economic Impact Assessment Methodology – *Overview*



Three Step Process:

1. Data Collection – Economic activities of EE programs
2. Modeling – IMPLAN Software
3. Analysis of Output – Summarize and assess IMPLAN model output (Jobs, Labor Income, Output)

Economic Impact Assessment Methodology
Geography of Impacts

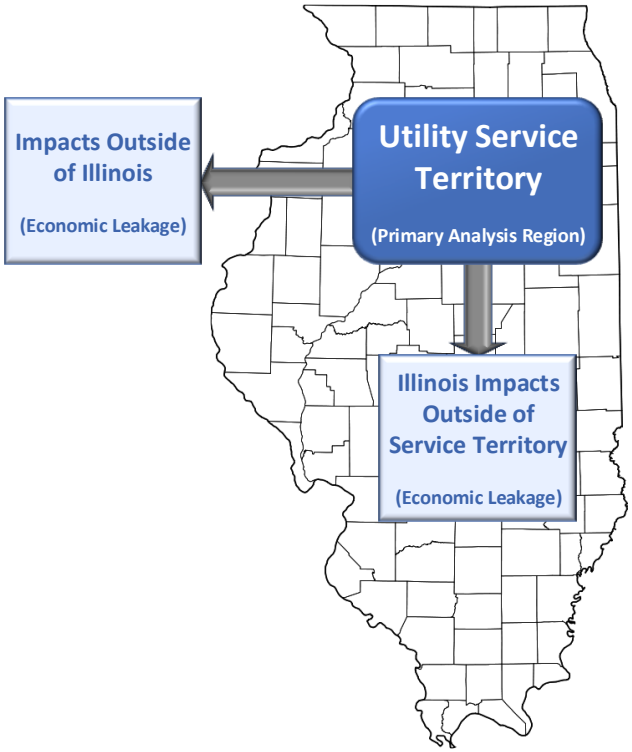
- For utility EE programs, economic impacts occur in one of three locations:
  1. Within the utility's service territory
  2. Outside the utility's service territory – but within Illinois
  3. Outside of Illinois

- Analysis implements a Multi-Regional Input-Output (MRIO) within IMPLAN to estimate impacts that happen within the utility service territory (#1) and elsewhere in Illinois (#2).

- The MRIO approach simplifies the aggregation of impacts across utilities within Illinois by standardizing the defined geographies

- A portion of the total economic impacts happen outside of Illinois, but are not explicitly estimated within the modeling framework due to the additional costs for economic data covering regions outside of Illinois

- Approaches for estimating impacts at the community level have been explored, but would require localized inputs that go far beyond the level of detail that is required for other analysis. It is also more expensive to acquire the underlying economic data for more granular regions. Due to these factors, it is not feasible within the current scope.



Economic Impact Assessment Methodology – *IMPLAN*

IMPLAN is a regional economic analysis software application that is designed to estimate the impact or ripple effect (specifically backward linkages) of a given economic activity within a specific geographic area through the implementation of its Input-Output (I-O) model. The following are assumptions within any I-O Model:

- Constant returns to scale
- No supply constraints
- Fixed input structure
- Industry technology assumption
- Constant byproducts coefficients
- The model is static

By design, the following key limitations apply to Input-Output Models, such as IMPLAN, and should be considered:

- **Feasibility:** The assumption that there are no supply constraints and there is fixed input structure means that even if input resources required are scarce, IMPLAN will assume it will still only require the same portion of production value to acquire that input, unless otherwise specified. The assumption of no supply constraints also applies to human resources, so there is assumed to be no constraint on the talent pool from which a business or organization can draw.
- **Backward-linked and Static model:** I-O models do not account for forward linkages, nor do I-O models account for offsetting effects such as cannibalization of other existing businesses, diverting funds used from other potential or existing projects.
- **Like the model, prices are also static:** Price changes cannot be modeled an I-O model directly; instead, the final demand effects of a price change must be estimated before modeling them in IMPLAN to estimate the additional economic impacts of such changes.

For more information on the IMPLAN modeling process, visit IMPLAN.com.

Economic Impact Assessment Methodology
Modeling Approach

Each category of economic impact has been aligned with the sectors of the economy that most closely align with them.

Household Impacts

- All households with representative weighting applied to each income level

Income Qualified Impacts

- Households with an annual income less than $50k

Business Impacts

- All businesses – excluding utilities – weighted by economic output within utility territory

Net Incremental Measure Cost Impacts

- Retailers of Building Materials and Appliances

Utility Impacts

- Natural Gas Supply Procurement for Gas Utilities

Findings

Summary of Input Data for Economic Impacts – Nicor Gas

Impact Category	Amount	Impacted Segments			
Residential Bill Savings	$29.2 M	+	Households		
Income Qualified Bill Savings	$1.6 M	+	Income Eligible Households		
Business Bill Savings	$20.5 M	+	Businesses		
Lost Gas Utility Fuel Expenditures	$3.5 M	−	Natural Gas Production and Transportation		
Residential Incentives and Rebates	$5.5 M	+	Households		
Income Qualified Incentives and Rebates	$1.9 M	+	Income Eligible Households		
Business Incentives and Rebates	$4.4 M	+	Businesses		
Residential Net Incremental Measure Costs	$20.8 M	−	Households	+	Retailers and Suppliers
Income Eligible Net Incremental Measure Costs	$1.8 M	−	Income Qualified Households	+	Retailers and Suppliers
Business Net Incremental Measure Costs	$11.1 M	−	Businesses	+	Retailers and Suppliers
Portfolio Administration Costs	$18.1 M	+	Electric Utilities		
Residential and Income Qualified Program Funding (Bill Surcharges)	$11.2 M	−	All Households		
Business Program Funding (Bill Surcharges)	$6.2 M	−	Businesses		

Based on the portfolio of energy efficiency programs implemented during the 2018 calendar year.

Summary of Economic Impacts – Nicor Gas

Impact Category	Utility Territory	Rest of State	Statewide Total
Jobs Created	633 Jobs	2 Jobs	636 Jobs
Labor Income	$40.9 M	$0.2 M	$41.1 M
Economic Output	$118.7 M	$0.6 M	$119.3 M

- Shift from capital-intensive industries and imported commodities (e.g., Fossil Fuel Production) to labor-intensive industries (e.g., Retail) leading to an increased number of jobs and labor income.
- Reduced incremental natural gas consumption results in fewer imports from other states.
- Note: The number of jobs created are job-years and not permanent jobs. The portfolio's economic impacts could support the total number of jobs created for one year or a lower number of jobs over an extended period of time.

Summary of Economic Impacts – Nicor Gas

Jobs Created	Utility Territory	Rest of State	Statewide Total
Direct	283 Jobs	0 Jobs	283 Jobs
Indirect	133 Jobs	1 Jobs	134 Jobs
Induced	218 Jobs	1 Jobs	219 Jobs
Total	633 Jobs	2 Jobs	636 Jobs

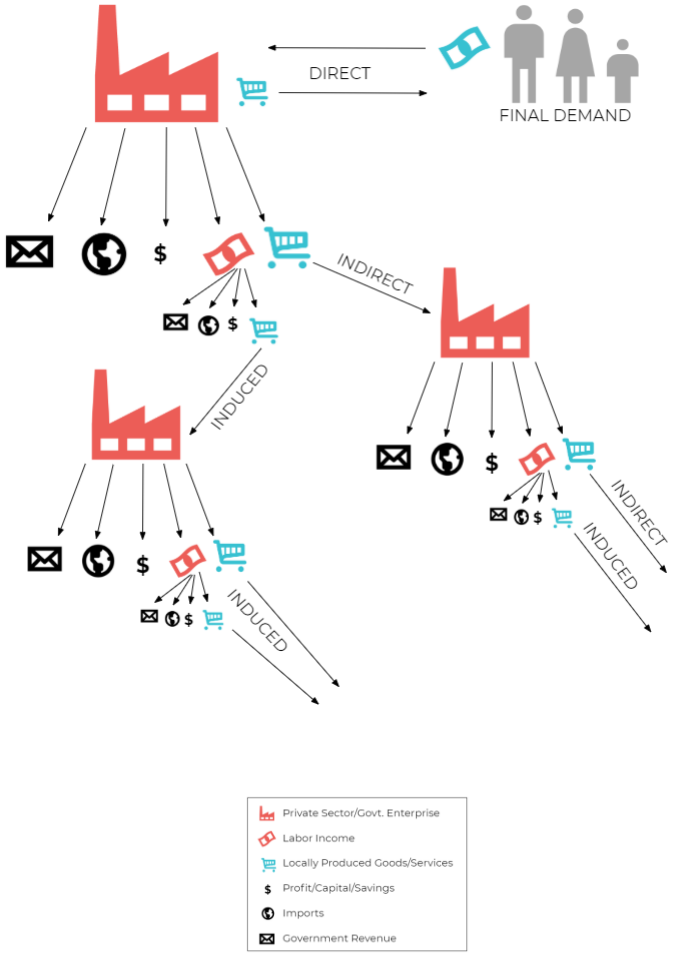
Labor Income	Utility Territory	Rest of State	Statewide Total
Direct	$19.9 M	$0 M	$19.9 M
Indirect	$9.3 M	$0.10 M	$9.4 M
Induced	$11.8 M	$0.05 M	$11.8 M
Total	$40.9 M	$0.2 M	$41.1 M

Economic Output	Utility Territory	Rest of State	Statewide Total
Direct	$56.0 M	$0 M	$56.0 M
Indirect	$24.5 M	$0.4 M	$25.0 M
Induced	$38.1 M	$0.2 M	$38.3 M
Total	$118.7 M	$0.6 M	$119.3 M

Appendix

Types of Economic Impacts

- **Direct Impacts:** Impacts resulting from changes in demand for industry output/commodities, household income, or spending patterns.
- **Indirect Impacts:** Impacts from business-to-business transactions resulting from the direct impact.
- **Induced Impacts:** Impacts from household spending from changes in labor income.
- **Total Impacts:** Sum of Direct, Indirect, and Induced impacts.
  - All impacts references in this presentation are total impacts. Including changes in employment, labor income, and economic output.



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