Cause No. 45894

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
d/b/a CENTERPOINT ENERGY INDIANA SOUTH
(CEI SOUTH)

DIRECT TESTIMONY
OF
MATTHEW R. THIBODEAU
SVP AND SENIOR PROJECT DIRECTOR FOR SARGENT & LUNDY

ON

ECONOMIC IMPACTS OF PROJECTED T&D EXPENDITURES, 2024-2028

SPONSORING PETITIONER'S EXHIBIT NO. 4,
ATTACHMENT MRT-1

DIRECT TESTIMONY OF MATTHEW R. THIBODEAU

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Matthew R. Thibodeau. My business address is 55 East Monroe Street, Chicago, IL 60603.

Q. BY WHOM ARE YOU EMPLOYED?

A. I am employed by Sargent & Lundy ("S&L") as Senior Vice President and Senior Project Director, and I am one of the owners of the firm.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS DIRECT TESTIMONY?

A. I am submitting testimony on behalf of Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South ("Petitioner", "CEI South", "CEIS" or "Company"), which is an indirect subsidiary of CenterPoint Energy, Inc.

Q. WHAT IS YOUR ROLE WITH RESPECT TO PETITIONER CEI SOUTH?

A. CEI South engaged Sargent & Lundy to study and evaluate the economic impact of its projected construction and development expenditures during the five-year period starting January 1, 2024 through December 31, 2028, referred hereinafter to as CEI South's 2024 – 2028 TDSIC Plan (or "TDSIC Plan").

Q. WHAT ARE YOUR PRESENT DUTIES AND RESPONSIBILITIES AS SENIOR VICE PRESIDENT AND SENIOR PROJECT DIRECTOR FOR SARGENT & LUNDY?

A. As Senior Vice President and Senior Project Director for S&L, my primary duties include serving as the Director of consulting engagements and providing subject matter expertise on matters in the power sector. As the Director of consulting engagements, I provide executive support to project teams working under my direction and guidance. The practice areas that I lead for S&L include electric sector financial and economic studies, power supply planning, power procurement, utility planning, power plant project development and financing, renewable energy integration, renewable energy projects, battery energy storage projects, and other consulting studies.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I earned a Bachelor of Science in Mechanical Engineering degree from Worcester Polytechnic Institute in Worcester, Massachusetts in 1994. I earned an MBA from the University of Michigan in Ann Arbor, Michigan in 2003. I am a licensed Professional Engineer in Indiana, as well as in Illinois, Michigan, and Puerto Rico.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AS IT RELATES TO THIS MATTER.

A. I have worked on, managed, directed, and overseen numerous cost studies and cost estimates for energy infrastructure, including transmission and distribution (T&D) systems, power generation facilities, and energy storage systems. This has included cost studies and cost estimates for utilities, electric system operators, government agencies, lenders, investors, and research organizations. While most of this work is confidential, one publicly available cost study[1] that I led in 2019 was for the United States Energy Information Administration ("EIA"), which is a statistical and analytical agency within the U.S. Department of Energy that collects, analyzes, and disseminates independent and impartial energy information. In addition, for each of the past four years, I have been invited by the United States National Renewable Energy Laboratory ("NREL") to be a member of the Technical Review Committee for NREL's Annual Technology Baseline ("ATB"), which is an online dataset of technology cost and performance information for various types of energy infrastructure.

Q. HAVE YOU EVER TESTIFIED BEFORE THE INDIANA UTILITY REGULATORY COMMISSION ("COMMISSION")?

A. Yes. I have previously provided testimony to the Commission on several occasions. In September 2021, I provided rebuttal testimony t in support of NIPSCO's TDSIC filing (Cause No. 45557). In February 2021, I provided testimony on AES Indiana's 2019 all-source request for proposals (or "RFP") process (Cause No. 45493). I have also provided testimony at the Indiana State House previously; in September 2019, I provided testimony to the Indiana 21st Century Energy Task Force on the future of baseload power.

[1] https://www.eia.gov/analysis/studies/powerplants/capitalcost/pdf/capital_cost_AEO2020.pdf

II. PURPOSE & SCOPE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my direct testimony is to discuss S&L's report titled *Economic Impacts of Projected T&D Expenditures, 2024-2028*, referred to herein as the "Economic Impact Report" and provided as **Attachment MRT-1**. This testimony is intended to provide an overview of the Economic Impact Report, the results, and appropriate ways to understand what the report does and does not represent.

Q. ARE YOU SPONSORING ANY ATTACHMENTS IN THIS PROCEEDING?

A. Yes. I am sponsoring the following attachment in this proceeding:

- Petitioner's Exhibit No. 4, **Attachment MRT-1**: Economic Impact Report

Q. WAS THIS ATTACHMENT PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. Yes, it was.

III. ECONOMIC IMPACT OVERVIEW

Q. WHAT IS YOUR ROLE WITH REGARD TO THE DEVELOPMENT AND PREPARATION OF THE ECONOMIC IMPACT REPORT?

A. I was Director of the project team that developed the Economic Impact Report. I oversaw and reviewed analysis of economic impacts and the report prepared by my team in its entirety to summarize the process and results of the analysis.

Q. WHAT ASPECTS (IF ANY) WITH REGARD TO THE DEVELOPMENT AND PREPARATION OF THE ECONOMIC IMPACT REPORT WERE YOU NOT INVOLVED IN?

A. CEI South provided the input cost data including project cost breakdowns, associated vendors and vendor locations, and annual cost allocations used within the 2024 – 2028 TDSIC Plan. Review and validation of the data provided by CEI South was not included within the scope of the Economic Impact Report.

Q. PROVIDE AN OVERVIEW OF THE ECONOMIC IMPACT REPORT.

A. S&L reviewed and evaluated the economic impact of CEI South's projected construction and development expenditures associated with CEI South's 2024 – 2028

TDSIC Plan. S&L's study was limited to capital expenditures relating to T&D systems and did not include the economic impact of operation and maintenance expense.

S&L reported the results of its study and analysis in the Economic Impact Report, which estimates the direct, indirect, and induced impacts of these expenditures on two different geographic regions—Indiana and the remaining United States. Each impact is broken down into the following types: supported employment, labor income, value added (Gross Domestic Product), and total economic output. From these impact types, estimates of wages, federal taxes, and state and local taxes were then calculated.

Q. WHAT SOFTWARE WAS USED TO MODEL THE ECONOMIC IMPACT OF THE EXPENDITURES?

A. S&L used a combination of analytical processing in Microsoft Excel 2021 to organize the expenditures into an economic framework as well as the impact analysis for planning (IMPLAN) version 7.2 software for modeling the economic impact of the expenditures.

Q. PROVIDE AN OVERVIEW OF THE IMPLAN SOFTWARE.

A. IMPLAN software utilizes an "input-output" model. The software uses a new financial transaction or other change in economic activity as input to generate impact estimates for employment, income, value added, output, and taxes as the output. These models are based upon detailed databases, including survey, and reporting data from the government and other public and private sources. The data was collected to track historical economic patterns and interrelationships among industries, households, and regions. These patterns are used to track industry specific business to business spendings trends that allow IMPLAN to track the rippling effect of direct expenditures through multiple rounds of successive business to business transactions. These subsequent and successive rounds of spending are used to estimate the induced and indirect benefits of the projects initial direct expenditures.

Q. PROVIDE AN OVERVIEW OF THE ECONOMIC IMPACT REPORT ANALYSIS METHODOLOGY.

A. CEI South provided S&L with representative cost breakdowns and associated key vendors, which included distinct categories and subcategories within the TDSIC Plan. Using the cost category and subcategory breakdowns with their associated vendor

information provided by CEI South, S&L was also able to assess the economic breakdown of the total dollars spent for each category and subcategory within the TDSIC Plan. An economic breakdown is a way of differentiating costs for a specific project by its region and industry of primary impact; this is also referred to as the regional industry costs. S&L assigned a regional distribution and the impact industry to each item within the project cost breakdown. S&L used these breakdowns to translate project costs into regional industry costs for each year of the TDSIC Plan. The regional industry costs were then input into impact analysis for planning ("IMPLAN") software which calculates the economic benefits of the estimated project expenditures.

The economic benefits that IMPLAN details include supported employment, labor income, value added (Gross Domestic Product), total economic output, and state and federal taxes. These benefits arise from three different effects of the project expenditures into the economy: Direct Effect, Indirect Effect, and Induced Effect. Direct Effect, sometimes referred to as the "initial change to the economy," is the result solely of the expenditures between a producer and consumer relating to the project. Indirect Effect is the result of the purchases and contracts with the third parties providing the goods, inputs, and services to the project. Induced Effect is the result of project laborers spending wages they acquired while working on the project.

Q. PROVIDE AN OVERVIEW OF THE PROJECTED ECONOMIC BENEFIT OF CEI SOUTH'S TDSIC PLAN.

A. As discussed earlier in my testimony, CEI South retained S&L to study and evaluate the economic impact of the proposed expenditures associated with CEI South's TDSIC Plan. While the majority of CEI South's economic impact is expected to occur in Indiana, the analysis focused on the economic impact within Indiana and the United States. It should be noted that the primary analysis of the expenditure data provided by CEI South included three geographic regions total – Indiana, the remaining United States, and outside the United States. However, only the expenditures included within the Indiana or United States regions were modeled to have an economic benefit and any expenditures outside of the United States were excluded from subsequent analysis. The IMPLAN software was used to estimate the economic benefit of CEI South's expenditures and investments categorized as net employment, labor income,

value added to the market, wages injected into the economy (output), and federal, state, and local taxes. In summary, based on the investment level in CEI South's TDSIC Plan, the total economic impact in Indiana is as follows:

Impact Type	Employment	Labor Income	Value Added	Output	State/Local Taxes	Federal Taxes
Total Economic Impact from CEI South T&D Construction Expenditures in Indiana (2024-2028)						
Direct Effect	1003	$97,045,288	$255,265,665	$588,650,887	$26,972,792	$15,587,823
Indirect Effect	548	$54,601,879	$151,482,546	$339,676,839	$21,490,606	$6,673,220
Induced Effect	683	$38,480,413	$65,998,218	$115,188,687	$4,798,765	$6,901,935
Total Effect	2234	$190,127,580	$472,746,429	$1,043,516,414	$53,262,163	$29,162,978

The total economic impact inside the United States and outside of Indiana is as follows:

Impact Type	Employment	Labor Income	Value Added	Output	State/Local Taxes	Federal Taxes
Total Economic Impact from CEI South T&D Construction Expenditures in the United States and Outside Indiana (2024-2028)						
Direct Effect	1111	$79,528,981	$133,281,092	$264,530,091	$3,309,892	$17,730,707
Indirect Effect	723	$59,364,609	$97,246,494	$200,659,948	$4,907,821	$11,865,843
Induced Effect	965	$63,356,433	$111,570,019	$196,595,537	$6,119,147	$12,505,622
Total Effect	2799	$202,250,023	$342,097,605	$661,785,576	$14,336,859	$42,102,171

Q. WHAT IS THE ECONOMIC IMPACT REPORT?

A. The Economic Impact Report is a summary of the analysis and results quantifying the economic benefit that is forecasted to be generated by CEI South's proposed capital expenditures. The cost input used in the analysis is entirely based on the direct project costs that are proposed by CEI South. The results of the analysis quantify the estimated employment, labor income, GDP (value added), economic output, and tax income resulting from the proposed projects. The intent of the Economic Impact Report

is to demonstrate the significant economic benefit associated with CEI South's planned investments.

Q. WHY IS THE ECONOMIC IMPACT REPORT A VALUABLE PIECE OF EVIDENCE FOR THE COMMISSION TO CONSIDER?

A. The anticipated economic impact on the State of Indiana is relevant to what benefits are attributable to CEI South's TDSIC Plan, and while they are less directly relevant, the impacts in the broader U.S. are relevant. Factors such as positive employment impacts, labor income, state and local tax increases, and the multiplier effect of these factors in the broader economy have direct bearing on whether and how CEI South's TDSIC Plan is in the public interest.

That is not to say that the Economic Impact Report is the only relevant evidence that should be considered by the Commission, nor is it the only evidence offered by CEI South to support overall TDSIC Plan approval. However, the Economic Impact Report is an important piece of evidence for the Commission to consider, as it is relevant to the Commission's determination of whether the estimated costs of the eligible improvements included in the TDSIC Plan are justified by incremental benefits attributable to the Plan.

IV. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A. Yes, it does.

VERIFICATION

I affirm under penalties for perjury that the foregoing representations are true to the best of my knowledge, information, and belief.

Matthew R. Thibodeau
SVP and Senior Project Director, Sargent & Lundy

May 22, 2023

Date

Economic Impacts of Projected T&D Expenditures, 2024-2028

Prepared for

CenterPoint Energy Indiana South

Prepared by Sargent & Lundy

Report SL-017684
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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition/Clarification
CEI South	Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South
GDP	Gross Domestic Product
IMPLAN	Impact Analysis for Planning
T&D	Transmission and Distribution
S&L	Sargent and Lundy

EXECUTIVE SUMMARY

Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (CEI South) engaged Sargent & Lundy (S&L) to study and evaluate the economic impact of their projected construction and development expenditures during the five-year period from 2024 to 2028. This study considered capital expenditures relating to transmission and distribution (T&D) systems; it does not include the economic impact of operation and maintenance expenditures.

CEI South is an investor-owned utility under the jurisdiction of the Indiana Utility Regulatory Commission. S&L has been provided projected program expenditures and corresponding vendors for CEI South's planned projects within the jurisdiction of the Indiana Utility Regulatory Commission. Given their geographic location, the majority of the economic impact is expected to occur within Indiana.

S&L's analysis considered three distinct regions, Indiana, the rest of the United States, and regions outside of the United States. The impacts were then narrowed down to Indiana and the rest of the United States. When combined, the Indiana and remaining United States regions are assumed to be the total economic impact on the United States. The impact analysis for planning (IMPLAN) software, which uses an impact analysis model, was used to estimate the economic benefit of CEI South's expenditures. These benefits are categorized as net employment, income, value added to the market, wages injected into the economy, and federal, state, and local taxes. IMPLAN is a widely used software, particularly in the electric industry.

CEI South estimated the total capital expenditures required by their five-year plan to be $454 million[1]. This total projected expenditure is analyzed in the study by dividing it into four categories: 1) transmission, 2) distribution, 3) substation assets and 4) security. Each category is then subsequently divided into individual projects. The projects' totals included in the analysis as an input in the IMPLAN software are shown in Table ES-1. The total (direct and indirect) for each category over the five-year period is as follows:

- Transmission Projects: $ 127,152,752
- Distribution Projects: $ 209,326,178
- Substation Asset Projects: $ 103,521,070
- Security Projects: $ 14,000,000

Where applicable, the economic impact of the projects are further divided into two geographical regions or outside of the United States according to the locations of assumed industries from which direct project purchases would be made; note that this is not represented in Table ES-1 and Table ES-2.

[1] The total amount of capital expenditure assumes approval of all programs at the total projected cost outlined in CEI South's plan for each project category.

Table ES-1 — CEI South T&D Construction Expenditures Breakdown, Transmission and Distribution Projects, 2024-2028

Transmission Projects		Distribution Projects	
Re-Build with OPGW	$101,945,357	12-kV Rebuild	$98,792,745
		UG Replacement	$45,894,366
Re-Build	$25,207,395	Pole	$45,000,000
		Automation	$19,639,067
Total	$127,152,752	Total	$209,326,178

Table ES-2 — CEI South T&D Construction Expenditures Breakdown, Substation Assets and Security Projects, 2024-2028

Substation Asset Projects		Security Projects	
Transmission Substation	$49,946,956	Tier 2 Security (2024)	$4,481,610
Distribution Substation	$32,869,899	Tier 2 Security (2025)	$4,962,882
Relay / SCADA	$20,704,214	Tier 3 Security (2024 – 2028)	$4,555,508
Total	$103,521,070	Total	$14,000,000

In general, IMPLAN assumes three types of economic impact: 1) direct, 2) indirect, and 3) induced. Once the IMPLAN models are run, all three impacts are derived. Direct impact, sometimes referred to as the "initial change to the economy," is the result solely of the expenditures between a producer and consumer relating to the project. An indirect impact is the result of the purchases and contracts with the third parties providing the goods, inputs, and services to the project. An induced impact is the result of project laborers spending wages they acquired while working on the project.

The results of the IMPLAN model are shown in Table ES-3 for both Indiana and the remaining United States. The impact on the entire United States (the sum of the two regions) is also provided. Each economic impact includes the following types:

- **Supported Employment:** This type of economic impact describes the full-time and part-time employment required/supported by the project over the given period. Based on the model, CEI South's current plan is projected to support 5,033 total jobs in the entire United States. Of these total jobs, 2,234 of them exist within Indiana and 2,799 jobs are created or supported in the rest of the United States.[2]
  - These employment figures equate to 12.7 jobs created or supported in Indiana per $1 million dollars spent within Indiana.
  - These employment figures equate to 11.4 jobs created or supported within the entire United States per $1 million dollars spent within the entire United States.
- **Labor Income:** This type of economic impact describes the sum of employee compensation and proprietor income. Labor income is dependent on the employment requirement within each industry and the typical wages for that industry. Based on the model, CEI South's current plan is projected to generate $392.4 million in labor income within the entire United States. Of the total labor income, $190.1 million in labor income will occur in Indiana and $202.3 million will occur in the remaining United States. During the study period, the average wage in Indiana is projected to be $85,091 per job in Indiana and $77,955 per job in the remaining United States.
- **Value Added:** This type of economic impact describes the sum of labor income, production taxes, and property income. It is often referred to as the Gross Domestic Product (GDP). Based on the model, CEI South's current plan is projected to add nearly $814.8 million in value added (GDP) to the entire United States. Of this value-added (GPD), approximately $472.7 million is projected to be added in Indiana and $342.1 million projected to be added to the remaining United States.
- **Total Economic Output:** This type of economic impact describes the sum of the value added and the intermediate expenditures. Intermediate expenditures are the goods and services used as inputs into production or development. Based on the model, CEI South's current plan is projected to result in approximately $1.71 billion in entire United States output. Of this total, approximately $1.044 billion is from Indiana and $661.8 million is from the remaining United States.

Table ES-3 — CEI South Construction Expenditure Impacts of Indiana, Remaining United States, and Entire United States

Impact Type	**Employment**	Labor Income	**Value Added**	**Output**	State/Local Taxes	Federal Taxes
Total Economic Impact from CEI South T&D Construction Expenditures in Indiana (2024-2028)						
Direct Effect	1003	$97,045,288	$255,265,665	$588,650,887	$26,972,792	$15,587,823
Indirect Effect	548	$54,601,879	$151,482,546	$339,676,839	$21,490,606	$6,673,220
Induced Effect	683	$38,480,413	$65,998,218	$115,188,687	$4,798,765	$6,901,935

[2] These are not necessarily new jobs but are more accurately defined as the total jobs required to complete the projects.

Impact Type	**Employment**	Labor Income	**Value Added**	**Output**	State/Local Taxes	Federal Taxes
Total Effect	2234	$190,127,580	$472,746,429	$1,043,516,414	$53,262,163	$29,162,978
Total Economic Impact from CEI South T&D Construction Expenditures in the United States and Outside Indiana (2024-2028)						
Direct Effect	1111	$79,528,981	$133,281,092	$264,530,091	$3,309,892	$17,730,707
Indirect Effect	723	$59,364,609	$97,246,494	$200,659,948	$4,907,821	$11,865,843
Induced Effect	965	$63,356,433	$111,570,019	$196,595,537	$6,119,147	$12,505,622
Total Effect	2799	$202,250,023	$342,097,605	$661,785,576	$14,336,859	$42,102,171
Total Economic Impact from CEI South T&D Construction Expenditures in the United States (2024-2028)						
Direct Effect	2,113	$176,574,269	$388,546,757	$853,180,978	$30,282,684	$33,318,530
Indirect Effect	1,271	$113,966,489	$248,729,040	$540,336,787	$26,398,427	$18,539,063
Induced Effect	1,649	$101,836,846	$177,568,236	$311,784,224	$10,917,911	$19,407,557
Total Effect	5,033	$392,377,603	$814,844,034	$1,705,301,990	$67,599,022	$71,265,149

The impacts from CEI South's T&D construction expenditures can also be presented on a year-by-year basis according to the same impact and type methodology outlines above, as shown in Table ES-4. Consistent with the yearly project expenditure pattern, the economic impacts contain low levels of variation over the whole five-year plan.

Table ES-4 — Impacts Associated with Year-by-Year T&D Expenditures

Impact Type	**Employment**	Labor Income	**Value Added**	**Output**	State/Local Taxes	Federal Taxes
Year-by-Year Impact from CEI South T&D Construction Expenditures in Indiana						
2024	479	$39,821,085	$97,963,550	$215,651,816	$10,965,533	$6,136,263
2025	477	$39,791,574	$98,049,348	$215,913,579	$11,004,875	$6,121,040
2026	425	$36,747,180	$92,096,454	$203,625,616	$10,420,937	$5,617,578
2027	431	$37,181,732	$92,964,650	$205,429,558	$10,478,953	$5,698,159
2028	423	$36,586,010	$91,672,426	$202,895,844	$10,391,865	$5,589,938
Year-by-Year Impact from CEI South T&D Construction Expenditures in the United States and Outside of Indiana						
2024	576	$41,577,471	$70,138,986	$135,188,377	$2,952,198	$8,642,573
2025	582	$42,105,875	$71,106,180	$137,100,825	$2,985,702	$8,761,631
2026	549	$39,610,723	$67,252,727	$130,608,542	$2,816,441	$8,255,040
2027	540	$39,245,388	$65,987,032	$127,541,258	$2,776,407	$8,148,007
2028	553	$39,710,566	$67,612,679	$131,346,574	$2,806,111	$8,294,920

Impact Type	**Employment**	Labor Income	**Value Added**	**Output**	State/Local Taxes	Federal Taxes
Total Year-by-Year Impact of T&D Expenditures in Entire United States						
2024	1,055	$81,398,555	$168,102,537	$350,840,193	$13,917,731	$14,778,836
2025	1,059	$81,897,449	$169,155,529	$353,014,404	$13,990,577	$14,882,671
2026	974	$76,357,903	$159,349,181	$334,234,158	$13,237,378	$13,872,618
2027	971	$76,427,120	$158,951,682	$332,970,817	$13,255,359	$13,846,166
2028	976	$76,296,576	$159,285,106	$334,242,418	$13,197,976	$13,884,858

1. INTRODUCTION

Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (CEI South) contracted Sargent & Lundy (S&L) to study and evaluate the economic impact of its projected construction expenditures during the five-year period from 2024 to 2028. The entirety of this study is limited to capital expenditures relating to the construction of transmission and distribution (T&D) systems. It does not include the economic impact of operation and maintenance expenditures. The analysis in this report estimates the direct, indirect, and induced impacts of these expenditures on two different geographic regions—Indiana and the remaining United States—and a third region being equal to their sum—the entire United States. Each impact is broken down into the following types: supported employment, labor income, value added Gross Domestic Product (GDP), and total economic output. From these types, estimates of wages, federal taxes, and state and local taxes can be calculated.

This analysis requires the input of annual cost estimations, which are categorized into specific industries and regions. The input for these estimates was derived from data provided by CEI South that was further developed internally by Sargent & Lundy. Once categorized annual costs were developed, they were input in the impact analysis for planning (IMPLAN) software, which is widely used in the energy industry. The general methodology used in the analysis is the “analysis by parts” method which involved inputting CEI South’s project expenditures by the categorized industry and location from which the major materials, equipment, and services are expected to be purchased. This approach provided more precise estimates of impacts compared to simply modeling all project expenditures as a single utility sector expenditure.

2. PROJECT DESCRIPTIONS

CEI South is an investor-owned electric and natural gas utility located in southern Indiana. It is an indirect utility subsidiary of CenterPoint Energy, Inc. headquartered in Houston, Texas. In Indiana, CEI South serves approximately 150,000 customers and provides electric service to the following counties in southwest Indiana: Gibson, Dubois, Pike, Posey, Spencer, Vanderburgh, and Warrick.

CEI South's primary generation facilities are the A.B. Brown Power Plant in Posey County and the F.B. Culley Generating Station in Warrick County. CEI South also receives energy from renewable energy facilities in Benton, Pike, and Vanderburgh[3].

Connecting CEI South's electric customers to the generating facilities requires an extensive network of high-voltage transmission lines and lower-voltage distribution lines, known as the "interconnection". For a five-year period from 2024 to 2028, CEI South will undertake significant capital expenditures to construct, develop, improve, and refurbish T&D facilities across its Indiana network to provide continued reliable and efficient electric services to its customers within Indiana. The capital expenditures for Indiana related projects are projected to amount to approximately $454,000,000 in nominal (direct) dollars over the five-year study period[4].

The total expenditures are analyzed in the study by dividing it into four categories: 1) transmission, 2) distribution, 3) substation assets and 4) security. Subcategories are populated with individual projects over the five-year study period. The categories included in the analysis as an input in the IMPLAN software are shown in Table 2-1. The total for each category (in direct dollars) over the next five years is as follows:

- Transmission Projects: $ 127,152,752
- Distribution Projects: $ 209,326,178
- Substation Asset Projects: $ 103,521,070
- Security Projects: $ 14,000,000

Where applicable, the economic impact of the projects are further divided into two geographical regions or outside of the United States according to the locations of assumed industries from which direct project purchases would be made; note that this is not represented in Table 2-1 and Table 2-2.

[3] Overall, CEI South's generation fleet comprises a mixed portfolio of 995 MW of coal-fired generation, 183 MW of gas-fired generation, and 54 MW of solar generation coupled with 1 MW of battery storage.
[4] Nominal dollars are measured as the dollar value of a product at the time it was produced and appropriately inflated thereafter.

Table 2-1 — CEI South T&D Construction Expenditures Breakdown, Transmission and Distribution Projects, 2024–2028

Transmission Projects		Distribution Projects	
Re-Build with OPGW	$101,945,357	12-kV Rebuild	$98,792,745
		UG Replacement	$45,894,366
Re-Build	$25,207,395	Pole	$45,000,000
		Automation	$19,639,067
Total	$127,152,752	Total	$209,326,178

Table 2-2 — CEI South T&D Construction Expenditures Breakdown, Substation Asset and Security Projects, 2024–2028

Substation Asset Projects		Security Projects	
Transmission Substation	$49,946,956	Tier 2 Security (2024)	$4,481,610
Distribution Substation	$32,869,899	Tier 2 Security (2025)	$4,962,882
Relay / SCADA	$20,704,214	Tier 3 Security (2024 – 2028)	$4,555,508
Total	$103,521,070	Total	$14,000,000

The four categories of CEI South T&D construction expenditures (transmission, distribution, substation assets, and security) are modeled to exhibit a degree of interannual variability over the 2024 to 2028 period; however, the total annual expenditures of the Transmission, Distribution, and Substation Assets categories is modeled to remain constant at $88 million each year. Table 2-3 lists the expected value of expenditures, by category, for each year during the five-year expenditure timeframe. As seen in Table 2-3, expected T&D construction expenditures within each category vary slightly year over year. In all years in the analysis, distribution project expenditures are expected to be higher than expenditures on transmission projects.

Table 2-3 — CEI South T&D Construction Expenditures by Category, 2024–2028

2024	2025	2026	2027	2028	Total
Transmission Project Expenditures					
$23,257,197	$25,548,396	$27,450,049	$19,202,128	$31,694,984	$127,152,752
Distribution Project Expenditures					
$43,523,939	$42,569,016	$39,345,269	$45,183,965	$38,703,989	$209,326,178
Substation Asset Expenditures					
$21,218,865	$19,882,589	$21,204,683	$23,613,907	$17,601,027	$103,521,070
Security Project Expenditures					
$5,331,314	$5,819,113	$929,825	$967,018	$952,729	$14,000,000
Total Expenditures					
$93,331,315	$93,819,114	$88,929,826	$88,967,018	$88,952,729	$454,000,000

3. MULTIPLIER IMPACTS AND THE IMPLAN MODEL

Based on CEI South's plan to construct, develop, and upgrade its T&D system, CEI South's projected capital expenditure is $454 million (direct). This will have a significant impact on Indiana's economy and will additionally impact the rest of the United States. Each expenditure has primary and secondary impacts. To fully capture the economic impact of project construction expenditures, it is necessary to follow these expenditures as they work their way through the economy over a period of a few years after expenditures are first made. The primary or direct impacts are the result solely of the initial expenditures between a producer and consumer relating to the project. The secondary impacts are in the form of indirect and induced benefits to the economy. An indirect impact is the result of the purchases and contracts with third parties providing the project's goods, inputs, and services. An induced impact results from project laborers spending wages they acquired while working on the project.

For example, when CEI South upgrades a large substation it may include the purchase of breakers, switches, transformers, relays, and other BOP materials from their suppliers. They also hire labor, engineers, consultants, and additionally support their own in-hour team of technicians, engineers, and managers. The "direct impact" is the immediate exchange of goods and services between CEI South and the respective entities. The suppliers/entities then use the income from CEI South to pay their own employees and to purchase their own inputs and materials to meet their contractual obligations. Payments to employees works similarly in that an employee takes their income and spends it on private goods and services – thereby continuing the exchange further through the economy. This process of the receiving, then spending, or passing along, of expenditures that arise from the business-to-business purchases ripples through the economy, repeating the process through multiple exchanges. The "indirect impact" is the total economic impact of this rippling business spending that is a multiple of the original purchase of material and service inputs by the firms hired to construct the substation.

Aside from subsequent business-to-business transactions, a significant portion of the direct expenditure will be paid directly to the laborers and employees who perform the work and services. Through the "induced impact," these workers use their earned income to pay for private goods and services and living expenses such as food, rent, clothing, and automobile payments or services and leisure activities such as home renovations or vacations. Establishments that receive the workers' income will, in turn, use the revenue received to pay their expenses, including their income, general business expenditures, and supplies needed to provide additional goods and services. Just like indirect impact, the process of work and employee income passing through the economy will continue through multiple rounds of spending, creating

the same ripple effect. The "induced impact" is the total economic impact of the rippling income spending that is a multiple of the original wages received by those working directly on the project.

For both the induced impact and the indirect impact, the impact will lessen through each round of spending because not all of the expenditures are spent within the areas of study. Areas outside of the study include imported goods, worker savings, taxes, etc. Thus, just as a stone is thrown into the water and creates ripples that lessen with time and distance, the economic "ripple effect" with project expenditures will lessen as the successive rounds of spending work through the economy. Generally, it takes two to three years after a project is completed for the majority of the economic impact to take effect.

3.1. IMPLAN MODELING SOFTWARE

While the successive rounds of spending in an economy is conceptually intuitive, manually tracing the actual spending patterns of even a single construction project would be difficult, expensive, and time consuming. Alternatively, estimating the economic impact of a financial transaction on the economy can be done using mathematical methods and complex economic models. One commonly used technique for estimating the economic impact uses input-output models. These types of models were first developed in the 1930s by Dr. Wassily Leontief. Decades later, they were applied to computerized commercial software. The software uses a new financial transaction or other change in economic activity as input to generate impact estimates for employment, income, value added, output, and taxes as the output. These models are based upon detailed databases, including survey, and reporting data from the government and other public and private sources. The data was collected to track historical economic patterns and interrelationships among industries, households, and regions. Two widely used input-output models are the RIMS II Input-Output model and the IMPLAN model. IMPLAN is the more widely used model for energy sector economic studies and was therefore used in this analysis.

The IMPLAN model was developed initially in the 1970s by the U.S. Forest Service with the intention of determining the impacts of certain forestry policy and management decisions. In the mid-1980s, the U.S. Forest Service contracted with the University of Minnesota to support and further develop the model data sets. In 1993, Minnesota IMPLAN Group, Inc. was founded as an independent organization through a technology transfer agreement with the University of Minnesota. Minnesota IMPLAN Group, Inc. was subsequently given rights to all future IMPLAN development. In 1995, Minnesota IMPLAN Group, Inc. began to develop the first Microsoft Windows version and the following year IMPLAN Version 1 was released. Version 7 was used in this study since it can perform multi-regional impact analysis.

3.2. IDENTIFICATION OF THE PROJECT STUDY AREAS

Due to the wide range of specific cultures and laws between states, or even counties within each state, one of the first assumptions that must be made is the study area for the model. Because the majority of CEI

South's T&D construction expenditure impact will be felt in the state of Indiana, this study viewed impacts at the state level rather than the county or country level. Additionally, local policy decisions may depend, in part, on a view of the economic impacts in the state. To understand the broader impact of state expenditures, it is also beneficial to track the impacts of Indiana project expenditures on the remaining United States and impacts outside of the United States. Therefore, three geographic regions were chosen for the analysis: Indiana, the remaining United States, and outside of the United States.

To assess the isolated state and national level impacts of the expenditures each year, two models, one for Indiana and one for the remaining United States, were created in IMPLAN for each year of the study. With the establishment of the two models, the total United States impact can be estimated by summing the results of both models. Sub-state regions, comprised of several counties where the expenditures will be concentrated, were not developed for the study. One can assume that the most significant impact will be realized in the southwest Indiana area, where much of the workforce for the project will live (as permanent residents or as temporary residents during construction) and spend a significant amount of their income.

4. ECONOMIC IMPACTS OF CEI SOUTH T&D CONSTRUCTION EXPENDITURES

4.1. INDUSTRY ALLOCATION OF CONSTRUCTION EXPENDITURES

The $454 million (direct) of CEI South's T&D construction expenditures are listed in Table 2-1 and arranged chronologically in Table 2-3. To construct the economic impact model using IMPLAN, the next step required the development of CEI South T&D project categories with more economically significant expenditure assumptions. Economically significant assumptions include which region expenditures are paid to, if the expenditures are to people or businesses, and what industry sector each expenditure is attributed to.

While using the general IMPLAN power/energy T&D sector (Sector 47) to model the T&D construction expenditures is possible, this sector is widely defined and would not include the specific goods and services outside of T&D such as transportation and engineering services. IMPLAN calls the method to develop more precise impact estimates an "analysis by parts" approach (or a "bill of goods" approach), and it was used in this analysis. This approach involves identifying the sector or industry, region, and recipient of project expenditures that will be made.

Expenditure patterns were developed by mapping representative cost allocations and associated vendors within the cost breakdown provided by CEI South to specific industries and regions. S&L was provided a representative breakdown for each project group that contained allocated costs for each project group across material, labor, engineering, and overhead costs. Material, Labor, and engineering costs were further broken down and associated with specific vendors. S&L considered the specific vendors included within the provided breakdown to further assess and categorize the economic and regional mapping of each cost category within every project group. This mapping was then assumed to be applicable to each year's projected total expenditures for that corresponding project group. Table 4-1 shows the project groups that were included within the cost breakdown provided to S&L.

Table 4-2 shows the different IMPLAN economic sectors and their descriptions that were considered for the analysis. The resulting economic and regional breakdown for each project group is shown in Appendix A.

Table 4-1 — Project Groups for CEI South's Project Expenditures

Category	Project Group
Transmission	Rebuild Line
Transmission	Rebuild Line with OPGW
Distribution	12-kV Line Rebuild
Distribution	Underground Line Replacement
Distribution	Pole Replacement
Distribution	Automation Upgrades
Substation Assets	Large / Transmission Substations
Substation Assets	Small / Distribution Substations
Substation Assets	Relay and SCADA
Security	Tier 2 Security (2024)
Security	Tier 2 Security (2025)
Security	Tier 3 Security

Table 4-2 — IMPLAN Sectors and Industries

IMPLAN Index	Sector/Industry Description
47	Electric power transmission and distribution
52	Construction of new power and communication structures
132	Sawmills
164	Plastic material and resin manufacturing
236	Fabricated structural metal manufacturing
239	Sheet metal work manufacturing
248	Turned product and screw, nut, and bolt manufacturing
270	Optical instrument and lens manufacturing
309	Electronic connector manufacturing
310	Other electronic component manufacturing
329	Power, distribution, and specialty transformer manufacturing
331	Switchgear and switchboard apparatus manufacturing
332	Relay and industrial control manufacturing
335	Fiber optic cable manufacturing
336	Other communication and energy wire manufacturing
339	All other miscellaneous electrical equipment and component manufacturing
417	Truck transportation
457	Architectural, engineering, and related services
459	Custom computer programming services
463	Environmental and other technical consulting services
475	Investigation and security services
477	Landscape and horticultural services
514	Electronic and precision equipment repair and maintenance
524	Labor and civic organizations (i.e. Union Labor)

4.2. IMPLAN MODEL RESULTS

IMPLAN models were constructed with the inputs from Appendix A for each year and region. The two regions were linked using the IMPLAN multi-regional approach such that interregional secondary effects could be captured.

The results of the IMPLAN model are shown in Table 4-3 for both Indiana and the remaining United States. The impact on the entire United States (the sum of the Indiana and remaining United States geographic regions) is also provided. Each economic impact includes the following types:

- **Supported Employment:** This type of economic impact describes the full-time and part-time employment required/supported by the project over the given period. Based on the model, CEI South's current plan is projected to support 5,033 total jobs in the entire United States. Of these total jobs, 2,234 of them exist within Indiana and 2,799 jobs are created or supported in the rest of the United States.[5]
  - These employment figures equate to 12.7 jobs created or supported in Indiana per $1 million dollars spent within Indiana.
  - These employment figures equate to 11.4 jobs created or supported within the entire United States per $1 million dollars spent within the entire United States.
- **Labor Income:** This type of economic impact describes the sum of employee compensation and proprietor income. Labor income is dependent on the employment requirement within each industry and the typical wages for that industry. Based on the model, CEI South's current plan is projected to generate $392.4 million in labor income within the entire United States. Of the total labor income, $190.1 million in labor income will occur in Indiana and $202.3 million will occur in the remaining United States. During the study period, the average wage in Indiana is projected to be $85,091 per job in Indiana and $77,955 per job in the remaining United States.
- **Value Added:** This type of economic impact describes the sum of labor income, production taxes, and property income. It is often referred to as the Gross Domestic Product (GDP). Based on the model, CEI South's current plan is projected to add nearly $814.8 million in value added (GDP) to the entire United States. Of this value-added (GPD), approximately $472.7 million is projected to be added in Indiana and $342.1 million projected to be added to the remaining United States.
- **Total Economic Output:** This type of economic impact describes the sum of the value added and the intermediate expenditures. Intermediate expenditures are the goods and services used as inputs into production or development. Based on the model, CEI South's current plan is projected to result in approximately $1.71 billion in entire United States output. Of this total, approximately $1.044 billion is from Indiana and $661.8 million is from the remaining United States.

Table 4-3 — CEI South Construction Expenditure Impacts of Indiana, Remaining United States, and Entire United States

Impact Type	**Employment**	Labor Income	**Value Added**	**Output**	State/Local Taxes	Federal Taxes
Total Economic Impact from CEI South T&D Construction Expenditures in Indiana (2024-2028)						
Direct Effect	1003	$97,045,288	$255,265,665	$588,650,887	$26,972,792	$15,587,823
Indirect Effect	548	$54,601,879	$151,482,546	$339,676,839	$21,490,606	$6,673,220
Induced Effect	683	$38,480,413	$65,998,218	$115,188,687	$4,798,765	$6,901,935

[5] These are not necessarily new jobs but are more accurately defined as the total jobs required to complete the projects.

Impact Type	Employment	Labor Income	Value Added	Output	State/Local Taxes	Federal Taxes
Total Effect	2234	$190,127,580	$472,746,429	$1,043,516,414	$53,262,163	$29,162,978
Total Economic Impact from CEI South T&D Construction Expenditures in the United States and Outside Indiana (2024-2028)						
Direct Effect	1111	$79,528,981	$133,281,092	$264,530,091	$3,309,892	$17,730,707
Indirect Effect	723	$59,364,609	$97,246,494	$200,659,948	$4,907,821	$11,865,843
Induced Effect	965	$63,356,433	$111,570,019	$196,595,537	$6,119,147	$12,505,622
Total Effect	2799	$202,250,023	$342,097,605	$661,785,576	$14,336,859	$42,102,171
Total Economic Impact from CEI South T&D Construction Expenditures in the United States (2024-2028)						
Direct Effect	2,113	$176,574,269	$388,546,757	$853,180,978	$30,282,684	$33,318,530
Indirect Effect	1,271	$113,966,489	$248,729,040	$540,336,787	$26,398,427	$18,539,063
Induced Effect	1,649	$101,836,846	$177,568,236	$311,784,224	$10,917,911	$19,407,557
Total Effect	5,033	$392,377,603	$814,844,034	$1,705,301,990	$67,599,022	$71,265,149

4.3. YEAR-BY-YEAR EXPENDITURE IMPACTS

The impacts from CEI South's T&D expenditures can also be presented on a year-by-year basis according to the same impact and type methodology outlined previously, as shown in Table 4-4. Consistent with the yearly project expenditure pattern, the economic impacts contain low levels of variation from year to year over the whole five-year plan.

Table 4-4 — Impacts Associated with Year-by-Year T&D Expenditures

Impact Type	Employment	Labor Income	Value Added	Output	State/Local Taxes	Federal Taxes
Year-by-Year Impact from CEI South T&D Construction Expenditures in Indiana						
2024	479	$39,821,085	$97,963,550	$215,651,816	$10,965,533	$6,136,263
2025	477	$39,791,574	$98,049,348	$215,913,579	$11,004,875	$6,121,040
2026	425	$36,747,180	$92,096,454	$203,625,616	$10,420,937	$5,617,578
2027	431	$37,181,732	$92,964,650	$205,429,558	$10,478,953	$5,698,159
2028	423	$36,586,010	$91,672,426	$202,895,844	$10,391,865	$5,589,938
Year-by-Year Impact from CEI South T&D Construction Expenditures in the United States and Outside Indiana						
2024	576	$41,577,471	$70,138,986	$135,188,377	$2,952,198	$8,642,573
2025	582	$42,105,875	$71,106,180	$137,100,825	$2,985,702	$8,761,631
2026	549	$39,610,723	$67,252,727	$130,608,542	$2,816,441	$8,255,040
2027	540	$39,245,388	$65,987,032	$127,541,258	$2,776,407	$8,148,007

Impact Type	**Employment**	Labor Income	**Value Added**	**Output**	State/Local Taxes	Federal Taxes
2028	553	$39,710,566	$67,612,679	$131,346,574	$2,806,111	$8,294,920
Year-by-Year Impact from CEI South T&D Construction Expenditures in the United States						
2024	1,055	$81,398,555	$168,102,537	$350,840,193	$13,917,731	$14,778,836
2025	1,059	$81,897,449	$169,155,529	$353,014,404	$13,990,577	$14,882,671
2026	974	$76,357,903	$159,349,181	$334,234,158	$13,237,378	$13,872,618
2027	971	$76,427,120	$158,951,682	$332,970,817	$13,255,359	$13,846,166
2028	976	$76,296,576	$159,285,106	$334,242,418	$13,197,976	$13,884,858

APPENDIX A. IMPLAN INDUSTRY AND REGIONAL BREAKDOWN BY PROJECT GROUP

IMPLAN ID	Description	Transmission Rebuild Line			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	2.3%	0%	0%	100%
47	Electric power transmission and distribution	0.9%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	0.0%	-	-	-
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	23.9%	0%	100%	0%
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	5.5%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	7.3%	50%	50%	0%
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	2.2%	100%	0%	0%
457	Architectural, engineering, and related services	3.8%	0%	100%	0%
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	1.3%	60%	40%	0%
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	2.2%	100%	0%	0%
514	Electronic and precision equipment repair and maintenance	7.0%	100%	0%	0%
524	Labor and civic organizations (Union Labor)	31.7%	0%	100%	0%
Total/Average		100.0%	28.7%	69.0%	2.3%

IMPLAN ID	Description	Transmission Rebuild Line with OPGW			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	2.4%	0%	0%	100%
47	Electric power transmission and distribution	0.9%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	0.0%	-	-	-
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	24.5%	0%	100%	0%
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	5.6%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	8.4%	55%	45%	0%
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	1.7%	100%	0%	0%
457	Architectural, engineering, and related services	3.8%	0%	100%	0%
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	1.3%	60%	40%	0%
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	2.2%	100%	0%	0%
514	Electronic and precision equipment repair and maintenance	6.5%	100%	0%	0%
524	Labor and civic organizations (Union Labor)	31.0%	0%	100%	0%
Total/Average		100.0%	28.5%	69.1%	2.4%

IMPLAN ID	Description	Distribution			
		12-kV Line Rebuild			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	5.5%	0%	0%	100%
47	Electric power transmission and distribution	2.6%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	35.2%	0%	100%	0%
132	Sawmills	2.1%	48%	52%	0%
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	10.6%	0%	100%	0%
239	Sheet metal work manufacturing	0.2%	100%	0%	0%
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	5.6%	100%	0%	0%
309	Electronic connector manufacturing	3.8%	100%	0%	0%
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	0.0%	-	-	-
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.0%	-	-	-
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	2.6%	100%	0%	0%
514	Electronic and precision equipment repair and maintenance	2.6%	100%	0%	0%
524	Labor and civic organizations (Union Labor)	17.3%	0%	100%	0%
Total/Average		100.0%	30.4%	64.2%	5.5%

IMPLAN ID	Description	Distribution			
		Underground Line Replacement			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	1.5%	0%	0%	100%
47	Electric power transmission and distribution	2.5%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	3.8%	0%	100%	0%
132	Sawmills	0.5%	48%	52%	0%
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	22.8%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.2%	100%	0%	0%
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	0.6%	100%	0%	0%
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	1.9%	100%	0%	0%
514	Electronic and precision equipment repair and maintenance	54.2%	100%	0%	0%
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	71.7%	26.8%	1.5%

IMPLAN ID	Description	Distribution			
		Pole Replacement			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	1.1%	0%	0%	100%
47	Electric power transmission and distribution	7.3%	27%	73%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	29.7%	0%	100%	0%
132	Sawmills	8.1%	48%	52%	0%
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	12.6%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.2%	100%	0%	0%
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	4.0%	100%	0%	0%
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	1.3%	100%	0%	0%
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	23.8%	0%	100%	0%
Total/Average		100.0%	23.4%	75.5%	1.1%

IMPLAN ID	Description	Distribution Automation Upgrades			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	3.1%	0%	0%	100%
47	Electric power transmission and distribution	1.1%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	33.8%	0%	100%	0%
132	Sawmills	1.0%	48%	52%	0%
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	21.6%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	23.8%	100%	0%	0%
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.5%	100%	0%	0%
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	2.3%	100%	0%	0%
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	0.8%	100%	0%	0%
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	40.9%	55.9%	3.1%

IMPLAN ID	Description	Substation Assets			
		Large / Transmission Substations			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	3.2%	0%	0%	100%
47	Electric power transmission and distribution	11.6%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	32.5%	73%	28%	0%
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	26.6%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	5.9%	0%	100%	0%
332	Relay and industrial control manufacturing	2.7%	0%	100%	0%
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.0%	-	-	-
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	5.5%	0%	100%	0%
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	0.0%	-	-	-
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	47.2%	49.6%	3.2%

IMPLAN ID	Description	Substation Assets			
		Small / Distribution Substations			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	3.2%	0%	0%	100%
47	Electric power transmission and distribution	11.6%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	32.5%	73%	28%	0%
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	26.6%	0%	100%	0%
331	Switchgear and switchboard apparatus manufacturing	5.9%	0%	100%	0%
332	Relay and industrial control manufacturing	2.7%	0%	100%	0%
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.0%	-	-	-
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	5.5%	0%	100%	0%
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	0.0%	-	-	-
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	47.2%	49.6%	3.2%

IMPLAN ID	Description	Substation Assets Relay and SCADA			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	3.1%	0%	0%	100%
47	Electric power transmission and distribution	11.7%	100%	0%	0%
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	32.5%	100%	0%	0%
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	0.0%	-	-	-
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	35.2%	0%	100%	0%
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.0%	-	-	-
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	5.5%	0%	100%	0%
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	0.0%	-	-	-
477	Landscape and horticultural services	0.0%	-	-	-
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	56.2%	40.7%	3.1%

IMPLAN ID	Description	Security			
		Tier 2 – 2024			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	1.3%	0%	0%	100%
47	Electric power transmission and distribution	0.0%	-	-	-
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	0.0%	-	-	-
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	1.4%	0%	100%	0%
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.1%	0%	100%	0%
248	Turned product and screw, nut, and bolt manufacturing	0.0%	0%	100%	0%
270	Optical instrument and lens manufacturing	11.6%	0%	100%	0%
309	Electronic connector manufacturing	0.1%	0%	100%	0%
310	Other electronic component manufacturing	0.0%	0%	100%	0%
329	Power, distribution, and specialty transformer manufacturing	0.0%	-	-	-
331	Switchgear and switchboard apparatus manufacturing	0.0%	0%	100%	0%
332	Relay and industrial control manufacturing	0.2%	0%	100%	0%
335	Fiber optic cable manufacturing	1.4%	0%	100%	0%
336	Other communication and energy wire manufacturing	0.0%	0%	100%	0%
339	All other misc. electrical equipment and component manufacturing	1.8%	0%	100%	0%
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	6.9%	0%	100%	0%
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	63.1%	79%	21%	0%
477	Landscape and horticultural services	0.0%	-	-	-
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	61.8%	36.9%	1.3%

IMPLAN ID	Description	Security			
		Tier 2 – 2025			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	2.0%	0%	0%	100%
47	Electric power transmission and distribution	0.0%	-	-	-
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	0.0%	-	-	-
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	2.1%	0%	100%	0%
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.1%	0%	100%	0%
248	Turned product and screw, nut, and bolt manufacturing	0.0%	0%	100%	0%
270	Optical instrument and lens manufacturing	18.1%	0%	100%	0%
309	Electronic connector manufacturing	0.1%	0%	100%	0%
310	Other electronic component manufacturing	0.0%	0%	100%	0%
329	Power, distribution, and specialty transformer manufacturing	0.0%	-	-	-
331	Switchgear and switchboard apparatus manufacturing	0.1%	0%	100%	0%
332	Relay and industrial control manufacturing	0.4%	0%	100%	0%
335	Fiber optic cable manufacturing	2.2%	0%	100%	0%
336	Other communication and energy wire manufacturing	0.1%	0%	100%	0%
339	All other misc. electrical equipment and component manufacturing	2.9%	0%	100%	0%
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	10.8%	0%	100%	0%
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	49.1%	82%	18%	0%
477	Landscape and horticultural services	0.0%	-	-	-
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	52.2%	45.8%	2.0%

IMPLAN ID	Description	Security Tier 3			
		Cost %	Indiana	USA	N/A
0	Not applicable (Sales Tax)	2.6%	0%	0%	100%
47	Electric power transmission and distribution	0.0%	-	-	-
47.1	CEI South Direct Labor	12.0%	100%	0%	0%
52	Construction of new power and communication structures	0.0%	-	-	-
132	Sawmills	0.0%	-	-	-
164	Plastic material and resin manufacturing	0.0%	-	-	-
236	Fabricated structural metal manufacturing	0.0%	-	-	-
239	Sheet metal work manufacturing	0.0%	-	-	-
248	Turned product and screw, nut, and bolt manufacturing	0.0%	-	-	-
270	Optical instrument and lens manufacturing	0.0%	-	-	-
309	Electronic connector manufacturing	0.0%	-	-	-
310	Other electronic component manufacturing	0.0%	-	-	-
329	Power, distribution, and specialty transformer manufacturing	0.0%	-	-	-
331	Switchgear and switchboard apparatus manufacturing	0.0%	-	-	-
332	Relay and industrial control manufacturing	0.0%	-	-	-
335	Fiber optic cable manufacturing	0.0%	-	-	-
336	Other communication and energy wire manufacturing	0.0%	-	-	-
339	All other misc. electrical equipment and component manufacturing	0.0%	-	-	-
417	Truck transportation	0.0%	-	-	-
457	Architectural, engineering, and related services	0.0%	-	-	-
459	Custom computer programming services	0.0%	-	-	-
463	Environmental and other technical consulting services	0.0%	-	-	-
475	Investigation and security services	85.4%	34%	66%	0%
477	Landscape and horticultural services	0.0%	-	-	-
514	Electronic and precision equipment repair and maintenance	0.0%	-	-	-
524	Labor and civic organizations (Union Labor)	0.0%	-	-	-
Total/Average		100.0%	41.4%	56.0%	2.6%