OFFICIAL
EXHIBITS

FILED
JULY 24, 2019
INDIANA UTILITY
REGULATORY COMMISSION

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANAPOLIS POWER & LIGHT COMPANY FOR APPROVAL OF IPL'S TDSIC PLAN FOR ELIGIBLE TRANSMISSION, DISTRIBUTION, AND STORAGE SYSTEM IMPROVEMENTS PURSUANT TO IND. CODE § 8-1-39-10.	)))))))	**CAUSE NO. 45264**

IURC
PETITIONER'S
EXHIBIT NO. 12
11-14-19 AT
DATE REPORTER

PETITIONER'S SUBMISSION OF DIRECT TESTIMONY OF MATTHEW R. KINGHORN

Indianapolis Power & Light Company ("IPL" or "Petitioner"), by counsel, hereby submits the direct testimony of Matthew R. Kinghorn.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing was served this 24th day of July, 2019, by email transmission, hand delivery or United States Mail, first class, postage prepaid to:

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ATTORNEYS FOR APPLICANT
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VERIFIED DIRECT TESTIMONY

OF

MATTHEW R. KINGHORN

ON BEHALF OF

INDIANAPOLIS POWER & LIGHT COMPANY

VERIFIED DIRECT TESTIMONY OF MATTHEW R. KINGHORN
ON BEHALF OF
INDIANAPOLIS POWER & LIGHT COMPANY

Q1. Please state your name, employer, and business address.

A1. My name is Matthew R. Kinghorn. I am employed by Indiana University. My business address is 1309 East 10th Street, Suite 4048, Bloomington, IN 47405.

Q2. What is your position with Indiana University?

A2. I am a Senior Research Analyst at the Indiana Business Research Center ("IBRC"), which is a part of the Kelley School of Business at Indiana University.

Q3. Please describe your duties as Senior Research Analyst.

A3. As a Senior Research Analyst, I conduct a wide range of research studies, including economic impact analysis, industry and labor force analysis, regional economic analysis, demographic estimates and projections, trade and foreign investment analysis, and housing market research.

Q4. Please summarize your education and professional qualifications.

A4. I graduated from Indiana University with both a Bachelor's degree in Geography and a Master's in Public Administration. I have been employed at the IBRC as an analyst since 2007. In my time at IBRC I have conducted dozens of economic impact studies and have received advanced training in the best practices of economic impact analysis and the use of the IMPLAN economic modeling software by attending three separate multi-day training sessions with the Minnesota IMPLAN Group. Prior to working at the IBRC, I spent three years as a project manager with the Indiana-based community development consulting firm Strategic Development Group.

Q5. What is the purpose of your testimony in this proceeding?

A5. The purpose of my testimony is to articulate the methodology used to measure the economic impact of IPL's plan to upgrade and modernize its electric transmission and distribution system and to summarize the findings of our analysis.

Q6. Are you sponsoring any attachments in support of your testimony?

A6. Yes. I am sponsoring the IBRC's Economic Impact Estimate Report titled "The Economic Impacts of IPL's Plan to Upgrade its Electrical Transmission and Distribution System." The report is included as Appendix 8.5 to IPL's TDSIC Plan which is attached to IPL Witness Bentley's direct testimony as Attachment BJB-2.

Q7. Was the attachment identified above prepared or assembled by you or under your direction or supervision?

A7. Yes.

Q8. Please describe the IBRC and its qualifications and experience with providing economic impact analyses.

A8. The IBRC has a staff of approximately 25 researchers, programmers, and administrative professionals spread between its offices in Indianapolis and Bloomington. The IBRC is engaged in a wide range of research topics, with economic impact analysis being one key area of focus. The IBRC employs two analysts who have attended advanced training in the use of the IMPLAN modeling software. In the last five years, the IBRC has conducted several analyses of the economic contributions related to investments proposed by Indiana utilities, including a study in 2013 on IPL's plan to construct and operate a new gas power plant in Morgan County, Indiana.[1]

[1] See IURC CN 44339.

Q9. Please describe the IMPLAN modeling software.

A9. The IMPLAN economic modeling software is built on a mathematical input-output (I-O) model that expresses relationships between sectors of the economy in a chosen geographic location. In expressing the flow of dollars through a regional economy (e.g., a county, a group of counties, a state, etc.), the I-O model assumes fixed relationships between producers and their suppliers based on demand.

The idea behind I-O modeling is that the inter-industry relationships within a region largely determine how that economy will respond to economic changes. In an I-O model, the increase in demand for a certain product or service causes a multiplier effect. Increased demand for a product affects the producer of the product, the producer's employees, the producer's suppliers, the supplier's employees, and so on—ultimately generating a total effect in the economy that is greater than the initial change in demand.

IMPLAN constructs its I-O model using production, employment and trade data from a range of sources, such as the U.S. Census Bureau's annual County Business Patterns report, and the U.S. Bureau of Labor Statistics' annual report called Covered Employment and Wages. The use of these data sources allows the IMPLAN software build economic models that are tailored to reflect the unique industry mix of any given geographic area.

Q10. Please explain the IBRC's assignment in this case.

A10. The IBRC's role was to estimate the economic effects—the changes in employment, employee compensation, economic output (i.e., gross domestic product ("GDP")), and state and local government revenues—associated with IPL's plan to upgrade and modernize its electric transmission and distribution system in its Central Indiana service area over the years 2020 to 2026. This is commonly called an "economic impact study" because it estimates the economic consequences of either adding or removing an economic

activity—*i.e.*, a business, production facility, a construction project, etc.—to or from a region. This type of study not only gauges the effects of the direct spending by the economic entity, but also gauges the economic ripple effects associated with the economic activity of the supply chain as well as the household spending generated by worker wages and benefits.

Q11. Please describe the process that the IBRC used to evaluate the economic impact associated with IPL's activities.

A11. IPL provided the IBRC research team with the estimated amount of annual investments outlined in its plan to upgrade and modernize its electric transmission and distribution system. This expenditure information was broken out by engineering services, purchases of equipment and materials, and labor. Each of these categories were further divided into local and non-local spending categories, depending on whether IPL expects their vendors/workers to be located in Marion County or outside the county. This detailed accounting of IPL's planned investments greatly improves the accuracy of the resulting estimates by clearly delineating local vs. non-local spending (rather than relying on the regional purchase coefficients built into the IMPLAN model) and by allowing the research team to conduct an "Analysis by Parts" (ABP) approach to its economic modeling. The ABP approach is important in that the research team was able to define a custom production function for this analysis rather than relying on the standard production function for utilities construction provided in the IMPLAN models (a production function is like a recipe for making a good, a service or even a construction project).

To estimate how the activities in Marion County generated additional economic activity throughout the rest of Indiana, the research team conducted a "Multi-Regional Input-Output Analysis" (MRIO) within the IMPLAN software. The MRIO approach estimates

how the supply chain purchases and household spending of these Marion County-based activities trigger additional ripple effects in the Indiana's other 91 counties.

Q12. What did IBRC use as the estimated cost of IPL's construction activities?

A12. IPL provided IBRC an estimated cost of approximately $1.2 billion for its plan to upgrade and modernize its electric transmission and distribution system.

Q13. What are the key findings of your analysis?

A13. The key findings from this analysis show that IPL's $1.2 billion investment over this seven-year period will support an estimated 580 direct jobs per year in the area over the life of the project. These jobs will largely be concentrated in the construction and engineering fields. Along with these direct employment effects, this increased economic activity will support an additional 300 local ripple effect jobs per year resulting from supply chain purchases and the household spending associated with these direct jobs. This brings the full employment footprint of IPL's T&D system investments to an estimated 880 jobs per year between 2020 and 2026. This total employment impact will combine to produce an estimated $62.2 million in total employee compensation (i.e., pay and benefits), which translates into nearly $70,700 in compensation per worker.

A helpful way to interpret these impacts is to consider the multiplier effect (i.e., total impact divided by direct impact). The ratio of direct jobs to total jobs, for instance, gives a multiplier of 1.52, meaning that every job directly tied to IPL's investments supports another 0.52 jobs with other employers in the area (or every 10 direct jobs support slightly more than 5 additional jobs elsewhere). The compensation estimates in this analysis yield a multiplier of 1.38, suggesting that every dollar of direct payroll generates an additional $0.38 in compensation with other local employers.

In terms of total economic activity, the full impact of these IPL activities will combine to contribute an estimated $92.6 million per year to Marion County's gross domestic product (GDP) over the seven-year period. The GDP multiplier of 1.46 indicates that every dollar of GDP directly generated by these investments will trigger an additional $0.46 in economic activity in the area.

Looking over the full span of the project, IPL's investments will amount to more than $435 million in compensation in Marion County and nearly $648 million in GDP.

IPL's plan to upgrade its T&D system will also generate state and local government revenues. The IMPLAN model estimates the tax revenues from business profits, indirect business taxes (e.g., sales, property and excise taxes), personal taxes (e.g., income and property taxes), and employer and employee contributions to social insurance. Fueled primarily by sales and property taxes, this investment in T&D system modernization will generate an estimated $3.3 million per year in state and local government revenue.

As the supply chains that support IPL's investment activities and the household spending of workers extend to other parts of Indiana, the additional spending supports another 70 ripple effect jobs and the total employment impact of the T&D system plan expands from 900 jobs in Marion County to 950 jobs statewide. Furthermore, the average annual GDP impact of these investments will reach nearly $99 million at the state level and state and local government revenues rise to an estimated $3.5 million per year.

Q14. Please summarize the conclusions you draw from the results of your analysis.

A14. The local spending associated with IPL's plan to upgrade and modernize its electric transmission and distribution system between 2020 and 2026 will support an estimated 880 jobs per year in Marion County worth $62.2 million in annual compensation. Furthermore, the full impact of these IPL activities will combine to contribute an estimated $92.6 million

per year to Marion County's gross domestic product and generate an estimated $3.3 million per year in state and local government revenue. At the state level, these estimates rise to a total employment impact of 950 jobs per year, $65.9 million in annual compensation, $98.5 million in GDP per year, and $3.5 million in annual state and local government revenues.

Q15. Does this conclude your prepared verified direct testimony?

A15. Yes.

Verification

I Matthew R. Kinghorn, Senior Research Analyst at the Indiana Business Research Center ("IBRC"), which is a part of the Kelley School of Business at Indiana University, affirm under penalties for perjury that the foregoing representations are true to the best of my knowledge, information, and belief.

Dated July 22, 2019.

Matthew R. Kinghorn