STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC PURSUANT TO IND. CODE §§ 8-1-2-42.7, 8-1-2-61 AND, IND. CODE § 8-1-2.5-6 FOR (1) AUTHORITY TO MODIFY ITS RATES AND CHARGES FOR ELECTRIC UTILITY SERVICE THROUGH A PHASE IN OF RATES; (2) APPROVAL OF NEW SCHEDULES OF RATES AND CHARGES, GENERAL RULES AND REGULATIONS, AND RIDERS; (3) APPROVAL OF REVISED COMMON AND ELECTRIC DEPRECIATION RATES APPLICABLE TO ITS ELECTRIC PLANT IN SERVICE; (4) APPROVAL OF NECESSARY AND APPROPRIATE ACCOUNTING RELIEF; AND (5) APPROVAL OF A NEW SERVICE STRUCTURE FOR INDUSTRIAL RATES.	)	**CAUSE NO. 45159**

INTERVENOR INDIANA COAL COUNCIL EXHIBIT 1

Prefiled Direct Testimony of

Phillip Graeter

Manager at Energy Ventures Analysis

Sponsoring Attachments PG-1 and PG-2

1. Q **PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

A My name is Phillip Graeter. I am a Manager in the consulting firm of Energy Ventures Analysis, Inc. ("EVA"). My business address is 1901 N. Moore Street, Suite 1200, Arlington, Virginia 22209-1706.

2. Q **ON WHOSE BEHALF ARE YOU PROVIDING TESTIMONY?**

A I am testifying on behalf of the Indiana Coal Council, Inc. ("ICC").

3. Q **PLEASE DESCRIBE EVA.**

A EVA is a consulting firm that engages in a variety of projects for private and public sector clients related to energy and environmental issues. EVA also has a subscription business and currently produces about 15 publications, the frequency of which range from daily to annual. In the energy area, much of our work is related to analysis of the electric utility industry and fuel markets, particularly oil, natural gas and coal. Our clients in these areas include coal, oil and natural gas producers, electric utilities, industrial energy consumers, and gas pipelines and railroads. We also work for public agencies, including the U.S. Department of Justice, the U.S. Department of Energy, state public utility commissions, as well as intervenors in utility rate proceedings, such as consumer counsels and municipalities. Another group of clients include trade and industry associations. EVA has provided testimony in numerous state public utility commissions. Principals in the firm have also filed testimony in a number of cases in both state and federal courts, as well as before the Federal Energy Regulatory Commission.

4. Q **PLEASE OUTLINE YOUR FORMAL EDUCATION AND CERTIFICATIONS.**

A I received a Master of Science degree in Engineering Management, and a Bachelor of Science degree in Systems Engineering, both from the George Washington University. Utilizing my unique educational background in engineering management with a focus in energy economics and finance, I have prepared numerous economic and regulatory impact studies on a wide-ranging array of issues regarding the U.S. energy sector for clients that include state regulatory commissions, federal agencies, trade associations, and private companies. A copy of my current CV is attached as Attachment PG-1.

5. Q **WHAT IS THE SUBJECT OF YOUR TESTIMONY?**

A I respond in part to the Testimony of Mr. Avi Allison filed on behalf of Intervenor Sierra Club. Mr. Allison testifies at page 35 of his testimony that he agrees with NIPSCO's underlying decision to accelerate the retirement of its Michigan City and Schahfer coal units because of the likely savings shown in NIPSCO's IRP retirement analysis. However, the calculation of savings Mr. Avi references does not take into account the cost of lost jobs that accelerated retirements could cause. I performed a "Job Impact Study of the Accelerated Retirements of NIPSCO's R.M. Schahfer and Michigan City Power Plants," a copy of which is attached as Attachment PG-2.

6. Q **WHAT ARE SOME OF THE MAJOR FINDINGS OF YOUR STUDY?**

A My study shows that the accelerated retirements of the R.M. Schahfer and Michigan City power plants will have serious negative impacts on the local communities, while NIPSCO's plan to replace these power plants will do little to soften these impacts.

According to NIPSCO's recent presentation at the public advisory meeting in October 2018, 276 direct plant jobs would be lost if the Schahfer plant were to close in 2023 (151 at units 14/15 and 125 at units 17/18). An additional 150 plant jobs would be lost if Michigan City 12 also closed in 2028, putting the total number of direct jobs at risk to 426. Due to the acceleration of these power plant retirements, almost 5,500 job-years would be lost. Additionally, the average annual salary for power plant employees in the state of Indiana is more than double the amount of the average Indiana employee. Losing such a significant amount of a well-compensated workforce will have trickle-down effects felt throughout the county and state economy.

7. Q **COULD THERE BE JOB LOSSES BEYOND DIRECT LOST JOBS?**

A Yes. The 426 well-compensated direct plant jobs that are at risk by the accelerated retirements of R.M. Schahfer and Michigan City 12 also support many indirect and induced jobs.

8. Q **WHAT TYPES OF INDIRECT JOBS ARE AT RISK AS A RESULT OF THE CLOSURE OF R.M. SCHAHFER AND MICHIGAN CITY 12?**

A Indirect jobs are defined as jobs supplying goods and services to the power plant or jobs that are directly dependent on the output of the power plant. For example, some coal mining jobs at the coal-supplying mine in the Illinois Basin are considered indirect jobs that are potentially at-risk should R.M. Schahfer close. Another example of indirect jobs potentially at risk are the approximately 100 employees at Georgia Pacific's gypsum plant in Wheatfield, IN, which uses fly ash produced at the R.M. Schahfer plant to produce gypsum. Should R.M. Schahfer retire at the end of 2023, some or all of the jobs at the gypsum plant could be lost should Georgia Pacific fail to find alternative supply options.

9. Q **WHAT TYPES OF INDUCED JOBS ARE AT RISK AS A RESULT OF THE CLOSURE OF R.M. SCHAHFER AND MICHIGAN CITY 12?**

A Induced jobs are created by the spending of income from direct and indirect jobs. For example, local retail stores depend on plant employees to spend disposable income to stay in business. With the potential loss of the power plants, some local jobs inadvertently will also be lost.

According to my findings, 552 local indirect and induced jobs are at risk should R.M. Schahfer retire at the end of 2023, while 300 such jobs are at risk when Michigan City retires at the end of 2028. It is worth noting that these figures exclude coal mining jobs, since they would not be considered "local", despite the proximity to the Illinois coal basin, one of the main sources of coal for the R.M. Schahfer plant. Including the indirect and induced jobs at risk due to the accelerated retirements of the two power plants, the total number of job-years lost due to the accelerated retirements at R.M. Schahfer and Michigan City increases significantly. More than 16,400 job-years would be lost to the state and local economies.

10. Q **HOW IMPORTANT IS THE LOCATION OF THESE RETIRING POWER PLANTS?**

A The location of the power plants is very important. Both Jasper County (the county R.M. Schahfer is located in) and LaPorte County (the county Michigan City is located in) have higher unemployment rates than the rest of the state. After exceeding 10% at the height of the great recession of 2008, unemployment rates in Indiana as a whole, as well as Jasper and LaPorte counties, have dropped significantly, reaching 10-year lows in 2018. Nevertheless, unemployment in Jasper and LaPorte counties are more than 15% and 29% higher than the average unemployment rate in Indiana, respectively.

Losing the jobs associated with both power plants could have dramatic impacts on the local workforce. For example, when adding the 276 plant jobs from R.M. Schahfer to the unemployment number from December 2018 for Jasper County, the unemployment rate would increase by over 40%, from 3.96% to 5.62%. When including the indirect and induced jobs described above, the unemployment rate would more than double to almost 9%, a level not seen in Jasper County since 2011. Similar effects would be observed in LaPorte County, where the unemployment rate would increase by 7% and 21% when including plant jobs and plant jobs + indirect and induced jobs in the latest unemployment numbers from the U.S. Bureau of Labor Statistics.

11. Q **HOW WILL LOCAL ECONOMIES BE IMPACTED BY THE ACCELERATED CLOSURES OF R.M. SCHAHFER AND MICHIGAN CITY?**

A As a direct result of the significant job losses and the accelerated plant closures, local and state economies will likely lose a substantial amount of tax revenue. For example, NIPSCO pays large amounts of property taxes to both the LaPorte and Jasper County governments. In fact, according to NIPSCO's recent presentation in October 2018, NIPSCO is the largest property taxpayer in Jasper County where R.M. Schahfer is located while being one of the top three property taxpayers in LaPorte County, where Michigan City is located, contributing approximately $20 million annually. According to information presented by NIPSCO in its 2016 IRP, the tax revenue to Jasper County attributable to the property taxes paid for R.M. Schahfer is substantial. For example, in 2014, almost three-quarters of the township tax was attributable to the R.M. Schahfer property tax NIPSCO paid.

As part of the retirement analysis presented in NIPSCO's 2018 IRP, NIPSCO attempted to quantify the likely impact to local economies due to the accelerated loss of property tax revenue from the R.M. Schahfer and Michigan City power plants. According to the 2018 IRP, accelerating the retirements of R.M. Schahfer and Michigan City would result in a loss of $74 million, or 29% over the preferred scenario presented in the 2016 IRP. However, $74 million only includes the property taxes lost to local economies. The economic losses to local and state economies, due to the loss in personal income taxes and sales taxes on goods and services as a direct result of the jobs lost, are more substantial and felt across the affected counties.

12. Q **HOW WILL NIPSCO'S PLAN TO REPLACE THESE POWER PLANTS WITH RENEWABLE RESOURCES BENEFIT THE LOCAL ECONOMIES HARDEST HIT BY THESE PLANT RETIREMENTS?**

A NIPSCO's plan to replace R.M. Schahfer and Michigan City with mostly renewable resources will do very little to the local economies in LaPorte and Jasper Counties. According to the 2018 IRP, NIPSCO plans to replace the retiring coal capacity primarily with solar, wind, and energy efficiency. In fact, solar and solar + storage account for 78% of expected cumulative capacity additions (on a UCAP basis) at the end of 2028. However, the vast majority of jobs created are temporary or not located within the communities where the jobs related to the power plant closures are lost.

According to the U.S. Department of Energy's 2017 U.S. Energy and Employment Report, more than 80% of all jobs in the U.S. solar industry are associated with manufacturing or importing solar panels and parts, and construction and installation. Less than 1% is associated with actually operating and maintaining the solar generating facilities once installed. With only 2.8 gigawatts of domestic solar PV manufacturing capacity at the

end of 2017, the vast majority of solar panels and equipment is being imported from overseas, mainly from Asian countries such as Malaysia, Vietnam, and the Philippines. Domestic solar manufacturing is concentrated in just a few states: Washington, California, Mississippi, Michigan, Ohio, and Georgia, with no manufacturing facilities in the state of Indiana. Therefore, increased solar build-out will most likely create more jobs overseas or out-of-state than locally where other jobs would be lost.

Additionally, according to the 2017 DOE Energy and Employment Report, more than one-third of jobs in the solar industry are in construction and installation. While the installation of solar panels will be done by local companies and local installation crews, these jobs are temporary, by definition. With no guarantee that the solar facilities are being built in the same general location as the retiring plants, the large amount of installation and construction jobs might not bring any economic benefits to Jasper and LaPorte Counties. Also, once the large construction phase is over, there remain permanent jobs related to the operation of the new power. However, the number of operations jobs for solar generation is negligible. In its 2018 IRP Update, NIPSCO states that although it is adding significantly more capacity than it is retiring, the number of permanent operations and maintenance jobs are well below 30.

13. Q **DOES THIS CONCLUDE YOUR CROSS-ANSWERING TESTIMONY?**

A Yes.

VERIFICATION

The undersigned, Phillip Graeter, affirms under the penalties of perjury that the answers in the foregoing Testimony in Cause No. 45159 are true to the best of his knowledge, information, and belief.

Phillip Graeter

RESUME OF
PHILLIP GRAETER

PROFILE

Experienced project and team manager with a demonstrated and comprehensive understanding of the U.S. energy sector. Utilizing my unique educational background in engineering management with a focus in energy economics and finance, I have prepared numerous economic and regulatory impact studies on a wide-ranging array of issues regarding the U.S. energy sector for clients that include state regulatory commissions, federal agencies, trade associations, and private companies.

WORK EXPERIENCE

Energy Ventures Analysis, Inc. (EVA) **Arlington, VA**

Manager Jan 2018 – present

- Supervising EVA's environmental and coal teams, ensuring client project deliverables get delivered on time and with high quality
- Overseeing the timely and accurate publication of all EVA coal and environmental publications
- Assisting EVA's president in various consulting projects covering the domestic and global coal and environmental markets
- Prepared testimony for various federal and state courts, legislative bodies, and public service commissions, including the Pennsylvania public utility commission, the Arizona state legislature, and the U.S. Senate Committee on Energy and Natural Resources
- Authored numerous economic and regulatory impact studies on a wide-ranging array of issues including proposed state and federal regulations, plant and mine closures or new-builds

Senior Energy Consultant Jan 2017 – Dec 2017

- Developed EVA's Quarterly Environmental Report, which provides an overview and in-depth analyses of the major North American emission markets (i.e., California AB32, RGGI, CSAPR, Title IV Acid Rain) and federal and state regulatory updates affecting the U.S. energy sector
- Prepared multiple client reports, drafted comments, and provided economic and regulatory impact analysis regarding proposed and currently litigated U.S. environmental regulations such as the Clean Power Plan, Steam Electric Power Generating Effluent Guidelines, and Cross-State Air Pollution Rule

Senior Energy Analyst Jan 2016 – Dec 2016

- Quantified and composed a regulatory impact study of the 2015 Clean Power Plan on the U.S. energy sector and presented to the U.S. Office of Management and Budget
- Co-authored and presented in-depth power market impact analyses of proposed regulatory changes of U.S. emission markets such as the Cross-State Air Pollution Rule 2016 Update
- Built numerous forecasting and market analysis models accurately signifying the potential impacts of current and future market changes on power supply options and demand effects

Energy Analyst May 2013 – Dec 2015

- Interpreted copious environmental regulations (i.e., MATS, Clean Power Plan, BART, 316(b)) and coordinated the correct representation of said regulations in EVA's US power industry forecasts
- Assisted in developing emission allowance market outlooks and price forecasts for various North American emission markets (i.e., California AB32, RGGI, CSAPR, Title IV Acid Rain)

EDUCATION

THE GEORGE WASHINGTON UNIVERSITY **Washington, DC**

Master of Science in Engineering Management **May 2014**

Energy & Environmental Management concentration, GPA: 3.9

Bachelor of Science in Systems Engineering, summa cum laude **May 2013**

Minors in Mathematics and Statistics, GPA: 3.9

MARCH 2019

Job Impact Study of the Accelerated Retirements of NIPSCO's R.M. Schahfer and Michigan City Power Plants

ENERGY VENTURES ANALYSIS

Prepared by:

ENERGY VENTURES ANALYSIS

ATTCHMENT PG-2

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Suite 1200
Arlington, VA 22209-1706

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Executive Summary

On October 18, 2018, Northern Indiana Public Service Company (NIPSCO) announced, as part of their 2018 Integrated Resource Planning (IRP) Update, that the company is pursuing a no-coal-beyond-2028 strategy, therefore accelerating the retirement of two of their existing coal plants when compared to NIPSCO's previous statements. This study highlights the likely jobs impacts related to the early retirement of NIPSCO's R.M. Schahfer and Michigan City power plants. The key findings are:

- NIPSCO is retiring two of the newest and cleanest coal-fired power plants in the state of Indiana.
- 426 well-compensated plant jobs on-site would be lost due to the retirement of the R.M. Schahfer and Michigan City power plants.
- Due to the accelerated retirements of R.M. Schahfer and Michigan City, almost 5,500 job years will be lost.
- In addition to the plant jobs on-site, more than 850 indirect and induced local jobs and more than 16,400 job-years would be lost due to the plant closures.
- The unemployment rate in Jasper County would more than double to the closure of R.M. Schahfer, while LaPorte County's unemployment rate would increase by 21%.
- Both Jasper and LaPorte Counties would lose one of their top property tax revenue sources, on top of tax revenue lost from personal income taxes and sales taxes.
- NIPSCO's proposal to replace R.M. Schahfer and Michigan City largely with solar would replace the permanent and local jobs with jobs that are located out-of-state, overseas or are temporary in nature.

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Introduction

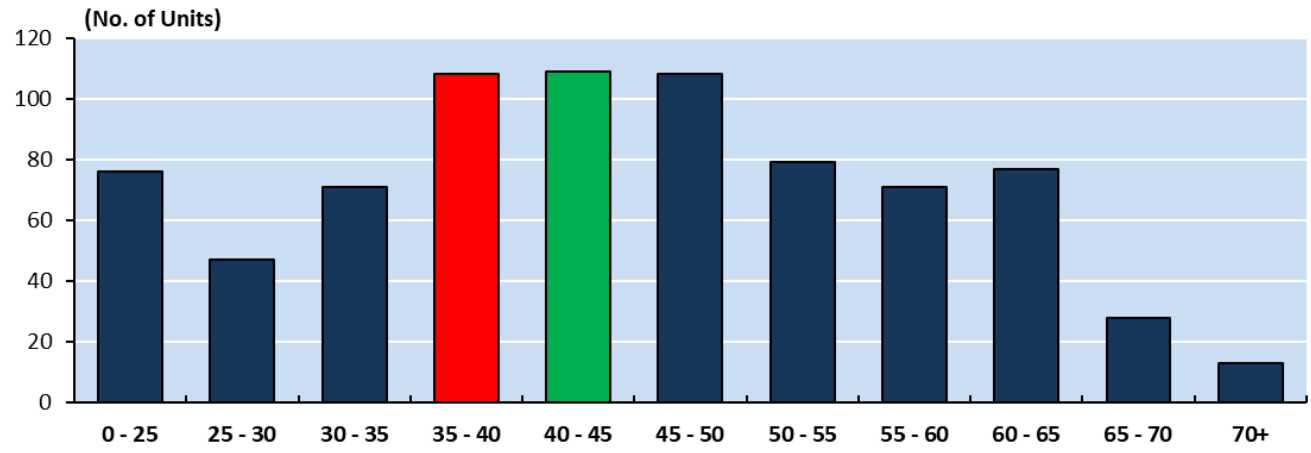
On October 18, 2018, Northern Indiana Public Service Company (NIPSCO) announced, as part of its 2018 Integrated Resource Plan (IRP), that the company plans to accelerate the retirement of its remaining coal plants. NIPSCO indicated it plans to retire Schahfer in 2023 and Michigan City in 2028. This study highlights the likely jobs impacts related to the premature retirement of NIPSCO's R.M. Schahfer and Michigan City power plants.

Overview of the NIPSCO Coal Plants at Risk

R.M. Schahfer Generating Station

NIPSCO's R.M. Schahfer power plant, located near Wheatfield, Indiana in Jasper County, consists of four coal-fired steam boilers as well as two natural gas-fired combustion turbines. The four coal units have a total capacity of 1,625 megawatts (MW), with individual unit sizes ranging from 361 MW to 472 MW. The first unit came online in 1976, while the last one was completed ten years later in 1986. With an average age of 38 years, more than half of the U.S. coal fleet operating in 2019 is older than the R.M. Schahfer units, as shown in Exhibit 1.

EXHIBIT 1: AGE DISTRIBUTION OF OPERATING COAL-FIRED GENERATORS IN 2019



Note: Schahfer 14/15 highlighted in green, 17/18 in red *Source: DOE Energy Information Administration*

Besides being some of the newest coal units in the state of Indiana, NIPSCO also has made significant capital investments to make the R.M. Schahfer units some of the cleanest in the state. For example, after being retrofitted with advanced emission control technologies for NO_x and SO_2 in 2004 and 2013, respectively, R.M. Schahfer unit 14's NO_x and SO_2 emission rates fell 99% and 77% between 2009 and 2018.

According to data from the Energy Information Administration (EIA), in 2018, the R.M. Schahfer coal units generated more than 6.7 billion kWh, enough to power almost 840,000 residential homes in NIPSCO's territory for the year. Additionally, R.M. Schahfer consumes about three million tons of coal per year, with the Powder River Basin (PRB) coal going to Schahfer 14/15 and the Illinois Basin coal going to Schahfer 17/18. NIPSCO acknowledges it had expected the retirements of Schahfer to be completed in 2040.

As part of its 2018 IRP, NIPSCO is proposing to accelerate the retirement of all units 2023 along, putting the 276 workers at the power plant at risk of losing their livelihood within the next four years.

Michigan City

Michigan City is a 469 MW single-unit coal-fired power plant located along Lake Michigan in LaPorte County, Indiana. Michigan City unit 12 was completed in 1974, making it the oldest coal unit in NIPSCO's system. Despite its age, Michigan

City is one of the most efficient coal units in Indiana, averaging a net heat rate of 10,700 Btu/kWh over the last six years. NIPSCO also invested more than $125 million in state-of-the-art emission control upgrades since 2003, making Michigan City one of the best controlled coal-fired power plants in the country. In fact, its annual SO_2 emissions have declined almost 90% over the last decade alone.

In 2018, Michigan City generated more than two billion kWh of electricity, enough to power more than 250,000 residential homes in NIPSCO's territory for the year. Also, Michigan City burns approximately one million tons of coal per year blending mostly coal from Powder River Basin in Wyoming with Northern Appalachian coal.

As part of its premature retirement strategy presented in its 2018 IRP, NIPSCO is proposing to remove Michigan City from service no later than 2028, six years ahead of its anticipated retirement by NIPSCO, putting the livelihood of 150 plant employees at risk.

Direct On-Site Jobs Lost due to the Accelerated Closure of Schahfer and Michigan City

According to NIPSCO's recent presentation at the public advisory meeting in October 2018, 276 direct plant jobs would be lost if the Schahfer plant were to close in 2023 (151 at units 14/15 and 125 at units 17/18). An additional 150 plant jobs would be lost if Michigan City also closed in 2028, putting the total number of jobs at risk to 426[1].

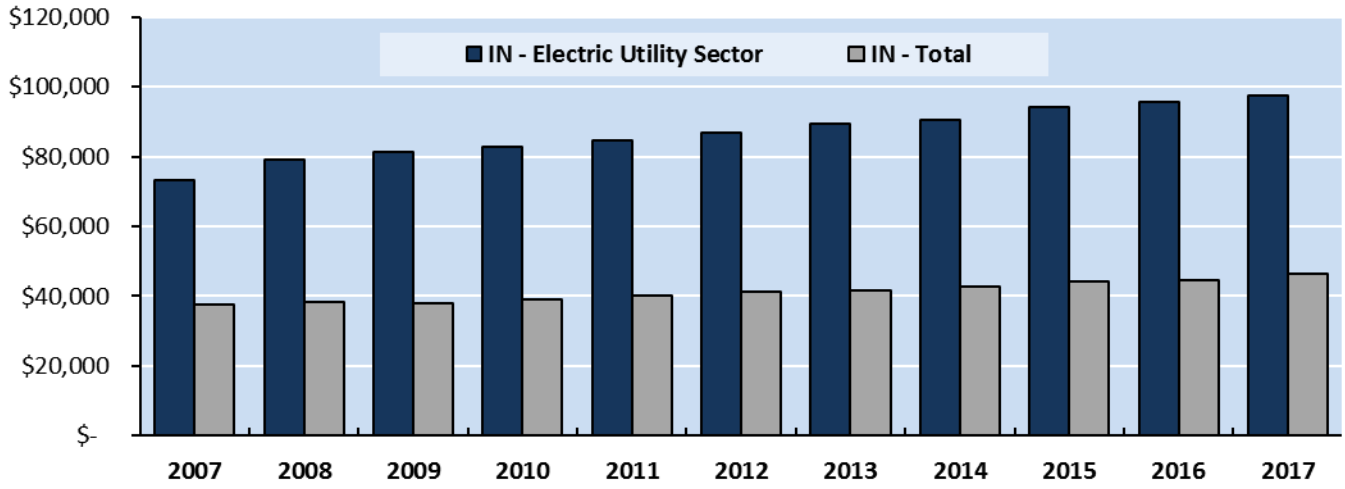
The accelerated retirements of R.M. Schahfer as well as Michigan City are a significant change from NIPSCO's original plan for these power plants. As previously stated, NIPSCO anticipated R.M. Schahfer to continue operation through 2040, while Michigan City, being the older of the two power plants, was expected to retire in 2034. Therefore, 5,492 job-years[2] would be lost due to the accelerated retirements of these two power plants. This number only includes the direct jobs lost at the power plants and does not include indirect and induced jobs, which are described later in this report.

Furthermore, jobs in the electric utility industry are some of the highest paid occupations in rural America since most jobs in the field require at least some form of college education. Exhibit 2 shows the annual average salary for jobs in the electric utility sector in Indiana compared to the average annual salary for all industries in the state.

[1] https://www.nipsco.com/docs/default-source/about-nipsco-docs/nipsco-irp-public-advisory-meeting-october-18-2018-presentation.pdf

[2] A job-year of employment is defined as. full-time employment for one person during one year.

EXHIBIT 2: AVERAGE ANNUAL SALARY – ELECTRIC UTILITY SECTOR VS. ALL INDUSTRIES IN INDIANA



Source: U.S. Bureau of Labor Statistics

As shown in Exhibit 2, workers in the electric utility sector earn on average more than twice as much as the annual salary across all industries in Indiana. Losing such a significant amount of a well-compensated workforce will have trickle-down effects felt throughout the county and state economy.

Indirect & Induced Jobs Lost due to the Accelerated Closure of Schahfer and Michigan City

The 426 well-compensated direct plant jobs that are at risk by the accelerated retirements of R.M. Schahfer and Michigan City also support many indirect and induced jobs.

Indirect jobs are defined as jobs supplying goods and services to the power plant or are directly dependent on the output of the power plant. For example, some coal mining jobs at the coal-supplying mine in the Illinois Basin are considered indirect jobs that are potentially at-risk should R.M. Schahfer close. Another example of indirect jobs potentially at risk are the approximately 100 employees[3] at Georgia Pacific's gypsum plant in Wheatfield, IN which uses fly ash produced at the R.M. Schahfer plant to produce gypsum. Should R.M. Schahfer retire at the end of 2023, some or all of the jobs at the gypsum plant could be lost should Georgia Pacific fail to find alternative supply options.

Induced jobs are created by the spending of income from direct and indirect jobs. For example, local retail stores depend on plant employees to spend disposable income to stay in business. With the potential loss of the power plants, some local jobs inadvertently will also be lost.

Many studies have tried to quantify the amount of indirect and induced jobs created or maintained depending on direct jobs in the electric power industry. Most studies quantified the so-called employment multiplier for on-going operation and maintenance at 2.5-3.0 for coal-fired power plants[4][5]. However, approximately 25% of those indirect and induced jobs are related to the coal mining process[6], which, in this situation, are located out-of-state. However, even when reducing

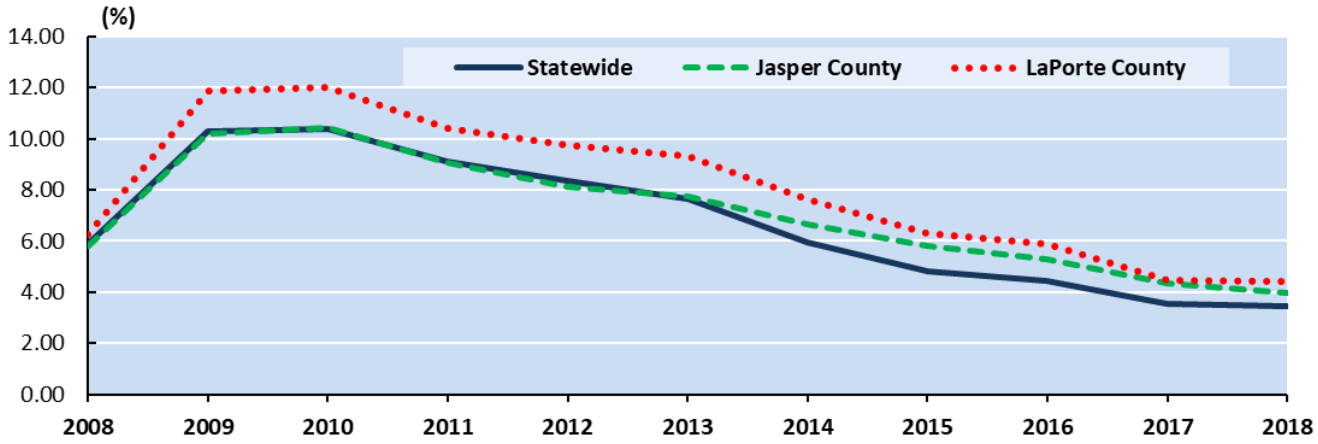
[3] https://www.gp.com/about-us/locations
[4] John Leatherman, 2010. "The Economic Impact of Building and Operating an 895 MW Coal-Based Power Plant in Finney County Kansas"
[5] World Economic Forum, 2012. "Energy Vision Update 2012"
[6] WEF, page 17.

the employment multiplier by 25% to 2.0, 552 local indirect and induced jobs are potentially at risk should R.M. Schahfer retire at the end of 2023, while 300 such jobs might be at risk when Michigan City retires at the end of 2028.

Including the indirect and induced jobs presented above, the total number of job-years lost due to the accelerated retirements at R.M. Schahfer and Michigan City increases significantly. Again, assuming R.M. Schahfer would have retired at the end of 2040 and Michigan City at the end of 2034, 16,476 job-years would be lost to the state and local economies.

The location of the power plants is also very important. Both Jasper County and LaPorte have higher unemployment rates than the rest of the state, as shown in Exhibit 3.

EXHIBIT 3: AVERAGE ANNUAL UNEMPLOYMENT RATES IN JASPER AND LAPORTE COUNTIES VS. INDIANA AS A WHOLE

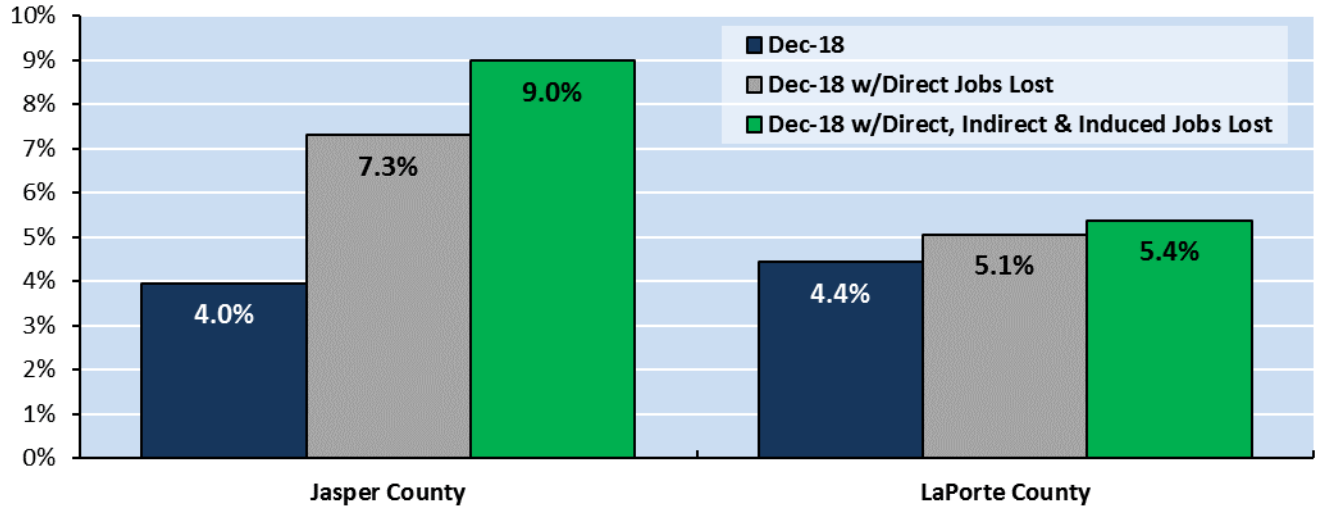


Source: U.S. Bureau of Labor Statistics

After exceeding 10% at the height of the great recession of 2008, unemployment rates in Indiana as a whole, as well as Jasper and LaPorte counties, have dropped significantly, reaching 10-year lows in 2018. However, unemployment in Jasper and LaPorte counties are more than 15% and 29% higher than the average unemployment rate in Indiana, respectively.

Losing the jobs associated with both power plants could have dramatic impacts, as shown in Exhibit 4.

EXHIBIT 4: DECEMBER 2018 UNEMPLOYMENT RATE WITH AND WITHOUT PLANT, INDIRECT & INDUCED JOBS



For example, when adding the 276 plant jobs from R.M. Schahfer to the unemployment number from December 2018 for Jasper County, the unemployment rate would increase by over 40%, from 3.96% to 5.62%. When including the indirect and induced jobs described above, the unemployment rate would more than double to almost 9%, a level not seen in Jasper County since 2011. Similar effects would be observed in LaPorte County, where the unemployment rate would increase by 7% and 21% when including plant jobs and plant jobs + indirect and induced jobs in the latest unemployment numbers from the Bureau of Labor Statistics[7].

Impact of the Accelerated Closure of Schahfer and Michigan City on Local Economies

As a direct result of the significant job losses and the accelerated plant closures, local and state economies will likely lose a substantial amount of tax revenue. For example, NIPSCO pays large amounts of property taxes to both the LaPorte and Jasper County governments. In fact, according to NIPSCO's recent presentation in October 2018, NIPSCO is the largest property taxpayer in Jasper County where R.M. Schahfer is located while being one of the top three property taxpayers in LaPorte County, where Michigan City is located. Exhibit 5, presented in NIPSCO's 2016 IRP, shows the 2014 contribution percentages of R.M. Schahfer property taxes to the various categories in Jasper County.

EXHIBIT 5: PERCENTAGE OF JASPER COUNTY PROPERTY TAX BASE ATTRIBUTABLE TO R.M. SCHAHFER

	Percentage of Jasper County Property Tax Base Attributable to R.M. Schahfer
County Tax	16.50%
Township Tax	72.74%
School Tax	30.18%
Library Tax	17.78%
Airport Authority Tax	9.14%
Total	**10.37%**

As shown in Exhibit 5, the tax revenue to Jasper County attributable to the property taxes paid for R.M. Schahfer is substantial. For example, in 2014, almost three-quarters of the township tax was attributable to the R.M. Schahfer property tax NIPSCO paid.

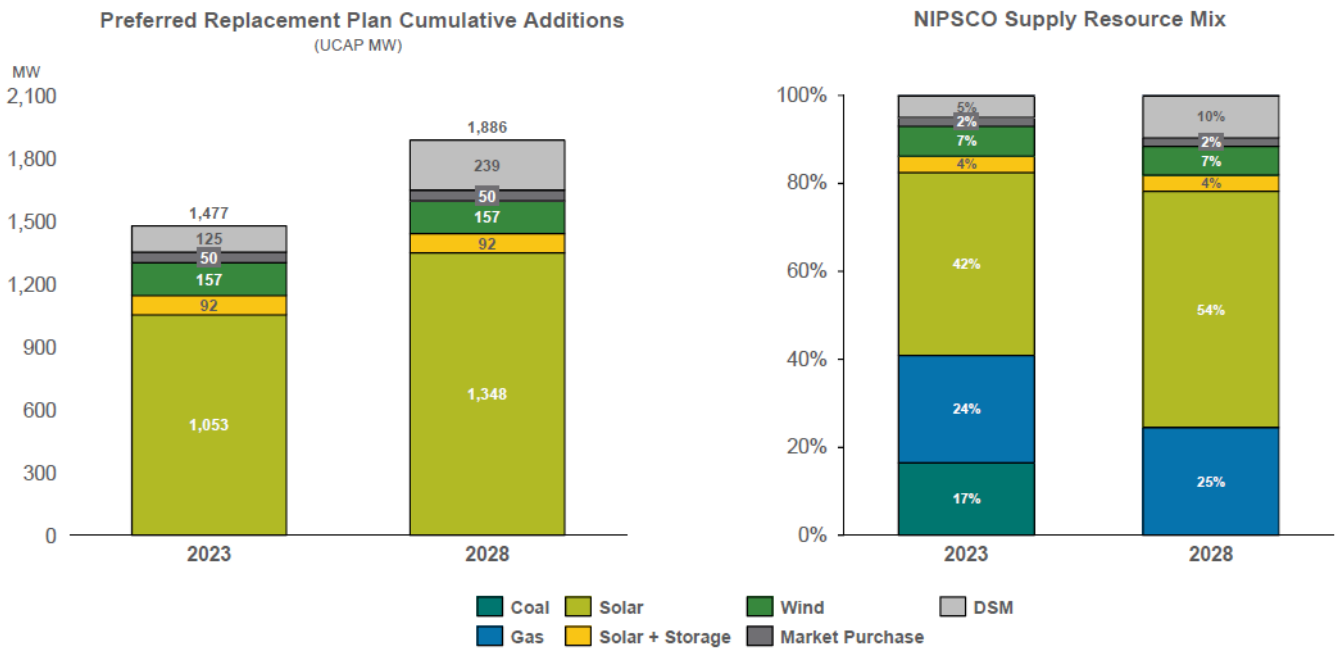
As part of the retirement analysis presented in NIPSCO's 2018 IRP, NIPSCO attempted to quantify the likely impact to local economies due to the accelerated loss of property tax revenue from the R.M. Schahfer and Michigan City power plants. According to the 2018 IRP, accelerating the retirements of R.M. Schahfer and Michigan City would result in a loss of $74 million, or 29% over the preferred scenario presented in the2016 IRP. However, $74 million only includes the property taxes lost to local economies. The economic losses to local and state economies, due to the loss in personal income taxes and sales taxes on goods and services as a direct result of the jobs lost, are more substantial and felt across the affected counties.

[7] https://www.bls.gov/data/

NIPSCO's Preferred Plan Will Replace Permanent Local Jobs with Largely Temporary Solar Jobs Located Out-of-State

According to the 2018 IRP, NIPSCO proposes to replace the lost coal-fired generating capacity[8] with renewables, market purchases, and energy efficiency measures. Exhibit 6 shows NIPSCO's proposed replacement plan by category and the projected supply resource mix at the end of 2023 and 2028.

EXHIBIT 6: PREFERRED REPLACEMENT CAPACITY PLAN AND SUPPLY RESOURCE MIX[9]



As shown in Exhibit 6, NIPSCO plans to replace the retiring coal capacity primarily with solar. In fact, solar and solar + storage account for 78% of expected cumulative capacity additions at the end of 2028.[10] However, the vast majority of jobs created are temporary or not located within the communities where the jobs related to the power plant closures are lost.

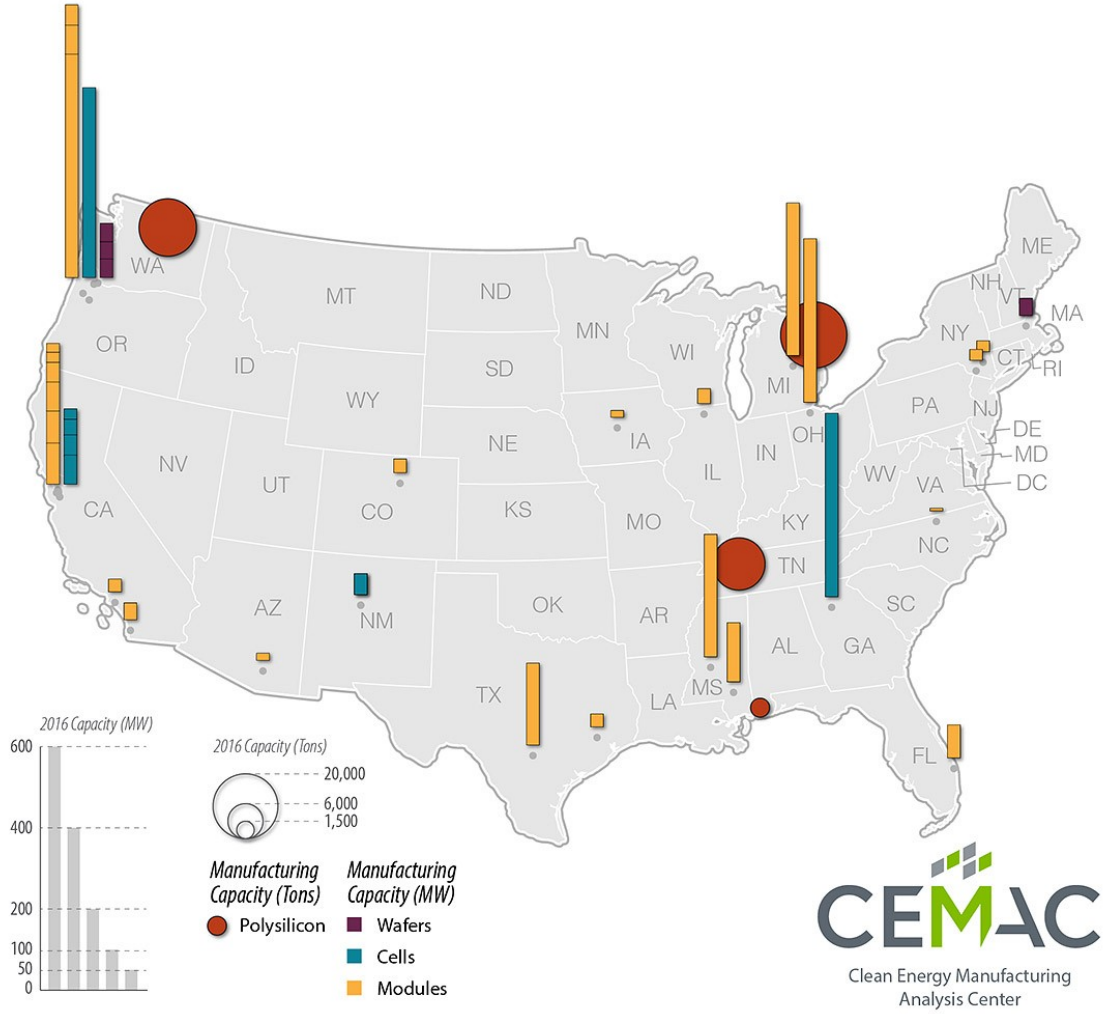
According to the U.S. Department of Energy's 2017 U.S. Energy and Employment Report[11], more than 80% of all jobs in the U.S. solar industry are associated with manufacturing or importing solar panels and parts, and construction and installation. Less than 1% is associated with actually operating and maintaining the solar generating facilities once installed.

With only 2.8 gigawatts[12] of domestic solar PV manufacturing capacity at the end of 2017, the vast majority of solar panels and equipment is being imported from overseas. According to U.S. Commerce data, the U.S. imported more than 110 million solar panels and equipment[13] in 2018, despite the extensive tariffs imposed by the Trump Administration at the

[8] MISO's capacity requirements are based upon UCAP which is unforced capacity as opposed to ICAP which is installed capacity. The capacity discussion is based upon UCAP.
[9] Source: NIPSCO 2018 IRP, page 172.
[10] NIPSCO has petitioned the IURC for approval of approximately 800 MW of wind in Causes 45194, 45195, and 45196. Given the relatively low Effective Load Carrying Capability (ELCC) in MISO Zone 6, the 800 MW translates into only about 60 MW of UCAP. None of the proposed wind farms are in the counties affected by the premature plant retirements.
[11] https://www.energy.gov/downloads/2017-us-energy-and-employment-report
[12] https://www.latimes.com/business/la-fi-trump-solar-tariffs-20180530-story.html
[13] https://usatrade.census.gov/ ; HS code 85414060

beginning of 2018. 97% of those imports are from Asia, with Malaysia (33% of all solar imports into the U.S.), Vietnam (16%), and Philippines (135) leading the way.

EXHIBIT 7: 2016 YEAR-END SOLAR MANUFACTURING CAPACITY IN THE UNITED STATES[14]



Domestic solar manufacturing is concentrated in just a few states: Washington, California, Mississippi, Michigan, Ohio, and Georgia, as shown in Exhibit 7, with no manufacturing facilities in the state of Indiana. Therefore, increased solar build-out will most likely create more jobs overseas or out-of-state than locally where other jobs would be lost.

Additionally, according to the 2017 DOE Energy and Employment Report, more than one-third of jobs in the solar industry are in construction and installation. While the installation of solar panels will be done by local companies and local installation crews, these jobs are temporary, by definition. With no guarantee that the solar facilities are being built in the same general location as the retiring plants, the large amount of installation and construction jobs might not bring any economic benefits to Jasper and LaPorte Counties. Also, once the large construction phase is over, there remain permanent jobs related to the operation of the new power. However, the number of operations jobs for solar generation is negligible. In its 2018 IRP Update, NIPSCO states that although it is adding more capacity than it is retiring, the number of permanent operations and maintenance jobs are well below 30[15].

[14] https://www.manufacturingcleanenergy.org/blog-20170327.html
[15] NIPSCO 2018 IRP, page 171.