

# **Appendix N**


## **Economic Impact Study**

**Byron Solar Project**

Dodge and Olmsted Counties, Minnesota

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# Economic Impact of Byron Solar Project



June 2021

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Dr. David G. Loomis is Professor of Economics at Illinois State University and Co-Founder of the Center for Renewable Energy. He has over 10 years of experience in the renewable energy field and has performed economic analyses at the county, region, state and national levels for utility-scale wind and solar generation. He has served as a consultant for Apex Clean Energy, Clean Line Energy Partners, EDF Renewables, E.ON Climate and Renewables, Geronimo Energy, Invenergy, J-Power, the National Renewable Energy Laboratories, Ranger Power, State of Illinois, Tradewind, and others. He has testified on the economic impacts of energy projects before the Illinois Commerce Commission, Iowa Utilities Board, Missouri Public Service Commission, Illinois Senate Energy and Environment Committee, the Wisconsin Public Service Commission, Kentucky Public Service Commission, Ohio Public Siting Board, and numerous county boards. Dr. Loomis is a widely recognized expert and has been quoted in the Wall Street Journal, Forbes Magazine, Associated Press, and Chicago Tribune as well as appearing on CNN.

Dr. Loomis has published over 38 peer-reviewed articles in leading energy policy and economics journals. He has raised and managed over \$7 million in grants and contracts from government, corporate and foundation sources. He received the 2011 Department of Energy's Midwestern Regional Wind Advocacy Award and the 2006 Best Wind Working Group Award. Dr. Loomis received his Ph.D. in economics from Temple University in 1995.

## Strategic Economic Research, LLC

Strategic Economic Research, LLC (SER) has produced over 120 economic impact reports in 27 states for renewable energy projects across the US. SER specializes in economic analysis at the county, regional, state or national levels to analyze the jobs, income, taxes and economic output that will flow from a particular industry.

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## I. Executive Summary of Findings

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EDF Renewables is developing the Byron Solar Project in Dodge County, Minnesota. The purpose of this report is to aid decision makers in evaluating the economic impact of this project on Dodge County and the State of Minnesota. The basis of this analysis is to study the direct, indirect, and induced impacts on job creation, wages, and total economic output.

Byron Solar Project is a 200-megawatt alternative current (MWac) utility-scale solar powered-electric generation facility that will utilize photovoltaic (PV) panels installed on a single-axis tracking system. Solar power electric generation facilities are commonly referred to as PV systems or solar PV. The project represents an investment in excess of \$259 million. The total development is anticipated to result in the following:

### Jobs – all jobs numbers are full-time equivalents

- 367 new local jobs during construction for Dodge County
- 797 new local jobs during construction for the State of Minnesota
- Over 10.4 new local long-term jobs for Dodge County
- Over 20.2 new local long-term jobs for the State of Minnesota

### Earnings

- Over \$34.5 million in new local earnings during construction for Dodge County
- Over \$73.9 million in new local earnings during construction for the State of Minnesota
- Over \$452 thousand in new local long-term earnings for Dodge County annually
- Over \$1.4 million in new local long-term earnings for the State of Minnesota annually

### Output

- Over \$44.8 million in new local output during construction for Dodge County
- Over \$115 million in new local output during construction for the State of Minnesota
- Over \$1.4 million in new local long-term output for Dodge County annually
- Over \$3.4 million in new local long-term output for the State of Minnesota annually

### Property Taxes

- Over \$3.1 million in total township property taxes over the life of the Project
- Over \$12.5 million in total county property taxes for Dodge County over the life of the Project
- Over \$15.6 million in property taxes in total for all taxing districts over the life of the Project

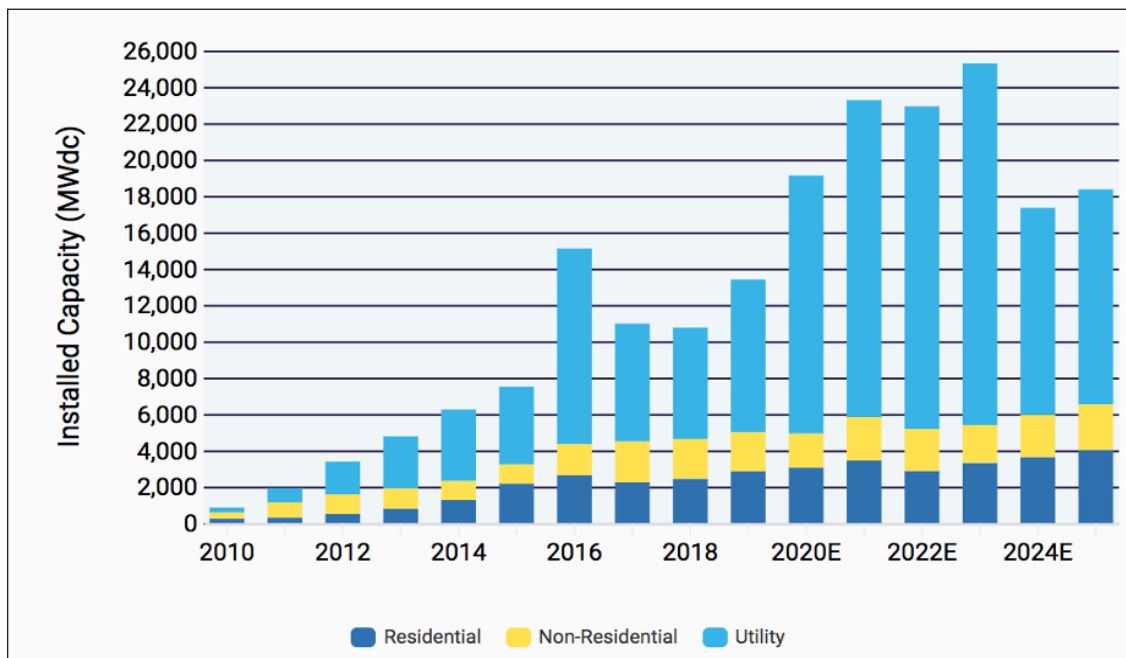
## II. U.S. Solar PV Industry Growth and Economic Development

### a. U.S. Solar PV Industry Growth

The U.S. solar industry is growing at a rapid but uneven pace, with systems installed for onsite use, including residential, commercial and industrial properties and with utility-scale solar powered-electric generation facilities intended for wholesale distribution, such as Byron Solar. From 2013 to 2018, the amount of electricity generated from solar had more than quadrupled, increasing 444%. (EIA, 2020). The industry has continued to add increasing numbers of PV systems to the grid. In 2020, the U.S. installed over 19,000 MW direct current (MWdc) of solar PV driven mostly by utility-scale PV which exceeded the previous annual record established in 2016.<sup>1</sup> As Figure 1 clearly shows, the capacity additions in 2017-2019 still outpaced any year before 2016. The primary driver of this overall sharp pace of growth is large price declines in solar equipment. Since 2010, the price of solar PV has declined from about \$5.79/watt in 2010 to \$1.33/watt in 2020 according to Figure 2.

Utility-scale PV leads the installation growth in the U.S. A total of almost 14 GWdc of utility PV projects were completed in 2020. An additional 17.9 GWdc are under construction and are expected to come on-line in 2021.

Figure 1 – Annual U.S. Solar PV Installations, 2010-2025

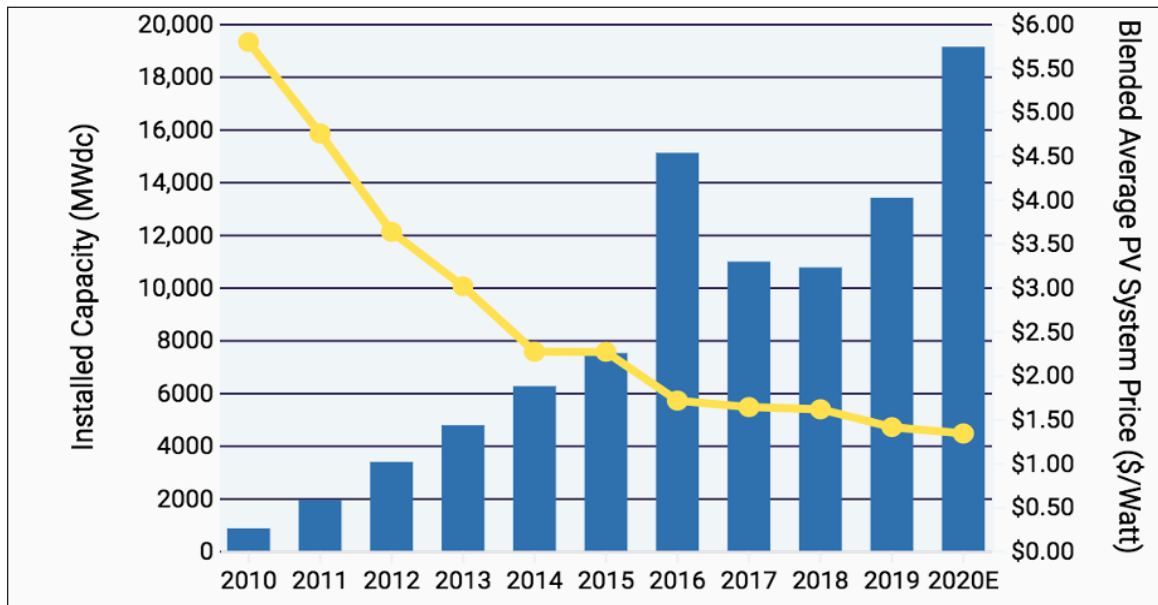


Source: Solar Energy Industries Association, Solar Market Insight Report 2020 Year in review

<sup>1</sup> There was a dramatic increase in 2016 because the industry was expecting the expiration of the federal investment tax credit and rushed to complete as many projects as possible before the expected expiration. This rush effectively pulled projects that were originally slated for 2017 and 2018 forward into 2016 resulting in the high amount installed in 2016 but a lower amount installed in 2017 and 2018.

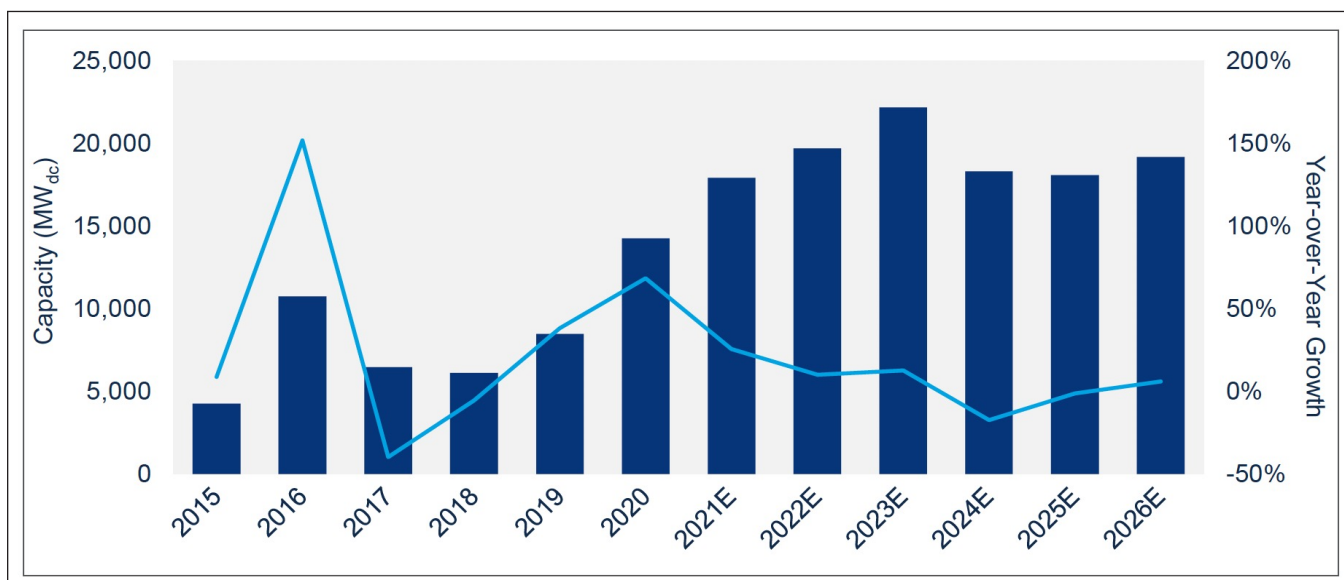


Figure 2 – U.S. Annual Solar PV Installed Price Trends Over Time



Source: Solar Energy Industries Association, Solar Market Insight Report 2020 Q4

Figure 3 – U.S. Utility PV Installations and Forecast



Source: Solar Energy Industries Association, Solar Market Insight Report 2021 Q2

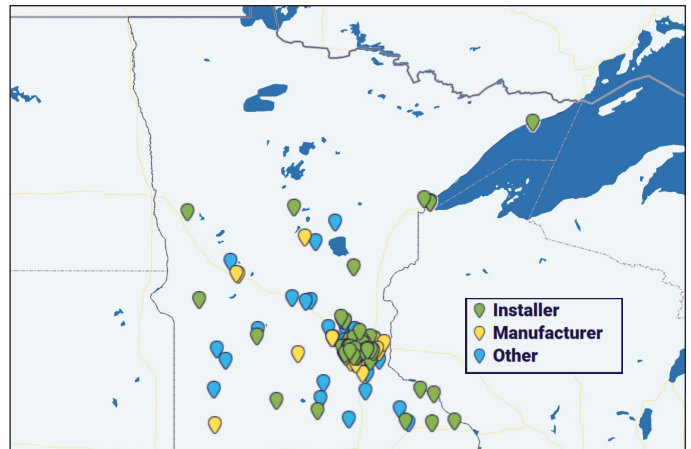
## b. Minnesota Solar PV Industry

According to SEIA, Minnesota is ranked 15th in the U.S. in cumulative installations of solar PV. California, Texas, and North Carolina are the top 3 states for solar PV which may not be surprising because of the high solar irradiation that they receive. However, other states with similar solar irradiation to Minnesota rank highly including New Jersey (7th), Massachusetts (8th), and New York (10th). In 2020, Minnesota installed 170.76 MW of solar electric capacity bringing its cumulative capacity to 1,568.55 MW.

Minnesota has great potential to expand its solar installations. Minnesota has the following notable utility-scale solar farms in operation: North Star Solar is a 100 MW installation in Chisago County, MN; Aurora Solar Project is a 150 MWdc plant consisting of 16 different sites across Minnesota; Waseca Solar Farm is a 10 MW installation in Waseca County, MN; IKEA has installed a 1 MW project at its location in Bloomington, MN; and Dodge Holdco Solar Farm is a 5 MW installation in Mantorville, MN. The 200 MW Byron Solar Project will be one of the largest installations in Minnesota to date.

There are more than 146 solar companies in Minnesota including 31 manufacturers, 49 installers/developers, and 66 others.<sup>2</sup> Figure 4 shows the locations of solar companies in Minnesota as of the time of this report. Currently, there are 3,993 solar jobs in the State of Minnesota according to SEIA.

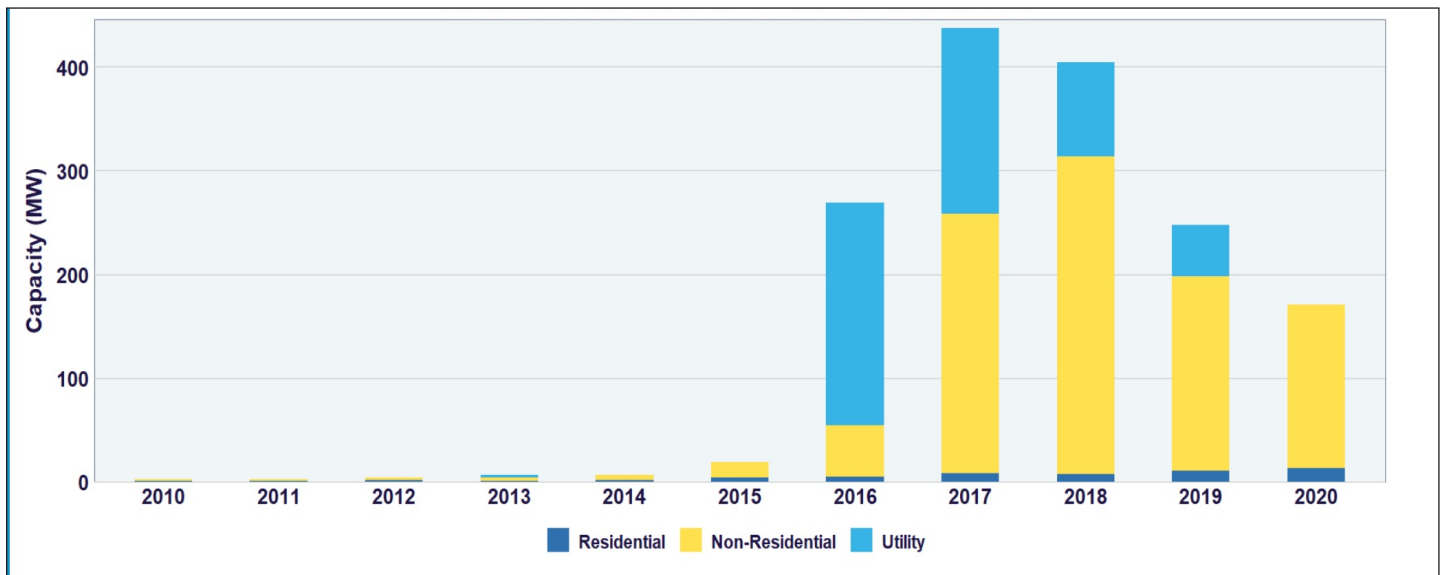
Figure 4 – Solar Company Locations in Minnesota



Source: Solar Energy Industries Association, Solar Spotlight: Minnesota

Figure 5 shows the Minnesota historical installed capacity by year according to the SEIA. Huge growth was seen in 2017 and 2018. Over the next five years, solar in Minnesota is projected to grow by 1,138 MW.

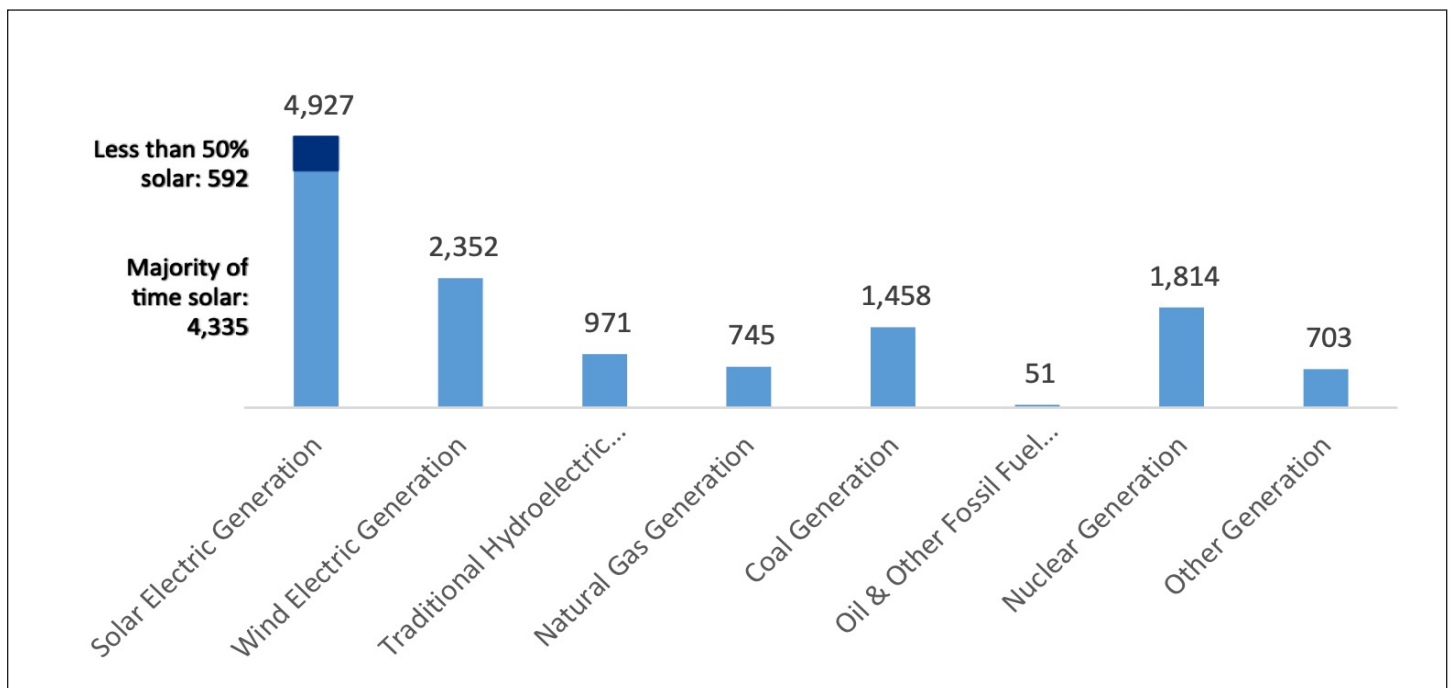
Figure 5 – Minnesota Annual Solar Installations



Source: Solar Energy Industries Association, Solar Spotlight: Minnesota

The U.S. Department of Energy sponsors the U.S. Energy and Employment Report each year. Electric Power Generation covers all utility and non-utility employment across electric generating technologies, including fossil fuels, nuclear, and renewable technologies. It also includes employees engaged in facility construction, turbine and other generation equipment manufacturing, operations and maintenance, and wholesale parts distribution for all electric generation technologies. According to Figure 6, employment is the highest in the solar energy industry (4,927), larger than wind electric generation (2,352) and nuclear generation (1,814).

Figure 6 – Electric Generation Employment by Technology



Source: US Energy and Employment Report 2020: Minnesota

## c. Economic Benefits of Utility-Scale Solar PV Energy

Utility-scale solar powered-electric generation facilities have numerous economic benefits. Solar PV installations create job opportunities in the local area during both the short-term construction phase and the long-term operational phase. In addition to the workers directly involved in the construction and maintenance of the solar energy project, numerous other jobs are supported through indirect supply chain purchases and the higher spending that is induced by these workers. Solar PV projects strengthen the local tax base and help improve county services, and local infrastructure, such as public roads.

Numerous studies have quantified the economic benefits of Solar PV projects across the United States and have been published in peer-reviewed academic journals using the same methodology as this report. Some of these studies examine smaller-scale solar systems, and some examine utility-scale solar energy. Croucher (2012) uses NREL's Jobs and Economic Development Impacts ("JEDI") modeling methodology to find which state will receive the greatest economic impact from installing one hundred 2.5 kW residential systems. He shows that Pennsylvania ranked first supporting 28.98 jobs during installation and 0.20 jobs during operations. Illinois ranked second supporting 27.65 jobs during construction and 0.18 jobs during operations.

Jo et. al. (2016) analyzes the financing options and economic impact of solar PV systems in Normal, IL and uses the JEDI model to determine the county and state economic impact. The study examines the effect of 100 residential retrofit fixed-mount crystalline-silicone systems having a nameplate

capacity of 5kW. Eight JEDI models estimated the economic impacts using different input assumptions. They found that county employment impacts varied from 377 to 1,059 job-years during construction and 18.8 to 40.5 job-years during the operating years. Each job-year is a full-time equivalent job of 2,080 hours for a year.

More recently, Michaud et. al (2020) performed an analysis of the economic impact of utility-scale solar energy projects in the State of Ohio. They detail three scenarios: low (2.5 GW), moderate (5 GW) and high (7.5 GW). Using the JEDI model, they find that between 18,039 and 54,113 jobs would be supported during construction and between 207 and 618 jobs would be supported annually during operations. In addition, between \$22.5 million and \$67.5 million annually in tax revenues would come from these projects.

Loomis et. al. (2016) estimates the economic impact for the State of Illinois if the state were to reach its maximum potential for solar PV. The study estimates the economic impact of three different scenarios for Illinois – building new solar installations of either 2,292 MW, 2,714 MW or 11,265 MW. The study assumes that 60% of the capacity is utility-scale solar, 30% of the capacity is commercial, and 10% of the capacity is residential. It was found that employment impacts vary from 26,753 to 131,779 job years during construction and from 1,223 to 6,010 job years during operating years.

Several other reports quantify the economic impact of solar energy. Bezdek (2006) estimates the economic impact for the State of Ohio and finds the potential for PV market in Ohio to be \$25 million with 200 direct jobs and 460 total jobs. The Center for Competitive Florida (2009) estimates the impact if the state were to install 1,500 MW of solar and finds that 45,000 direct jobs and 50,000 indirect jobs could be created. The Solar Foundation (2013) uses the JEDI modeling methodology to show that Colorado's solar PV installation to date created 10,790 job-years. They also analyze what would happen if the state were to install 2,750 MW of solar PV from 2013 to 2030 and find that it would result in nearly 32,500 job years. Berkman et. al (2011) estimates the economic and fiscal impacts of the 550 MWac Desert Sunlight Solar Farm. The project creates approximately 440 construction jobs over a 26-month period, \$15 million in new sales tax revenues, \$12 million in new property revenues for Riverside County, CA, and \$336 million in indirect benefits to local businesses in the county.

In Minnesota, Tuck (2021) estimates the economic impact of a 150 MW solar PV project in Freeborn County and finds that the project will support 319 jobs with \$13.6 million in labor income in the county and 509 jobs with \$27.5 million in labor income in the state.

Finally, Jenniches (2018) performed a review of the literature assessing the regional economic impacts of renewable energy sources. After reviewing all of the different techniques for analyzing the economic impacts, he concludes “for assessment of current renewable energy developments, beyond employment in larger regions, IO [Input-Output] tables are the most suitable approach.” (Jenniches, 2018, 48). Input-Output analysis is the basis for the methodology used in the economic impact analysis of this report.



### III. Byron Solar Project Description and Location

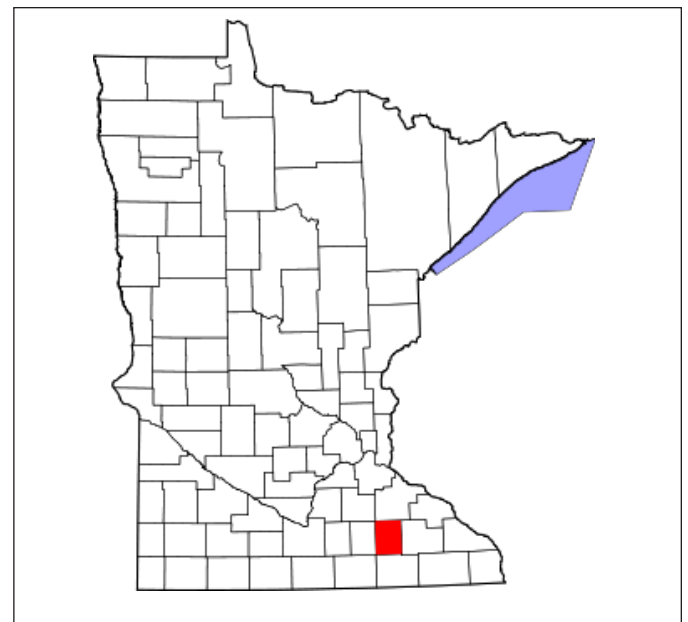
#### a. Byron Solar Project

The Byron Solar Project is an up to 200 MW solar project and associated 345kV transmission line located in Dodge and Olmstead Counties, Minnesota. EDF Renewables (EDFR) is developing this project, which will generate roughly 435,000 megawatt hours (MWh) annually of clean and reliable electricity. This is approximately the energy consumption from 35,000 homes and will offset the equivalent annual CO2 emissions from approximately 66,000 passenger vehicles driven for one year or 339 million pounds of coal burned. Byron Solar will begin construction in 2023 and is anticipated to operate for up to 35 years.

#### b. Dodge County, Minnesota

Dodge County is located in the Southern part of Minnesota (see Figure 7). It has a total area of 440 square miles and the U.S. Census estimates that the 2019 population was 20,934 with 8,241 housing units. The county has a population density of 47.3 (persons per square mile) compared to 68.9 for the State of Minnesota. Median household income in the county was \$74,575.

Figure 7 – Location of Dodge County, MN



## i. Economic and Demographic Statistics

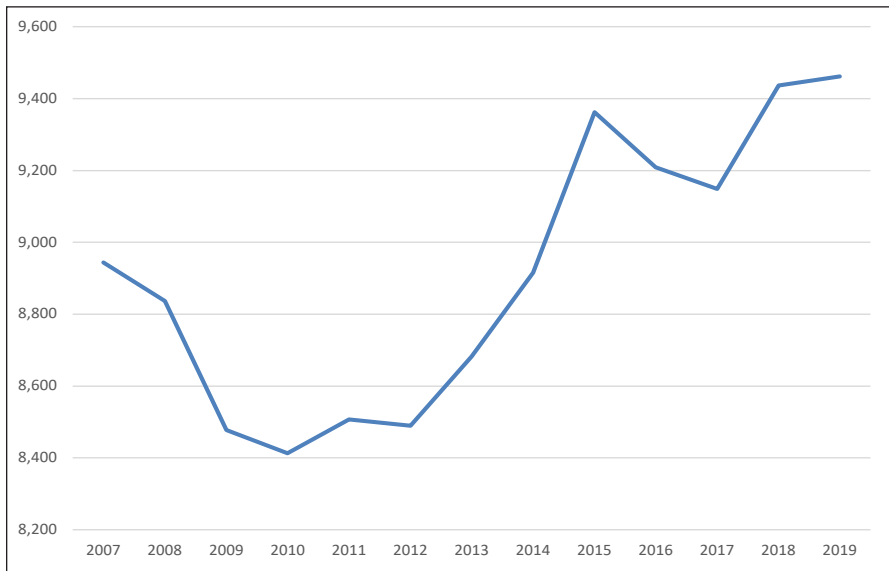
As shown in Table 1, the largest industry is “Manufacturing” followed by “Administrative Government,” “Agriculture, Forestry, Fishing, and Hunting,” and “Construction.” These data for Table 1 come from IMPLAN covering the year 2019 (the latest year available).

**Table 1 – Employment by Industry in Dodge County**

Industry	Number	Percent
Manufacturing	1,732	19.1%
Administrative Government	1,210	13.4%
Agriculture, Forestry, Fishing and Hunting	865	9.6%
Construction	855	9.4%
Wholesale Trade	720	8.0%
Retail Trade	674	7.4%
Accommodation and Food Services	505	5.6%
Other Services (except Public Administration)	396	4.4%
Real Estate and Rental and Leasing	388	4.3%
Finance and Insurance	329	3.6%
Transportation and Warehousing	309	3.4%
Health Care and Social Assistance	280	3.1%
Professional, Scientific, and Technical Services	207	2.3%
Administrative and Support and Waste Management and Remediation Services	117	1.3%
Arts, Entertainment, and Recreation	111	1.2%
Educational Services	99	1.1%
Management of Companies and Enterprises	77	0.9%
Government Enterprises	63	0.7%
Information	58	0.6%
Mining, Quarrying, and Oil and Gas Extraction	39	0.4%
Utilities	14	0.2%

Source: Impact Analysis for Planning (IMPLAN),  
County Employment by Industry

Figure 8 – Total Employment in Dodge County from 2007 to 2019

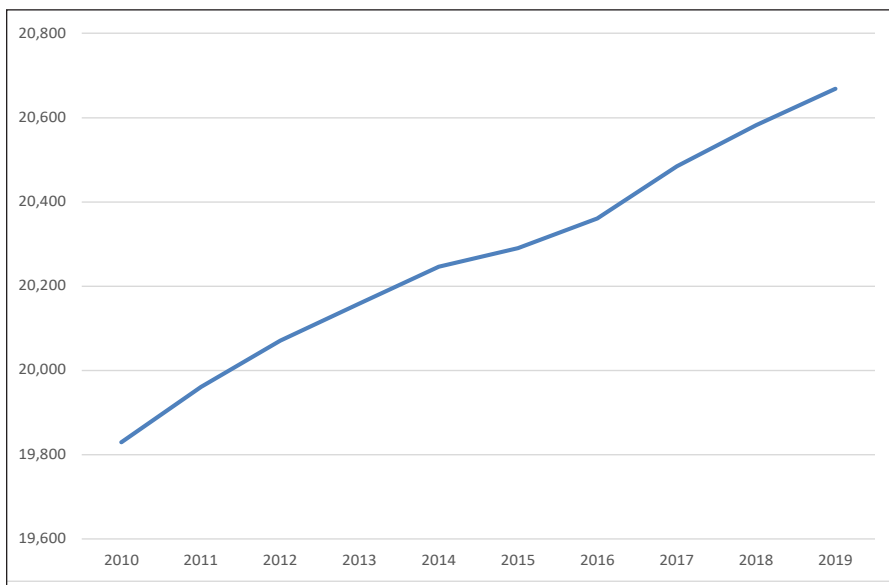


Source: Bureau of Economic Analysis, Regional Data, GDP and Personal Income

Table 1 provides the most recent snapshot of total employment but does not examine the historical trends within the county. Figure 8 shows employment from 2007 to 2019. Total employment in Dodge County was at its lowest at 8,413 in 2010 and its highest at 9,462 in 2019.

Similar to the upward trend of employment, the overall population in the county has been increasing steadily, as shown in Figure 9. Dodge County population was 19,829 in 2010 and 20,669 in 2019, a gain of 840. The average annual population increase over this time period was 93.

Figure 9 – Population in Dodge County 2010 to 2019

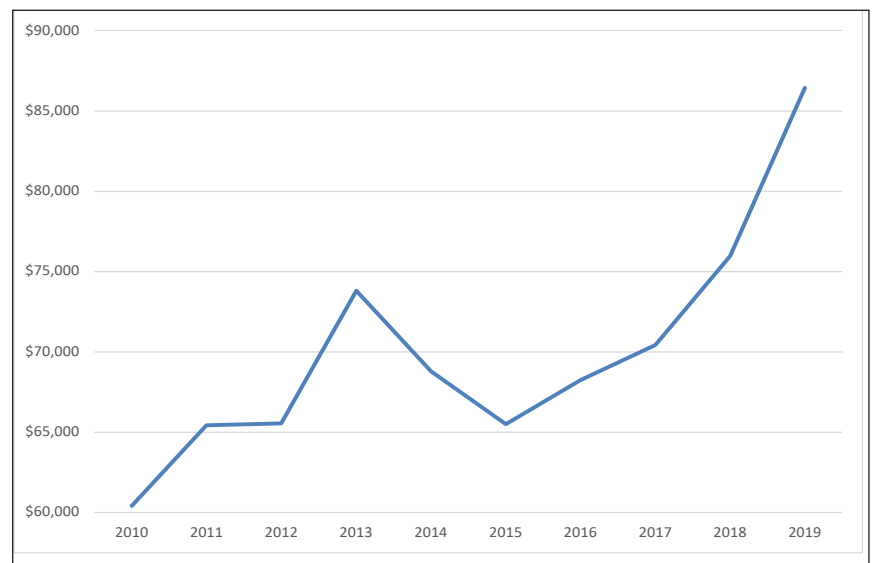


Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Total Population Estimate

Similar to the population trend, household income has been trending upward in Dodge County. Figure 10 shows the median household income in Dodge County from 2010 to 2019. Household income was at its lowest at \$60,398 in 2010 and its highest at \$86,436 in 2019.

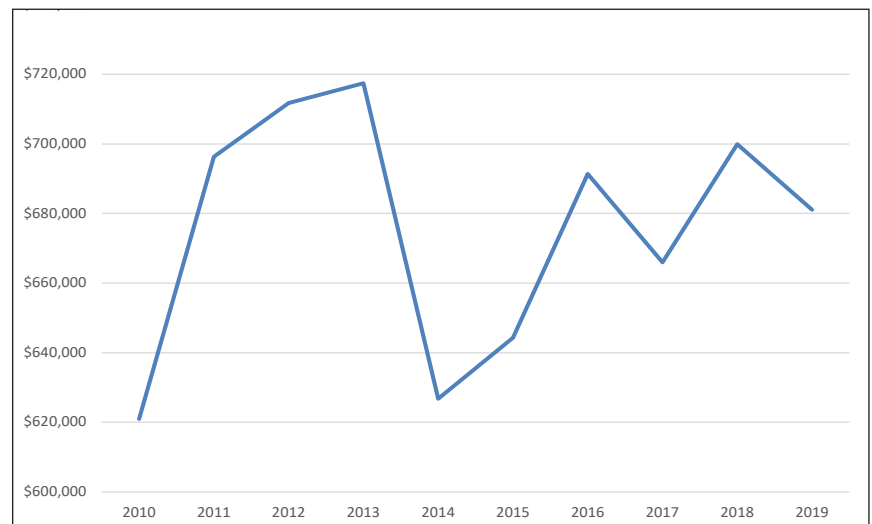
Real Gross Domestic Product (GDP) is a measure of the value of goods and services produced in an area and adjusted for inflation over time. The Real GDP for Dodge County has been fluctuating since 2010, as shown in Figure 11.

**Figure 10 – Median Household Income in Dodge County from 2010 to 2019**



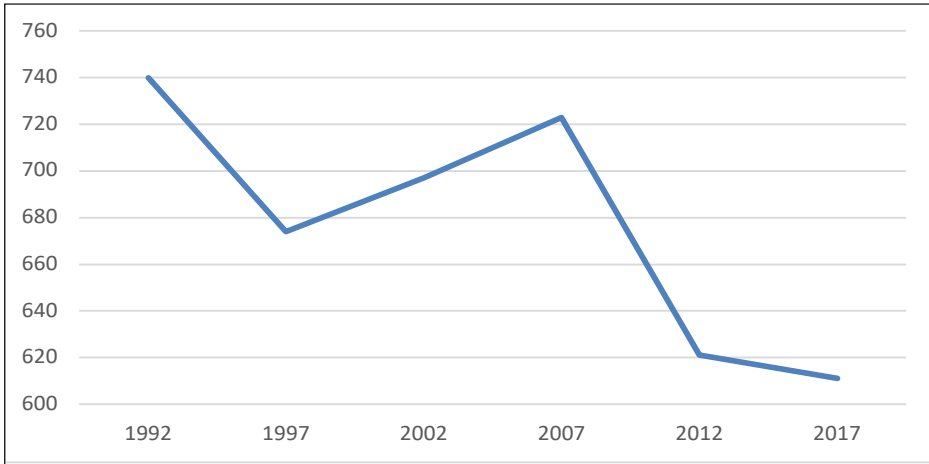
Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Estimate of Median Household Income

**Figure 11 – Real Gross Domestic Product (GDP) in Dodge County from 2010 to 2019**



Source: Bureau of Economic Analysis, Regional Data, GDP and Personal Income

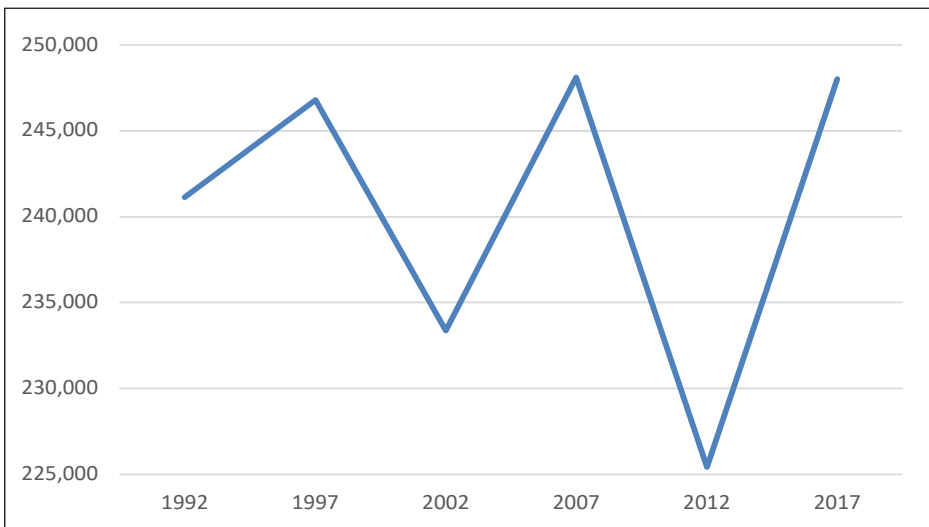
Figure 12 – Number of Farms in Dodge County from 1992 to 2017



Source: Census of Agriculture, 1992-2017

The farming industry has decreased in Dodge County. As shown in Figure 12, the number of farms has decreased from 740 in 1992 to 611 in 2017. The amount of land in farms has fluctuated greatly. The county farmland hit a low of 225,418 acres in 2012, and then rose to 248,036 acres in 2017 according to Figure 13.

Figure 13 – Land in Farms in Dodge County from 1992 to 2017



Source: Census of Agriculture, 1992-2017

## IV. Economic Impact Methodology

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The economic analysis of solar PV project presented uses NREL's latest Jobs and Economic Development Impacts (JEDI) PV Model (PV12.23.16). The JEDI PV Model is an input-output model that measures the spending patterns and location-specific economic structures that reflect expenditures supporting varying levels of employment, income, and output. That is, the JEDI Model takes into account that the output of one industry can be used as an input for another. For example, when a PV system is installed, there are both soft costs consisting of permitting, installation and customer acquisition costs, and hardware costs, of which the PV module is the largest component. The purchase of a module not only increases demand for manufactured components and raw materials, but also supports labor to build and install a module. When a module is purchased from a manufacturing facility, the manufacturer uses some of that money to pay employees. The employees use a portion of their compensation to purchase goods and services within their community. Likewise, when a developer pays workers to install the systems, those workers spend money in the local economy that boosts economic activity and employment in other sectors. The goal of economic impact analysis is to quantify all of those reverberations throughout the local and state economy.

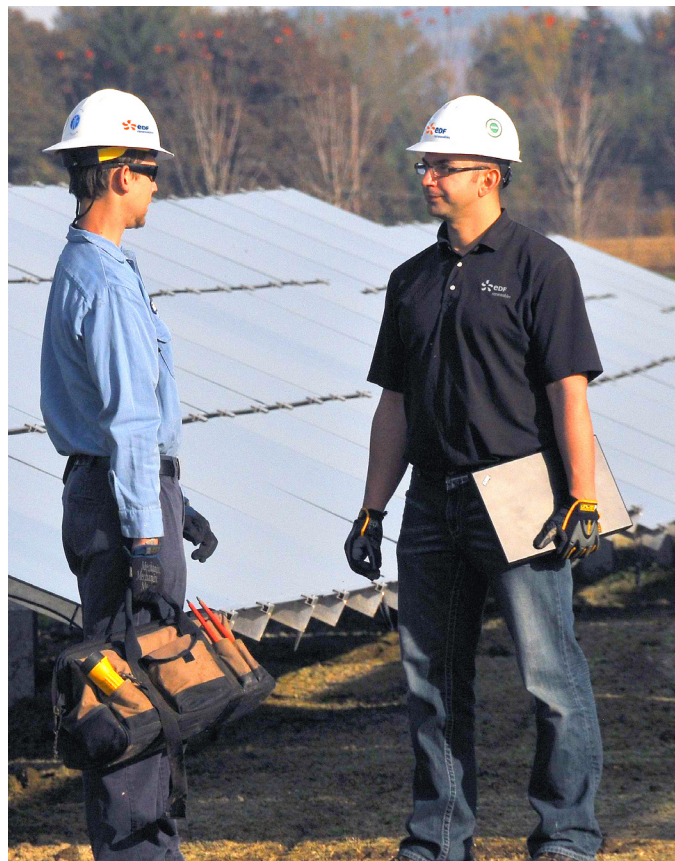
The first JEDI Model was developed in 2002 to demonstrate the economic benefits associated with developing wind farms in the United States. Since then, JEDI models have been developed for biofuels, natural gas, coal, transmission lines and many other forms of energy. These models were created by Marshall Goldberg of MRG & Associates, under contract with the National Renewable Energy Laboratory. The JEDI model utilizes state-specific industry multipliers obtained from IMPLAN (Impact analysis for PLANning). IMPLAN software and data are managed and updated by the Minnesota IMPLAN Group, Inc., using data collected at federal, state, and local levels. This study analyzes the gross jobs that the new solar energy project development supports and does not analyze the potential loss of jobs due to declines in other forms of electric generation.

The total economic impact can be broken down into three distinct types: direct impacts, indirect impacts, and induced impacts. **Direct impacts** during the construction period refer to the changes that occur in the onsite construction industries in which the direct final demand (i.e., spending on construction labor and services) change is made. Onsite construction-related services include installation labor, engineering, design, and other professional services. Direct impacts during operating years refer to the final demand changes that occur in the onsite spending for the solar operations and maintenance workers.



The initial spending on the construction and operation of the PV installation will create a second layer of impacts, referred to as “supply chain impacts” or “indirect impacts.” **Indirect impacts** during the construction period consist of changes in inter-industry purchases resulting from the direct final demand changes and include construction spending on materials and PV equipment, as well as other purchases of goods and offsite services. Utility-scale solar PV indirect impacts include PV modules, invertors, tracking systems, cabling, and foundations.

**Induced impacts** during construction refer to the changes that occur in household spending as household income increases or decreases as a result of the direct and indirect effects of final demand changes. Local spending by employees working directly or indirectly on the Project that receive their paychecks and then spend money in the community is included. The model includes additional local jobs and economic activity that are supported by the purchases of these goods and services.



## V. Economic Impact Results

The economic impact results were derived from detailed project cost estimates supplied by EDF Renewables. In addition, EDF Renewables also estimated the percentages of project materials and labor that will be coming from within Dodge County and the State of Minnesota.

Two separate JEDI models were produced to show the economic impact of Byron Solar Project. The first JEDI model used the 2019 Dodge County multipliers from IMPLAN. The second JEDI model used the 2019 IMPLAN multipliers for the State of Minnesota and the same project costs. Because all new multipliers from IMPLAN and specific project cost data from Byron Solar Project are used, the JEDI model serves only to translate the project costs into IMPLAN sectors.

Tables 2-4 show the output from these models. Table 2 lists the total employment impact from Byron Solar Project for Dodge County and the State of Minnesota. Table 3 shows the impact on total earnings and Table 4 contains the impact on total output.

Table 2 – Total Employment Impact from Byron Solar Project

	Dodge County Jobs	State of Minnesota Jobs
<b>Construction</b>		
Project Development and Onsite Labor Impacts (direct)	293	451
Module and Supply Chain Impacts (indirect)	56	171
Induced Impacts	18	175
<i>New Local Jobs during Construction</i>	367	797
<b>Operations (Annual)</b>		
Onsite Labor Impacts (direct)	3.8	3.8
Local Revenue and Supply Chain Impacts (indirect)	5.4	7.5
Induced Impacts	1.2	8.9
<i>New Local Long-Term Jobs</i>	10.4	20.2

The results from the JEDI model show significant employment impacts from Byron Solar Project. Employment impacts can be broken down into several different components. Direct jobs created during the construction phase typically last anywhere from 12 to 18 months depending on the size of the project; however, the direct job numbers present in Table 2 from the JEDI model are based on a full time equivalent (FTE) basis for a year. In other words, 1 job = 1 FTE = 2,080 hours worked in a year. A part time or temporary job would constitute only a fraction of a job according to the JEDI model. For example, the JEDI model results show 293 new direct jobs during construction in Dodge County, though the construction of the solar center could involve closer to 586 workers working half-time for a year. Thus, due to the short-term nature of construction projects, the JEDI model often significantly understates the number of people actually hired to work on the project. It is important to keep this fact in mind when looking at the numbers or when reporting the numbers.

As shown in Table 2, new local jobs created or retained during construction total 367 for Dodge County, and 797 for the State of Minnesota. New local long-term jobs created from Byron Solar Project total 10.4 for Dodge County and 20.2 for the State of Minnesota.

Direct jobs created during the operational phase last the life of the solar PV project, typically 20-30 years. Direct construction jobs and operations and maintenance jobs both require highly-skilled workers in the fields of construction, management, and engineering. These well-paid professionals boost economic development in rural communities where new employment opportunities are often welcome due to economic downturns. Accordingly, it is important to not just look at the number of jobs but also the earnings that they produce. Table 3 shows the earnings impacts from Byron Solar Project, which are categorized by construction impacts and operations impacts. The new local earnings during construction total over \$34.5 million for Dodge County and over \$73.9 million for the State of Minnesota. The new local long-term earnings total over \$452 thousand for Dodge County and over \$1.4 million for the State of Minnesota.

Table 3 – Total Earnings Impact from Byron Solar Project

	Dodge County	State of Minnesota
<b>Construction</b>		
Project Development and Onsite Earnings Impacts	\$31,648,586	\$53,126,042
Module and Supply Chain Impacts	\$2,319,792	\$10,651,259
Induced Impacts	\$587,776	\$10,155,529
<i>New Local Earnings during Construction</i>	\$34,556,154	\$73,932,831
<b>Operations (Annual)</b>		
Onsite Labor Impacts	\$217,720	\$434,548
Local Revenue and Supply Chain Impacts	\$193,185	\$477,739
Induced Impacts	\$41,502	\$515,076
<i>New Local Long-Term Earnings</i>	\$452,407	\$1,427,364

Output refers to economic activity or the value of production in the state or local economy. It is an equivalent measure to the Gross Domestic Product, which measures output on a national basis. According to Table 4, the new local output during construction totals over \$44.8 million for Dodge County and over \$115 million for the State of Minnesota. The new local long-term output totals over \$1.4 million for Dodge County and over \$3.4 million for the State of Minnesota.

Table 4 – Total Output Impact from Byron Solar Project

	Dodge County	State of Minnesota
<b>Construction</b>		
Project Development and Onsite Jobs Impacts on Output	\$34,775,060	\$56,450,098
Module and Supply Chain Impacts	\$7,269,266	\$29,350,200
Induced Impacts	\$2,769,183	\$29,255,279
<i>New Local Output during Construction</i>	\$44,813,510	\$115,055,577
<b>Operations (Annual)</b>		
Onsite Labor Impacts	\$217,720	\$434,548
Local Revenue and Supply Chain Impacts	\$1,067,234	\$1,542,243
Induced Impacts	\$191,605	\$1,479,365
<i>New Local Long-Term Output</i>	\$1,476,560	\$3,456,157

## VI. Tax Revenue

Solar energy projects increase the property tax base of a county, creating a new revenue source for education and other local government services, such as fire protection, parks, health and safety. Byron Solar would be subject to Minnesota's Solar Energy Production Tax. More details about the production tax can be found at: <https://www.revenue.state.mn.us/solar-energy-production-tax>.

Table 5 details the tax implications of Byron Solar Project. There are several important assumptions built into the analysis in this table.

- First, the analysis assumes that the production of the Project will be 435,000 MWh per year.
- Second, the Solar Energy Production Tax rate is \$1.20 per megawatt hour produced.
- Third, the replacement tax is distributed as 80% to the county and 20% to the township where the system is located.
- Fourth, the land value that the system is located on may increase in value as the real property is re-classified. This valuation is unclear and so no additional tax was calculated for real property.
- Fifth, no comprehensive tax payment was calculated, and these calculations are only to be used to illustrate the economic impact of the Project.

As shown in Table 5, a conservative estimate of the total property taxes paid by the Project is over \$522 thousand per year. The expected total property taxes paid over the 30-year lifetime of the Project is over \$15.6 million. Dodge County will receive over \$12.5 million and the townships will receive over \$3.1 million in property taxes over the life of the Project.

Table 5 – Total Property Taxes Paid by Byron Solar Project

	Avg Annual	30-Year Total
Dodge County	\$417,600.00	\$12,528,000.00
Canisteo Township	\$102,673.94	\$3,080,218.08
Mantorville Township	\$1,726.06	\$51,781.92
Total	\$522,000.00	\$15,660,000.00



## VII. References

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## VIII. Curriculum Vita - David G. Loomis

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David G. Loomis  
 Illinois State University  
 Department of Economics  
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 dloomis@ilstu.edu

### Education

Doctor of Philosophy, Economics, Temple University, Philadelphia, Pennsylvania, May 1995.

Bachelor of Arts, Mathematics and Honors Economics, Temple University, Magna Cum Laude, May 1985.

### Experience

1996-present Illinois State University, Normal, IL  
 Full Professor – Department of Economics (2010-present)

Associate Professor - Department of Economics (2002-2009)

Assistant Professor - Department of Economics (1996-2002)

- Taught Regulatory Economics, Telecommunications Economics and Public Policy, Industrial Organization and Pricing, Individual and Social Choice, Economics of Energy and Public Policy and a Graduate Seminar Course in Electricity, Natural Gas and Telecommunications Issues.
- Supervised as many as 5 graduate students in research projects each semester.
- Served on numerous departmental committees.

1997-present Institute for Regulatory Policy Studies, Normal, IL

Executive Director (2005-present)

Co-Director (1997-2005)

- Grew contributing membership from 5 companies to 16 organizations.
- Doubled the number of workshop/training events annually.
- Supervised 2 Directors, Administrative Staff and internship program.
- Developed and implemented state-level workshops concerning regulatory issues related to the electric, natural gas, and telecommunications industries.

2006-2018 Illinois Wind Working Group, Normal, IL

Director

- Founded the organization and grew the organizing committee to over 200 key wind stakeholders
- Organized annual wind energy conference with over 400 attendees
- Organized strategic conferences to address critical wind energy issues
- Initiated monthly conference calls to stakeholders
- Devised organizational structure and bylaws

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2007-2018 Center for Renewable Energy, Normal, IL  
Director

- Created founding document approved by the Illinois State University Board of Trustees and Illinois Board of Higher Education.
- Secured over \$150,000 in funding from private companies.
- Hired and supervised 4 professional staff members and supervised 3 faculty members as Associate Directors.
- Reviewed renewable energy manufacturing grant applications for Illinois Department of Commerce and Economic Opportunity for a \$30 million program.
- Created technical “Due Diligence” documents for the Illinois Finance Authority loan program for wind farm projects in Illinois.

2011-present Strategic Economic Research, LLC  
President

- Performed economic impact analyses on policy initiatives and energy projects such as wind energy, solar energy, natural gas plants and transmission lines at the county and state level.
- Provided expert testimony before state legislative bodies, state public utility commissions, and county boards.
- Wrote telecommunications policy impact report comparing Illinois to other Midwestern states.

1997-2002 International Communications  
Forecasting Conference

Chair

- Expanded Planning Committee with representatives from over 18 different international companies and delivered high quality conference attracting over 500 people over 4 years.

1985-1996 Bell Atlantic, Philadelphia, Pa.  
Economist - Business Research

- Wrote and taught Applied Business Forecasting multimedia course.
- Developed and documented 25 econometric demand models that were used in regulatory filings.
- Provided statistical and analytic support to regulatory costing studies.
- Served as subject matter expert in switched and special access.
- Administered \$4 million budget including \$1.8 million consulting budget.

## Professional Awards and Memberships

2016 Outstanding Cross-Disciplinary Team Research Award with Jin Jo and Matt Aldeman – recognizes exemplary collaborative research conducted by multiple investigators from different disciplines.

2011 Midwestern Regional Wind Advocacy Award from the U. S. Department of Energy's Wind Powering America presented at WindPower 2011

2009 Economics Department Scott M. Elliott Faculty Excellence Award – awarded to faculty who demonstrate excellence in teaching, research and service.

2009 Illinois State University Million Dollar Club – awarded to faculty who have over \$1 million in grants through the university.

2008 Outstanding State Wind Working Group Award from the U. S. Department of Energy's Wind Power America presented at WindPower 2008.

1999 Illinois State University Teaching Initiative Award

Member of the American Economic Association, National Association of Business Economists, International Association for Energy Economics, Institute for Business Forecasters; Institute for International Forecasters, International Telecommunications Society.

## Professional Publications

38. Ohler, A. Loomis, D.G., Marquis, Y. (2022). The Household Appliance Stock, Income, and Electricity Demand Elasticity, *Energy Journal*, 43(1).

37. Ohler, A., Loomis, D.G., Ilves, K. (2020). A study of electricity savings from energy star appliances using household survey data, *Energy Policy*, 144: 1-13.

36. Ohler, A., Mohammadi, H. and Loomis, D.G. (2020). Electricity restructuring and the relationship between fuel costs and electricity prices for industrial and residential customers, *Energy Policy*, 142: 1-8.

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### Professional Publications (continued)

30. Aldeman, M.R., Jo, J.H., and Loomis, D.G. (2015). The Technical Potential for Wind Energy in Illinois, *Energy*, 90(1), 1082-1090.
29. Tegen, S., Keyser, D., Flores-Espino, F., Miles, J., Zammit, D. and Loomis, D. (2015). Offshore Wind Jobs and Economic Development Impacts in the United States: Four Regional Scenarios, National Renewable Energy Laboratory Technical Report, NREL/TP-5000-61315, February.
28. Loomis, D. G. and Bowden, N. S. (2013). Nationwide Database of Electric Rates to Become Available, *Natural Gas & Electricity*, 30 (5), 20-25.
27. Jin, J. H., Loomis, D. G., and Aldeman, M. R. (2013). Optimum penetration of utility-scale grid-connected solar photovoltaic systems in Illinois, *Renewable Energy*, 60, 20-26.
26. Malm, E., Loomis, D. G., DeFranco, J. (2012). A Campus Technology Choice Model with Incorporated Network Effects: Choosing Between General Use and Campus Systems, *International Journal of Computer Trends and Technology*, 3(4), 622-629.
25. Chupp, B. A., Hickey, E.A. & Loomis, D. G. (2012). Optimal Wind Portfolios in Illinois, *Electricity Journal*, 25, 46-56.
24. Hickey, E., Loomis, D. G., & Mohammadi, H. (2012). Forecasting hourly electricity prices using ARMAX-GARCH models: An application to MISO hubs, *Energy Economics*, 34, 307-315.
23. Theron, S., Winter, J.R, Loomis, D. G., & Spaulding, A. D. (2011). Attitudes Concerning Wind Energy in Central Illinois. *Journal of the America Society of Farm Managers and Rural Appraisers*, 74, 120-128.
22. Payne, J. E., Loomis, D. G. & Wilson, R. (2011). Residential Natural Gas Demand in Illinois: Evidence from the ARDL Bounds Testing Approach. *Journal of Regional Analysis and Policy*, 41(2), 138.
21. Loomis, D. G. & Ohler, A. O. (2010). Are Renewable Portfolio Standards A Policy Cure-all? A Case Study of Illinois's Experience. *Environmental Law and Policy Review*, 35, 135-182.
20. Gil-Alana, L. A., Loomis, D. G., & Payne, J. E. (2010). Does energy consumption by the U.S. electric power sector exhibit long memory behavior ? *Energy Policy*, 38, 7512-7518.
19. Carlson, J. L., Payne, J. E., & Loomis, D. G. (2010). An assessment of the Economic Impact of the Wind Turbine Supply Chain in Illinois. *Electricity Journal*, 13, 75-93.
18. Apergis, N., Payne, J. E., & Loomis, D. G. (2010). Are shocks to natural gas consumption transitory or permanent? *Energy Policy*, 38, 4734-4736.
17. Apergis, N., Payne, J. E., & Loomis, D. G. (2010). Are fluctuations in coal consumption transitory or permanent? Evidence from a panel of U.S. states. *Applied Energy*, 87, 2424-2426.
16. Hickey, E. A., Carlson, J. L., & Loomis, D. G. (2010). Issues in the determination of the optimal portfolio of electricity supply options. *Energy Policy*, 38, 2198-2207.

### Professional Publications (continued)

15. Carlson, J. L., & Loomis, D. G. (2008). An assessment of the impact of deregulation on the relative price of electricity in Illinois. *Electricity Journal*, 21, 60-70.
14. Loomis, D. G., (2008). The telecommunications industry. In H. Bidgoli (Ed.), *The handbook of computer networks* (pp. 3-19). Hoboken, NJ: John Wiley & Sons.
13. Cox, J. E., Jr., & Loomis, D. G. (2007). A managerial approach to using error measures in the evaluation of forecasting methods. *International Journal of Business Research*, 7, 143-149.
12. Cox, J. E., Jr., & Loomis, D. G. (2006). Improving forecasting through textbooks – a 25 year review. *International Journal of Forecasting*, 22, 617-624.
11. Swann, C. M., & Loomis, D. G. (2005). Competition in local telecommunications – there's more than you think. *Business Economics*, 40, 18-28.
10. Swann, C. M., & Loomis, D. G. (2005). Intermodal competition in local telecommunications markets. *Information Economics and Policy*, 17, 97-113.
9. Swann, C. M., & Loomis, D. G. (2004). Telecommunications demand forecasting with intermodal competition – a multi-equation modeling approach. *Teletronikk*, 100, 180-184.
8. Cox, J. E., Jr., & Loomis, D. G. (2003). Principles for teaching economic forecasting. *International Review of Economics Education*, 1, 69-79.
7. Taylor, L. D. & Loomis, D. G. (2002). *Forecasting the internet: understanding the explosive growth of data communications*. Boston: Kluwer Academic Publishers.
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4. Cox, J. E., Jr. & Loomis, D. G. (2000). A course in economic forecasting: rationale and content. *Journal of Economics Education*, 31, 349-357.
3. Malm, E. & Loomis, D. G. (1999). Active market share: measuring competitiveness in retail energy markets. *Utilities Policy*, 8, 213-221.
2. Loomis, D. G. (1999). Forecasting of new products and the impact of competition. In D. G. Loomis & L. D. Taylor (Eds.), *The future of the telecommunications industry: forecasting and demand analysis*. Boston: Kluwer Academic Publishers.
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## Expert Testimony

46. Public Service Commission of Wisconsin, Docket No. 9806-CE-100, Application for Darien Solar Energy Center, LLC to Construct a New Solar Electric Generation Facility located in Walworth County, Wisconsin (Invenergy): Written Direct Testimony filed February 5, 2021; April 22, 2021 Hearing.
45. Kentucky State Board on Electric Generation and Transmission Siting, Case No. 2020-00219, AEUG Madison Solar (Acciona), April 15, 2021 Hearing.
44. McLean County (Illinois) Zoning Board of Appeals, on behalf of Invenergy, Direct Oral Testimony, April 6-7, 2021.
43. Kentucky State Board on Electric Generation and Transmission Siting, Case No. 2020-00206, AEUG Fleming Solar (Acciona), April 1, 2021 Hearing.
42. Iowa Utilities Board, Docket No. E-22432, on behalf of Heartland Divide Wind II, LLC (NextEra), Written Direct Testimony filed February 2, 2021, March 18, 2021 Hearing.
41. Macon Township Zoning Board, on behalf of Invenergy, Direct Oral Testimony, January 6, 2021, January 20, 2021, February 24, 2021, March 17, 2021.
40. Public Service Commission of Wisconsin, Docket No. 9804-CE-100, Application for Grant County Solar, LLC to Construct a New Solar Electric Generation Facility located near Potosi and Harrison Townships, in Grant County, Wisconsin (NextEra): Written Direct Testimony filed November 3, 2020; Rebuttal Testimony filed January 5, 2021; February 10, 2021 Hearing.
39. Warren County (Missouri) Zoning Board, on behalf of Invenergy, Direct Oral Testimony, November 19, 30, December 17, 2020.
38. Grundy County (Illinois) Zoning Board of Appeals, on behalf of RES America, Direct Oral Testimony, November 17, 2020.
37. McLean County (Illinois) Zoning Board of Appeals, on behalf of Invenergy, Direct Oral Testimony, August 4, 2020.
36. Public Service Commission of Wisconsin, Docket No. 9801-CE-100, Application of Paris Solar Farm, LLC for a Certificate of Public Convenience and Necessity, on behalf of Paris Solar Farm, LLC (Invenergy): Written Direct Testimony filed July 2, 2020.
35. Christian County (Illinois) Zoning Board of Appeals, on behalf of Invenergy, Direct Oral Testimony, June 23, 24, 30, & July 6, 7, 21, 2020.
34. Piatt County (Illinois) Zoning Board of Appeals, on behalf of Apex Energy, Direct Oral Testimony, January 23, 2020.
33. Marshall County (Illinois) Zoning Board of Appeals, on behalf of Akuo Energy, Direct Oral Testimony, October 17, 2019.

### Expert Testimony (continued)

32. Public Service Commission of Wisconsin, Docket No. 9800-CE-100, Application of Badger State Solar, LLC for a Certificate of Public Convenience and Necessity, on behalf of Badger State Solar, LLC (Ranger Power): Written Direct Testimony filed September 10, 2019.

31. Adams Township (Michigan) Planning Commission Hearing, on behalf of Invenergy, Direct Oral Testimony, August 27, 2019.

30. Christian County (Illinois) Zoning Board of Appeals, on behalf of Invenergy, Direct Oral Testimony, July 23, 2019.

29. Wheatland Township (Michigan) Planning Commission Hearing, on behalf of Invenergy, Direct Oral Testimony, July 18, 2019.

28. Christian County (Illinois) Board Meeting, on behalf of Invenergy and Tradewind Energy, Direct Oral Testimony, May 29, 2019.

27. DeWitt County (Illinois) Zoning Board of Appeals, on behalf of Tradewind Energy, Direct Oral Testimony, February 8, 2019.

26. Public Service Commission of Wisconsin, Docket No. 9697-CE-100, Application of Badger Hollow Solar Farm for a Certificate of Public Convenience and Necessity, on behalf of Badger Hollow Solar Farm LLC (Invenergy): Written Direct Testimony filed November 20, 2018; Written Rebuttal Testimony filed January 8, 2019; Surrebuttal Testimony filed January 14, 2019; Oral Cross-Examination, January 16, 2019.

25. Ohio Power Siting Board, Case No. 19-1880-EL-BGN, In the Matter of the Application of Atlanta Farms Solar Project, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Pickaway County, Ohio, on behalf of Atlanta Farms Solar Project, LLC, Exhibit with Report filed October 18, 2019.

24. Ford County (Illinois) Zoning Board of Appeals, on behalf of Pattern Energy and Apex Clean Energy, Direct Oral Testimony, October 3, 2018.

23. DeKalb County (Illinois) County Board Hearing, on behalf of EDF Renewable Development, Inc., Direct Oral Testimony, September 24, 2018.

22. Ford County (Illinois) Planning Commission, on behalf of Pattern Energy, Direct Oral Testimony, September 5, 2018.

21. Ohio Power Siting Board, Case No. 18-1360-EL-BGN, In the matter of Hardin Solar Energy II LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Hardin County, Ohio, on behalf of Hardin Solar Energy II LLC, Exhibit with Report filed August 3, 2018.

20. Ohio Power Siting Board, Case No. 17-774-EL-BGN, In the Matter of the Application of Vinton Solar Energy LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Vinton County, Ohio. On behalf of Vinton Solar Energy LLC, Exhibit with Report filed July 27, 2018.

19. DeKalb County (Illinois) Zoning Board of Appeals, on behalf of EDF Renewable Development, Inc., Direct Oral Testimony, June 27, 2018.

### Expert Testimony (continued)

18. Ford County (Illinois) Zoning Board, on behalf of Apex Clean Energy, Inc., Direct Oral Testimony, June 11, 2018.

17. McLean County (Illinois) Zoning Board of Appeals, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of Invenergy, LLC, Direct Oral Testimony, January 4, 2018.

16. New Mexico Public Regulation Commission, Case No. 17-00275-UT, Application of Sagamore Wind Energy LLC, on behalf of Invenergy, LLC: Direct Written Testimony filed November 6, 2017; Oral Cross-examination Testimony appeared before the Commission on March 13, 2018.

15. Ohio Power Siting Board, Case No. 17-773-EL-BGN, In the Matter of Hardin Solar Energy LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Hardin County, Ohio, on behalf of Invenergy, LLC, Exhibit with Report filed July 5, 2017.

14. Macon County (Illinois) Environmental, Education, Health and Welfare Committee, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of E.ON Energy, Direct Oral Testimony, August 20, 2015.

13. Macon County (Illinois) Zoning Board of Appeals, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of E.ON Energy, Direct Oral Testimony, August 11, 2015.

12. Kankakee County (Illinois) Planning, Zoning, and Agriculture Committee, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of EDF Renewables, Direct Oral Testimony, July 22, 2015.

11. Kankakee County (Illinois) Zoning Board of Appeals, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of EDF Renewables, Direct Oral Testimony, July 13, 2015.

10. Livingston County (Illinois) Zoning Board of Appeals, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of Invenergy, Direct Oral Testimony, November 17-19, 2014.

9. Missouri Public Service Commission, Case No. EA-2014-0207, Written Surrebuttal Testimony on behalf of Grain Belt Express Clean Line LLC, filed October 14, 2014.

8. Missouri Public Service Commission, Case No. EA-2014-0207, Written Direct Testimony on behalf of Grain Belt Express Clean Line LLC, filed March 26, 2014.

7. Illinois Commerce Commission, Case No. 12-0560, Oral Cross-examination Testimony on behalf of Rock Island Clean Line LLC appeared before the Commission on December 11, 2013.

6. Illinois Commerce Commission, Case No. 12-0560, Written Rebuttal Testimony on behalf of Rock Island Clean Line LLC filed August 20, 2013.

5. Boone County (Illinois) Board, Examination of Wind Energy Conversion System Ordinance, Direct Testimony and Cross-Examination, April 23, 2013.

### Expert Testimony (continued)

4. Illinois Commerce Commission, Case No. 12-0560, Written Direct Testimony on behalf of Rock Island Clean Line LLC filed October 10, 2012.

3. Whiteside County (Illinois) Board and Whiteside County Planning and Zoning Committee, Examination of Wind Energy Conversion System Ordinance, Direct Testimony and Cross-Examination, on behalf of the Center for Renewable Energy, April 12, 2012.

2. State of Illinois Senate Energy and Environment Committee, Direct Testimony and Cross-Examination, on behalf of the Center for Renewable Energy, October 28, 2010.

1. Livingston County (Illinois) Zoning Board of Appeals, Application for Special Use Permit for a Wind Energy Conversion System, on behalf of the Center for Renewable Energy, Direct Testimony and Cross-Examination, July 28, 2010.

### Selected Presentations

“Is Solar Energy a Good Use of Farmland?” presented on June 10, 2020 at CleanPower 2020 (webinar) with Jin Jo and Matt Aldeman.

“Renewable Energy in McLean County,” presented December 13, 2018 at Bloomington-Normal Economic Development Council’s BN By the Numbers, Normal, IL.

“Smart Cities and Micro Grids: Cost Recovery Issues,” presented September 12, 2017 at the National Association of Regulatory Utility Commissioners Staff Subcommittee on Accounting and Finance Meeting, Springfield, IL.

“Cloud Computing: Regulatory Principles and ICC NOI,” presented September 11, 2017 at the National Association of Regulatory Utility Commissioners Staff Subcommittee on Accounting and Finance Meeting, Springfield, IL.

“Illinois Wind, Illinois Solar and the Illinois Future Energy Jobs Act,” presented July 25, 2017 at the Illinois County Assessors Meeting, Normal, IL.

“Illinois Wind, Illinois Solar and the Illinois Future Energy Jobs Act,” presented April 21, 2017 at the Illinois Association of County Zoning Officers Meeting, Bloomington, IL.

“Energy Storage Economics and RTOs,” presented October 30, 2016 at the Energy Storage Conference at Argonne National Laboratory.

“Wind Energy in Illinois,” on October 6, 2016 at the B/N Daybreak Rotary Club, Bloomington, IL.

“Smart Grid for Schools,” presented August 17, 2016 to the Ameren External Affairs Meeting, Decatur, IL.

“Solar Energy in Illinois,” presented July 28, 2016 at the 3rd Annual K-12 Teachers Clean Energy Workshop, Richland Community College, Decatur, IL.

“Wind Energy in Illinois,” presented July 28, 2016 at the 3rd Annual K-12 Teachers Clean Energy Workshop, Richland Community College, Decatur, IL.

“Smart Grid for Schools,” presented June 21, 2016 at the ISEIF Grantee and Ameren Meeting, Decatur, IL.

“Costs and Benefits of Renewable Energy,” presented November 4, 2015 at the Osher Lifelong Learning Institute at Bradley, University, Peoria, IL.

### Selected Presentations (continued)

“Energy Sector Workforce Issues,” presented September 17, 2015 at the Illinois Workforce Investment Board, Springfield, IL.

“The Past, Present and Future of Wind Energy in Illinois,” presented March 13, 2015 at the Peoria Rotary Club, Peoria, IL.

“Where Are All the Green Jobs?” presented January 28, 2015 at the 2015 Illinois Green Economy Network Sustainability Conference, Normal, IL.

“Teaching Next Generation Energy Concepts with Next Generation Science Standards: Addressing the Critical Need for a More Energy-Literate Workforce,” presented September 30, 2014 at the Mathematics and Science Partnerships Program 2014 Conference in Washington, DC.

“National Utility Rate Database,” presented October 23, 2013 at Solar Power International, Chicago, IL.

“Potential Economic Impact of Offshore Wind Energy in the Great Lakes,” presented May 6, 2013 at WindPower 2013, Chicago, IL.

“Why Illinois? Windy City, Prairie Power,” presented May 5, 2013 at WindPower 2013, Chicago, IL.

“National Utility Rate Database,” presented January 29, 2013 at the EUEC Conference, Phoenix, AZ.

“Energy Learning Exchange and Green Jobs,” presented December 13, 2012 at the TRICON Meeting of Peoria and Tazewell County Counselors, Peoria, IL.

“Potential Economic Impact of Offshore Wind Energy in the Great Lakes,” presented November 12, 2012 at the Offshore Wind Jobs and Economic Development Impacts Webinar.

“Energy Learning Exchange,” presented October 31, 2012 at the Utility Workforce Development Meeting, Chicago, IL.

“Wind Energy in McLean County,” presented June 26, 2012 at BN By the Numbers, Normal, IL.

“Wind Energy,” presented June 14, 2012 at the Wind for Schools Statewide Teacher Workshop, Normal, IL.

“Economic Impact of Wind Energy in Illinois,” presented June 6, 2012 at AWEA’s WINDPOWER 2012, Atlanta, GA.

“Trends in Illinois Wind Energy,” presented March 6, 2012 at the AWEA Regional Wind Energy Summit – Midwest in Chicago, IL.

“Challenges and New Growth Strategies in the Wind Energy Business,” invited plenary session speaker at the Green Revolution Leaders Forum, November 18, 2011 in Seoul, South Korea.

“Overview of the Center for Renewable Energy,” presented July 20, 2011 at the University-Industry Consortium Meeting at Illinois Institute of Technology, Chicago, IL.

“Building the Wind Turbine Supply Chain,” presented May 11, 2011 at the Supply Chain Growth Conference, Chicago, IL.

“Building a Regional Energy Policy for Economic Development,” presented April 4, 2011 at the Midwestern Legislative Conference’s Economic Development Committee Webinar.



### Selected Presentations (continued)

“Wind Energy 101,” presented February 7, 2011 at the Wind Power in Central Illinois - A Public Forum, CCNET Renewable Energy Group, Champaign, IL.

“Alternative Energy Strategies,” presented with Matt Aldeman November 19, 2010 at the Innovation Talent STEM Education Forum, Chicago, IL.

“Siting and Zoning in Illinois,” presented November 17, 2010 at the Wind Powering America Webinar.

“What Governor Quinn Should Do about Energy?” presented November 15, 2010 at the Illinois Chamber of Commerce Energy Forum Conference, Chicago, IL.

“Is Wind Energy Development Right for Illinois,” presented with Matt Aldeman October 28, 2010 at the Illinois Association of Illinois County Zoning Officials Annual Seminar in Utica, IL.

“Economic Impact of Wind Energy in Illinois,” presented July 22, 2010 at the AgriEnergy Conference in Champaign, IL.

“Renewable Energy Major at ISU,” presented July 21, 2010 at Green Universities and Colleges Subcommittee Webinar.

“Economics of Wind Energy,” presented May 19, 2010 at the U.S. Green Building Council meeting in Chicago, IL.

“Forecasting: A Primer for the Small Business Entrepreneur,” presented with James E. Cox, Jr. April 14, 2010 at the Allied Academies’ Spring International Conference in New Orleans, LA.

“Are Renewable Portfolio Standards a Policy Cure-All? A Case Study of Illinois’ Experience,” presented January 30, 2010 at the 2010 William and Mary Environmental Law and Policy Review Symposium in Williamsburg, VA.

“Creating Partnerships between Universities and Industry,” presented November 19, 2009, at New Ideas in Educating a Workforce in Renewable Energy and Energy Efficiency in Albany, NY.

“Educating Illinois in Renewable Energy,” presented November 14, 2009 at the Illinois Science Teachers Association in Peoria, IL.

“Green Collar Jobs,” invited presentation October 14, 2009 at the 2009 Workforce Forum in Peoria, IL.

“The Role of Wind Power in Illinois,” presented March 4, 2009 at the Association of Illinois Electric Cooperatives Engineering Seminar in Springfield, IL. “The Economic Benefits of Wind Farms,” presented January 30, 2009 at the East Central Illinois Economic Development District Meeting in Champaign, IL.

“Green Collar Jobs in Illinois,” presented January 6, 2009 at the Illinois Workforce Investment Board Meeting in Macomb, Illinois.

“Green Collar Jobs: What Lies Ahead for Illinois?” presented August 1, 2008 at the Illinois Employment and Training Association Conference.

“Mapping Broadband Access in Illinois,” presented October 16, 2007 at the Rural Telecon ’07 conference.

“A Managerial Approach to Using Error Measures to Evaluate Forecasting Methods,” presented October 15, 2007 at the International Academy of Business and Economics.



### Selected Presentations (continued)

“Dollars and Sense: The Pros and Cons of Renewable Fuel,” presented October 18, 2006 at Illinois State University Faculty Lecture Series.

“Broadband Access in Illinois,” presented July 28, 2006 at the Illinois Association of Regional Councils Annual Meeting.

“Broadband Access in Illinois,” presented November 17, 2005 at the University of Illinois’ Connecting the e to Rural Illinois.

“Improving Forecasting Through Textbooks – A 25 Year Review,” with James E. Cox, Jr., presented June 14, 2005 at the 25th International Symposium on Forecasting.

“Telecommunications Demand Forecasting with Intermodal Competition, with Christopher Swann, presented April 2, 2004 at the Telecommunications Systems Management Conference 2004.

“Intermodal Competition,” with Christopher Swann, presented April 3, 2003 at the Telecommunications Systems Management Conference 2003.

“Intermodal Competition in Local Exchange Markets,” with Christopher Swann, presented June 26, 2002 at the 20th Annual International Communications Forecasting Conference.

“Assessing Retail Competition,” presented May 23, 2002 at the Institute for Regulatory Policy Studies’ Illinois Energy Policy for the 21st Century workshop.

“The Devil in the Details: An Analysis of Default Service and Switching,” with Eric Malm presented May 24, 2001 at the 20th Annual Advanced Workshop on Regulation and Competition.

“Forecasting Challenges for U.S. Telecommunications with Local Competition,” presented June 28, 1999 at the 19th International Symposium on Forecasting.

“Acceptance of Forecasting Principles in Forecasting Textbooks,” presented June 28, 1999 at the 19th International Symposium on Forecasting.

“Forecasting Challenges for Telecommunications With Local Competition,” presented June 17, 1999 at the 17th Annual International Communications Forecasting Conference.

“Measures of Market Competitiveness in Deregulating Industries,” with Eric Malm, presented May 28, 1999 at the 18th Annual Advanced Workshop on Regulation and Competition.

“Trends in Telecommunications Forecasting and the Impact of Deregulation,” Proceedings of EPRI’s 11th Forecasting Symposium, 1998.

“Forecasting in a Competitive Age: Utilizing Macroeconomic Forecasts to Accurately Predict the Demand for Services,” invited speaker, Institute for International Research Conference, September 29, 1997.

“Regulatory Fairness and Local Competition Pricing,” presented May 30, 1996 at the 15th Annual Advanced Workshop in Regulation and Public Utility Economics.

“Optimal Pricing For a Regulated Monopolist Facing New Competition: The Case of Bell Atlantic Special Access Demand,” presented May 28, 1992 at the Rutgers Advanced Workshop in Regulation and Public Utility Economics.

## Grants

“SmartGrid for Schools 2018 and Energy Challenge,” with William Hunter, Illinois Science and Energy Innovation Foundation, RSP Award # A15-0092-002 - extended, January 2017, \$300,000.

“Energy Learning Exchange - Implementing Nationally Recognized Energy Curriculum and Credentials in Illinois,” Northern Illinois University, RSP Award # A17-0098, February, 2017, \$13,000.

“SmartGrid for Schools 2017 and Energy Challenge,” with William Hunter, Illinois Science and Energy Innovation Foundation, RSP Award # A15-0092-002 - extended, January 2017, \$350,000.

“Illinois Jobs Project,” University of California Berkeley, RSP Award # A16-0148, August, 2016, \$10,000.

“Energy Workforce Ready Through Building Performance Analysis,” Illinois Department of Commerce and Economic Opportunity through the Department of Labor, RSP # A16-0139, June, 2016, \$328,000 (grant was de-obligated before completion).

“SmartGrid for Schools 2016 and Smart Appliance Challenge,” with William Hunter, Brad Christenson and Jeritt Williams, Illinois Science and Energy Innovation Foundation, RSP Award # A15-0092-002, January 2016, \$450,000.

“SmartGrid for Schools 2015,” with William Hunter and Matt Aldeman, Illinois Science and Energy Innovation Foundation, RSP Award # A15-0092-001, February 2015, \$400,000.

“Economic Impact of Nuclear Plant Closings: A Response to HR 1146,” Illinois Department of Economic Opportunity, RSP Award # 14-025001 amended, January, 2015, \$22,000.

“Partnership with Midwest Renewable Energy Association for Solar Market Pathways” with Missy Nergard and Jin Jo, U.S. Department of Energy Award Number DE-EE0006910, October, 2014, \$109,469 (ISU Award amount).

“Renewable Energy for Schools,” with Matt Aldeman and Jin Jo, Illinois Department of Commerce and Economic Opportunity, Award Number 14-025001, June, 2014, \$130,001.

“SmartGrid for Schools 2014,” with William Hunter and Matt Aldeman, Illinois Science and Energy Innovation Foundation, RSP # 14B116, March 2014, \$451,701.

“WINDPOWER 2014 Conference Exhibit,” Illinois Department of Commerce and Economic Opportunity, RSP #14C167, March, 2014, \$95,000.

“Lake Michigan Offshore Wind Energy Buoy,” with Matt Aldeman, Illinois Clean Energy Community Foundation, Request ID 6435, November, 2013, \$90,000.

“Teaching Next Generation Energy Concepts with Next Generation Science Standards,” with William Hunter, Matt Aldeman and Amy Bloom, Illinois State Board of Education, RSP # 13B170A, October, 2013, second year, \$159,954; amended to \$223,914.

“Solar for Schools,” with Matt Aldeman, Illinois Green Economy Network, RSP # 13C280, August, 2013, \$66,072.

“Energy Learning Exchange Implementation Grant,” with William Hunter and Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 13-052003, June, 2013, \$350,000.

## Grants (continued)

“Teaching Next Generation Energy Concepts with Next Generation Science Standards,” with William Hunter, Matt Aldeman and Amy Bloom, Illinois State Board of Education, RSP # 13B170, April, 2013, \$159,901.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431006, March, 2013, \$225,000.

“Illinois Pathways Energy Learning Exchange Planning Grant,” with William Hunter and Matt Aldeman, Illinois State Board of Education (Source: U.S. Department of Education), RSP # 13A007, December, 2012, \$50,000.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, amended March, 2012, \$98,911.

“Wind for Schools Education and Outreach,” with Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 11-025001, amended February, 2012, \$111,752.

“A Proposal to Support Solar Energy Potential and Job Creation for the State of Illinois Focused on Large Scale Photovoltaic System,” with Jin Jo (lead PI), Illinois Department of Commerce and Economic Opportunity, Award Number 12-025001, January 2012, \$135,000.

“National Database of Utility Rates and Rate Structure,” U.S. Department of Energy, Award Number DE-EE0005350TDD, 2011-2014, \$850,000.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, \$75,000.

“Illinois Pathways Energy Learning Exchange Planning Grant,” with William Hunter and Matt Aldeman, Illinois State Board of Education (Source: U.S. Department of Education), RSP # 13A007, December, 2012, \$50,000.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, amended March, 2012, \$98,911.

“Wind for Schools Education and Outreach,” with Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 11-025001, amended February, 2012, \$111,752.

“A Proposal to Support Solar Energy Potential and Job Creation for the State of Illinois Focused on Large Scale Photovoltaic System,” with Jin Jo (lead PI), Illinois Department of Commerce and Economic Opportunity, Award Number 12-025001, January 2012, \$135,000.

“National Database of Utility Rates and Rate Structure,” U.S. Department of Energy, Award Number DE-EE0005350TDD, 2011-2014, \$850,000.  
“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, \$75,000.

“Wind for Schools Education and Outreach,” with Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 11-025001, March 2011, \$190,818.

## Grants (continued)

“Teaching Next Generation Energy Concepts with Next Generation Science Standards,” with William Hunter, Matt Aldeman and Amy Bloom, Illinois State Board of Education, RSP # 13B170, April, 2013, \$159,901.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431006, March, 2013, \$225,000.

“Illinois Pathways Energy Learning Exchange Planning Grant,” with William Hunter and Matt Aldeman, Illinois State Board of Education (Source: U.S. Department of Education), RSP # 13A007, December, 2012, \$50,000.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, amended March, 2012, \$98,911.

“Wind for Schools Education and Outreach,” with Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 11-025001, amended February, 2012, \$111,752.

“A Proposal to Support Solar Energy Potential and Job Creation for the State of Illinois Focused on Large Scale Photovoltaic System,” with Jin Jo (lead PI), Illinois Department of Commerce and Economic Opportunity, Award Number 12-025001, January 2012, \$135,000.

“National Database of Utility Rates and Rate Structure,” U.S. Department of Energy, Award Number DE-EE0005350TDD, 2011-2014, \$850,000.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, \$75,000.

“Illinois Pathways Energy Learning Exchange Planning Grant,” with William Hunter and Matt Aldeman, Illinois State Board of Education (Source: U.S. Department of Education), RSP # 13A007, December, 2012, \$50,000.

“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, amended March, 2012, \$98,911.

“Wind for Schools Education and Outreach,” with Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 11-025001, amended February, 2012, \$111,752.

“A Proposal to Support Solar Energy Potential and Job Creation for the State of Illinois Focused on Large Scale Photovoltaic System,” with Jin Jo (lead PI), Illinois Department of Commerce and Economic Opportunity, Award Number 12-025001, January 2012, \$135,000.

“National Database of Utility Rates and Rate Structure,” U.S. Department of Energy, Award Number DE-EE0005350TDD, 2011-2014, \$850,000.  
“Illinois Sustainability Education SEP,” Illinois Department of Commerce and Economic Opportunity, Award Number 08-431005, June 2011, \$75,000.

“Wind for Schools Education and Outreach,” with Matt Aldeman, Illinois Department of Commerce and Economic Opportunity, Award Number 11-025001, March 2011, \$190,818.

## Grants (continued)

“Illinois Broadband Mapping Study,” with J. Lon Carlson and Rajeev Goel, Illinois Department of Commerce and Economic Opportunity, Award Number 06-205008, 2006-2007, \$75,000.

“Illinois Wind Energy Education and Outreach Project,” with David Kennell and Randy Winter, U.S. Department of Energy, Award Number DE-FG36-06GO86091, 2006-2010, \$990,000.

“Wind Turbine Installation at Illinois State University Farm,” with Doug Kingman and David Kennell, Illinois Clean Energy Community Foundation (peer-reviewed), May, 2004, \$500,000.

“Illinois State University Wind Measurement Project,” Doug Kingman and David Kennell, Illinois Clean Energy Community Foundation (peer-reviewed), with August, 2003, \$40,000.

“Illinois State University Wind Measurement Project,” with Doug Kingman and David Kennell, NEG Micon matching contribution, August, 2003, \$65,000.

“Distance Learning Technology Program,” Illinois State University Faculty Technology Support Services, Summer 2002, \$3,000.

“Providing an Understanding of Telecommunications Technology By Incorporating Multimedia into Economics 235,” Instructional Technology Development Grant (peer-reviewed), January 15, 2001, \$1,400.

“Using Real Presenter to create a virtual tour of GTE’s Central Office,” with Jack Chizmar, Instructional Technology Literacy Mentoring Project Grant (peer-reviewed), January 15, 2001, \$1,000.

“An Empirical Study of Telecommunications Industry Forecasting Practices,” with James E. Cox, College of Business University Research Grant (peer-reviewed), Summer, 1999, \$6,000.

“Ownership Form and the Efficiency of Electric Utilities: A Meta-Analytic Review” with L. Dean Hiebert, Institute for Regulatory Policy Studies research grant (peer-reviewed), August 1998, \$6,000.

**Total Grants: \$7,740,953**



## External Funding

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Aqua Illinois (\$7,500); Commonwealth Edison (\$7,500); Exelon (\$7,500); Illinois American Water (\$7,500); Midcontinent ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2017, \$67,500 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2017, \$18,342.

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Aqua Illinois (\$7,500); Commonwealth Edison (\$7,500); Exelon (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midcontinent ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2017, \$75,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2016, \$19,667.

Corporate Funding for Energy Learning Exchange, Calendar Year 2016, \$53,000.

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Aqua Illinois (\$7,500); Commonwealth Edison (\$7,500); Exelon/Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midcontinent ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Utilities, Inc. (\$7,500) Fiscal Year 2016, \$82,500 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2015, \$15,897.

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Exelon/Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midcontinent ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2015, \$90,000 total.

Corporate Funding for Energy Learning Exchange, Calendar Year 2014, \$55,000.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2014, \$12,381.



## External Funding (continued)

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Energy Efficiency Alliance (\$4,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2014, \$102,000 total.

Corporate Funding for Energy Learning Exchange, Calendar Year 2013, \$53,000.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2013, \$17,097.

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2013, \$97,500 total.

Corporate Funding for Illinois Wind Working Group, Calendar Year 2012, \$29,325.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2012, \$16,060.

Corporate Funding for Institute for Regulatory Policy Studies, Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2012, \$90,000 total.

Corporate Funding for Illinois Wind Working Group, Calendar Year 2011, \$57,005.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2011, \$13,562.

Corporate Funding for Institute for Regulatory Policy Studies, Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2011, \$90,000 total.

Corporate Funding for Center for Renewable Energy, Calendar Year 2010, \$50,000.

Corporate Funding for Illinois Wind Working Group, Calendar Year 2010, \$49,000.

Workshop Surplus for Institute for Regulatory Policy Studies, with Lon Carlson, Fiscal Year 2010, \$17,759.

## External Funding (continued)

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Energy Efficiency Alliance (\$4,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2014, \$102,000 total.

Corporate Funding for Energy Learning Exchange, Calendar Year 2013, \$53,000.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2013, \$17,097.

Corporate Funding for Institute for Regulatory Policy Studies, Ameren (\$7,500), Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2013, \$97,500 total.

Corporate Funding for Illinois Wind Working Group, Calendar Year 2012, \$29,325.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2012, \$16,060.

Corporate Funding for Institute for Regulatory Policy Studies, Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2012, \$90,000 total.

Corporate Funding for Illinois Wind Working Group, Calendar Year 2011, \$57,005.

Workshop Surplus for Institute for Regulatory Policy Studies, with Adrienne Ohler, Fiscal Year 2011, \$13,562.

Corporate Funding for Institute for Regulatory Policy Studies, Alliance Pipeline (\$7,500); Aqua Illinois (\$7,500); AT&T (\$7,500); Commonwealth Edison (\$7,500); Constellation NewEnergy (\$7,500); Illinois American Water (\$7,500) ITC Holdings (\$7,500); Midwest Generation (\$7,500); MidWest ISO (\$7,500); NICOR Energy (\$7,500); People Gas Light and Coke (\$7,500); PJM Interconnect (\$7,500); Fiscal Year 2011, \$90,000 total.

Corporate Funding for Center for Renewable Energy, Calendar Year 2010, \$50,000.

Corporate Funding for Illinois Wind Working Group, Calendar Year 2010, \$49,000.

## External Funding (continued)

Corporate Funding for Institute for Regulatory Policy Studies, AARP (\$1,500), Alliance Pipeline (\$2,500), Ameren (\$5,000); Citizens Utility Board (\$5,000); Commonwealth Edison (\$5,000); Constellation NewEnergy (\$5,000); DTE Energy (\$5,000); MidAmerican Energy (\$5,000); Midwest Generation (\$5,000); MidWest ISO (\$5,000); NICOR Energy (\$5,000); Peabody Energy (\$2,500), People Gas Light and Coke (\$5,000); PJM Interconnect (\$5,000); SBC (\$5,000); Verizon (\$5,000); Fiscal Year 2006, \$71,500 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Fiscal Year 2005, \$12,916.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); Citizens Utility Board (\$5,000); Commonwealth Edison (\$5,000); Constellation NewEnergy (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); Midwest Generation (\$5,000); MidWest ISO (\$5,000); NICOR Energy (\$5,000); People Gas Light and Coke (\$5,000); PJM Interconnect (\$5,000); SBC (\$2,500); Verizon (\$2,500); Fiscal Year 2005, \$60,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Fiscal Year 2004, \$17,515.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); Commonwealth Edison (\$5,000); Constellation NewEnergy (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); Midwest Generation (\$5,000); NICOR Energy (\$5,000); People Gas Light and Coke (\$5,000); PJM Interconnect (\$5,000); Fiscal Year 2004, \$45,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Fiscal Year 2003, \$8,300.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); AT&T (\$2,500); Commonwealth Edison (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); NICOR Energy (\$5,000); People Gas Light and Coke (\$5,000); Fiscal Year 2003, \$32,500 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Calendar Year 2002, \$15,700.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$2,500); AT&T (\$5,000); Commonwealth Edison (\$2,500); Illinois Power (\$2,500); MidAmerican Energy (\$2,500); NICOR Energy (\$2,500); People Gas Light and Coke (\$2,500); Calendar Year 2002, \$17,500 total.

Corporate Funding for International Communications Forecasting Conference, National Economic Research Associates (\$10,000); Taylor Nelson Sofres Telecoms (\$10,000); Calendar Year 2002, \$20,000 total

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); AT&T (\$5,000); Commonwealth Edison (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); NICOR Energy (\$5,000); People Gas Light and Coke (\$5,000); Calendar Year 2001, \$35,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Calendar Year 2001, \$19,400.

## External Funding (continued)

Corporate Funding for International Communications Forecasting Conference, National Economic Research Associates (\$10,000); Taylor Nelson Sofres Telecoms (\$10,000); SAS Institute (\$10,000); Calendar Year 2001, \$30,000 total.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); AT&T (\$5,000); Commonwealth Edison (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); NICOR Energy (\$5,000); People Gas Light and Coke (\$5,000); Calendar Year 2000, \$35,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Calendar Year 2000, \$20,270.

Corporate Funding for International Communications Forecasting Conference, National Economic Research Associates (\$10,000); Taylor Nelson Sofres Telecoms (\$10,000); Calendar Year 2000, \$20,000 total.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); AT&T (\$5,000); Commonwealth Edison (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); NICOR Energy (\$5,000); People Gas Light and Coke (\$5,000); Calendar Year 1999, \$35,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Calendar Year 1999, \$10,520.

Corporate Funding for International Communications Forecasting Conference, National Economic Research Associates (\$10,000); PNR Associates (\$10,000); Calendar Year 1999, \$20,000 total.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); CILCO (\$5,000); Commonwealth Edison (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); People Gas Light and Coke (\$5,000); Calendar Year 1998, \$30,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Calendar Year 1998, \$44,334.

Corporate Funding for International Communications Forecasting Conference, National Economic Research Associates (\$10,000); PNR Associates (\$10,000); Calendar Year 1998, \$20,000 total.

Corporate Funding for Institute for Regulatory Policy Studies, with L. Dean Hiebert, AmerenCIPS (\$5,000); CILCO (\$5,000); Commonwealth Edison (\$5,000); Illinois Power (\$5,000); MidAmerican Energy (\$5,000); People Gas Light and Coke (\$5,000); Calendar Year 1997, \$30,000 total.

Workshop Surplus for Institute for Regulatory Policy Studies, with L. Dean Hiebert, Calendar Year 1997, \$19,717.

**Total External Funding: \$2,492,397**



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