APPENDIX V – ECONOMIC IMPACT ANALYSIS

Economic Impact Analysis for the Panther Grove II Wind Project

August 2024

Enbridge is developing the Panther Grove II Wind Project in Livingston County, Illinois. The Panther Grove II Wind Project consists of an estimated 468 megawatts ("MW") of capacity of wind turbines and the associated access roads, transmission and communication equipment, storage areas, and control facilities. The total Project represents an investment of more than $1 billion. The total development is anticipated to result in the following:

JOBS

- 369 new local jobs during construction for Livingston County
- 1,607 new local jobs during construction for the State of Illinois
- 27.3 new local long-term jobs for Livingston County
- 68.7 new local long-term jobs for the State of Illinois

EARNINGS

- Over $42.2 million in new local earnings during construction for Livingston County
- Over $184 million in new local earnings during construction for the State of Illinois
- Over $2.1 million in new local long-term earnings for Livingston County annually
- Over $5.6 million in new local long-term earnings for the State of Illinois annually

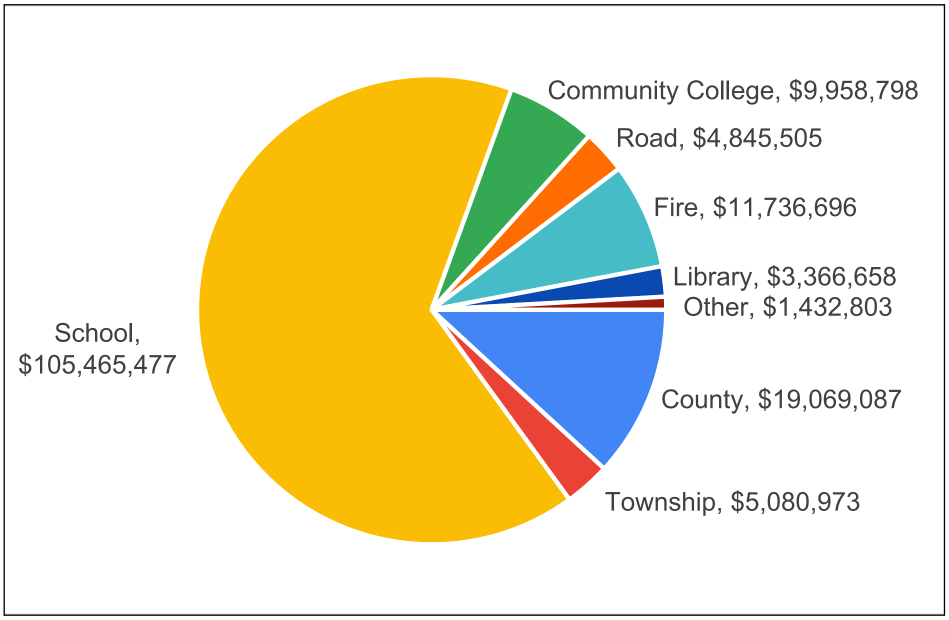
OUTPUT

- Over $81.4 million in new local output during construction for Livingston County
- Over $370 million in new local output during construction for the State of Illinois
- Over $10.0 million in new local long-term output for Livingston County annually
- Over $20.4 million in new local long-term output for the State of Illinois annually

PROPERTY TAXES

- Over $160 million in property taxes in total for all taxing districts over the life of the Project

Total Property Taxes Paid by the Panther Grove II Wind Project



TOTALS

Total Employment Impact from the Panther Grove II Wind Project

	Livingston County Jobs	State of Illinois Jobs
Construction		
Direct Impacts	152	431
Indirect Impacts	175	721
Induced Impacts	42	455
Local Jobs during Construction	369	1607
Operations (Annual/Ongoing)		
Onsite Direct Impacts	11.8	11.8
Indirect Impacts	6.8	24.6
Induced Impacts	8.7	32.3
Local Long-Term Jobs	27.3	68.7

Total Earnings Impact from the Panther Grove II Wind Project

	Livingston County	State of Illinois
Construction		
Direct Impacts	$29,844,259	$91,737,187
Indirect Impacts	$10,059,914	$58,738,455
Induced Impacts	$2,309,179	$33,938,639
Local Earnings during Construction	$42,213,352	$184,414,281
Operations (Annual/Ongoing)		
Onsite Direct Impacts	$1,274,560	$1,274,560
Indirect Impacts	$403,567	$1,945,537
Induced Impacts	$482,861	$2,407,928
Local Long-Term Earnings	$2,160,988	$5,628,025

Total Output Impact from the Panther Grove II Wind Project

	Livingston County	State of Illinois
Construction		
Direct Impacts	$31,144,036	$93,325,613
Indirect Impacts	$42,797,221	$179,920,431
Induced Impacts	$7,498,523	$97,206,527
Local Output during Construction	$81,439,780	$370,452,571
Operations (Annual/Ongoing)		
Onsite Direct Impacts	$1,274,560	$1,274,560
Indirect Impacts	$7,204,310	$12,323,439
Induced Impacts	$1,567,146	$6,895,876
Local Long-Term Output	$10,046,016	$20,493,875

Our property tax analysis was based on current estimates for the Project and distributed across property tax classes using industry standard assumptions and average tax rates for the county. All tax rates are assumed to stay constant, and the Project is assumed to be decommissioned in 30 years. No comprehensive tax payment was calculated, and these calculations are only to be used to illustrate the potential economic impact of the Project.

Total Property Taxes Paid by the Panther Grove II Wind Project

Year	Total Property Taxes
2027	$7,963,260
2028	$7,822,852
2029	$7,671,577
2030	$7,509,007
2031	$7,334,695
2032	$7,148,185
2033	$6,949,000
2034	$6,736,654
2035	$6,510,639
2036	$6,270,435
2037	$6,015,502
2038	$5,745,286
2039	$5,459,212
2040	$5,156,687
2041	$4,837,102
2042	$4,499,824
2043	$4,144,203
2044	$3,769,567
2045	$3,616,310
2046	$3,700,570
2047	$3,786,794
2048	$3,875,026
2049	$3,965,314
2050	$4,057,706
2051	$4,152,250
2052	$4,248,998
2053	$4,347,999
2054	$4,449,308
2055	$4,552,977
2056	$4,659,061
TOTAL	$160,955,998
AVG ANNUAL	$5,365,200

815-905-2750
2705 Kolby Court
Bloomington, IL 61704

strategiceconomic.com

Strategic Economic Research, LLC

ECONOMIC IMPACT ANALYSIS FOR THE PANTHER GROVE II WIND PROJECT

August 2024

Dr. David G. Loomis,
Bryan Loomis, and
Chris Thankan

Strategic Economic Research, LLC
strategiceconomic.com
815-905-2750

About the Authors

Dr. David G. Loomis, PhD

Professor Emeritus of Economics, Illinois State University
Co-Founder of the Center for Renewable Energy
President of Strategic Economic Research, LLC

Dr. David G. Loomis is Professor Emeritus of Economics at Illinois State University and Co-Founder of the Center for Renewable Energy. He has over 20 years of experience in the renewable energy field. He has served as a consultant for 43 renewable energy development companies. 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 40 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.

Bryan Loomis, MBA

Vice President of Strategic Economic Research, LLC

Bryan Loomis has been conducting economic impact, property tax, and land use analyses at Strategic Economic Research since 2019. He has performed or overseen over 100 wind and solar analyses, and has also provided expert testimony for permitting hearings and open houses in many states, including Colorado, Kansas, Indiana, Illinois, and Iowa. He improved the property tax analysis methodology at SER by researching various state taxing laws and implementing depreciation, taxing jurisdiction millage rates and other factors into the tax analysis tool. Before working with SER, Bryan ran a consulting agency, working with over 30 technology startups on growth and marketing. Bryan received his MBA from Belmont University in 2016.

Chris Thankan

Director of Economic Analysis

Christopher Thankan assists with the production of the economic impact studies including sourcing, analyzing, and graphing government data. He also performs economic and property tax analysis for wind, solar, and transmission projects. Chris has a Bachelor of Science degree in Sustainable & Renewable Energy and minored in Economics.

Strategic Economic Research, LLC (SER) provides economic consulting for renewable energy projects across the U.S. We have produced over 400 economic impact reports in 32 states. Research Associates who performed work on this project include Paige Afram, Amanda Battaglia, Drew Kagel, Sawyer Keithley, Clara Lewis, Ethan Loomis, Hannah Loomis, Nita Loomis, Mandi Mitchell, Russell Piontek, Tim Roberts, Rachel Swanson, Ashley Thompson, David Thompson, and Cedric Volkmer.

Table of Contents

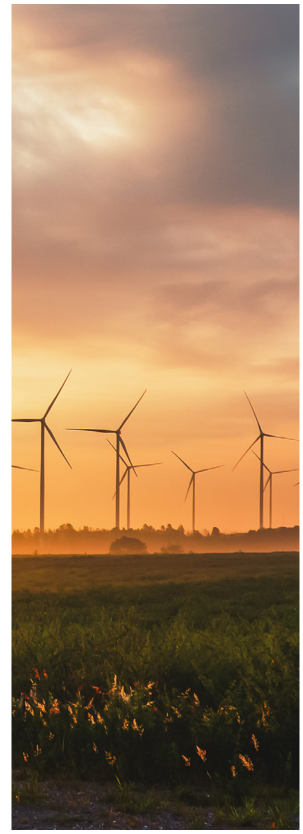


Table of Contents - Figures & Tables

I. Executive Summary

The Panther Grove II Wind Project is being developed in Livingston County, Illinois. The purpose of this report is to evaluate the economic impact of this Project on Livingston County and the State of Illinois. The basis of this analysis is to study the direct, indirect, and induced impacts on job creation, wages, and total economic output.

The Panther Grove II Wind Project consists of approximately 468 megawatts ("MW") of capacity of wind turbines and the associated access roads, transmission and communication equipment, storage areas, and control facilities (the "Project"). For purposes of this report, a total name plate capacity of 468 MW in Livingston County was assumed. The Project represents an investment of over $1 billion in Livingston County. The total development is anticipated to result in the following:

Jobs

- 369 new jobs during construction for Livingston County
- 1,607 new jobs during construction for the State of Illinois
- 27.3 new long-term jobs for Livingston County
- 68.7 new long-term jobs for the State of Illinois

Earnings

- Over $42.2 million in new earnings during construction for Livingston County
- Over $184 million in new earnings during construction for the State of Illinois
- Over $2.1 million in new long-term earnings for Livingston County annually
- Over $5.6 million in new long-term earnings for the State of Illinois annually

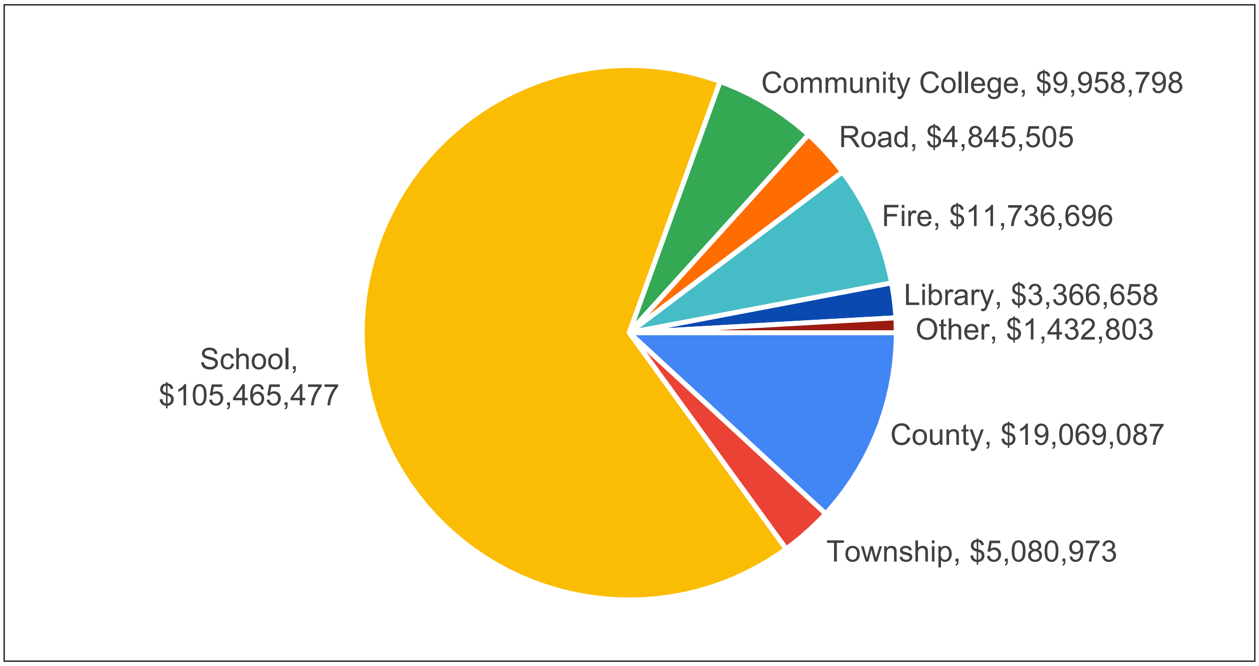
Output - the value of production in the state or local economy. It is an equivalent measure to the Gross Domestic Product.

- Over $81.4 million in new output during construction for Livingston County
- Over $370 million in new output during construction for the State of Illinois
- Over $10.0 million in new long-term output for Livingston County annually
- Over $20.4 million in new long-term output for the State of Illinois annually

Tax Benefits

- Over $105 million in total school district property taxes over the life of the Project
- Over $19.0 million in total county property taxes for Livingston County over the life of the Project
- Over $160 million in property taxes in total for all taxing districts over the life of the Project

Figure 1 – Total Property Taxes Paid by the Panther Grove II Wind Project



Strategic Economic Research, LLC

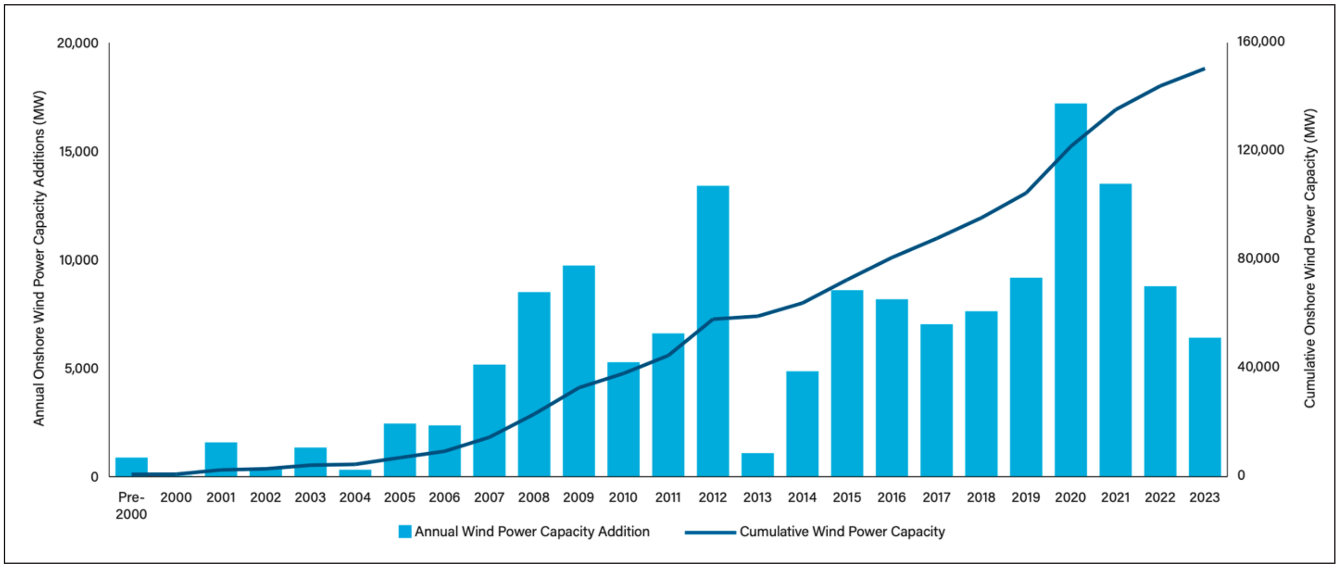
II. Wind Industry Growth and Economic Development

a. United States Wind Industry Growth

The United States wind industry grew at a rapid pace from 2006-2020, pausing only in 2013 due to federal policy uncertainty. In 2020, the U.S. set a record of 16,913 MW far surpassing the previous annual peak of 13,131 MW of wind power installed in 2012 (American Clean Power (ACP), 2021). The total wind capacity installed in 2021 was 13,400 MW (ACP, 2022). In 2022, there was a total capacity of 8,511 MW installed which is about equal to the 2015-2019 annual installation amounts (ACP, 2023).

The total amount of wind capacity in the U.S. by the end of 2023 was 150,455 MW (ACP, 2023). China is the global leader with 403,325 MW of installed capacity, with Germany in third place with 61,139 MW of installed capacity (2023 figures with the United States in second place) (GWEC, 2024). Figure 2 shows the growth in installed annual capacity and cumulative capacity in the U.S., and Figure 3 shows the state-by-state breakdown of installed capacity by June 2024.

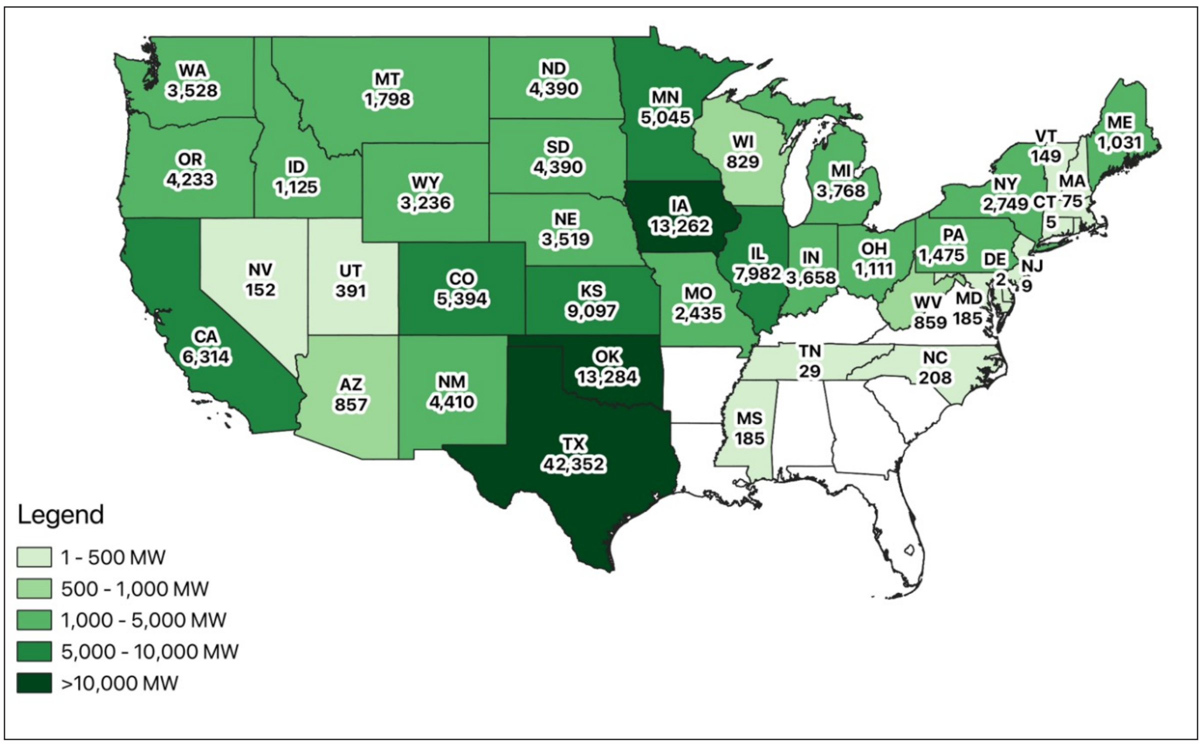
Figure 2 – United States Annual and Cumulative Wind Power Capacity Growth



Source: ACP, Clean Power Market Report 2023

Several factors have spurred the continued growth of wind energy in recent years. First, new technology and rigorous competition among turbine manufacturers lowered the cost of wind turbines. Second, larger capacity wind turbines and higher hub heights produced more output and lowered the cost of wind energy production. Finally, several large corporate buyers increased the demand for wind energy beyond the traditional electric utility market.

Figure 3 – Total Wind Capacity by State



Source: American Clean Power Database, Q2 2024, Authors' Calculations

b. Illinois Wind Industry Growth

Table 1 - Illinois Wind Projects

Wind Farm	Capacity (MW)	Year Online
Alta Farms II	200.5	2023
Bennington	93.06	2021
Big Sky Wind Facility	250.3	2011
Bishop Hill	424.48	2012
Blooming Grove	260.92	2020
Bright Stalk Wind Farm (Lexington Chenoa)	205.2	2019
California Ridge	217.08	2012
Camp Grove	150	2007
Cardinal Point	150	2020
Crescent Ridge	61	2005
EcoGrove	100.5	2009
Ford Ridge	120.4	2022
Glacier Sands	355.9	2021
Grand Ridge	210	2008
Green River	194.25	2019
GSG Wind Farm	88.4	2023
Harvest Ridge Wind Farm (Broadlands)	199.8	2020
HillTopper	185	2018
Hoopeston Wind	98	2015
Kelly Creek	184	2016
Lee/DeKalb	217.5	2009
Lincoln Land	301.74	2021
Lone Tree	88.1	2020
Mendota Hills Wind Farm	76.125	2019
Midland Wind	105.5	2023
Minonk	200	2012
Otter Creek	158.2	2020
Pilot Hill	175.1	2015
Pioneer Trail Wind Farm	150.4	2011
Providence Heights Wind Farm	72	2008
Radford's Run	305.8	2017
Rail Splitter	100.5	2009
Sapphire Sky	259.8	2023
Settlers Trail Wind Farm	150.4	2011
Shady Oaks	217.7	2012
Streator Cayuga Ridge Wind	300	2010
Sugar Creek	202	2020
Top Crop Wind Farm	300	2009
Twin Groves	396	2007
Walnut Ridge	212	2018
White Oak Energy Center	150	2011
Whitney Hill	66.12	2019

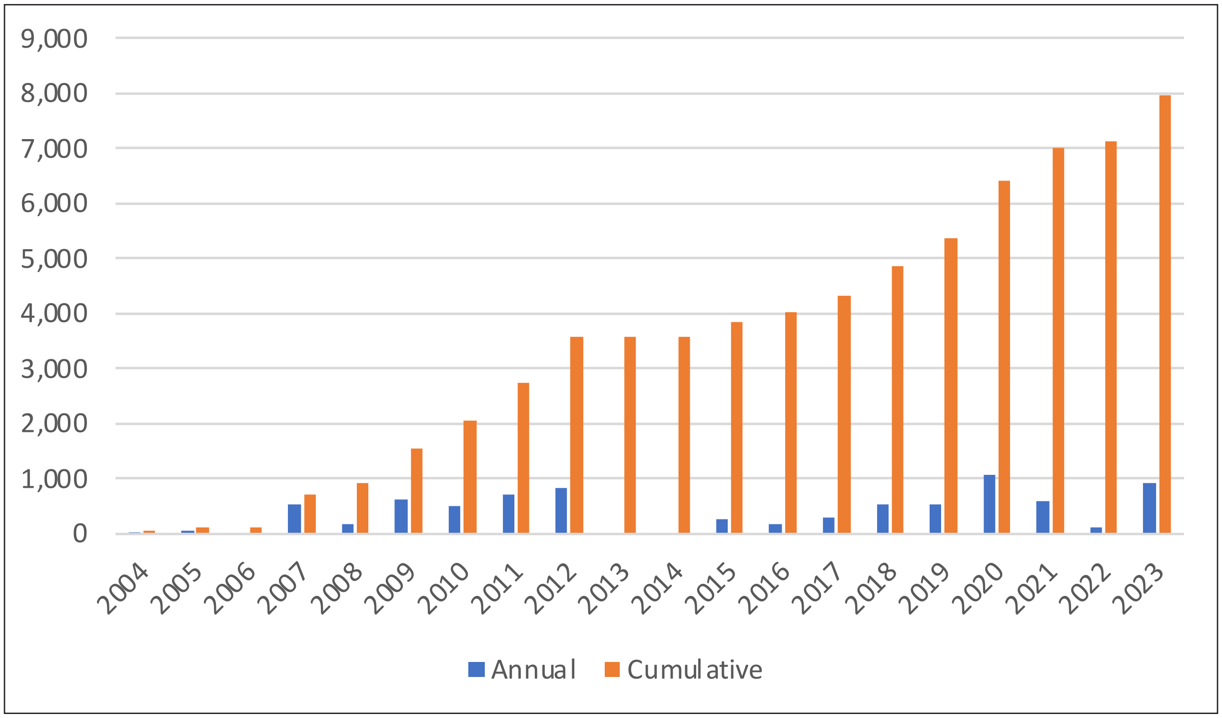
Illinois is a national leader in the wind energy industry (American Clean Power, 2024). As of March 2024, Illinois is ranked sixth in the United States in existing wind, solar, and energy storage capacity with over 9,400 MW (ACP, 2024).

Table 1 has a list of the operational wind farms in Illinois through 2023 (some small projects below 50 MW were omitted from the table). The year-by-year and cumulative growth in Illinois' wind energy capacity is shown in Figure 4. In 2012, Illinois had eight projects completed with an annual total installed capacity of 823.335 MW. Growth exploded in 2020 with six projects completed with the largest total annual installed capacity of 1,059.02 MW. In 2023, Illinois had six projects completed with an annual total installed capacity of 933.4.

The Energy Information Administration (EIA) calculated the number of megawatt-hours generated from different energy sources in 2023. As shown in Figure 5, the greatest percentage of electricity generated in Illinois came from nuclear energy with 54.9% followed by natural gas with 15.9% and coal with 15.3%. Approximately 12.4% of the total electricity power generated in Illinois came from wind in 2023.

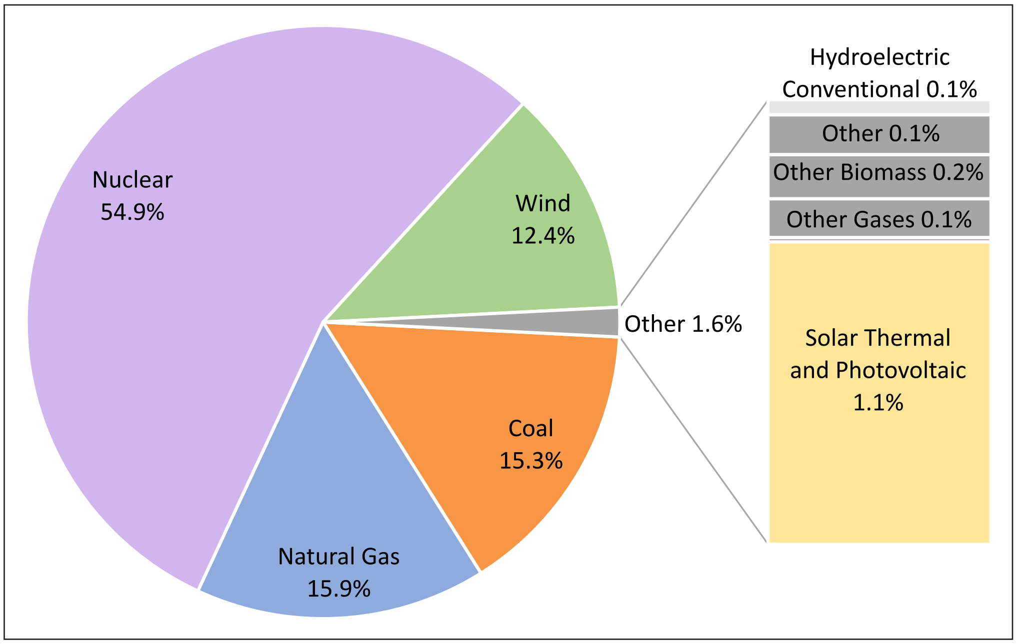
The U.S. Department of Energy sponsors the U.S. Energy and Employment Report each year. Electric Power Generation covers all utility and non-utility employment across electric generating technologies, including fossil fuels, nuclear, and renewable technologies. It also includes employees engaged in facility construction, turbine and other generation equipment manufacturing, operations and maintenance, and wholesale parts distribution for all electric generation technologies. According to Figure 6, employment in Illinois in the wind energy industry (9,285) is much larger than solar energy generation (6,579), natural gas generation (4,340), and nuclear electricity energy generation (4,099).

Figure 4 – Installed Capacity of Illinois Wind Projects



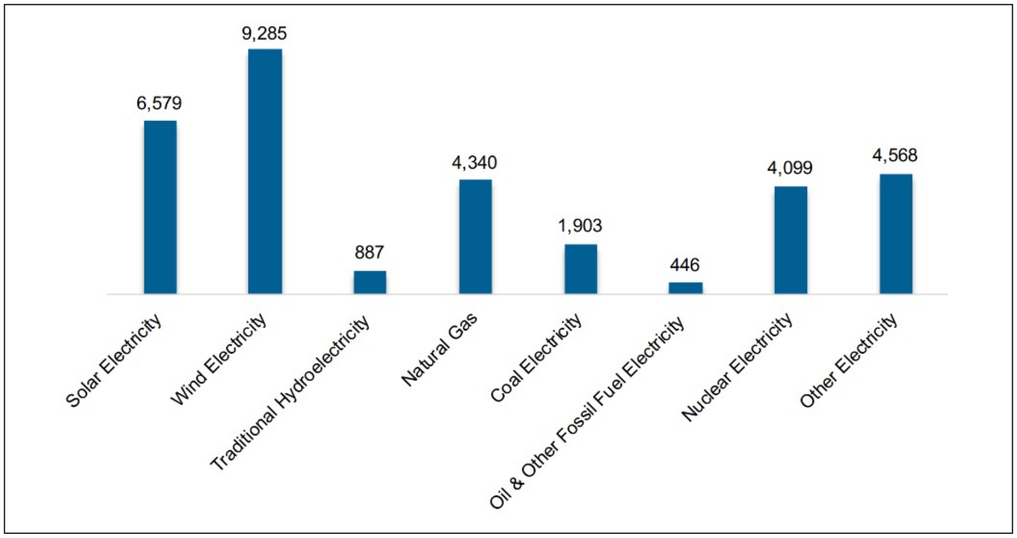
Source: American Clean Power, July 2024, Illinois

Figure 5 – Electric Generation by Fuel Type for Illinois in 2023



Source: U.S. Energy Information Association (EIA): Illinois, 2023

Figure 6 - Electric Generation Employment by Technology



Source: U.S. Energy and Employment Report 2023: Illinois

c. Economic Benefits of Wind Farms

Wind farms create numerous and significant economic benefits that continue to last for decades. Wind farms create job opportunities in the local area during both the short-term construction phase and the long-term operational phase. Short-term construction jobs include both workers at the wind farm site and jobs created along the supply chain. Long-term operational jobs include wind turbine technicians, supervisors and supply chain jobs.

Wind developers typically lease the land for the turbines from local landowners without materially affecting ongoing agricultural uses. Only a small portion of the total project footprint is used for the turbines, access roads, feeder lines and substations. For most wind projects, it is anticipated that approximately 1-2% of the total leased land will contain facilities. Each turbine and the associated access road will use approximately half an acre to one acre of farmland. Lease payments made to landowners provide a reliable source of long-term income to offset the fluctuating prices received from crops or the impact of weather events on production. Landowners then have additional funds to make purchases in the local economy and elsewhere.

Wind projects enhance the equalized assessed value of property within the county. Typically, wind developers pay taxes based on that improved value unless preempted by law or mutual agreement. Wind farms strengthen the local tax base helping to improve county services, schools, police and fire departments and fund infrastructure improvements, such as public roads.

Numerous studies have quantified the economic benefits across the United States. The National Renewable Energy Laboratory has produced economic impact reports for the State of Arizona (NREL, 2008a), State of Idaho (NREL, 2008b), State of Indiana (NREL, 2014), State of Iowa (NREL, 2013), State of Maine (NREL, 2008c), State of Montana (NREL, 2008d), State of New Mexico (NREL, 2008e), State of Nevada (NREL, 2008f), State of North Carolina (NREL, 2009), State of Pennsylvania (NREL, 2008g), State of South Dakota (NREL, 2008h), State of Utah (NREL 2008i), State of West Virginia (NREL, 2008j), and the State of Wisconsin (NREL, 2008k).

The Center for Renewable Energy at Illinois State University released a report examining the economic impact of Illinois' wind farms and the economic impact of the related wind turbine supply chain in Illinois (see https://renewableenergy.illinoisstate.edu/wind/pubs.php). According to the Economic Impact: Wind Energy Development in Illinois (June 2016), "the 25 largest wind farms in Illinois:

- Created approximately 20,173 full-time equivalent jobs during construction periods
- Support approximately 869 permanent jobs in rural Illinois areas
- Support local economies by generating $30.4 million in annual property taxes
- Generate $13.8 million annually in extra income for Illinois landowners who lease their land to the wind farm developer
- Will generate a total economic benefit of $6.4 billion over the life of the projects."

Loomis (2020) estimates the economic impact of wind and solar energy in Illinois resulting from the proposed Path to 100 legislation. The legislation is expected to result in constructing over 15,000 MW of wind and solar over the next 15 years yielding over 53,000 jobs during construction and over 3,200 jobs during operations. The analysis also looks at the 39 largest existing wind farms in Illinois and finds that they supported 29,295 jobs during construction and 1,307 jobs during operations for a total economic benefit of $10.2 billion over the life of the projects. In addition, a review of historical property tax records finds that existing utility-scale wind and solar projects paid over $305 million in property taxes statewide since 2003 and over $41.4 million in 2019 alone.

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.

More recently, Brunner and Schwegman (2022) examined the economic impacts of wind installations across the United States from 1995 to 2018. They found that wind energy projects resulted in "economically meaningful increases in county GDP per-capita, income per-capita, median household income, and median home values" (p. 165).

Finally, Gilbert et. al (2024) studied the employment impact of wind energy on a 20-mile radius around each turbine using individual employment data and discovered "economically and statistically significant employment and earnings gain from wind development within 20 miles of a worker's residence" (p. 31). Further, they find that county-level employment impacts like the ones in this report tend to be underestimated when examined using individual data.

III. Project Description and Location

a. Panther Grove Wind II Project

The Panther Grove II Wind Project is being developed in Livingston County, Illinois. The Project consists of approximately 468 megawatts ("MW") of capacity of wind turbines and the associated access roads, transmission and communication equipment, storage areas, and control facilities. The Project represents an investment of over $1 billion.

b. Livingston County, Illinois

Livingston County is located in the eastern part of Illinois (see Figure 7). It has a total area of 1,046 square miles, and the U.S. Census states that the 2023 population was 35,320 with 15,949 housing units. The county has a population density of 33.8 (persons per square mile) compared to 225.7 for the State of Illinois (2023). Median household income in the county was $68,175 in 2022 (U.S. Census Bureau, 2024).

Figure 7 – Location of Livingston County, Illinois

i. Economic and Demographic Statistics

As shown in Table 2, the largest industries in the county are "Manufacturing" followed by "Administrative Government," "Agriculture, Forestry, Fishing and Hunting," and "Retail Trade." The data for Table 2 come from IMPLAN covering the year 2022 (the latest year available).

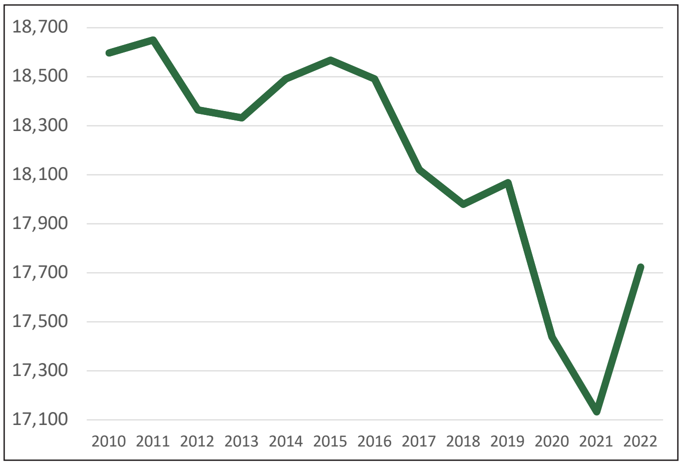
Table 2 provides the most recent snapshot of total employment but does not examine the historical trends within the county. Figure 8 shows employment from 2010 to 2022. Total employment in Livingston County was at its highest at 18,651 in 2011 and its lowest at 17,133 in 2021 (BEA, 2024).

Table 2 - Employment by Industry in Livingston County

Industry	Number	Percent
Manufacturing	2,516	14.3%
Administrative Government	2,354	13.4%
Agriculture, Forestry, Fishing and Hunting	1,822	10.4%
Retail Trade	1,705	9.7%
Health Care and Social Assistance	1,559	8.9%
Transportation and Warehousing	1,250	7.1%
Construction	1,017	5.8%
Finance and Insurance	885	5.0%
Accommodation and Food Services	867	4.9%
Wholesale Trade	849	4.8%
Other Services (except Public Administration)	655	3.7%
Administrative and Support and Waste Management and Remediation Services	522	3.0%
Professional, Scientific, and Technical Services	508	2.9%
Real Estate and Rental and Leasing	429	2.4%
Utilities	159	0.9%
Arts, Entertainment, and Recreation	144	0.8%
Educational Services	97	0.6%
Government Enterprises	90	0.5%
Information	64	0.4%
Mining, Quarrying, and Oil and Gas Extraction	60	0.3%
Management of Companies and Enterprises	1	0.0%

Source: Impact Analysis for Planning (IMPLAN), County Employment by Industry, 2022

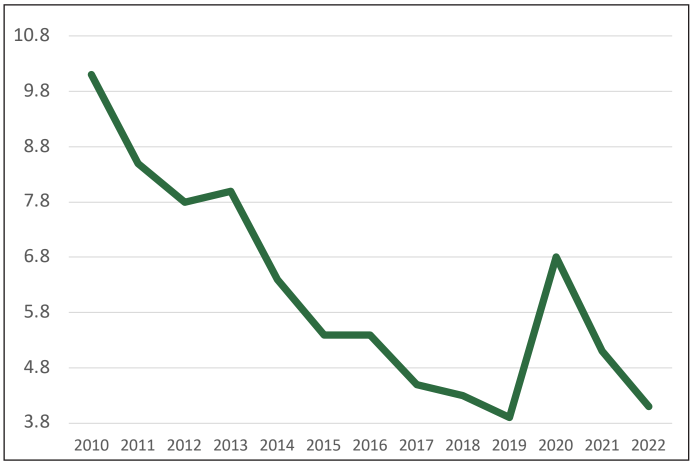
Figure 8 – Total Employment in Livingston County from 2010 to 2022



Source: Bureau of Economic Analysis, Regional Data, GDP and Personal Income, 2010-2022

The unemployment rate signifies the percentage of the labor force without employment in the county. Figure 9 shows the unemployment rates from 2010 to 2022. Unemployment in Livingston County was at its highest at 10.1% in 2010 and its lowest at 3.9% in 2019 (FRED, 2024). The unemployment rate spiked to 6.8% in 2020 but normalized to 4.1% in 2022.

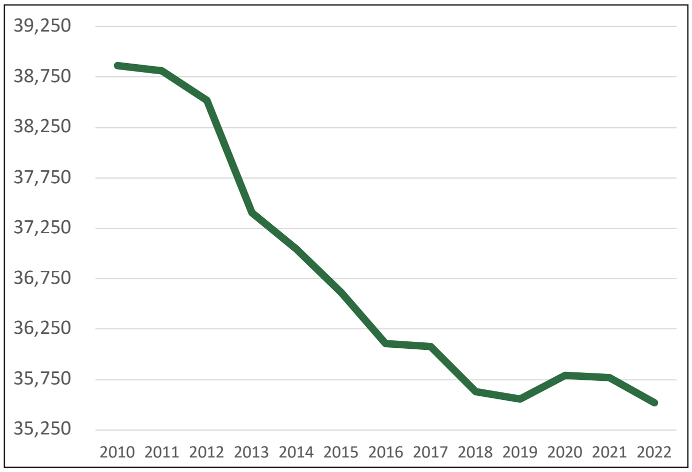
Figure 9 - Unemployment Rate in Livingston County from 2010 to 2022



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Unemployment Rates, 2010-2022

The overall population in the county has decreased steadily, as shown in Figure 10. Livingston County's population was 38,862 in 2010 and 35,517 in 2022, a loss of 3,345 people (FRED, 2024). The average annual population decrease over this time period was 279 people.

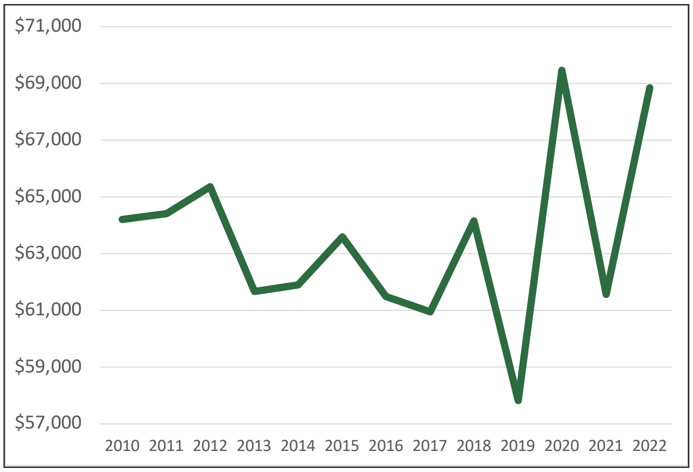
Figure 10 – Population in Livingston County from 2010 to 2022



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Population Estimates, 2010-2022

Household income has fluctuated in the county. Figure 11 shows the real median household income in Livingston County from 2010 to 2022. Using the national Consumer Price Index (CPI), the nominal median household income for each year was adjusted to 2022 dollars. Household income was at its lowest at $57,811 in 2019 and its highest at $69,476 in 2020 (FRED, 2024).

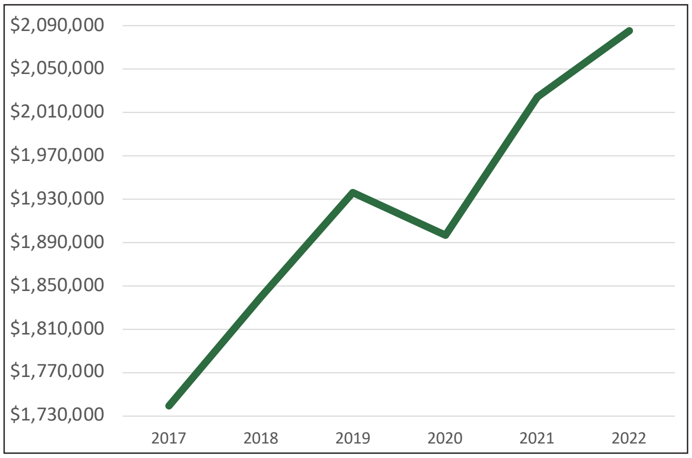
Figure 11 - Real Median Household Income in Livingston County from 2010 to 2022



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Estimate of Median Household Income, 2010-2022

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 Livingston County has increased since hitting a low in 2017, as shown in Figure 12 (FRED, 2024).

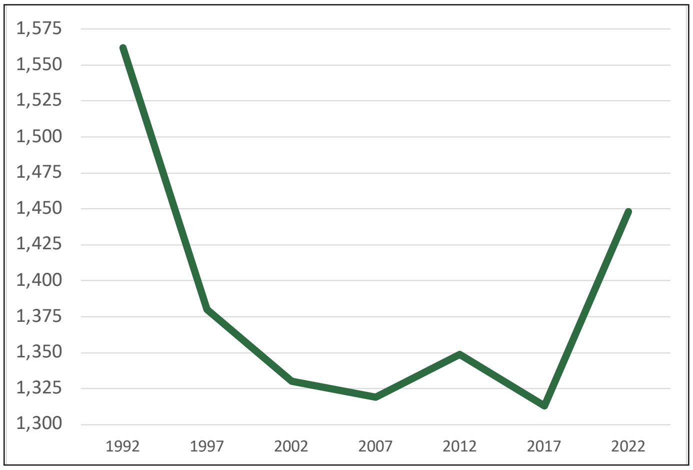
Figure 12 - Real Gross Domestic Product (GDP) in Livingston County from 2017 to 2022



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Real Gross Domestic Product, 2017-2022

The farming industry has fluctuated in Livingston County. As shown in Figure 13, the number of farms hit a high of 1,562 in 1992 and a low of 1,313 in 2017.

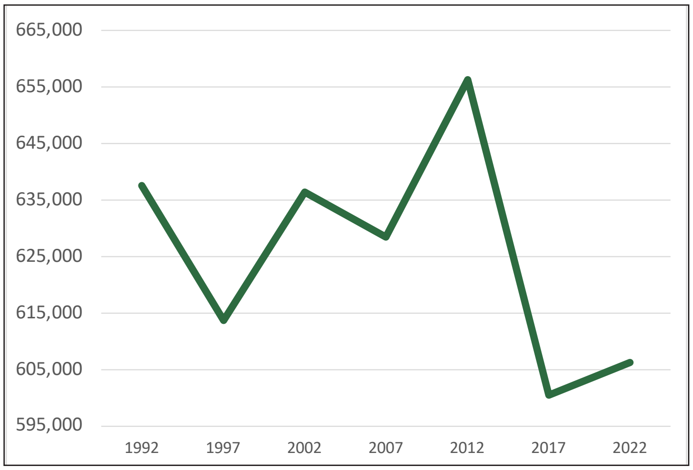
Figure 13 - Number of Farms in Livingston County from 1992 to 2022



Source: USDA National Agricultural Statistics Service, Census of Agriculture, 1992-2022

The amount of land in farms has fluctuated significantly. The county farmland hit a high of 656,275 acres in 2012 and a low of 600,533 acres in 2017, according to Figure 14.

Figure 14 - Land in Farms in Livingston County from 1992 to 2022



Source: USDA National Agricultural Statistics Service, Census of Agriculture, 1992-2022

IV. Methodology

The economic analysis of the wind power development presented here utilizes the National Renewable Energy Laboratory's (NREL's) latest Jobs and Economic Development Impacts (JEDI) Wind Energy Model (W6-28-19). NREL is the U.S. Department of Energy's primary national laboratory for renewable energy and energy efficiency research and development. The JEDI Wind Energy 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. Essentially, JEDI is an input-output model which takes into account the fact that the output of one industry can be used as an input for another. For example, when a wind farm developer purchases turbines to build a wind farm, those wind turbines are made of components such as fiberglass, aluminum, steel, copper, etc. Therefore, purchases of wind turbines impact the demand for these components. In addition, when a wind farm developer purchases a wind turbine from a manufacturing facility, the manufacturer uses some of that money to pay employees, and then the employees spend that money on goods and services within their community. In essence, JEDI reveals how purchases of wind project materials not only benefit turbine manufacturers but also the local industries that supply the concrete, rebar, and other materials (Reategui et al., 2009). The JEDI model uses construction cost data, operating cost data, and data relating to the percentage of goods and services acquired in the state to calculate jobs, earnings, and economic activities that are associated with this information. The results are broken down into the construction period and the operation period of the wind project. Within each period, impacts are further divided into direct, turbine, and supply chain (indirect) and induced impacts.

The JEDI Model was developed in 2002 to demonstrate the economic benefits associated with developing wind farms in the United States. The model was developed 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. The JEDI model considers 14 aggregated industries that are impacted by the construction and operation of a wind farm: agriculture, construction, electrical equipment, fabricated metals, finance/insurance/real estate, government, machinery, mining, other manufacturing, other services, professional service, retail trade, transportation/communication/public utilities, and wholesale trade (Reategui, 2009). This study does not analyze net jobs. It analyzes the gross jobs that the new wind farm development supports.

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. Final demands are goods and services purchased for their ultimate use by the end user. Onsite construction-related services include engineering, design, and other professional services.

Direct impacts during operating years refer to the final demand changes that occur in the onsite spending for wind farm workers. Direct jobs consist primarily of onsite wind turbine technicians.

The initial spending on the construction and operation of the wind farm creates a second layer of impacts, referred to as "turbine and supply chain impacts" or "indirect impacts."

Indirect impacts during the construction period consist of the changes in inter-industry purchases resulting from the direct final demand changes and include construction spending on materials and wind farm equipment and other purchases of goods and offsite services. Essentially, these impacts result from "spending related to project development and on-site labor such as equipment costs (turbines, blades, towers, transportation), manufacturing of components and supply chain inputs, materials (transformer, electrical, HV line extension, HV substation and interconnection materials), and the supply chain of inputs required to produce these materials" (JEDI Support Team, 2023). Concrete that is used in turbine foundations increases the demand for gravel, sand, and cement. As a result of the expenditure for concrete, there is increased economic activity at quarries and cement factories, and these changes are indirect impacts. The accountant for the construction firm and the banker who finances the contractor are both considered indirect impacts. All supply chain component impacts/manufacturing-related activities are included under indirect impacts; therefore, the late-stage turbine assembly process, which includes gearbox assembly, blade production, and steel rolling, are all included under the construction period indirect impacts category.

Indirect impacts during operating years refer to the changes in inter-industry purchases resulting from the direct final demand changes. Essentially, these impacts result from "expenditures related to on-site labor, materials, and services needed to operate the wind farms (e.g., vehicles, site maintenance, fees, permits, licenses, utilities, insurance, fuel, tools and supplies, replacement parts/equipment); the supply chain of inputs required to produce these goods and services; and project revenues that flow to the local economy in the form of land lease revenue, property tax revenue, and revenue to equity investors" (JEDI Support Team, 2023). All land lease payments and property taxes show up in the operating-years portion of the results because these payments do not support the day-to-day operations and maintenance of the wind farm but instead are more of a latent effect that results from the wind farm being present.

Induced impacts during construction refer to the changes that occur in household spending as household income increases or decreases due to the direct and indirect effects of final demand changes. Included in this is local spending by employees working directly or indirectly on the wind farm project who receive their paychecks and then spend money in the community. Additional local jobs and economic activity are supported by these purchases of goods and services. Thus, for example, the increased economic activity at quarries and cement factories results in increased revenues for the affected firms and raises individual incomes. Individuals employed by these companies then spend more money in the local economy, e.g., as workers receive income, they may decide to purchase more expensive clothes or higher quality food along with other goods and services from local businesses. This increased economic activity may result from "construction workers who spend a portion of their income on lodging, groceries, clothing, medicine, a local movie theater, restaurant, or bowling alley;" or a "steel mill worker who provides the inputs for turbine production and spends his money in a similar fashion, thus supporting jobs and economic activities in different sectors of the economy" (JEDI Support Team, 2023).

Induced impacts during operating years refer to the changes that occur in household spending as household income increases or decreases as a result of the direct and indirect effects from final demand changes. Some examples include a "wind farm technician who spends income from working at the wind farm on buying a car, a house, groceries, gasoline, or movie tickets;" or a "worker at a hardware store who provides spare parts and materials needed at the wind farm and who spends money in a similar fashion, thus supporting jobs and economic activities in different sectors of the economy" (JEDI Support Team, 2023).

This methodology has been validated by a paper in peer-reviewed economics literature. In the article, "Ex Post Analysis of Economics Impacts from Wind Power Development in U. S. Counties," the authors conduct an ex post econometric analysis of the county-level economic development impacts of wind power installations from 2000 through 2008. They find an aggregate increase in county-level personal income and employment of approximately $11,000 and 0.5 jobs per megawatt of wind power capacity during that time which is consistent with the JEDI results at the county level (Brown, 2012).

V. Results

The results were derived from project cost estimates supplied by Pather Grove Wind II. Panther Grove Wind II and SER estimated the percentages of project materials and labor that will be coming from within Livingston County and the State of Illinois.

Two separate JEDI models were run to show the economic impact of the Project. The first JEDI model used the 2022 Livingston County multipliers from IMPLAN. The second JEDI model used the 2022 State of Illinois multipliers from IMPLAN and the same project costs. Because the multipliers and the local content percentage are different for the two models, the results are independent from one another. However, any local content coming from Livingston County obviously comes from the State of Illinois as well. Similarly, the State of Illinois multipliers will generally be larger than Livingston County multipliers, but some individual sectors of the economy could be stronger.

he output from these models is shown in Tables 3 to 5. Table 3 lists the total employment impact from the Project for Livingston County and the State of Illinois. Table 4 shows the impact on total earnings, and Table 5 contains the impact on total output. The results are divided into one-time construction impacts and ongoing annually recurring operations impacts that are expected to last for the full life of the Project which is estimated to be 30-40 years. Project Development and Onsite Labor Impacts correspond to direct impacts as defined in the methodology section. Turbine and Supply Chain Impacts are the indirect impacts during construction and Local Revenue and Supply Chain Impacts are indirect impacts during operations.

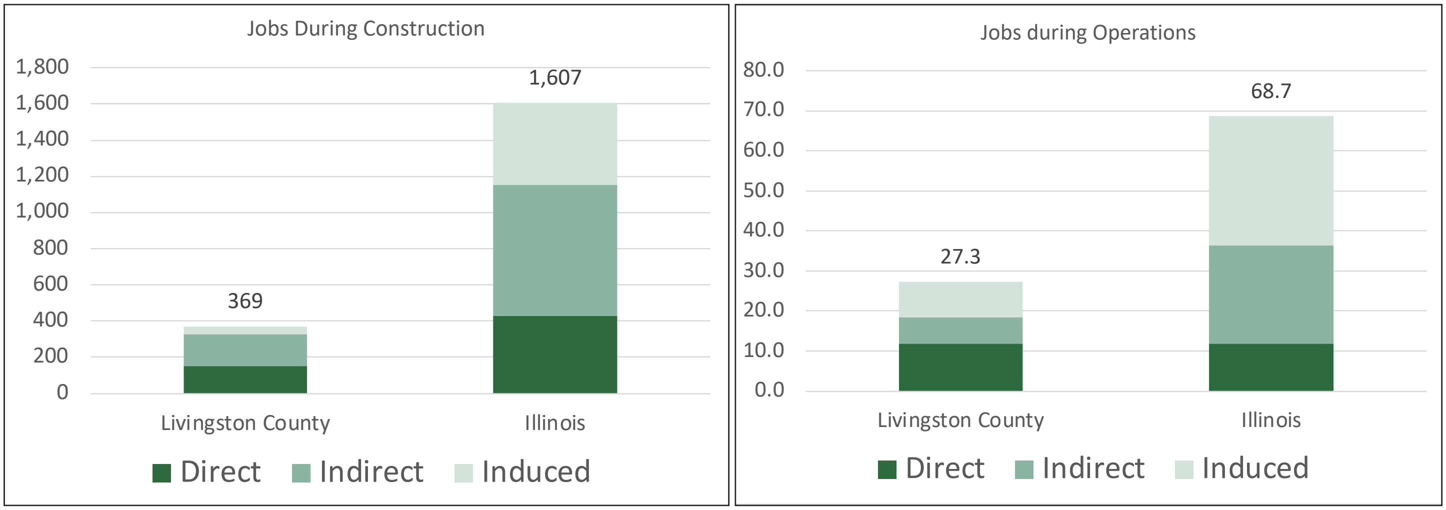
Table 3 – Total Employment Impact from the Panther Grove II Wind Project

	Livingston County Jobs	State of Illinois Jobs
Construction		
Project Development and Onsite Labor Impacts	152	431
Turbine and Supply Chain Impacts	175	721
Induced Impacts	42	455
New Local Jobs during Construction	369	1,607
Operations		
Onsite Labor Impacts	11.8	11.8
Local Revenue and Supply Chain Impacts	6.8	24.6
Induced Impacts	8.7	32.3
New Local Long-Term Jobs	27.3	68.7

The results from the JEDI model show significant employment impacts from the Panther Grove II Wind Project. Employment impacts can be broken down into several different components. Direct jobs created during the construction phase typically last anywhere from 6 months to over a year depending on the size of the project; however, the direct job numbers present in Table 3 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 152 new onsite jobs during construction in Livingston County, though the construction of the Project could actually involve hiring closer to 304 workers for 6 months.

As shown in Table 3, new local jobs created or retained during construction total 369 for Livingston County and 1,607 for the State of Illinois. New local long-term jobs created from the Project total 27.3 for Livingston County and 68.7 for the State of Illinois.

Figure 15 – Total Employment Impact for the Panther Grove II Wind Project



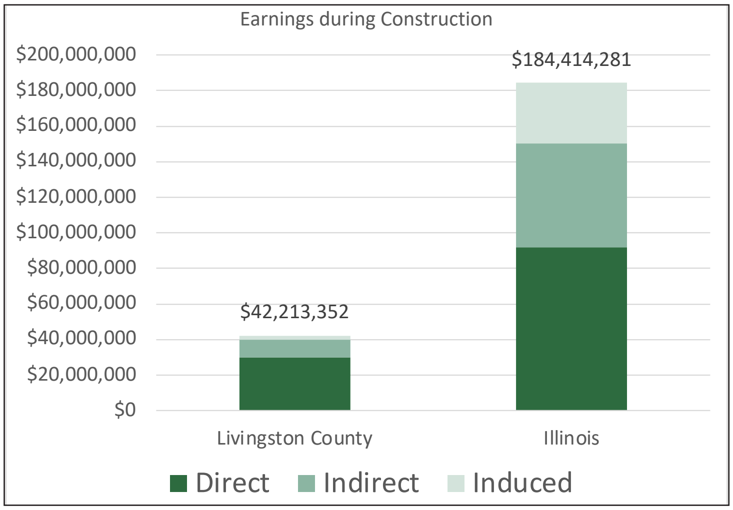
Direct jobs created during the operational phase last the life of the wind farm, typically 30-40 years. Direct construction jobs, and operations and maintenance jobs both require highly skilled workers in the fields of construction, management, and engineering. These well-paid professionals boost economic development in rural communities where new employment opportunities are welcome due to economic downturns.

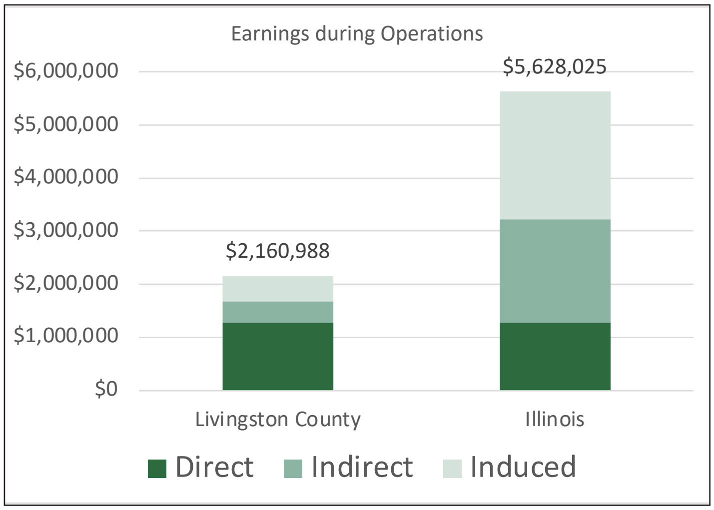
Accordingly, it is important to not just look at the number of jobs but also the earnings that they produce. The earnings impacts from the Project are shown in Table 4 and are categorized by construction impacts and operations impacts. The new local earnings during construction total over $42.2 million for Livingston County and over $184 million for the State of Illinois. The new local long-term earnings total over $2.1 million for Livingston County and over $5.6 million for the State of Illinois.

Table 4 – Total Earnings Impact from the Panther Grove II Wind Project

	Livingston County	State of Illinois
Construction		
Project Development and Onsite Earnings Impacts	$29,844,259	$91,737,187
Turbine and Supply Chain Impacts	$10,059,914	$58,738,455
Induced Impacts	$2,309,179	$33,938,639
New Local Earnings during Construction	$42,213,352	$184,414,281
Operations (Annual)		
Onsite Labor Impacts	$1,274,560	$1,274,560
Local Revenue and Supply Chain Impacts	$403,567	$1,945,537
Induced Impacts	$482,861	$2,407,928
New Local Long-Term Earnings	$2,160,988	$5,628,025

Figure 16 – Total Earnings Impact from the Panther Grove II Wind Project





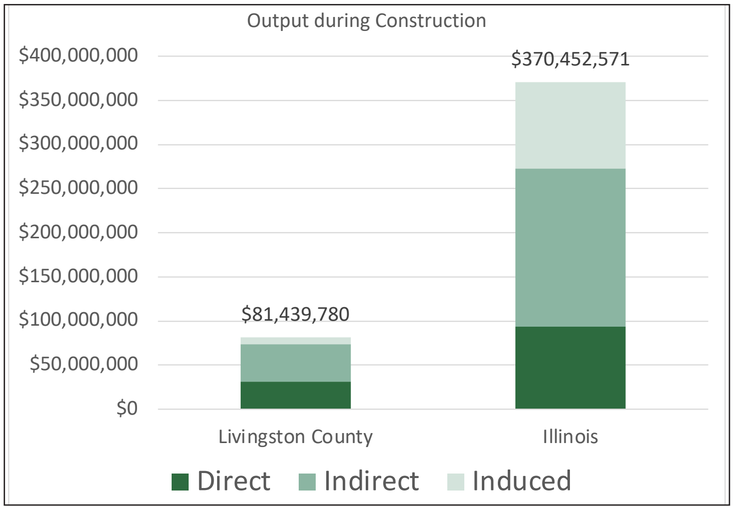
Output refers to economic activity or the value of production in the state or local economy. Economic output includes the earnings reported in Table 4 but also measures other factors such as landowner payments, property taxes, and other economic activity that is not earnings and benefits from employment. Local Revenue and Supply Chain Impacts include ongoing property taxes and are detailed in the next section.

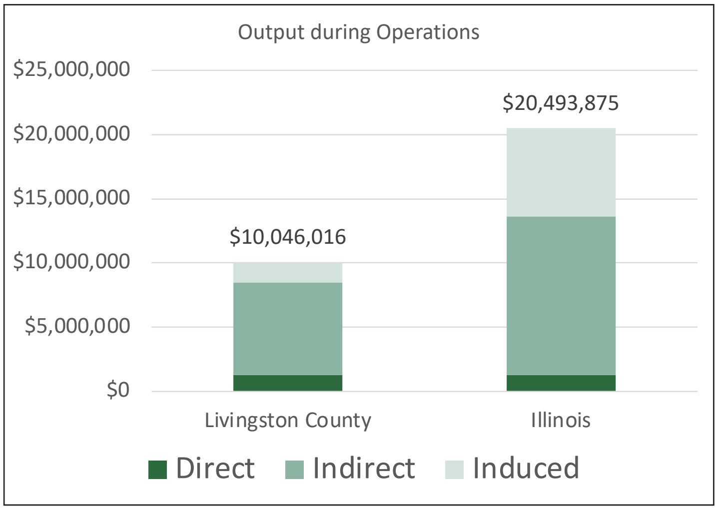
According to Table 5, the new local output during construction totals over $81.4 million for Livingston County and over $370 million for the State of Illinois. The new local long-term output totals over $10.0 million for Livingston County and over $20.4 million for the State of Illinois.

Table 5 – Total Output Impact from the Panther Grove II Wind Project

	Livingston County	State of Illinois
Construction		
Project Development and Onsite Jobs Impacts on Output	$31,144,036	$93,325,613
Turbine and Supply Chain Impacts	$42,797,221	$179,920,431
Induced Impacts	$7,498,523	$97,206,527
New Local Output during Construction	$81,439,780	$370,452,571
Operations (Annual)		
Onsite Labor Impacts	$1,274,560	$1,274,560
Local Revenue and Supply Chain Impacts	$7,204,310	$12,323,439
Induced Impacts	$1,567,146	$6,895,876
New Local Long-Term Output	$10,046,016	$20,493,875

Figure 17 – Total Output Impact from the Panther Grove II Wind Project





VI. Tax Benefits

Wind power 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, park districts, and road maintenance. According to state law (Public Act 095-0644), the fair cash value for a utility-scale wind turbine in Illinois is $360,000 per megawatt of capacity beginning in 2007 and is annually adjusted for inflation and depreciation. The inflation adjustment, as known as the Trending Factor, increases each year according to the Bureau of Labor Statistics' Consumer Price Index for all cities for all items. Depreciation is allowed at 4% per year up to a maximum total depreciation of 70% of the trended real property cost basis (calculated by taking the fair cash value of the turbine and multiplying by the Trending Factor). The property tax payments in this section may not reflect new spendable tax dollars to that taxing entity. In some cases, the total budget may be capped or have limits to yearly increases. If the budget cannot be increased to include all of the new tax revenue, the property tax rate for that entity will be lowered, resulting in lower taxes to all taxpayers. This lower tax rate benefits the whole community of taxpayers, and the total amount of lowered taxes is a measure of the community benefits that will result from the wind energy project. Thus, the calculated property tax revenue is a good measure of the community benefits even if all of the tax dollars are not spendable due to tax budget constraints.

Tables 6 to 10 detail the tax implications of the Panther Grove II Wind Project. There are several important assumptions built into the analysis in these tables.

- The analysis assumes that the valuation of the wind farm is the same as set forth in Public Act 095-0644.
- The tables assume future inflation is constant at 2.33% annually and the depreciation is 4% annually until it reaches the maximum of 70%.
- All tax rates are assumed to stay constant at their 2023 (2024 tax year) rates.
- The analysis assumes that the Project is placed in service on January 1st, 2027 at a fair cash value of $280 million according to Public Act 095-0644.
- It assumes that the Project is decommissioned in 30 years and pays no more taxes after that date.
- Since the exact placement of the turbines has not been finalized, the actual taxes paid could vary depending on the relative tax rates between districts. The percentage of turbines in each taxing jurisdiction was estimated based on the current project boundaries. If the project boundaries change or if the allocation of turbines is not proportional, the exact tax revenue could change.
- The names of the taxing bodies used in this section come from the county and state tax websites.
- The comprehensiveness and accuracy of the analysis below is dependent upon the assumptions listed above and used to calculate the property tax results. The analysis is to serve as a projection of property tax benefits to the local community and is not a guarantee of property tax revenue.
- If the inputs received from Panther Grove Wind II the laws surrounding renewable energy taxation in Illinois, or the tax rates in Livingston County change in a material way after the completion of this report, this analysis may no longer accurately reflect the property taxes to be paid by the Panther Grove II Wind Project.
- No comprehensive tax payment was calculated, and these calculations are only to be used to illustrate the economic impact of the Project.

Figure 18 - Percentages of Property Taxes Paid to Taxing Jurisdictions

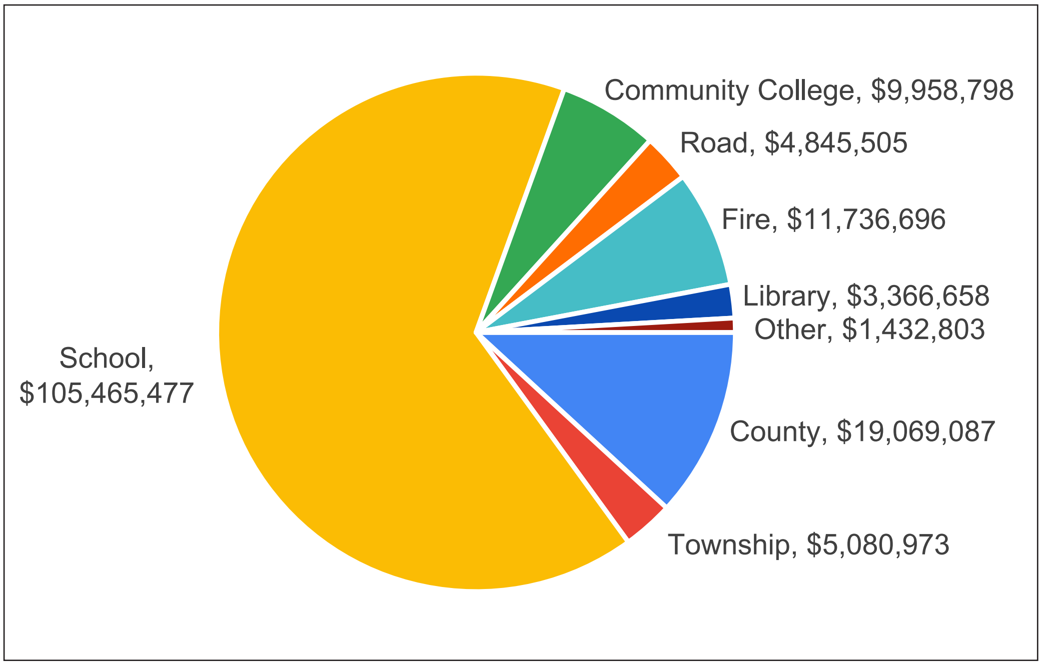


Table 6 – Total Property Taxes Paid by the Panther Grove II Wind Project

Year	Total Taxes Paid
2027	$7,963,260
2028	$7,822,852
2029	$7,671,577
2030	$7,509,007
2031	$7,334,695
2032	$7,148,185
2033	$6,949,000
2034	$6,736,654
2035	$6,510,639
2036	$6,270,435
2037	$6,015,502
2038	$5,745,286
2039	$5,459,212
2040	$5,156,687
2041	$4,837,102
2042	$4,499,824
2043	$4,144,203
2044	$3,769,567
2045	$3,616,310
2046	$3,700,570
2047	$3,786,794
2048	$3,875,026
2049	$3,965,314
2050	$4,057,706
2051	$4,152,250
2052	$4,248,998
2053	$4,347,999
2054	$4,449,308
2055	$4,552,977
2056	$4,659,061
TOTAL	$160,955,998
AVG ANNUAL	$5,365,200

As shown in Table 6, a conservative estimate of the total property taxes paid by the Project starts out at over $7.9 million and declines due to depreciation (and offset by the trending factor) until it reaches the maximum depreciation in 2045. After that, the Project is fully depreciated, and the trending factor causes the taxable value and taxes to increase. The expected total property taxes paid over the 30-year lifetime of the Project are over $160 million, and the average annual property taxes paid will be over $5.3 million.

Table 7 shows an estimate of the likely taxes paid to the following taxing bodies: Livingston County, Nebraska Township, Rooks Creek Township, Pike Township, and Waldo Township.

According to Table 7, the total amounts paid are over $19.0 million for Livingston County, over $883 thousand for Nebraska Township, over $372 thousand for Rooks Creek Township, over $959 thousand for Pike Township, and over $2.8 million for Waldo Township over the life of the Project.

Table 8 shows an estimate of the likely taxes paid to the following taxing bodies: Illinois Central College (ICC) Peoria 514, Heartland Community College 540, Nebraska Road District, Rooks Creek Road District, Pike Road District, and Waldo Road District.

According to Table 8, the total amounts paid are over $4.0 million for Illinois Central College Peoria 514, over $5.9 million for the Heartland Community College 540, over $986 thousand for the Nebraska Road District, over $377 thousand for the Rooks Road District, over $1.1 million for the Pike Road District, and over $2.3 million for the Waldo Road District over the life of the Project.

Table 9 shows an estimate of the likely taxes paid to the following taxing bodies: Flanagan Fire #F19, Gridley Fire G14, Chenoa Fire C10, Flanagan Park #1, Rooks Creek/Waldo/Pike.

According to Table 9, the total amounts paid are over $4.7 for Flanagan Fire #F19, over $6.0 million for Gridley Fire G14, over $1.0 million for Chenoa Fire C10, over $1.0 million for Flanagan Park #1, and over $388 thousand for Rooks Creek/Waldo/Pike over the life of the Project.

Table 7 – Tax Benefits from the Panther Grove II Wind Project for the County and Townships[1]

Year	Livingston County	Nebraska Township	Rooks Creek Township	Pike Township	Waldo Township
2027	$943,439	$43,695	$18,451	$47,449	$141,785
2028	$926,804	$42,925	$18,125	$46,612	$139,286
2029	$908,882	$42,095	$17,775	$45,711	$136,592
2030	$889,621	$41,203	$17,398	$44,742	$133,698
2031	$868,970	$40,246	$16,994	$43,703	$130,594
2032	$846,873	$39,223	$16,562	$42,592	$127,273
2033	$823,275	$38,130	$16,101	$41,405	$123,727
2034	$798,118	$36,965	$15,609	$40,140	$119,946
2035	$771,341	$35,724	$15,085	$38,793	$115,922
2036	$742,883	$34,406	$14,528	$37,362	$111,645
2037	$712,680	$33,008	$13,938	$35,843	$107,106
2038	$680,667	$31,525	$13,312	$34,233	$102,295
2039	$646,774	$29,955	$12,649	$32,528	$97,201
2040	$610,933	$28,295	$11,948	$30,726	$91,815
2041	$573,070	$26,542	$11,207	$28,822	$86,124
2042	$533,112	$24,691	$10,426	$26,812	$80,119
2043	$490,980	$22,740	$9,602	$24,693	$73,787
2044	$446,595	$20,684	$8,734	$22,461	$67,117
2045	$428,438	$19,843	$8,379	$21,548	$64,388
2046	$438,421	$20,305	$8,574	$22,050	$65,888
2047	$448,636	$20,778	$8,774	$22,563	$67,424
2048	$459,089	$21,263	$8,978	$23,089	$68,995
2049	$469,786	$21,758	$9,188	$23,627	$70,602
2050	$480,732	$22,265	$9,402	$24,178	$72,247
2051	$491,933	$22,784	$9,621	$24,741	$73,931
2052	$503,395	$23,315	$9,845	$25,317	$75,653
2053	$515,125	$23,858	$10,074	$25,907	$77,416
2054	$527,127	$24,414	$10,309	$26,511	$79,220
2055	$539,409	$24,983	$10,549	$27,129	$81,066
2056	$551,977	$25,565	$10,795	$27,761	$82,954
TOTAL	$19,069,087	$883,179	$372,932	$959,048	$2,865,814
AVG ANNUAL	$635,636	$29,439	$12,431	$31,968	$95,527

[1] The assumed tax rates are 1.00834% for Livingston County, 0.2857% Nebraska Township, 0.25636% for Rooks Creek Township, 0.22931% for Pike Township, and 0.28143% for Waldo Township.

Table 8 – Tax Benefits from the Panther Grove II Wind Project for Other Taxing Bodies[2]

Year	ICC Peoria 514	Heartland Community College 540	Nebraska Road District	Rooks Creek Road District	Pike Road District	Waldo Road District
2027	$198,755	$293,954	$48,802	$18,691	$57,511	$114,726
2028	$195,250	$288,771	$47,941	$18,362	$56,497	$112,703
2029	$191,475	$283,187	$47,014	$18,006	$55,405	$110,524
2030	$187,417	$277,186	$46,018	$17,625	$54,231	$108,182
2031	$183,067	$270,752	$44,950	$17,216	$52,972	$105,670
2032	$178,411	$263,867	$43,807	$16,778	$51,625	$102,983
2033	$173,440	$256,514	$42,586	$16,310	$50,186	$100,114
2034	$168,140	$248,676	$41,285	$15,812	$48,653	$97,055
2035	$162,499	$240,333	$39,900	$15,282	$47,020	$93,798
2036	$156,504	$231,466	$38,428	$14,718	$45,285	$90,338
2037	$150,141	$222,055	$36,865	$14,119	$43,444	$86,665
2038	$143,396	$212,080	$35,209	$13,485	$41,493	$82,772
2039	$136,256	$201,520	$33,456	$12,814	$39,427	$78,651
2040	$128,706	$190,353	$31,602	$12,104	$37,242	$74,292
2041	$120,729	$178,556	$29,644	$11,353	$34,934	$69,688
2042	$112,311	$166,106	$27,577	$10,562	$32,498	$64,829
2043	$103,435	$152,978	$25,397	$9,727	$29,930	$59,705
2044	$94,085	$139,149	$23,101	$8,848	$27,224	$54,308
2045	$90,259	$133,492	$22,162	$8,488	$26,117	$52,100
2046	$92,362	$136,602	$22,678	$8,686	$26,726	$53,314
2047	$94,515	$139,785	$23,207	$8,888	$27,348	$54,556
2048	$96,717	$143,042	$23,748	$9,095	$27,986	$55,827
2049	$98,970	$146,375	$24,301	$9,307	$28,638	$57,128
2050	$101,276	$149,785	$24,867	$9,524	$29,305	$58,459
2051	$103,636	$153,275	$25,446	$9,746	$29,988	$59,821
2052	$106,051	$156,847	$26,039	$9,973	$30,687	$61,215
2053	$108,522	$160,501	$26,646	$10,205	$31,402	$62,641
2054	$111,050	$164,241	$27,267	$10,443	$32,133	$64,101
2055	$113,638	$168,068	$27,902	$10,687	$32,882	$65,594
2056	$116,285	$171,984	$28,552	$10,936	$33,648	$67,123
TOTAL	$4,017,298	$5,941,500	$986,397	$377,791	$1,162,434	$2,318,883
AVG ANNUAL	$133,910	$198,050	$32,880	$12,593	$38,748	$77,296

[2] The assumed tax rates are 0.46026% for ICC Peoria 514, 0.58347% for Heartland Community College 540, 0.31909% for Nebraska Road District, 0.2597% for Rooks Creek Road District, 0.27794% for Pike Road District, and 0.22772% for Waldo Road District.

Table 9 – Tax Benefits from the Panther Grove II Wind Project for Other Taxing Bodies (Cont.)[3]

Year	Flanagan Fire #F19	Gridley Fire G14	Chenoa Fire C10	Flanagan Park #1	Rooks Creek/ Waldo/Pike
2027	$233,517	$297,024	$50,128	$51,649	$19,239
2028	$229,400	$291,787	$49,245	$50,738	$18,899
2029	$224,964	$286,145	$48,292	$49,757	$18,534
2030	$220,197	$280,081	$47,269	$48,703	$18,141
2031	$215,085	$273,579	$46,172	$47,572	$17,720
2032	$209,616	$266,623	$44,998	$46,362	$17,269
2033	$203,775	$259,193	$43,744	$45,071	$16,788
2034	$197,548	$251,273	$42,407	$43,693	$16,275
2035	$190,920	$242,843	$40,984	$42,227	$15,729
2036	$183,876	$233,883	$39,472	$40,669	$15,149
2037	$176,401	$224,374	$37,867	$39,016	$14,533
2038	$168,477	$214,295	$36,166	$37,263	$13,880
2039	$160,088	$203,625	$34,366	$35,408	$13,189
2040	$151,216	$192,341	$32,461	$33,446	$12,458
2041	$141,845	$180,421	$30,449	$31,373	$11,686
2042	$131,954	$167,841	$28,326	$29,185	$10,871
2043	$121,526	$154,576	$26,088	$26,879	$10,012
2044	$110,540	$140,602	$23,729	$24,449	$9,107
2045	$106,046	$134,886	$22,765	$23,455	$8,737
2046	$108,517	$138,029	$23,295	$24,002	$8,940
2047	$111,045	$141,245	$23,838	$24,561	$9,149
2048	$113,633	$144,536	$24,393	$25,133	$9,362
2049	$116,280	$147,904	$24,962	$25,719	$9,580
2050	$118,990	$151,350	$25,543	$26,318	$9,803
2051	$121,762	$154,876	$26,138	$26,931	$10,032
2052	$124,599	$158,485	$26,747	$27,559	$10,265
2053	$127,502	$162,178	$27,371	$28,201	$10,504
2054	$130,473	$165,956	$28,008	$28,858	$10,749
2055	$133,513	$169,823	$28,661	$29,530	$11,000
2056	$136,624	$173,780	$29,329	$30,218	$11,256
TOTAL	$4,719,928	$6,003,555	$1,013,213	$1,043,946	$388,858
AVG ANNUAL	$157,331	$200,119	$33,774	$34,798	$12,962

[3] The assumed tax rates are 058992% for Flanagan Fire #F19, 0.71773% for Gridley Fire G14, 0.398% for Chenoa Fire C10, 0.17397% for Flanagan Park #1, and 0.02458% for Rooks Creek/Waldo/Pike.

Table 10 shows an estimate of the likely taxes paid to the following taxing bodies: Flanagan Library, Gridley Library, and El Paso Library.

According to Table 10, the total amounts paid are over $1.9 million for Flanagan Library, over $1.4 million for Gridley Library, and over $36.9 thousand for El Paso Library over the life of the Project.

Table 10 – Tax Benefits from the Panther Grove II Wind Project for the Libraries[4]

Year	Flanagan Library	Gridley Library	El Paso Library
2027	$94,195	$70,541	$1,829
2028	$92,534	$69,297	$1,796
2029	$90,745	$67,957	$1,762
2030	$88,822	$66,517	$1,724
2031	$86,760	$64,973	$1,684
2032	$84,554	$63,321	$1,641
2033	$82,198	$61,556	$1,596
2034	$79,686	$59,675	$1,547
2035	$77,012	$57,673	$1,495
2036	$74,171	$55,545	$1,440
2037	$71,156	$53,287	$1,381
2038	$67,959	$50,894	$1,319
2039	$64,575	$48,359	$1,254
2040	$60,997	$45,680	$1,184
2041	$57,217	$42,849	$1,111
2042	$53,227	$39,861	$1,033
2043	$49,021	$36,711	$952
2044	$44,589	$33,392	$866
2045	$42,776	$32,034	$830
2046	$43,773	$32,781	$850
2047	$44,793	$33,545	$870
2048	$45,837	$34,326	$890
2049	$46,905	$35,126	$911
2050	$47,997	$35,944	$932
2051	$49,116	$36,782	$953
2052	$50,260	$37,639	$976
2053	$51,431	$38,516	$998
2054	$52,630	$39,413	$1,022
2055	$53,856	$40,332	$1,045
2056	$55,111	$41,271	$1,070
TOTAL	$1,903,900	$1,425,799	$36,959
AVG ANNUAL	$63,463	$47,527	$1,232

[4] The assumed tax rates rates are 0.22277% for Flanagan Library, 0.20105% for Gridley Library, and 0.20305% for El Paso Library.

The largest taxing jurisdictions for property taxes are local school districts. However, the tax implications for school districts are more complicated than for other taxing bodies. School districts receive state aid based on the assessed value of the taxable property within its district. As assessed value increases, the state aid to the school district is decreased. The Center for Renewable Energy at Illinois State University did a report titled Wind Farm Implications for School District Revenue which details how a wind farm affects the local school district's revenue. Although the school district collects increased local property tax revenue from the wind farm, it receives less in state aid because of the increases in Equalized Assessed Value (EAV) due to the wind farm. **However, the reduction in state aid is much smaller than the increased tax revenue.**

Although the exact amount of the reduction in state aid to the school districts is uncertain, local project tax revenue is superior to relying on state aid for the following reasons: (1) the wind turbines can't relocate – it is a permanent structure that will be within the school district's footprint for the life of the Project; (2) the school district can raise the tax rate and increase its revenues as needed; (3) the school district does not have to deal with the year-to-year uncertainty of state aid amounts; (4) the school district does not have to wait for months (or even into the next Fiscal Year!) for payment; (5) the Project does not increase the overall cost of education in the way that a new residential development would.

Table 11 shows the direct property tax revenue coming from the Project to Flanagan-Cornell Unit 74 School District, Flanagan-Cornell Unit 74 High School District, El Paso-Gridley Unit 11 School District, and Prairie Central Unit 8 School District. This tax revenue uses the assumptions outlined earlier to calculate the other tax revenue and assumes that 45% of the turbines are in Flanagan-Cornell Unit 74 School District and Flanagan-Cornell Unit 74 High School District, 38% in the El Paso-Gridley Unit 11 School District, and 16% in the Prairie Central Unit 8 School District. Over the 30-year life of the Project, the school districts are expected to receive over $105 million in tax revenue.

Table 11 – Tax Benefits from the Panther Grove II Wind Project for the School Districts[5]

Year	Flanagan-Cornell Unit 74 School District	Flanagan-Cornell Unit 74 High School District	El Paso-Gridley Unit 11 School District	Prairie Central Unit 8 School District
2027	$1,675,781	$742,050	$1,942,815	$857,234
2028	$1,646,233	$728,967	$1,908,559	$842,119
2029	$1,614,399	$714,870	$1,871,652	$825,835
2030	$1,580,188	$699,721	$1,831,989	$808,334
2031	$1,543,506	$683,478	$1,789,462	$789,570
2032	$1,504,257	$666,098	$1,743,959	$769,492
2033	$1,462,341	$647,537	$1,695,363	$748,050
2034	$1,417,655	$627,750	$1,643,557	$725,192
2035	$1,370,092	$606,689	$1,588,415	$700,861
2036	$1,319,544	$584,306	$1,529,812	$675,004
2037	$1,265,896	$560,550	$1,467,616	$647,561
2038	$1,209,032	$535,370	$1,401,690	$618,472
2039	$1,148,831	$508,713	$1,331,896	$587,677
2040	$1,085,168	$480,522	$1,258,089	$555,110
2041	$1,017,915	$450,742	$1,180,119	$520,707
2042	$946,938	$419,313	$1,097,832	$484,400
2043	$872,102	$386,174	$1,011,070	$446,118
2044	$793,264	$351,264	$919,670	$405,789
2045	$761,013	$336,983	$882,279	$389,291
2046	$778,744	$344,835	$902,836	$398,361
2047	$796,889	$352,870	$923,873	$407,643
2048	$815,457	$361,091	$945,399	$417,141
2049	$834,457	$369,505	$967,427	$426,861
2050	$853,900	$378,114	$989,968	$436,806
2051	$873,795	$386,924	$1,013,034	$446,984
2052	$894,155	$395,940	$1,036,638	$457,399
2053	$914,989	$405,165	$1,060,791	$468,056
2054	$936,308	$414,605	$1,085,508	$478,962
2055	$958,124	$424,266	$1,110,800	$490,122
2056	$980,448	$434,151	$1,136,682	$501,542
TOTAL	$33,871,421	$14,998,565	$39,268,798	$17,326,692
AVG ANNUAL	$1,129,047	$499,952	$1,308,960	$577,556

[5] The assumed tax rates are 3.9632% for Flanagan-Cornell Unit 74 School District, 1.75494% for Flanagan-Cornell Unit 74 High School, 5.39881% for El Paso-Gridley Unit 11 School District, and 5.60502% for Prairie Central Unit 8 School District.

Having considered all these benefits, it is still important to determine the net impact of the wind energy project after taking into account the reduction in school funding from the State of Illinois. Determining the reduction in state aid is complicated by the fact that there is a new law for distributing state funds to education.

On August 31, 2017, Governor Rauner signed into law PA 100-0465 that fundamentally changes the way that the state distributes state aid to school districts. The funding consists of two parts – a Base Funding Minimum and a Tier Funding. The Base Funding Minimum in FY18 is based on what the district received in FY17 under the old funding formula. Some call this the "Hold Harmless" provision and ensures that there are no "losing" districts in the transition to the new funding formula. The Tier Funding is additional money and goes in higher portion to the districts that demonstrate a higher need under the new formula. Because of the "Hold Harmless" provision, no school district will see a reduction in their GSA from what they received in the year before the wind farm was installed. However, the higher EAV caused by the wind farm will reduce its eligibility for new money allocated in the state budget.

There are several sources of uncertainty with the new school funding formula concerning this new money. First, the total amount of new funding to be distributed over the next ten years is unknown at this point. It will be determined year-by-year in the state budget passed by the legislature and signed by the governor. For FY21, no new money was allocated for the school funding formula though the FY22 does have new money in the budget. Second, data for the formula funding changes each year based on the school's student population and its "need" and it is difficult to forecast its school's student population over time. Third, each school district is competing with all other school districts for this new funding and so the EAV and student population for all other school districts in the state will impact what a single school district receives. Fourth, the school district's EAV could also change due to other property changes in the district.

In order to determine the net impact of the Project on a school district's eligibility for new state aid money, we can make the following assumptions: (1) that the State of Illinois continues to provide $350 million in NEW state aid to education ANNUALLY. For reference, the new law passed in 2017 provided $350 million and the FY19 state budget has $350 million. The state budget has failed to include this increase in FY20 and FY21; (2) that the school districts will forfeit ALL of the new Tier funding for schools. It seems more likely that the school districts will switch tiers rather than lose all funding; (3) that the school districts would be entitled to the same tiered funding annually for the 10 years covered by the new school funding law without the wind farm; (4) that other school districts in the State of Illinois have a constant EAV and Evidence Based Funding needs.

For FY24, Flanagan-Cornell Unit 74 School District had 82% adequacy, was assigned Tier 2 status, and will receive $14,218 in "new money." El Paso-Gridley Unit 11 had 84% adequacy, was assigned Tier 2 status, and will receive $41,264 in "new money." And Prairie Central Unit 8 School District had 97% adequacy, was assigned Tier 3 status, and will receive $24,877 in "new money." As outlined in Table 11, there is no year in which the school districts receive less than $382,482. If new money is allocated in the future, it is unlikely that these districts will lose all of the "new money" and their EBF funding cannot go down from the previous year. Thus, the school districts will receive a net positive flow of funds because of the wind project if "new money" remains the same.

VII. Glossary

Cc

Consumer Price Index (CPI)

An index of the changes in the cost of goods and services to a typical consumer, based on the costs of the same goods and services at a base period.

Dd

Direct impacts

During the construction period: the changes that occur in the onsite construction industries in which the direct final demand change is made.

During operating years: the final demand changes that occur in the onsite spending for the solar operations and maintenance workers.

Ee

Equalized Assessed Value (EAV)

The product of the assessed value of property and the state equalization factor. This is typically used as the basis for the value of property in a property tax calculation.

Ff

Farming profit

The difference between total revenue (price multiplied by yield) and total cost regarding farmland.

Full-time equivalent (FTE)

A unit that indicates the workload of an employed person. One FTE is equivalent to one worker working 2,080 hours in a year. One half FTE is equivalent to a half-time worker or someone working 1,040 hours in a year.

Hh

HV line extension

High-voltage electric power transmission links used to connect generators to the electric transmission grid.

Ii

IMPLAN (IMpact analysis for PLANning)

A business who is the leading provider of economic impact data and analytic applications. IMPLAN data is collected at the federal, state, and local levels and used to create state-specific and county-specific industry multipliers.

Indirect impacts

Impacts that occur in industries that make up the supply chain for that industry.

During the construction period: the changes in inter- industry purchases resulting from the direct final demand changes, including construction spending on materials and wind farm equipment and other purchases of good and offsite services.

During operating years: the changes in inter-industry purchases resulting from the direct final demand changes.

Induced impacts

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.

Inflation

A persistent rise in the general level of prices related to an increase in the volume of money and resulting in the loss of value of currency. Inflation is typically measured by the CPI.

Mm

Median Household Income (MHI)

The income amount that divides a population into two equal groups, half having an income above that amount, and half having an income below that amount.

Millage rate

The tax rate, as for property, assessed in mills per dollar.

Multiplier

A factor of proportionality that measures how much a variable changes in response to a change in another variable.

MW

A unit of power, equal to one million watts or one thousand kilowatts.

MWac (megawatt alternating current)

The power capacity of a utility-scale solar PV system after its direct current output has been fed through an inverter to create an alternating current (AC). A solar system's rated MWac will always be lower than its rated MWdc due to inverter losses. AC is the form in which electric energy is delivered to businesses and residences and that consumers typically use when plugging electric appliances into a wall socket.

Nn

Net economic impact

Total change in economic activity in a specific region, caused by a specific economic event.

Net Present Value (NPV)

Cash flow determined by calculating the costs and benefits for each period of investment.

NREL's Jobs and Economic Development Impacts (JEDI) Model

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.

Oo

Output

Economic output measures the value of goods and services produced in a given area. Gross Domestic Product is the economic output of the United States as a whole.

Rr

Real Gross Domestic Product (GDP)

A measure of the value of goods and services produced in an area and adjusted for inflation over time.

Real-options analysis

A model used to look at the critical factors affecting the decision to lease agricultural land to a company installing a solar powered electric generating facility.

Ss

Stochastic

To have some randomness.

Tt

Tax rate

The percentage (or millage) of the value of a property to be paid as a tax.

Total economic output

The quantity of goods or services produced in a given time period by a firm, industry, county, or country.

VIII. References

American Clean Power (ACP). (2021). Clean Power Quarterly Report Q3 2021. https://cleanpower.org/resources/clean-power-quarterly-report-q3-2021/

American Clean Power (ACP). (2022). Clean Power Annual Market Report 2021. https://cleanpower.org/resources/clean-power-annual-market-report-2021/

American Clean Power (ACP). (2023). Clean Power Quarterly Market Report Q4 2022. https://cleanpower.org/resources/clean-power-quarterly-market-report-q4-2022/

American Clean Power (ACP). (2023). Clean Power Annual Market Report 2022. https://cleanpower.org/resources/clean-power-annual-market-report-2022/

American Clean Power (ACP). (2023). Clean Power Quarterly Market Report Q3 2023. https://cleanpower.org/resources/clean-power-quarterly-market-report-q3-2023/

American Clean Power (ACP). (2024). Clean Power Annual Market Report 2023. https://cleanpower.org/resources/clean-power-annual-market-report-2023/

American Clean Power (ACP). (2024). State Fact Sheets. https://cleanpower.org/facts/state-fact-sheets/

Brunner, E. & Schwegman, D. J. (2022). Commercial wind energy installations and local economic development: Evidence from U.S. counties. Energy Policy 165, June.

Bureau of Economic Analysis (BEA). (2024). Regional Data. GDP and Personal Income [Data set]. https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1

Brown, J., Pender, J., Wiser, R. & Hoen, B. (2012). Ex Post Analysis of Economic Impacts from Wind Power Development in U.S. Counties. Energy Economics, 34, 1743-1754.

Center for Renewable Energy. (2016). Economic Impact: Illinois Wind Energy Development. Illinois State University. June 2016. https://edauniversitycenter.uic.edu/wp-content/uploads/sites/16/2018/09/Wind_Energy_Economic-Impact-Report_2016.pdf

Federal Reserve Bank of St. Louis Economic Data (FRED). (2024). Median Household Income. https://fred.stlouisfed.org/searchresults/?st=Median%20household%20income

Federal Reserve Bank of St. Louis Economic Data (FRED). (2024). Population Estimates. https://fred.stlouisfed.org/searchresults/?st=population

Federal Reserve Bank of St. Louis Economic Data (FRED). (2024). Real Gross Domestic Product. https://fred.stlouisfed.org/searchresults?st=real+gross+domestic+product

Federal Reserve Bank of St. Louis Economic Data (FRED). (2024). Unemployment Rate. https://fred.stlouisfed.org/searchresults/?st=unemployment&t=il&rt=il&ob=sr

Gilbert, B., Hoen, B., and Gargarin, H. (2024). Distributional Equity in the Employment and Wage Impacts of Energy Transitions. Journal of the Association of Environmental and Resource Economists, November.

Global Wind Energy Council (GWEC). (2024). Global Wind Report 2023. https://gwec.net/global-wind-report-2024/

IMPLAN Group LLC. (2024). Huntersville, NC. implan.com

JEDI Support Team. (2023). JEDI Update 2023. https://www.nrel.gov/analysis/jedi/about.html

Jenniches, S. (2018). Assessing the Regional Economic Impacts of Renewable Energy Sources. Renewable and Sustainable Energy Reviews. Elsevier, 93, 35-51.

Loomis, D., Carlson, J.L., & Payne, J. (2010). An Assessment of the Economic Impact of the Wind Turbine Supply Chain in Illinois. The Electricity Journal. 23(7). 75-93.

Loomis, D.G. (2020). Economic Impact of Wind and Solar Energy in Illinois and the Potential Impacts of Path to 100 Legislation. Strategic Economic Research, LLC. December 2020.

National Renewable Energy Laboratory (NREL). (2008a). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Arizona. Technical Report DOE/GO-102008-2670, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44144.pdf

National Renewable Energy Laboratory (NREL). (2008b). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Idaho. Technical Report DOE/GO-102008-2671, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44145.pdf

National Renewable Energy Laboratory (NREL). (2008c). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Maine. Technical Report DOE/GO-102008-2672, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44146.pdf

National Renewable Energy Laboratory (NREL). (2008d). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Montana. Technical Report DOE/GO-102008-2673, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44147.pdf

National Renewable Energy Laboratory (NREL). (2008e). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in New Mexico. Technical Report DOE/GO-102008-2679, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44273.pdf

National Renewable Energy Laboratory (NREL). (2008f). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Nevada. Technical Report DOE/GO-102008-2678, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44271.pdf

National Renewable Energy Laboratory (NREL). (2008g). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Pennsylvania. Technical Report DOE/GO-102008-2680, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44274.pdf

National Renewable Energy Laboratory (NREL). (2008h). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in South Dakota. Technical Report DOE/GO-102008-2681, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44275.pdf

National Renewable Energy Laboratory (NREL). (2008i). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Utah. Technical Report DOE/GO-102008-2677, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44268.pdf

National Renewable Energy Laboratory (NREL). (2008j). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in West Virginia. Technical Report DOE/GO-102008-2682, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44276.pdf

National Renewable Energy Laboratory (NREL). (2008k). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in Wisconsin. Technical Report DOE/GO-102008-2683, October 2008. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44277.pdf

National Renewable Energy Laboratory (NREL). (2009). Economic Benefits, Carbon Dioxide (CO2) Emissions Reductions, and Water Conservation Benefits from 1,000 Megawatts (MW) of New Wind Power in North Carolina. Technical Report DOE/GO-102009-2755, March 2009. NREL, Golden, CO. http://www.nrel.gov/docs/fy09osti/44916.pdf

National Renewable Energy Laboratory (NREL). (2013). Estimated Economic Impacts of Utility Scale Wind Power in Iowa. Technical Report NREL/TP-6A20-53187, November 2013. NREL, Golden, CO. http://www.nrel.gov/docs/fy14osti/53187.pdf

National Renewable Energy Laboratory (NREL). (2014). Economic Impacts from Indiana's First 1,000 Megawatts of Wind Power. Technical Report NREL/TP-5000-60914, August 2014. NREL, Golden, CO. http://www.nrel.gov/docs/fy14osti/60914.pdf

National Renewable Energy Laboratory & Marshall Goldberg of MRG & Associates. (2010). Jobs and Economic Development Impacts Wind Energy Model. Release number W1.09.03e. http://www.nrel.gov/analysis/jedi/download.html

Reategui, S., Stafford, E.R., Hartman, C.L., & Huntsman, J.M. (2009). Generating Economic Development from a Wind Power Project in Spanish Fork Canyon, Utah: A Case Study and Analysis of State-Level Economic Impacts. DOE/GO-102009-2760. January 2009. https://img.ksl.com/slc/917/91737/9173767.pdf

United States Census Bureau. (2024). QuickFacts. https://www.census.gov/

USDA National Agricultural Statistics Service (NASS). (1994). 1992 Census of Agriculture. https://agcensus.library.cornell.edu/census_year/1992-census/

USDA National Agricultural Statistics Service (NASS). (1999). 1997 Census of Agriculture. https://agcensus.library.cornell.edu/census_year/1997-census/

USDA National Agricultural Statistics Service (NASS). (2004). 2002 Census of Agriculture. https://agcensus.library.cornell.edu/census_year/2002-census/

USDA National Agricultural Statistics Service (NASS). (2009). 2007 Census of Agriculture. https://agcensus.library.cornell.edu/census_year/2007-census/

USDA National Agricultural Statistics Service (NASS). (2014). 2012 Census of Agriculture. https://agcensus.library.cornell.edu/census_year/2012-census/

USDA National Agricultural Statistics Service (NASS). (2019). 2017 Census of Agriculture. https://www.nass.usda.gov/Publications/AgCensus/2017/index.php

USDA National Agricultural Statistics Service (NASS). (2024). 2022 Census of Agriculture. https://www.nass.usda.gov/Publications/AgCensus/2022/

USDA National Agricultural Statistics Service (NASS). (2024a). Statistics by State [Interactive Map]. National Agricultural Statistics Service. https://www.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/County_Profiles/index.php

USDA National Agricultural Statistics Service (NASS). (2024b). Statistics by State [Interactive Map]. https://www.nass.usda.gov/Statistics_by_State/index.php

U.S. Department of Energy. (2023). United States Energy & Employment Report: Energy Employment by State 2023. https://www.energy.gov/sites/default/files/2023-06/2023%20USEER%20States%20Complete.pdf

U.S. Energy Information Administration (EIA). (2023). Monthly Generation Data by State, Producer Sector and Energy Source [Data set]. Form EIA-923. https://www.eia.gov/electricity/data/eia923/

IX. Curriculum Vitae (Abbreviated)

David G. Loomis
Strategic Economic Research, LLC
2705 Kolby Court
Bloomington, IL 61704
815-905-2750
dave@strategiceconomic.com

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

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

1996-2023 Illinois State University, Normal, IL
Professor Emeritus – Department of Economics (2023 - present)
Full Professor – Department of Economics (2010-2023)
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

1997-2023 Institute for Regulatory Policy Studies, Normal, IL
Executive Director (2005-2023)
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

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

- Published 40 articles in leading journals such as AIMS Energy, Renewable Energy, National Renewable Energy Laboratory Technical Report, Electricity Journal, Energy Economics, Energy Policy, and many others
- Testified over 80 times in formal proceedings regarding wind, solar and transmission projects
- Raised over $7.7 million in grants
- Raised over $2.7 million in external funding

Bryan A. Loomis
Strategic Economic Research, LLC
Vice President

Education

Master of Business Administration (M.B.A.), Marketing and Healthcare, Belmont University, Nashville, Tennessee, 2017.

Experience

2019-present Strategic Economic Research, LLC, Bloomington, IL
Vice President
(2021-present)
Property Tax Analysis and Land Use Director
(2019-2021)

- Directed the property tax analysis by training other associates on the methodology and overseeing the process for over twenty states
- Improved the property tax analysis methodology by researching various state taxing laws and implementing depreciation, taxing jurisdiction millage rates, and other factors into the tax analysis tool
- Executed land use analyses by running Monte Carlo simulations of expected future profits from farming and comparing that to the solar lease
- Performed economic impact modeling using JEDI and IMPLAN tools
- Improved workflow processes by capturing all tasks associated with economic modeling and report-writing, and created automated templates in Asana workplace management software

2019-2021 Viral Healthcare Founders LLC, Nashville, TN
CEO and Founder

- Founded and directed marketing agency for healthcare startups
- Managed three employees
- Mentored and worked with over 30 startups to help them grow their businesses
- Grew an email list to more than 2,000 and LinkedIn following to 3,500
- Created a Slack community and grew to 450 members
- Created weekly video content for distribution on Slack, LinkedIn and Email

Christopher Thankan
Strategic Economic Research, LLC
Director of Economic Analysis

Education

Bachelor of Science in Sustainable & Renewable Energy (B.S.), Minor in Economics, Illinois State University, Normal, IL, 2021

Experience

2021-present Strategic Economic Research, LLC, Bloomington, IL
Economic Analyst

- Create economic impact results on numerous renewable energy projects Feb 2021-Present
- Utilize IMPLAN multipliers along with NREL's JEDI model for analyses
- Review project cost Excel sheets
- Conduct property tax analysis for different US states
- Research taxation in states outside research portfolio
- Complete ad hoc research requests given by the president
- Hosted a webinar on how to run successful permitting hearings
- Research school funding and the impact of renewable energy on state aid to school districts
- Quality check coworkers JEDI models
- Started more accurate methodology for determining property taxes that became the main process used

Strategic Economic Research, LLC

by Dr. David G. Loomis,
Bryan Loomis, and Chris Thankan
Strategic Economic Research, LLC
strategiceconomic.com
815-905-2750