



ECONOMIC IMPACT ANALYSIS FOR THE COLES WIND PROJECT

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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.



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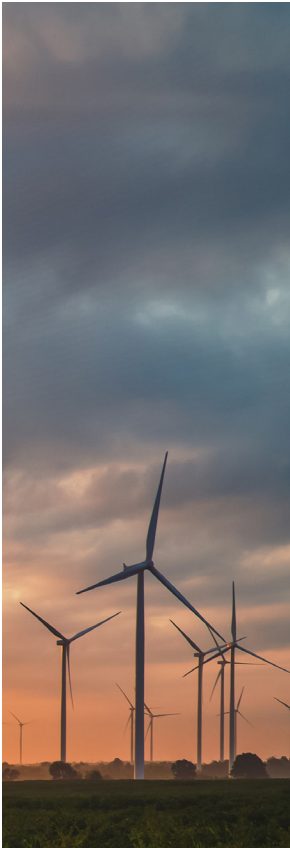


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I. Executive Summary

Apex Clean Energy is developing the Coles Wind Project in Coles County, Illinois. The purpose of this report is to evaluate the economic impact of this Project on Coles 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 Coles Wind Project consists of an estimated 300 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 300 MW in Coles County was assumed. The Project represents an investment of over \$649 million in Coles County. The total development is anticipated to result in the following:

Property Taxes

- Over \$48.6 million in total school district property taxes over the life of the Project
- Over \$13.0 million in total county property taxes for Coles County over the life of the Project
- Over \$81.2 million in total property taxes for all taxing districts over the life of the Project

Jobs

- 286 new jobs during construction for Coles County
- 916 new jobs during construction for the State of Illinois
- 35.2 new long-term jobs for Coles County
- 56.6 new long-term jobs for the State of Illinois

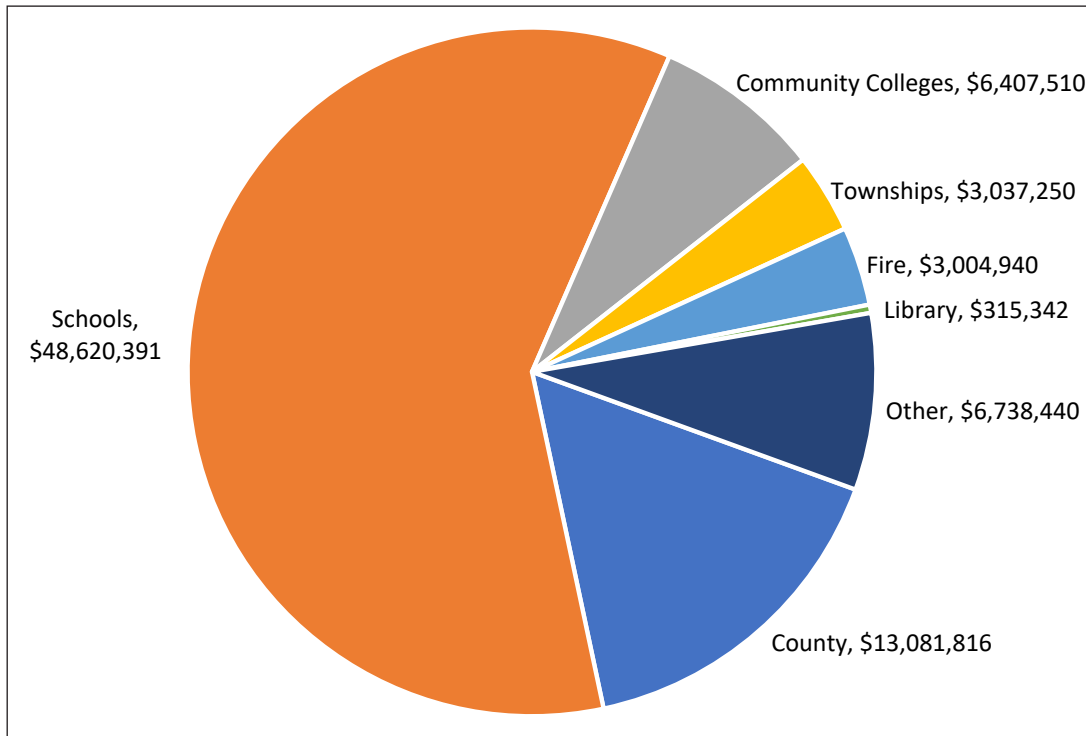
Earnings – the wages and benefits that result from the employment impacts above

- Over \$27.1 million in new earnings during construction for Coles County
- Over \$83.0 million in new earnings during construction for the State of Illinois
- Over \$2.5 million in new long-term earnings for Coles County annually
- Over \$4.1 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 \$68.0 million in new output during construction for Coles County
- Over \$251 million in new output during construction for the State of Illinois
- Over \$4.9 million in new long-term output for Coles County annually
- Over \$9.8 million in new long-term output for the State of Illinois annually

Figure 1.1 – Total Property Taxes Paid by the Coles Wind Project



II. Wind Industry Growth and Economic Development

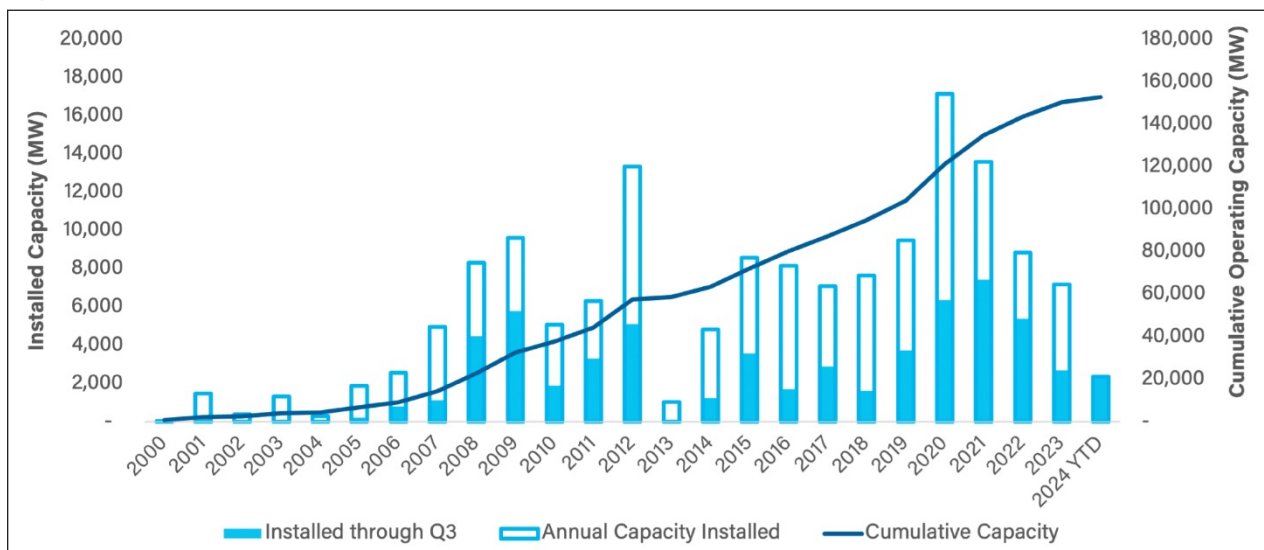
a. United States Wind Industry Growth

The United States wind industry grew at a rapid pace from 2006-2020. 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 cumulative wind capacity in 2023 was over 150,000 MW (ACP, Q3, 2024). In 2023, there was a total capacity of over 7,000 MW installed which is about equal to the 2015-2019 annual installation amounts.

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 2.1 shows the growth in installed annual capacity and cumulative capacity in the U.S., and Figure 2.2 shows the state-by-state breakdown of installed capacity by June 2024.

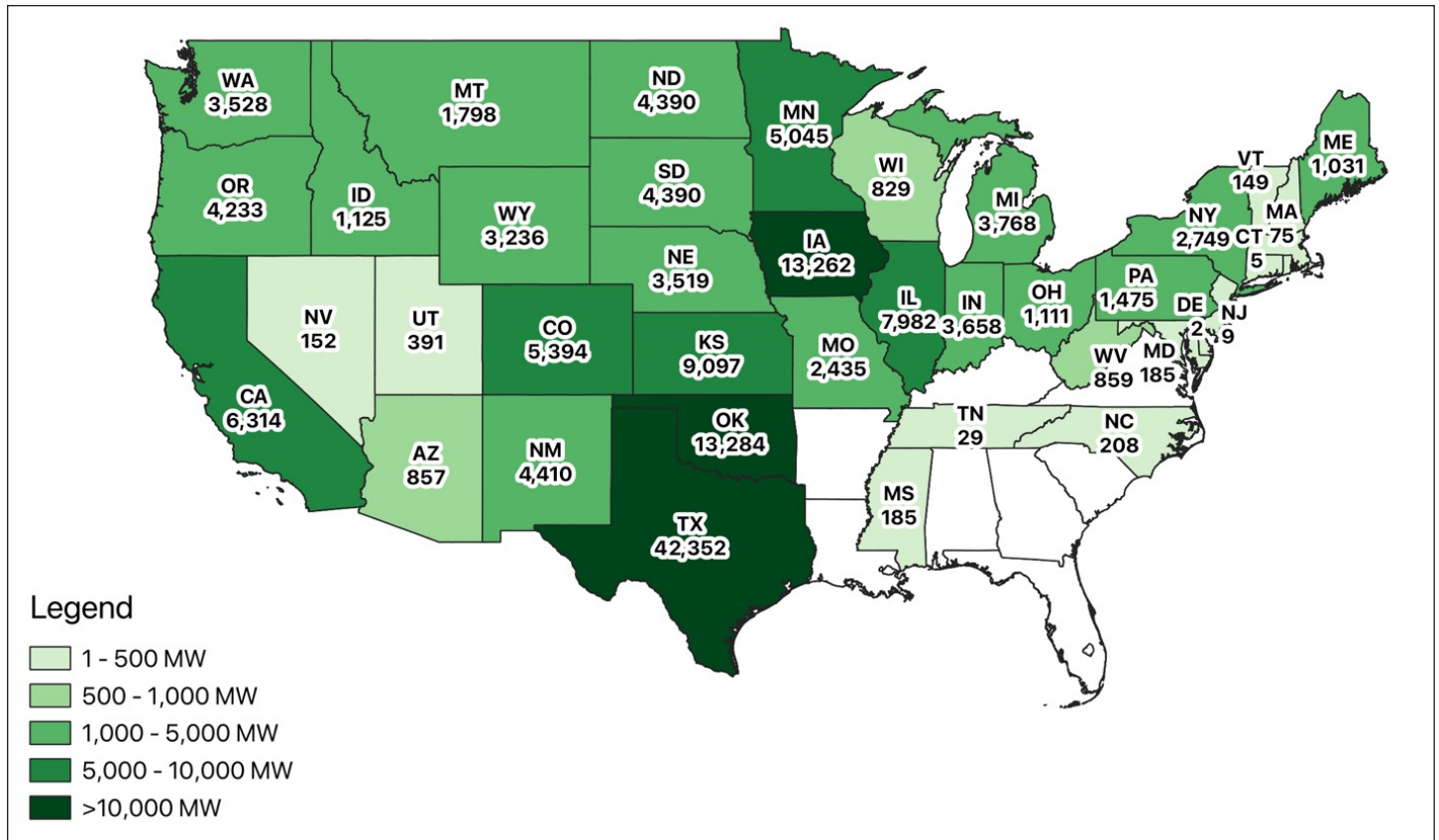
Several factors have spurred the continued growth of wind energy in recent years. First, new technology and rigorous competition among turbine manufacturers lowered the cost of wind turbines. Second, larger capacity wind turbines and higher hub heights produced more output and lowered the cost of wind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

Figure 2.1 – United States Annual and Cumulative Land-Based Wind Power Capacity Growth



Source: ACP, Clean Power Market Report, Q3 2024

Figure 2.2 – Total Wind Capacity by State



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

b. Illinois Wind Industry Growth

Illinois is a national leader in the wind energy industry (American Clean Power, 2024). As of June 2024, Illinois is ranked sixth in the United States in existing wind, solar, and energy storage capacity with over 9,447 MW (ACP, 2024).

Table 2.1 has a list of the operational wind farms in Illinois through 2023 (some small projects below 70 MW were omitted from the table). The year-by-year and cumulative growth in Illinois' wind energy capacity is shown in Figure 2.3. In 2012, Illinois had eight projects completed with an annual total installed capacity of 823.335 MW. Growth sharply increased in 2020 in Illinois with six projects completed with the largest annual total installed capacity of 1,059.02 MW. In 2023, six projects were completed with an annual installed capacity of 933.4 MW.

The Energy Information Administration (EIA) calculated the number of megawatt-hours generated from different energy sources in 2023. As shown in Figure 2.4, 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.

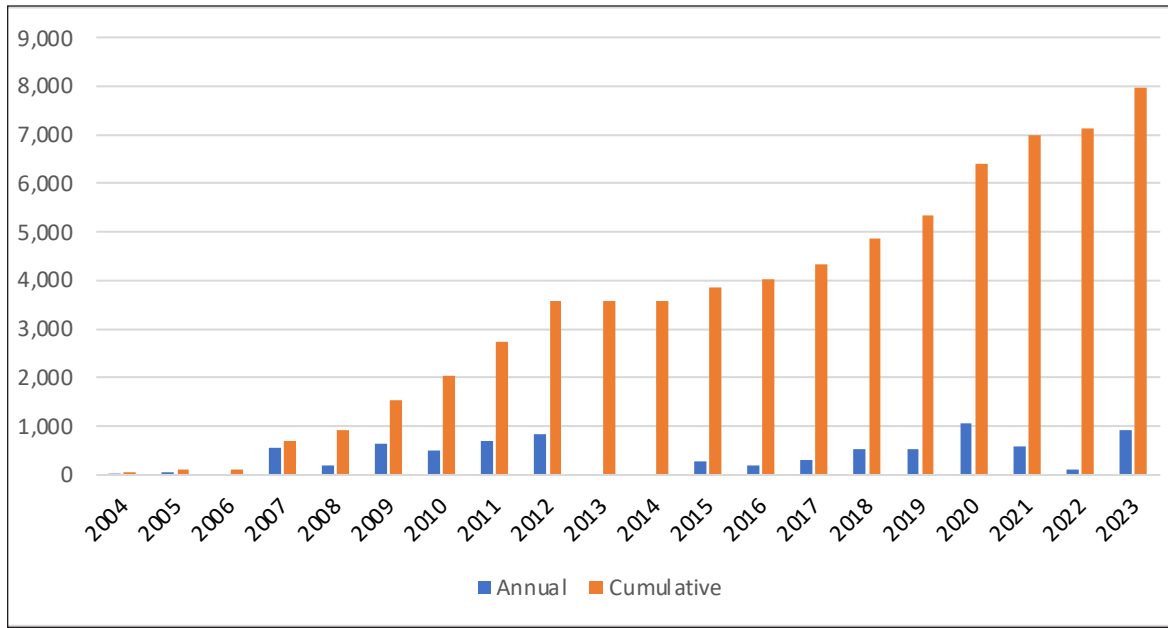
The U.S. Department of Energy sponsors the U.S. Energy and Employment Report each year. Electric Power Generation covers all utility and non-utility employment across electric generating technologies, including fossil fuels, nuclear, and renewable technologies. It also includes employees engaged in facility construction, turbine and other generation equipment manufacturing, operations and maintenance, and wholesale parts distribution for all electric generation technologies. According to Figure 2.5, employment in Illinois in the wind energy industry (9,389) is much larger than solar energy generation (6,988), natural gas generation (4,385), and nuclear energy generation (4,236).



Table 2.1 – Illinois Wind Projects

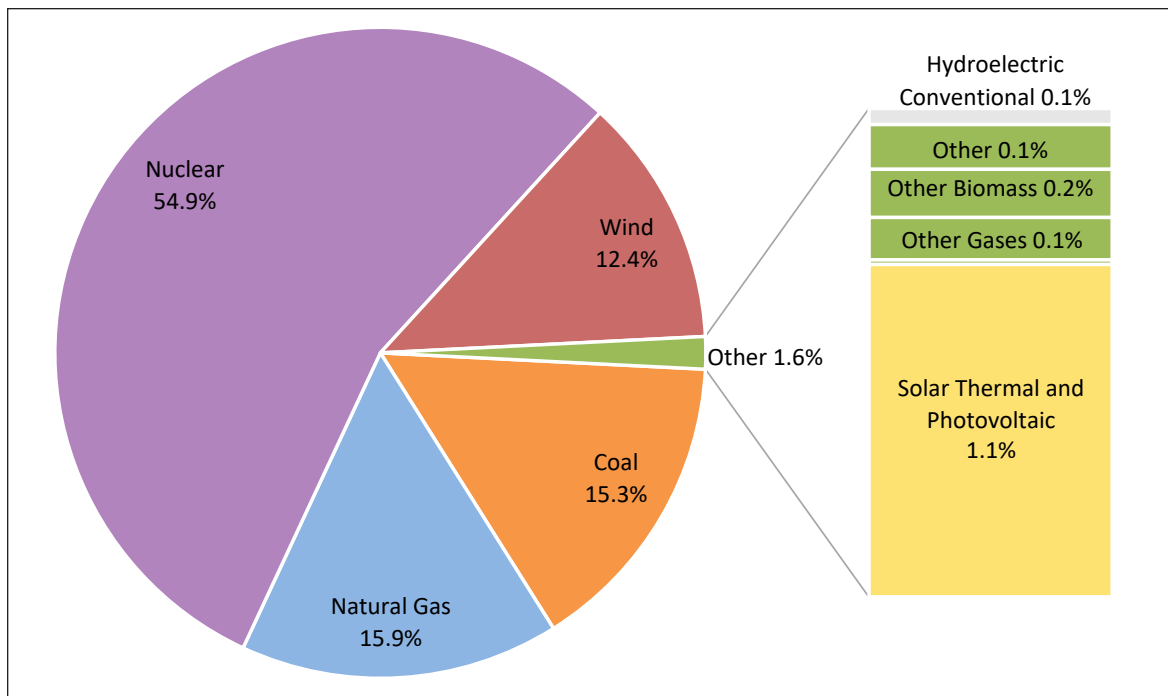
Wind Farm	Capacity (MW)	Year Online
Twin Groves	396	2007
Camp Grove	150	2007
Grand Ridge	210	2008
Providence Heights Wind Farm	72	2008
Top Crop Wind Farm	300	2009
Lee/DeKalb	217.5	2009
EcoGrove	100.5	2009
Rail Splitter	100.5	2009
Streator Cayuga Ridge Wind	300	2010
Big Sky Wind Facility	250.3	2011
Pioneer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

Figure 2.3 – Installed Capacity of Illinois Wind Projects



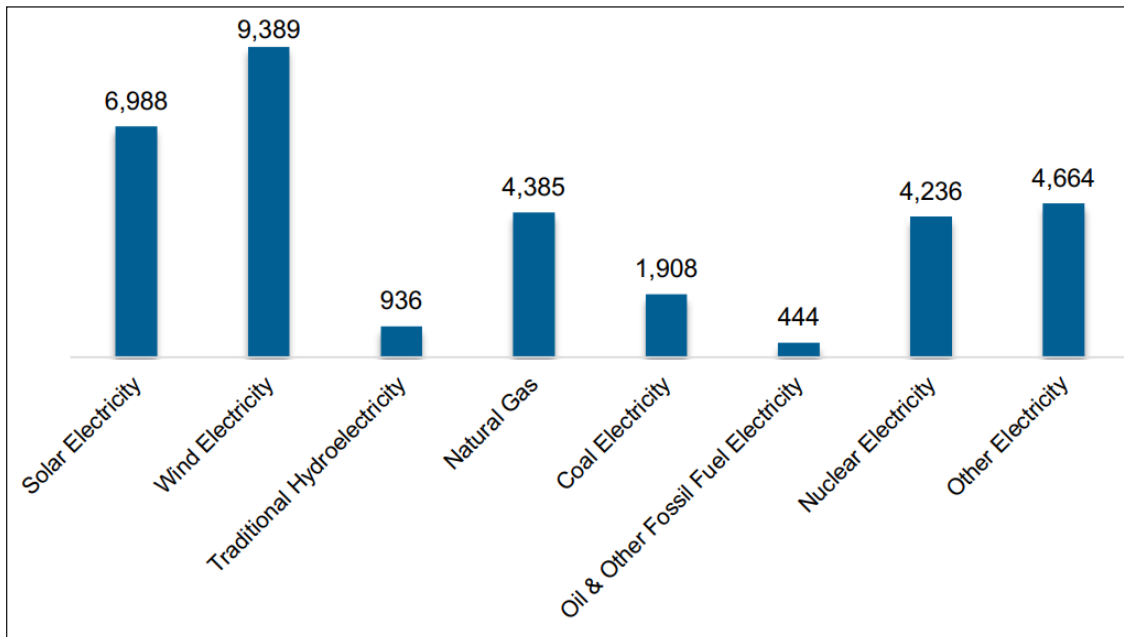
Source: American Clean Power, December 2024, Illinois

Figure 2.4 – Electric Generation by Fuel Type for Illinois in 2023



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

Figure 2.5 – Electric Generation Employment by Technology



Source: U.S. Energy and Employment Report 2024: 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 less than 1% 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:

- 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
- Created approximately 20,173 full-time equivalent jobs during construction periods
- Support approximately 869 permanent jobs in rural Illinois areas
- 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. Coles Wind Project

Apex Clean Energy is developing the Coles Wind Project in Coles County, Illinois. The Project consists of an estimated 300 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 \$649 million.

b. Coles County, Illinois

Coles County is located in the eastern part of Illinois (see Figure 3.1). It has a total area of 510 square miles, and the U.S. Census estimates that the 2023 population was 46,060 with 22,669 housing units. The county has a population density of 90.6 (persons per square mile) compared to 225 for the State of Illinois (2023). Median household income in the county was \$53,732 in 2022 (U.S. Census Bureau, 2024).

Figure 3.1 – Location of Coles County, Illinois



As shown in Table 3.1, the largest industries in the county are “Health Care and Social Assistance” followed by “Administrative Government,” “Retail Trade,” and “Professional, Scientific, and Technical Services.” These data for Table 3.1 come from IMPLAN covering the year 2022 (the latest year available).

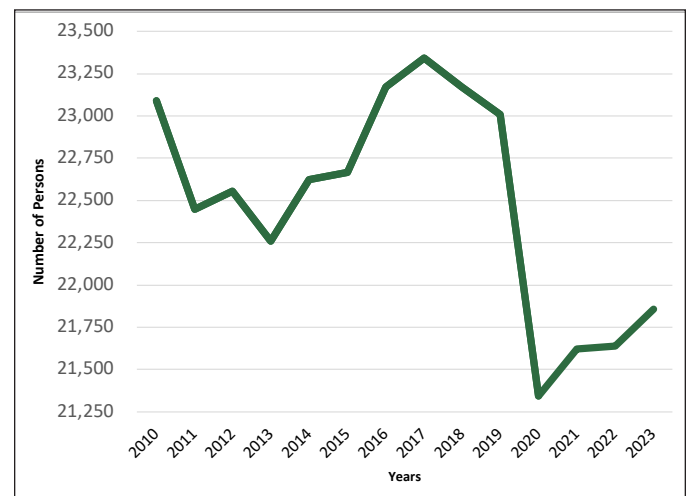
Table 3.1 – Employment by Industry in Coles County

Industry	Number	Percent
Health Care and Social Assistance	5,718	18.3%
Administrative Government	4,496	14.4%
Retail Trade	2,685	8.6%
Professional, Scientific, and Technical Services	2,564	8.2%
Administrative and Support and Waste Management and Remediation Services	2,436	7.8%
Accommodation and Food Services	2,268	7.3%
Other Services (except Public Administration)	1,891	6.0%
Manufacturing	1,671	5.3%
Construction	1,421	4.5%
Finance and Insurance	1,170	3.7%
Agriculture, Forestry, Fishing and Hunting	796	2.5%
Wholesale Trade	741	2.4%
Management of Companies and Enterprises	741	2.4%
Transportation and Warehousing	641	2.0%
Real Estate and Rental and Leasing	619	2.0%
Information	510	1.6%
Arts, Entertainment, and Recreation	299	1.0%
Government Enterprises	270	0.9%
Utilities	157	0.5%
Mining, Quarrying, and Oil and Gas Extraction	94	0.3%
Educational Services	77	0.2%

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

Table 3.1 provides the most recent snapshot of total employment but does not examine the historical trends within the county. Figure 3.2 shows the number of employed persons in Coles County from 2010 to 2022. The total number of employed persons in Coles County was at its highest at 23,344 in 2017 and its lowest at 21,345 in 2020 (BEA, 2024).

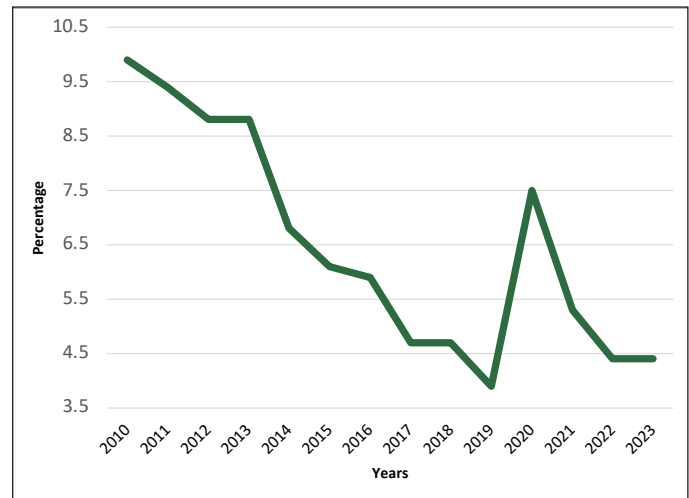
Figure 3.2 – Total Employed Persons in Coles County from 2010 to 2023



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 3.3 shows the unemployment rates from 2010 to 2023. Unemployment in Coles County was at its highest at 9.9% in 2010 and its lowest at 3.9% in 2019 (FRED, 2024). The unemployment rate spiked to 7.5% in 2020 but normalized to 4.4% in 2022 and 2023.

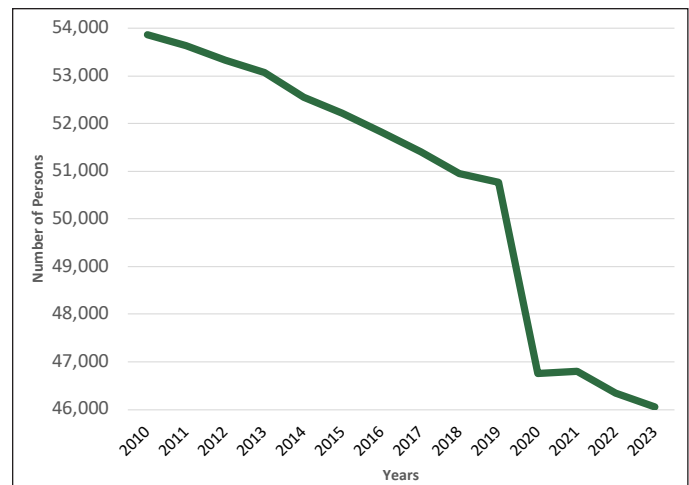
Figure 3.3 – Unemployment Rate in Coles County from 2010 to 2023



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Unemployment Rates, 2010-2023

The overall population in the county has decreased steadily, as shown in Figure 3.4. Coles County's population was 53,865 in 2010 and 46,060 in 2023, a loss of 7,805 people (FRED, 2024). The average annual population decrease over this time period was 600 people.

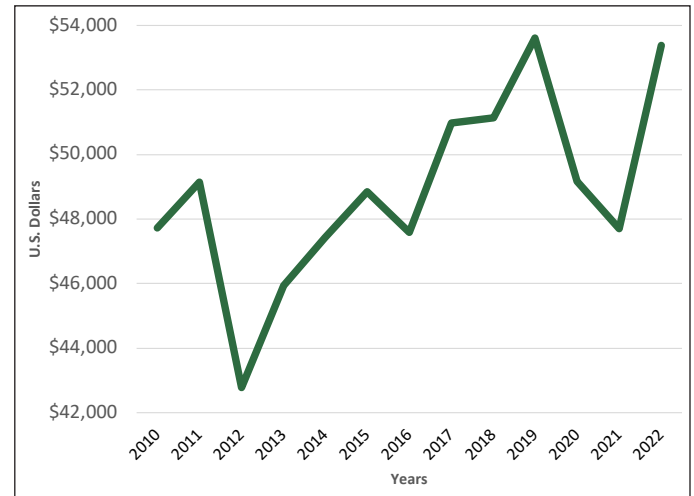
Figure 3.4 – Population in Coles County from 2010 to 2023



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Population Estimates, 2010-2023

Household income has trended upward in the county. Figure 3.5 shows the real median household income in Coles 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 \$42,767 in 2012 and its highest at \$53,609 in 2019 (FRED, 2024).

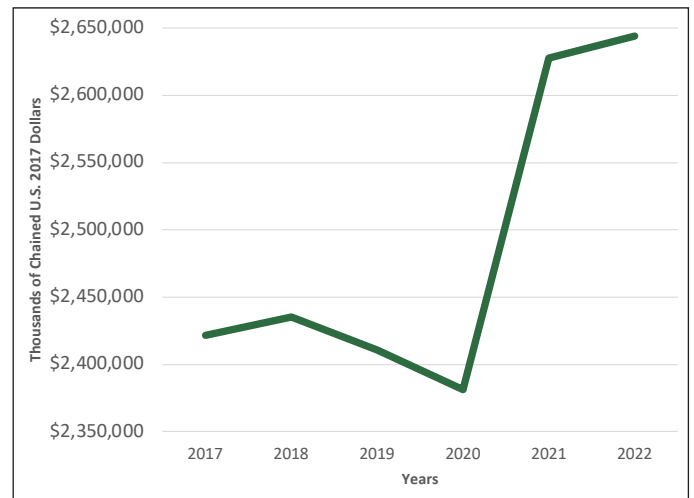
Figure 3.5 – Real Median Household Income in Coles County from 2010 to 2022



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 Coles County has increased since hitting a low in 2020, as shown in Figure 3.6 (FRED, 2024).

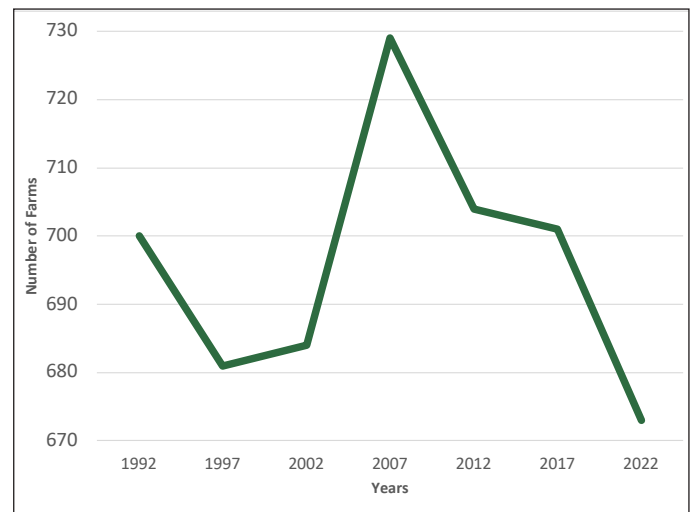
Figure 3.6 – Real Gross Domestic Product (GDP) in Coles County from 2017 to 2022



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 Coles County. As shown in Figure 3.7, the number of farms hit a high of 729 in 2007 and a low of 673 in 2022.

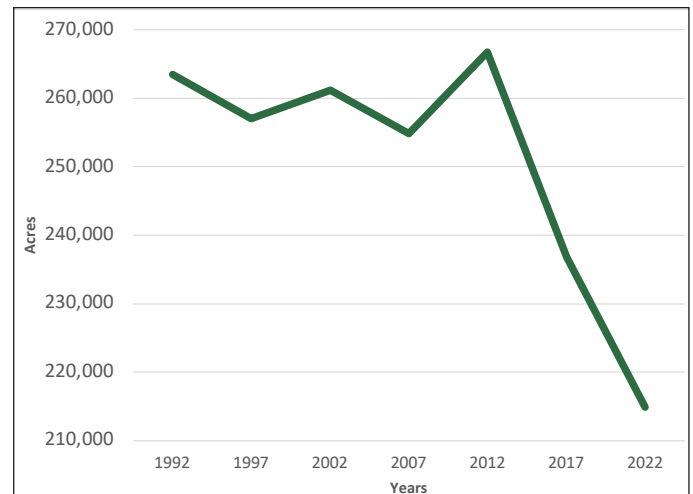
Figure 3.7 – Number of Farms in Coles County from 1992 to 2022



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

The amount of land in farms has decreased since hitting a high of 266,773 acres in 2012. The county farmland hit a low of 214,931 acres in 2022, according to Figure 3.8.

Figure 3.8 – Land in Farms in Coles County from 1992 to 2022



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

IV. Property Taxes

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).

Tables 4.1 to 4.4 detail the tax implications of the Coles 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 2024 (2023 tax year) rates.
- The analysis assumes that the Project is placed in service on January 1st, 2026 at a fair cash value of \$176 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.
- The analysis was based on current expected turbine locations. However, if alternate turbine locations are used instead, the actual taxes paid could vary depending on the relative tax rates between districts.
- 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 Apex Clean Energy, the laws surrounding renewable energy taxation in Illinois, or the tax rates in Coles 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 Coles 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 4.1 – Percentages of Property Taxes Paid to Taxing Jurisdictions

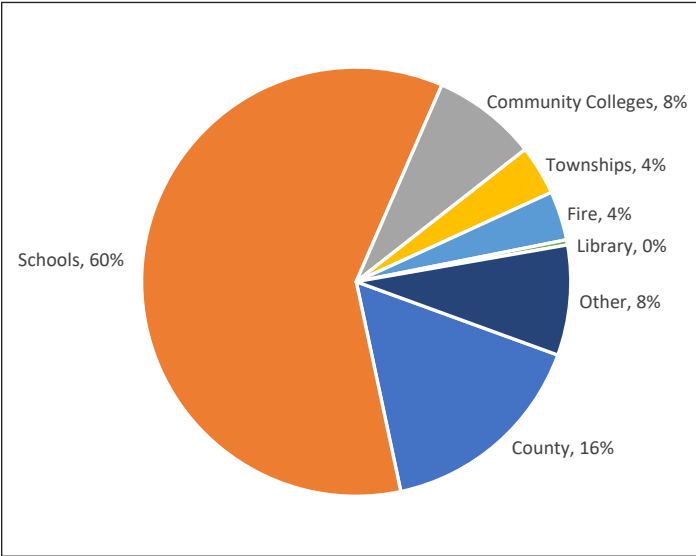


Table 4.1 – Total Property Taxes Paid by the Coles Wind Project

Year	Total Taxes Paid
2026	\$4,017,632
2027	\$3,946,793
2028	\$3,870,472
2029	\$3,788,452
2030	\$3,700,508
2031	\$3,606,410
2032	\$3,505,917
2033	\$3,398,784
2034	\$3,284,754
2035	\$3,163,566
2036	\$3,034,947
2037	\$2,898,618
2038	\$2,754,287
2039	\$2,601,657
2040	\$2,440,420
2041	\$2,270,256
2042	\$2,090,837
2043	\$1,901,826
2044	\$1,824,505
2045	\$1,867,016
2046	\$1,910,517
2047	\$1,955,032
2048	\$2,000,584
2049	\$2,047,198
2050	\$2,094,898
2051	\$2,143,709
2052	\$2,193,657
2053	\$2,244,769
2054	\$2,297,073
2055	\$2,350,594
TOTAL	\$81,205,690
AVG ANNUAL	\$2,706,856

As shown in Table 4.1, a conservative estimate of the total property taxes paid by the Project starts out at over \$4.0 million and declines due to depreciation (and offset by the trending factor) until it reaches the maximum depreciation in 2044. 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 \$81.2 million, and the average annual property taxes paid will be over \$2.7 million.

Table 4.2 shows an estimate of the likely taxes paid to the following taxing bodies: Coles County, Seven Hickory Township, Morgan Township, Multi Township Assessment District 6, Parkland Community College 505, and Lakeland Community College 517.

According to Table 4.2, the total amounts paid are over \$13.0 million for Coles County, over \$2.1 million for Seven Hickory Township, over \$574 thousand for Morgan Township, over \$343 thousand for Multi Township Assessment District (MTAD) 6, over \$897 thousand for Parkland Community College 505, and over \$5.5 million for Lakeland Community College 517 over the life of the Project.

Table 4.3 shows an estimate of the likely taxes paid to the following taxing bodies: Seven Hickory Morgan Fire, Humboldt Community Fire District, Hindsboro Community Fire District, Arcola Public Library District, Seven Hickory Road District, Morgan Road District, and the Airport Authority.

According to Table 4.3, the total amounts paid are over \$2.2 million for Seven Hickory Morgan Fire, over \$90.7 thousand for Humboldt Community Fire District, over \$643 thousand for Hindsboro Community Fire District, over \$315 thousand for Arcola Public Library District, over \$5.3 million for Seven Hickory Road District, over \$743 thousand for Morgan Road District, and over \$670 thousand for the Airport Authority over the life of the Project.

Table 4.2 – Tax Benefits from the Coles Wind Project for the County, Townships, and Community Colleges¹

Year	Coles County	Seven Hickory Township	Morgan Township	MTAD 6	Parkland Community College 505	Lakeland Community College 517
2026	\$647,220	\$104,815	\$28,435	\$17,017	\$44,410	\$272,600
2027	\$635,808	\$102,967	\$27,934	\$16,717	\$43,627	\$267,793
2028	\$623,513	\$100,976	\$27,394	\$16,394	\$42,784	\$262,615
2029	\$610,300	\$98,836	\$26,813	\$16,046	\$41,877	\$257,050
2030	\$596,133	\$96,541	\$26,191	\$15,674	\$40,905	\$251,083
2031	\$580,974	\$94,087	\$25,525	\$15,275	\$39,865	\$244,698
2032	\$564,785	\$91,465	\$24,814	\$14,850	\$38,754	\$237,879
2033	\$547,526	\$88,670	\$24,055	\$14,396	\$37,570	\$230,610
2034	\$529,157	\$85,695	\$23,248	\$13,913	\$36,309	\$222,873
2035	\$509,634	\$82,533	\$22,391	\$13,400	\$34,970	\$214,651
2036	\$488,914	\$79,178	\$21,480	\$12,855	\$33,548	\$205,924
2037	\$466,952	\$75,621	\$20,515	\$12,277	\$32,041	\$196,674
2038	\$443,701	\$71,856	\$19,494	\$11,666	\$30,445	\$186,881
2039	\$419,114	\$67,874	\$18,414	\$11,020	\$28,758	\$176,525
2040	\$393,139	\$63,667	\$17,272	\$10,337	\$26,976	\$165,585
2041	\$365,726	\$59,228	\$16,068	\$9,616	\$25,095	\$154,039
2042	\$336,823	\$54,547	\$14,798	\$8,856	\$23,112	\$141,865
2043	\$306,374	\$49,616	\$13,460	\$8,055	\$21,022	\$129,040
2044	\$293,918	\$47,599	\$12,913	\$7,728	\$20,168	\$123,794
2045	\$300,767	\$48,708	\$13,214	\$7,908	\$20,638	\$126,679
2046	\$307,774	\$49,843	\$13,522	\$8,092	\$21,119	\$129,630
2047	\$314,946	\$51,004	\$13,837	\$8,281	\$21,611	\$132,651
2048	\$322,284	\$52,193	\$14,159	\$8,474	\$22,114	\$135,741
2049	\$329,793	\$53,409	\$14,489	\$8,671	\$22,629	\$138,904
2050	\$337,477	\$54,653	\$14,827	\$8,873	\$23,157	\$142,141
2051	\$345,340	\$55,927	\$15,172	\$9,080	\$23,696	\$145,452
2052	\$353,387	\$57,230	\$15,526	\$9,291	\$24,248	\$148,841
2053	\$361,621	\$58,563	\$15,888	\$9,508	\$24,813	\$152,310
2054	\$370,047	\$59,928	\$16,258	\$9,729	\$25,391	\$155,858
2055	\$378,669	\$61,324	\$16,637	\$9,956	\$25,983	\$159,490
TOTAL	\$13,081,816	\$2,118,550	\$574,745	\$343,955	\$897,636	\$5,509,875
AVG ANNUAL	\$436,061	\$70,618	\$19,158	\$11,465	\$29,921	\$183,662

¹ The assumed tax rates are 1.07863% for Coles County, 0.1985% for Seven Hickory Township, 0.3491% for Morgan Township, 0.02836% for Multi Township Assessment District 6, 0.52866% for Parkland Community College 505, and 0.52826% for Lakeland Community College 517.

Table 4.3 – Tax Benefits from the Coles Wind Project for Other Taxing Bodies²

Year	Seven Hickory Morgan Fire	Humboldt Community Fire District	Hindsboro Community Fire District	Arcola Public Library District	Seven Hickory Road District	Morgan Road District	Airport Authority
2026	\$112,332	\$4,488	\$31,849	\$15,601	\$263,468	\$36,763	\$33,152
2027	\$110,351	\$4,409	\$31,287	\$15,326	\$258,822	\$36,114	\$32,568
2028	\$108,217	\$4,323	\$30,682	\$15,030	\$253,817	\$35,416	\$31,938
2029	\$105,924	\$4,232	\$30,032	\$14,712	\$248,439	\$34,666	\$31,261
2030	\$103,465	\$4,133	\$29,335	\$14,370	\$242,672	\$33,861	\$30,535
2031	\$100,834	\$4,028	\$28,589	\$14,005	\$236,501	\$33,000	\$29,759
2032	\$98,025	\$3,916	\$27,792	\$13,614	\$229,911	\$32,080	\$28,930
2033	\$95,029	\$3,796	\$26,943	\$13,198	\$222,885	\$31,100	\$28,046
2034	\$91,841	\$3,669	\$26,039	\$12,756	\$215,407	\$30,057	\$27,105
2035	\$88,453	\$3,534	\$25,079	\$12,285	\$207,460	\$28,948	\$26,105
2036	\$84,856	\$3,390	\$24,059	\$11,785	\$199,025	\$27,771	\$25,043
2037	\$81,045	\$3,238	\$22,978	\$11,256	\$190,085	\$26,523	\$23,918
2038	\$77,009	\$3,077	\$21,834	\$10,696	\$180,620	\$25,203	\$22,727
2039	\$72,742	\$2,906	\$20,624	\$10,103	\$170,611	\$23,806	\$21,468
2040	\$68,234	\$2,726	\$19,346	\$9,477	\$160,038	\$22,331	\$20,138
2041	\$63,476	\$2,536	\$17,997	\$8,816	\$148,879	\$20,774	\$18,733
2042	\$58,459	\$2,335	\$16,575	\$8,119	\$137,113	\$19,132	\$17,253
2043	\$53,175	\$2,124	\$15,076	\$7,385	\$124,718	\$17,402	\$15,693
2044	\$51,013	\$2,038	\$14,463	\$7,085	\$119,647	\$16,695	\$15,055
2045	\$52,201	\$2,085	\$14,800	\$7,250	\$122,435	\$17,084	\$15,406
2046	\$53,418	\$2,134	\$15,145	\$7,419	\$125,288	\$17,482	\$15,765
2047	\$54,662	\$2,184	\$15,498	\$7,592	\$128,207	\$17,889	\$16,132
2048	\$55,936	\$2,235	\$15,859	\$7,769	\$131,194	\$18,306	\$16,508
2049	\$57,239	\$2,287	\$16,229	\$7,950	\$134,251	\$18,733	\$16,893
2050	\$58,573	\$2,340	\$16,607	\$8,135	\$137,379	\$19,169	\$17,286
2051	\$59,938	\$2,395	\$16,994	\$8,325	\$140,580	\$19,616	\$17,689
2052	\$61,334	\$2,450	\$17,390	\$8,519	\$143,855	\$20,073	\$18,101
2053	\$62,763	\$2,507	\$17,795	\$8,717	\$147,207	\$20,540	\$18,523
2054	\$64,226	\$2,566	\$18,210	\$8,920	\$150,637	\$21,019	\$18,955
2055	\$65,722	\$2,626	\$18,634	\$9,128	\$154,147	\$21,509	\$19,396
TOTAL	\$2,270,492	\$90,707	\$643,742	\$315,342	\$5,325,298	\$743,059	\$670,082
AVG ANNUAL	\$75,683	\$3,024	\$21,458	\$10,511	\$177,510	\$24,769	\$22,336

² The assumed tax rates are 0.23401% for Seven Hickory Morgan Fire, 0.12465% for Humboldt Community Fire District, 0.37913% for Hindsboro Community Fire District, 0.18572% for Arcola Public Library District, 0.49896% for Seven Hickory Road District, 0.51056% for Morgan Road District, and 0.05525% for the Airport Authority.

Table 4.4 – Tax Benefits from the Coles Wind Project for the School Districts³

Year	Arcola CUSD 306	Charleston CUSD 1	Oakland CUSD 5
2026	\$364,622	\$1,721,805	\$319,055
2027	\$358,193	\$1,691,447	\$313,429
2028	\$351,267	\$1,658,738	\$307,368
2029	\$343,823	\$1,623,587	\$300,855
2030	\$335,841	\$1,585,898	\$293,871
2031	\$327,301	\$1,545,571	\$286,398
2032	\$318,181	\$1,502,504	\$278,418
2033	\$308,458	\$1,456,590	\$269,910
2034	\$298,109	\$1,407,722	\$260,854
2035	\$287,111	\$1,355,785	\$251,230
2036	\$275,438	\$1,300,664	\$241,016
2037	\$263,065	\$1,242,238	\$230,190
2038	\$249,967	\$1,180,383	\$218,728
2039	\$236,115	\$1,114,972	\$206,607
2040	\$221,481	\$1,045,872	\$193,803
2041	\$206,038	\$972,946	\$180,289
2042	\$189,755	\$896,054	\$166,041
2043	\$172,601	\$815,051	\$151,031
2044	\$165,584	\$781,914	\$144,891
2045	\$169,442	\$800,132	\$148,266
2046	\$173,390	\$818,775	\$151,721
2047	\$177,430	\$837,853	\$155,256
2048	\$181,564	\$857,375	\$158,874
2049	\$185,794	\$877,352	\$162,575
2050	\$190,123	\$897,794	\$166,363
2051	\$194,553	\$918,713	\$170,240
2052	\$199,086	\$940,119	\$174,206
2053	\$203,725	\$962,023	\$178,265
2054	\$208,472	\$984,439	\$182,419
2055	\$213,329	\$1,007,376	\$186,669
TOTAL	\$7,369,862	\$34,801,691	\$6,448,838
AVG ANNUAL	\$245,662	\$1,160,056	\$214,961

³The assumed tax rates are 4.34046% for Arcola CUSD 306, 3.87769% for Charleston CUSD 1, and 4.43103% for Oakland CUSD 5.

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 decreases. 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 4.4 shows the direct property tax revenue coming from the Project to Arcola Community Unit School District (CUSD) 306, Charleston CUSD 1, and Oakland CUSD 5. This tax revenue uses the assumptions outlined earlier to calculate the other tax revenue and assumes that 14% of the turbines are in Arcola CUSD 306, 74% are in Charleston CUSD 1, and 12% are in Oakland CUSD 5. Over the 50-year life of the Project, the school districts are expected to receive over \$48.6 million in tax revenue.

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 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.

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 FY25, Arcola CUSD 306 had 80% adequacy, was assigned Tier 2 status, and will receive \$46,130 in “new money.” Charleston CUSD 1 had 73% adequacy, was assigned Tier 1 status, and will receive \$880,391 in “new money.” And Oakland CUSD 5 had 89% adequacy, was assigned Tier 2 status, and will receive \$5,958 in “new money.” As outlined in Table 6.5, there is no year in which Arcola or Oakland school districts receive less than \$144,891. Charleston school district would need to reach 78% adequacy before it would lose any “new money.” 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. School boards generally like local tax dollars because they can control the levy and tax rate locally. State tax dollars are subject to congressional budget negotiations that are outside of any local control.



V. Methodology

SER's economic impact analysis of wind projects uses IMPLAN (Impact analysis for PLANning). IMPLAN software and parameters are based on government data collected at federal, state, and local levels. IMPLAN Group LLC is a leading provider of economic development software that is widely used by economists and economic development professionals across the United States. More information about IMPLAN can be found at implan.com.

IMPLAN 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, IMPLAN considers 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, IMPLAN modeling 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). IMPLAN modeling uses construction cost data, operating cost data, and data relating to the percentage of goods and services acquired in the county and 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, indirect, 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. 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 but can also include managers and administrative staff.

The initial spending on the construction and operation of the wind farm creates a second layer of impacts, referred to as “indirect impacts” or “turbine and supply chain 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 can result from spending on turbines, blades, towers, transformers, electrical wire, concrete, rebar, fasteners, etc., and construction services such as materials transportation, road repairs, accounting/payroll, legal guidance, etc. For example, concrete that is used in turbine foundations increases the demand for gravel, sand, and cement. Due to 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.

➡ **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 spending on equipment/materials pertaining to wind farm annual operations and maintenance such as vehicles, gasoline, tools, etc., and from services such as repair work, vegetation management, wildlife monitoring, etc. Property tax payments during annual operations create indirect impacts in the county and state that show up in the operations 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 during construction. Local employees, working directly or indirectly on the wind farm project, who receive their paychecks and then spend money in the community, support additional local jobs and economic activity. Thus, for example, the increased economic activity at quarries and cement factories during construction 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 at local restaurants, grocery stores, retail establishments, hospitals, medical offices, etc.

➡ **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 during annual operations and maintenance work. For example, onsite wind turbine technicians and contracted landscapers residing in the local area see increased individual incomes which are also spent at local establishments which spurs more local economic activity.

To show the economic impact of the Project, SER used two separate Multi-Regional Input-Output (MRIO) IMPLAN models with 2023 economic data, the most recent data year available at the time of analysis. The first IMPLAN model was used to calculate construction period impacts using Coles County economic data in conjunction with economic data aggregated from every other county in the state. Costs were assigned to each region according to client provided expected spending patterns, SER industry knowledge honed from over 400 previous analyses, and IMPLAN data related to the availability of relevant goods and services within the county and state economy. When results for the two regions are combined, they create the state's total construction period impacts. This method allows for more precise assignment of construction spending within the project county and construction spending outside the project county but within the project state.

The second model was used to calculate impacts stemming from annual operations and maintenance of the wind project. Like the construction period model, the operations period model also utilizes county specific data and the economic data collected from all other counties in the state. These combined data create the state's total annual operations period economic impacts. A sample of occupations, the education/training needed, and percentile wages is contained in Table 7.1 in the Appendix. A larger description of those occupations, their work environment, and future job growth is found in Table 7.2 in the Appendix.

SER's studies analyze the gross jobs that a new wind project development supports and does not analyze the potential loss of jobs due to declines in other forms of electricity generation. Impacts are determined by the robustness and applicability of the county and state economy, the client's intended spending in the project county and state, and the labor levels within the county and state.

VI. Results

The results from these models are shown in Tables 6.1 to 6.3. Table 6.1 lists the total employment impact from the Project for Coles County and the State of Illinois. Table 6.2 shows the impact on total earnings, and Table 6.3 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 25-40 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.

Results are not intended to be a precise forecast; they are an estimate of potential activity resulting from a specific set of intended costs and assumed spending in-county and in-state.

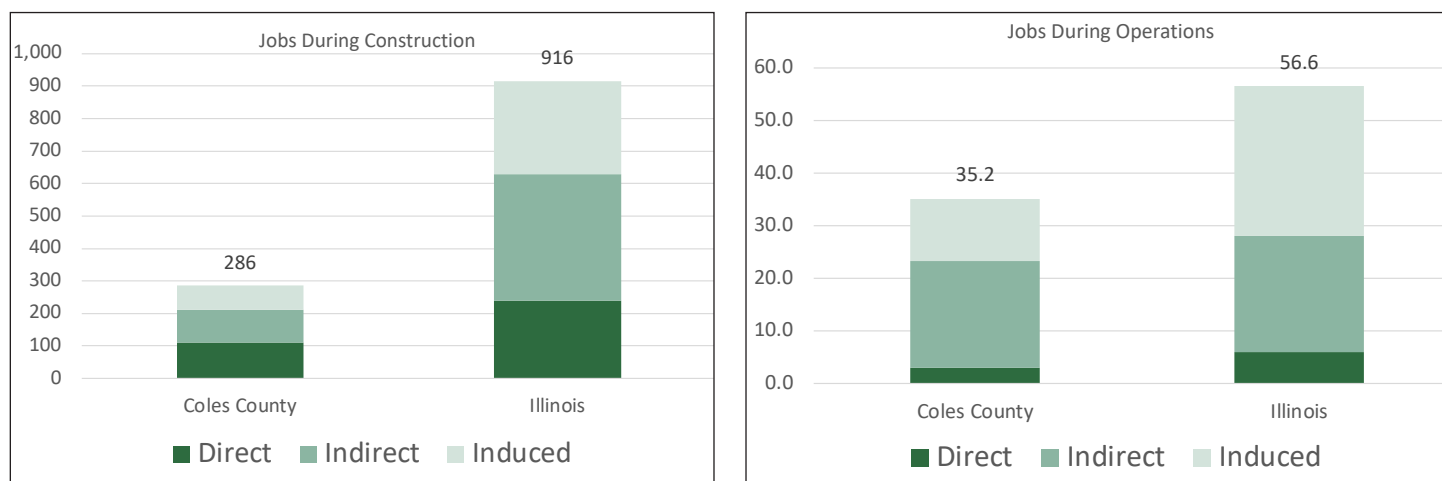
Table 6.1 – Total Employment Impact from the Coles Wind Project

	Coles County Jobs	State of Illinois Jobs
Construction		
Project Development and Onsite Labor Impacts	110	240
Turbine and Supply Chain Impacts	102	390
Induced Impacts	74	286
<i>New Local Jobs during Construction</i>	286	916
Operations		
Onsite Labor Impacts	3.0	6.0
Local Revenue and Supply Chain Impacts	20.4	22.1
Induced Impacts	11.8	28.5
<i>New Local Long-Term Jobs</i>	35.2	56.6

The results from the IMPLAN model show significant employment impacts from the Coles 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 6.1 from the IMPLAN 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, temporary, or seasonal job would constitute only a fraction of a job according to the IMPLAN model. For example, the IMPLAN model results show 110 new onsite jobs during construction in Coles County, though the construction of the Project could actually involve closer to 220 workers working half-time for a year. Thus, due to the short-term nature of construction projects, IMPLAN often significantly understates the actual number of people, i.e., “boots on the ground,” hired to work on the project. It is important to keep this fact in mind when viewing or reporting the numbers.

As shown in Table 6.1, new local jobs created or retained during construction total 286 for Coles County and 916 for the State of Illinois. New local long-term jobs created from the Project total 35.2 for Coles County and 56.6 for the State of Illinois.

Figure 6.1 – Total Employment Impact for the Coles Wind Project



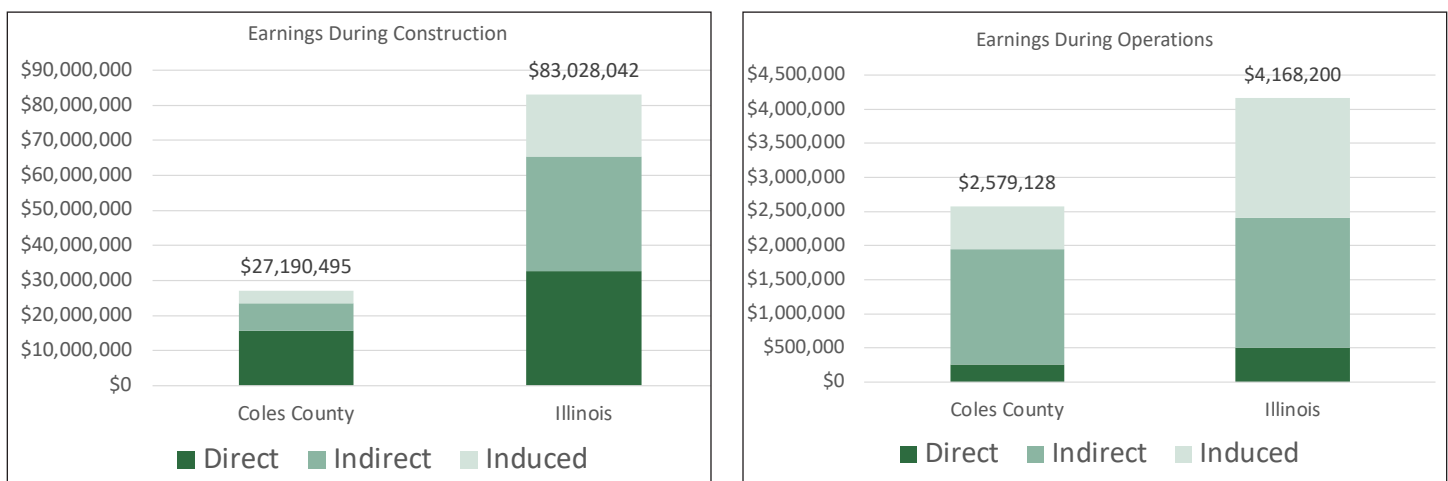
Direct jobs created during the operational phase last the life of the wind farm, typically 25-40 years. Direct construction jobs, and operations and maintenance jobs both require highly skilled workers in the fields of construction, management, and engineering. These well-paid professionals boost economic development in rural communities where new employment opportunities are welcome due to economic downturns. For a list of occupations expected to be employed, their wages, benefits, total compensation, and hours worked, please see Tables 7.3 to 7.5 in the Appendix.

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 6.2 and are categorized by construction impacts and annual operations impacts. The new local earnings during construction total over \$27.1 million for Coles County and over \$83.0 million for the State of Illinois. The new local long-term earnings total over \$2.5 million for Coles County and over \$4.1 million for the State of Illinois.

Table 6.2 – Total Earnings Impact from the Coles Wind Project

	Coles County	State of Illinois
Construction		
Project Development and Onsite Earnings Impacts	\$15,568,794	\$32,654,718
Turbine and Supply Chain Impacts	\$7,995,627	\$32,753,470
Induced Impacts	\$3,626,074	\$17,619,854
<i>New Local Earnings during Construction</i>	<i>\$27,190,495</i>	<i>\$83,028,042</i>
Operations (Annual)		
Onsite Labor Impacts	\$251,100	\$502,200
Local Revenue and Supply Chain Impacts	\$1,701,267	\$1,901,458
Induced Impacts	\$626,761	\$1,764,542
<i>New Local Long-Term Earnings</i>	<i>\$2,579,128</i>	<i>\$4,168,200</i>

Figure 6.2 – Total Earnings Impact from the Coles Wind Project



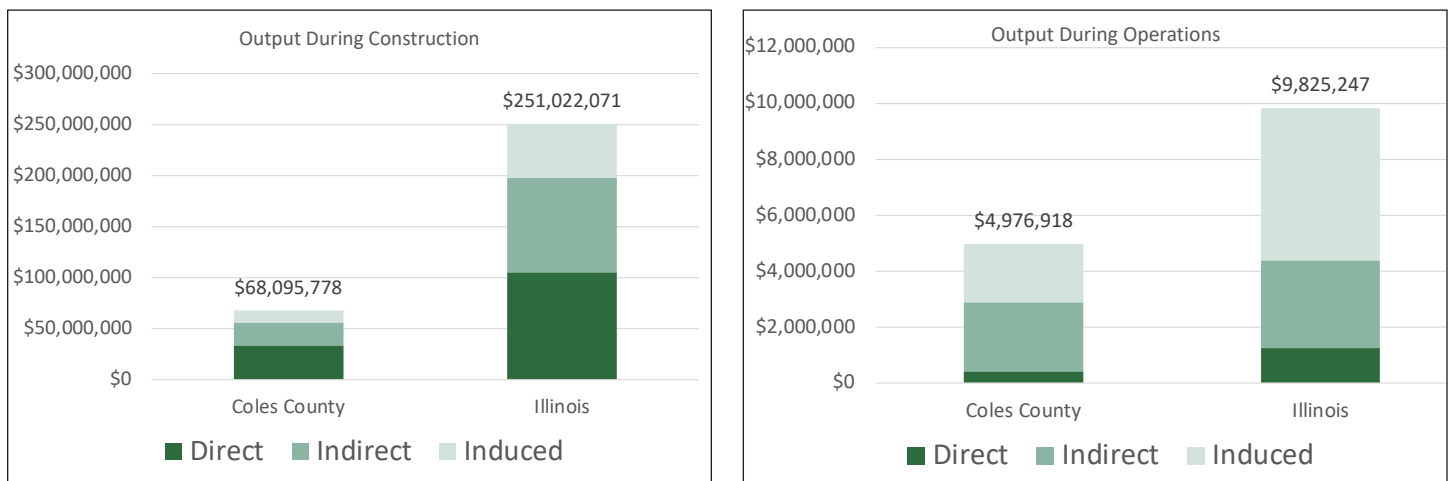
Output refers to economic activity or the value of production in the state or county economy, akin to Gross Domestic Product (GDP). Economic output includes the earnings reported in Table 6.2 but also measures other factors such as landowner payments, property taxes, and other economic activity that is neither earnings nor benefits from employment.

According to Table 6.3, the new local output during construction totals over \$68.0 million for Coles County and over \$251 million for the State of Illinois. The new local long-term output totals over \$4.9 million for Coles County and over \$9.8 million for the State of Illinois.

Table 6.3 – Total Output Impact from the Coles Wind Project

	Coles County	State of Illinois
Construction		
Project Development and Onsite Jobs Impacts on Output	\$33,563,286	\$105,460,769
Turbine and Supply Chain Impacts	\$22,479,154	\$92,706,541
Induced Impacts	\$12,053,338	\$52,854,761
<i>New Local Output during Construction</i>	<i>\$68,095,778</i>	<i>\$251,022,071</i>
Operations (Annual)		
Onsite Labor Impacts	\$411,710	\$1,264,267
Local Revenue and Supply Chain Impacts	\$2,471,269	\$3,127,507
Induced Impacts	\$2,093,939	\$5,433,473
<i>New Local Long-Term Output</i>	<i>\$4,976,918</i>	<i>\$9,825,247</i>

Figure 6.3 – Total Output Impact from the Coles Wind Project



VII . Appendix

Table 7.1 – Local and Statewide Compensation by Occupation

BLS Occupation Code	Job Type	Education/Training Required	Illinois 10th Percentile of Wages	Illinois 90th Percentile of Wages	Illinois Mean Wages	Champaign-Urbana, IL 10th Percentile of Wages	Champaign-Urbana, IL 90th Percentile of Wages	Champaign-Urbana, IL Mean Wages	US Fringe Benefits Median	Total Compensation Local mean wages plus US Fringe
Jobs during Construction										
47-2231	Solar Photovoltaic Installers	High school diploma or equivalent	\$23,680	\$49,600	\$35,140	N/A	N/A	N/A	\$27,394	N/A
47-3013	Helpers – Electricians	High school diploma or equivalent	\$37,000	\$89,400	\$59,750	\$46,420	\$103,940	\$78,090	\$27,394	\$105,484
47-2111	Electricians	High school diploma or equivalent	\$28,020	\$52,320	\$39,400	\$35,980	\$81,410	\$56,680	\$27,394	\$84,074
47-2061	Construction Laborers	No formal educational credential	\$34,440	\$71,360	\$48,960	\$47,080	\$104,610	\$83,200	\$27,394	\$110,594
47-2073	Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	\$46,840	\$99,780	\$71,040	\$51,410	\$110,030	\$85,870	\$27,394	\$113,264
47-1011	First-Line Supervisors of Construction Trades	High school diploma or equivalent	\$49,580	\$128,290	\$90,240	\$50,010	\$123,790	\$82,080	\$27,394	\$109,474
13-1082	Project Management Specialists and Business Operations Specialists		\$27,790	\$62,350	\$42,910	\$27,890	\$63,780	\$47,660	\$27,394	\$75,054
49-9071	Maintenance and Repair Workers, General (Operations)	High school diploma or equivalent	\$42,870	\$124,220	\$80,940	\$54,720	\$167,230	\$103,500	\$27,394	\$130,894
13-1111	Management Analysts	Bachelor's degree	\$43,960	\$168,380	\$98,580	\$40,630	\$204,210	\$107,380	\$27,394	\$134,774
11-1021	General and Operations Managers	Bachelor's degree	\$64,390	\$139,400	\$98,630	\$62,450	\$127,570	\$89,880	\$27,394	\$117,274
17-2071	Electrical Engineers		\$30,380	\$147,250	\$76,130	\$32,830	\$102,980	\$61,960	\$27,394	\$89,354
41-3091	Sales Representatives of Services		\$27,980	\$48,060	\$37,970	\$27,030	\$45,800	\$35,920	\$27,394	\$63,314
53-7062	Laborers and Freight, Stock and Material Movers	No formal educational credential	\$26,100	\$56,950	\$40,960	\$29,890	\$63,430	\$45,790	\$27,394	\$73,184
43-3031	Bookkeeping, Accounting and Auditing	Some college, no degree	\$33,560	\$82,290	\$59,050	N/A	N/A	N/A	\$27,394	N/A
Jobs during Operations										
51-8013	Power Plant Operators	High school diploma or equivalent	\$44,760	\$88,260	\$57,850	N/A	N/A	N/A	\$27,394	N/A
37-3011	Landscaping and Groundskeeping	No formal educational credential	\$22,060	\$44,700	\$33,580	\$28,200	\$54,840	\$39,370	\$27,394	\$66,764
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	\$43,850	\$99,610	\$68,460	\$38,950	\$85,550	\$61,740	\$27,394	\$89,134

Table 7.2 – Occupational Description and Future Outlook

Occupation Code	Occupation Title	Description	Work Environment	Current Employment	Job Growth, 2021-2031 (percent)
11-1021	General and Operations Managers	Plan, direct, or coordinate the operations of public or private sector organizations, overseeing multiple departments or locations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Usually manage through subordinate supervisors. Excludes First-Line Supervisors.	Top executives work in nearly every industry, for both small and large organizations. They often have irregular schedules, which may include working evenings and weekends. Travel is common, particularly for chief executives.	3,328,200	209,800 (7%)
13-1082	Project Management Specialists and Business Operations Specialists	Analyze and coordinate the schedule, timeline, procurement, staffing, and budget of a product or service on a per project basis. Lead and guide the work of technical staff. May serve as a point of contact for the client or customer. Excludes "Management Occupations" (11-0000), "Logisticians" (13-1081), "Meeting, Convention, and Event Planners" (13-1121), and "Production, Planning, and Expediting Clerks" (43-5061).	Project management specialists usually work in an office setting. Although project management specialists may collaborate on teams, some work independently. Project management specialists also may travel to their clients' places of business.	781,400	56,300 (7%)
13-1111	Management Analysts	Conduct organizational studies and evaluations, design systems and procedures, conduct work simplification and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Includes program analysts and management consultants. Excludes "Computer Systems Analysts" (15-1211) and "Operations Research Analysts" (15-2031).	Management analysts may travel frequently to meet with clients. Some work more than 40 hours per week.	950,600	108,400 (11%)
17-2071	Electrical Engineers	Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use. Excludes "Computer Hardware Engineers" (17-2061).	Electrical and electronics engineers work in industries including research and development, engineering services, manufacturing, telecommunications, and the federal government. Electrical and electronics engineers generally work indoors in offices. However, they may have to visit sites to observe a problem or a piece of complex equipment.	303,800	9,800 (3%)
41-3091	Sales Representatives of Services	Sell services to individuals or businesses. May describe options or resolve client problems. Excludes "Advertising Sales Agents" (41-3011), "Insurance Sales Agents" (41-3021), "Securities, Commodities, and Financial Services Sales Agents" (41-3031), "Travel Agents" (41-3041), "Sales Representatives, Wholesale and Manufacturing" (41-4010), and "Telemarketers" (41-9041).	Wholesale and manufacturing sales representatives work under pressure because their income and job security depend on the amount of merchandise they sell. Some sales representatives travel frequently.	1,597,600	63,300 (4%)
43-3031	Bookkeeping, Accounting and Auditing	Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers. Excludes "Payroll and Timekeeping Clerks" (43-3051).	Most accountants and auditors work full time. Overtime hours are typical at certain periods of the year, such as for quarterly audits or during tax season.	1,449,800	81,800 (6%)
47-1011	First-Line Supervisors of Construction Trades	Directly supervise and coordinate activities of construction or extraction workers.	N/A	735,500	29,900 (4%)
47-2061	Construction Laborers	Perform tasks involving physical labor at construction sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris, and other waste materials. May assist other craft workers. Construction laborers who primarily assist a particular craft worker are classified under "Helpers, Construction Trades" (47-3010). Excludes "Hazardous Materials Removal Workers" (47-4041).	Most construction laborers and helpers typically work full time and do physically demanding work. Some work at great heights or outdoors in all weather conditions. Construction laborers have one of the highest rates of injuries and illnesses of all occupations.	1,572,200	69,500 (4%)

Table 7.2 – Occupational Description and Future Outlook (Cont.)

47-2073	Operating Engineers and Other Construction Equipment Operators	Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties. Excludes “Extraction Workers” (47-5000) and “Crane and Tower Operators” (53-7021).	Construction equipment operators may work even in unpleasant weather. Most operators work full time, and some have irregular work schedules that include nights.	466,900	22,000 (5%)
47-2111	Electricians	Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems. Excludes “Security and Fire Alarm Systems Installers” (49-2098).	Almost all electricians work full time. Work schedules may include evenings and weekends. Overtime is common.	711,200	50,200 (7%)
47-3013	Helpers – Electricians	Help electricians by performing duties requiring less skill. Duties include using, supplying, or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist electricians are classified under “Construction Laborers” (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).	Most construction laborers and helpers typically work full time and do physically demanding work. Some work at great heights or outdoors in all weather conditions. Construction laborers have one of the highest rates of injuries and illnesses of all occupations.	1,572,200	69,500 (4%)
49-9071	Maintenance and Repair Workers, General (Operations)	Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of a building in repair. Duties may involve pipe fitting; HVAC maintenance; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs. Excludes “Facilities Managers” (11-3013) and “Maintenance Workers, Machinery” (49-9043).	General maintenance and repair workers often carry out many different tasks in a single day. They could work at any number of indoor or outdoor locations. They may work inside a single building, such as a hotel or hospital, or be responsible for the maintenance of many buildings, such as those in an apartment complex or on a college campus.	1,539,100	76,300 (5%)
51-1011	First-Line Supervisors of Production and Operating Workers	Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators. Excludes team or work leaders.	N/A	646,800	12,200 (2%)
49-9081	Wind Turbine Service Technicians	Wind Turbine Service Technicians inspect, diagnose, adjust, or repair wind turbines. Perform maintenance on wind turbine equipment including resolving electrical, mechanical, and hydraulic malfunctions.	Wind turbine service technicians generally work outdoors, in confined spaces, and often at great heights. Most wind techs work full time, and they also may be on call in the evening or on weekends.	11,400	6,800
(60%)	First-Line Supervisors of Production and Operating Workers	Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators. Excludes team or work leaders.	N/A	646,800	12,200 (2%)
53-7062	Laborers and Freight, Stock and Material Movers	Manually move freight, stock, luggage, or other materials, or perform other general labor. Includes all manual laborers not elsewhere classified. Excludes “Construction Laborers” (47-2061) and “Helpers, Construction Trades” (47-3011 through 47-3019). Excludes “Material Moving Workers” (53-7011 through 53-7199) who use power equipment.	Most hand laborers and material movers work full time. Because materials are shipped around the clock, some workers, especially those in warehousing, work overnight shifts.	6,473,000	358,300 (6%)
53-7021	Material Moving Machine Operators	Material moving machine operators use equipment to transport objects.	Most material moving machine operators work full time, and some work more than 40 hours per week. Because materials are shipped around the clock, some operators work overnight shifts.	847,700	22,500 (3%)

Table 7.3 – Occupational Output from IMPLAN Construction Model, Direct Jobs, Employment Greater than 1.0

Occ Code	Occupation	Wage and Salary Employment	Wage and Salary Income	Supplements to Wages and Salaries	Employee Compensation	Hours Worked
47-2000	Construction Trades Workers	32.41	\$3,115,577.82	\$536,596.63	\$3,652,174.45	62,685.50
49-9000	Other Installation, Maintenance, and Repair Occupations	25.82	\$2,921,451.51	\$503,162.22	\$3,424,613.73	54,625.15
47-1000	Supervisors of Construction and Extraction Workers	8.60	\$1,202,877.17	\$207,171.79	\$1,410,048.96	18,601.47
49-1000	Supervisors of Installation, Maintenance, and Repair Workers	6.21	\$943,745.67	\$162,541.52	\$1,106,287.19	13,508.36
13-1000	Business Operations Specialists	5.29	\$766,236.96	\$131,969.15	\$898,206.11	10,624.26
11-9000	Other Management Occupations	4.14	\$833,587.84	\$143,569.01	\$977,156.85	8,899.87
11-1000	Top Executives	3.06	\$772,660.73	\$133,075.52	\$905,736.25	6,742.98
43-9000	Other Office and Administrative Support Workers	2.19	\$155,327.15	\$26,752.03	\$182,079.18	3,550.70
43-3000	Financial Clerks	1.85	\$162,259.65	\$27,946.01	\$190,205.67	3,306.67
49-2000	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	1.69	\$182,353.86	\$31,406.84	\$213,760.70	3,510.37
43-6000	Secretaries and Administrative Assistants	1.60	\$129,692.08	\$22,336.89	\$152,028.98	2,804.85
53-3000	Motor Vehicle Operators	1.56	\$144,120.52	\$24,821.91	\$168,942.42	3,192.05
53-7000	Material Moving Workers	1.51	\$121,943.85	\$21,002.41	\$142,946.26	2,694.55
49-3000	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	1.44	\$153,939.49	\$26,513.03	\$180,452.52	3,083.88
47-4000	Other Construction and Related Workers	1.14	\$155,925.08	\$26,855.01	\$182,780.09	2,236.49
17-2000	Engineers	1.13	\$178,534.80	\$30,749.09	\$209,283.89	2,279.19

Table 7.4 – Occupational Output from IMPLAN Construction Model, Indirect Jobs, Employment Greater than 1.0

Occ Code	Occupation	Wage and Salary Employment	Wage and Salary Income	Supplements to Wages and Salaries	Employee Compensation	Hours Worked
47-2000	Construction Trades Workers	20.46	\$1,059,641.44	\$196,272.30	\$1,255,913.73	39,721.37
13-1000	Business Operations Specialists	4.37	\$363,706.62	\$81,071.74	\$444,778.35	8,658.44
47-1000	Supervisors of Construction and Extraction Workers	3.85	\$266,211.82	\$49,248.03	\$315,459.86	8,379.55
53-3000	Motor Vehicle Operators	3.65	\$193,362.69	\$45,709.20	\$239,071.89	7,356.26
51-8000	Plant and System Operators	3.20	\$245,183.58	\$85,924.73	\$331,108.31	6,127.53
49-9000	Other Installation, Maintenance, and Repair Occupations	3.18	\$225,338.44	\$69,663.88	\$295,002.33	6,084.40
11-9000	Other Management Occupations	2.78	\$303,756.09	\$69,327.62	\$373,083.71	5,859.52
11-1000	Top Executives	2.66	\$405,677.16	\$107,447.22	\$513,124.39	5,710.66
53-7000	Material Moving Workers	2.40	\$120,508.92	\$32,537.58	\$153,046.50	4,076.52
43-9000	Other Office and Administrative Support Workers	2.40	\$105,850.84	\$27,404.12	\$133,254.96	3,864.57
43-3000	Financial Clerks	2.27	\$121,861.18	\$34,899.27	\$156,760.45	3,955.74
43-4000	Information and Record Clerks	2.17	\$118,091.56	\$33,612.70	\$151,704.26	3,546.00
13-2000	Financial Specialists	2.14	\$142,751.45	\$32,404.38	\$175,155.83	4,138.74
39-3000	Entertainment Attendants and Related Workers	1.90	\$117,696.84	\$42,340.77	\$160,037.61	2,805.00
49-3000	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	1.59	\$97,910.56	\$23,475.99	\$121,386.56	3,260.96
43-6000	Secretaries and Administrative Assistants	1.46	\$75,529.38	\$19,834.37	\$95,363.75	2,524.67
41-2000	Retail Sales Workers	1.44	\$73,805.95	\$23,799.39	\$97,605.34	1,897.64
43-5000	Material Recording, Scheduling, Dispatching, and Distributing Workers	1.43	\$94,437.73	\$31,522.61	\$125,960.34	2,619.60
41-3000	Sales Representatives, Services	1.41	\$117,605.75	\$24,993.31	\$142,599.06	2,739.66
37-2000	Building Cleaning and Pest Control Workers	1.38	\$86,760.22	\$29,389.35	\$116,149.58	2,079.41
35-3000	Food and Beverage Serving Workers	1.32	\$61,898.53	\$20,975.18	\$82,873.71	1,599.30
11-3000	Operations Specialties Managers	1.22	\$191,594.30	\$51,937.40	\$243,531.69	2,484.71
33-9000	Other Protective Service Workers	1.10	\$76,699.93	\$24,758.69	\$101,458.62	1,684.98
15-1200	Computer Occupations	1.07	\$105,414.15	\$25,687.80	\$131,101.94	2,066.81
17-2000	Engineers	1.03	\$85,128.16	\$18,607.73	\$103,735.89	2,059.01

Table 7.5 – Occupational Output from IMPLAN Construction Model, Induced Jobs, Employment Greater than 1.0

Occ Code	Occupation	Wage and Salary Employment	Wage and Salary Income	Supplements to Wages and Salaries	Employee Compensation	Hours Worked
35-3000	Food and Beverage Serving Workers	5.84	\$106,858.86	\$15,042.89	\$121,901.75	6,405.03
41-2000	Retail Sales Workers	4.89	\$112,961.82	\$23,916.36	\$136,878.18	6,650.32
29-1000	Healthcare Diagnosing or Treating Practitioners	4.52	\$584,014.02	\$117,065.93	\$701,079.95	8,399.19
31-1100	Home Health and Personal Care Aides; and Nursing Assistants, Orderlies, and Psychiatric Aides	3.75	\$103,868.24	\$21,066.48	\$124,934.72	6,012.28
35-2000	Cooks and Food Preparation Workers	2.72	\$59,489.67	\$8,792.26	\$68,281.93	3,705.00
53-7000	Material Moving Workers	2.05	\$65,864.22	\$12,716.24	\$78,580.46	3,292.63
43-4000	Information and Record Clerks	2.04	\$73,316.14	\$13,817.39	\$87,133.53	3,377.35
13-1000	Business Operations Specialists	2.02	\$121,835.07	\$21,862.21	\$143,697.28	3,882.32
29-2000	Health Technologists and Technicians	1.98	\$114,036.40	\$23,190.97	\$137,227.37	3,538.55
37-2000	Building Cleaning and Pest Control Workers	1.67	\$32,638.26	\$6,280.89	\$38,919.15	2,668.80
11-1000	Top Executives	1.50	\$145,867.36	\$26,588.23	\$172,455.59	3,195.29
13-2000	Financial Specialists	1.45	\$103,216.80	\$17,246.01	\$120,462.81	2,860.40
43-6000	Secretaries and Administrative Assistants	1.38	\$52,866.58	\$9,994.67	\$62,861.25	2,465.00
53-3000	Motor Vehicle Operators	1.31	\$52,066.42	\$10,115.84	\$62,182.27	2,550.59
31-9000	Other Healthcare Support Occupations	1.17	\$44,765.78	\$8,687.58	\$53,453.35	1,957.15
49-3000	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	1.14	\$55,924.55	\$9,904.83	\$65,829.38	2,239.95
39-9000	Other Personal Care and Service Workers	1.14	\$16,041.46	\$2,899.56	\$18,941.02	1,442.92
35-1000	Supervisors of Food Preparation and Serving Workers	1.12	\$41,042.81	\$5,859.83	\$46,902.64	1,871.97
43-9000	Other Office and Administrative Support Workers	1.11	\$34,932.44	\$6,428.17	\$41,360.61	1,811.20
11-9000	Other Management Occupations	1.10	\$102,039.73	\$19,247.85	\$121,287.58	2,222.76
43-3000	Financial Clerks	1.09	\$39,267.11	\$7,383.54	\$46,650.66	1,930.39
35-9000	Other Food Preparation and Serving Related Workers	1.04	\$16,749.59	\$2,376.24	\$19,125.82	1,037.97

VIII. Glossary

Bb

Battery Energy Storage Systems (BESS)

An array of hundreds or thousands of small batteries that enable energy from renewables, like solar and wind, to be stored and released at a later time.

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.

li

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 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.

MWdc (megawatt direct current)

The power capacity of a utility-scale solar PV system before its direct current output has been fed through an inverter to create an alternating current. A solar system's rated MWdc will always be higher than its rated MWac.

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.

National Renewable Energy Laboratory's (NREL) 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.

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.

IX. References

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X. Curriculum Vitae (Abbreviated)

David G. Loomis
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Bloomington, IL 61704
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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
- 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

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

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



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