ECONOMIC IMPACT ANALYSIS OF THE HYCO SOLAR PROJECT

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Strategic Economic Research, LLC (SER) provides economic impact and local tax analyses for energy projects throughout the United States. SER reports show the jobs, earnings, output, and property taxes that these projects bring to local communities. The company has analyzed over 700 projects (over 132 gigawatts of energy) in 38 states. SER has primarily worked on renewable energy projects, including wind, solar, and storage. The company also produces analyses for other projects, including transmission, natural gas, nuclear, data centers, and more. In addition to written reports, the SER team combines years of experience to provide expert testimony for permitting of energy projects. Dr. David G. Loomis, the founder and President of SER, is a widely-recognized expert in energy economics.

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I. Executive Summary

Cypress Creek Renewables is developing the Hyco Solar Project in Person County, North Carolina. The purpose of this report is to aid decision makers in evaluating the economic impacts of this project on Person County and the State of North Carolina. The basis of this analysis is to study the direct, indirect, and induced impacts on job creation, wages, and total economic output.

The Hyco Solar Project is an 80-megawatt alternating current (MWac) utility-scale solar powered electric generation facility that will utilize photovoltaic (PV) panels installed on a single-axis tracking system. The total Project represents an investment in excess of $187 million. The total development is anticipated to result in the following:

Jobs[1]

- 67 new local jobs during construction for Person County
- 196 new local jobs during construction for the State of North Carolina
- 6.2 new local long-term jobs for Person County
- 12.1 new local long-term jobs for the State of North Carolina

Earnings[2]

- Over $3.9 million in new local earnings during construction for Person County
- Over $13.7 million in new local earnings during construction for the State of North Carolina
- Over $263 thousand in new local long-term earnings for Person County annually
- Over $739 thousand in new local long-term earnings for the State of North Carolina annually

Output[3]

- Over $9.1 million in new local output during construction for Person County
- Over $40.7 million in new local output during construction for the State of North Carolina
- Over $1.0 million in new local long-term output for Person County annually
- Over $1.9 million in new local long-term output for the State of North Carolina annually

Tax-Benefits

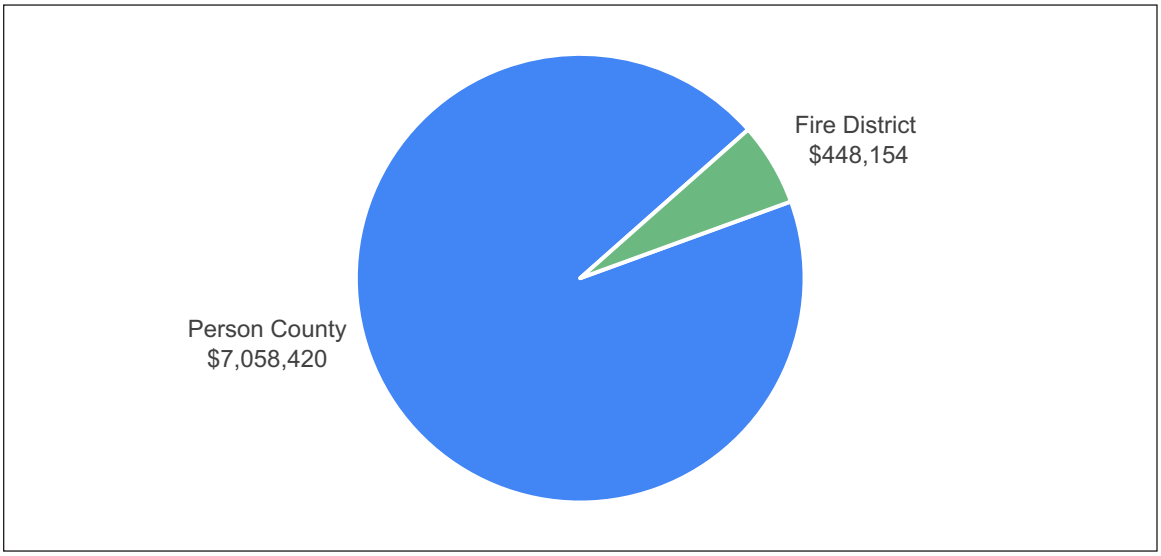
- Over $7.0 million in total county property taxes for Person County over the life of the Project
- Over $7.5 million in total property taxes for all taxing districts over the life of the Project

[1] All jobs values are full-time equivalents (FTEs) and are the sum of the direct, indirect, and induced jobs during construction and annual operations which can be found in the Economic Impact Results section.

[2] Earnings are a measurement in dollars of the total wages and benefits produced by the jobs found by the analysis. These earnings are categorized by construction impacts and operations impacts.

[3] The value of production in the state or local economy. It is an equivalent measure to the Gross Domestic Product.

Figure 1.1 – Total Property Taxes Paid by the Hyco Solar Project



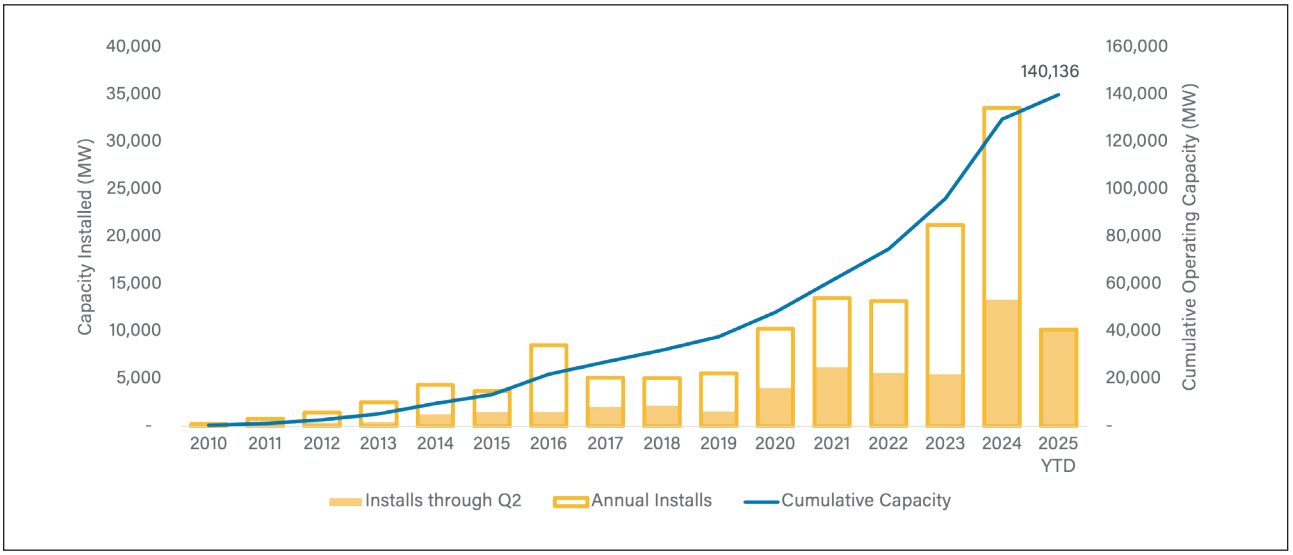
II. Energy Industry Growth & Economic Development

a. U.S. Solar PV Industry Growth

The U.S. solar industry is growing at a rapid but uneven pace. Solar energy systems are installed for on-site use — including residential, commercial, and industrial properties — and utility-scale solar-powered electric generation facilities intended for wholesale distribution. The Hyco Solar Project is a utility-scale solar PV project intended for wholesale markets through the transmission grid. From 2013 to 2018, the amount of solar-generated electricity more than quadrupled, increasing by 444% (SEIA, 2020). The industry has continued to add PV systems to the grid. Figure 2.1 shows the historical capacity additions. The primary driver of this overall sharp pace of growth is large price declines in solar equipment. According to Figure 2.2, utility-scale solar fixed tilt and single-axis tracking have decreased from an average of $6/watt in 2010 to slightly more than $1/watt in 2023. Solar PV also benefits from the Federal Investment Tax Credit (ITC), which provides a tax credit for residential and commercial properties.

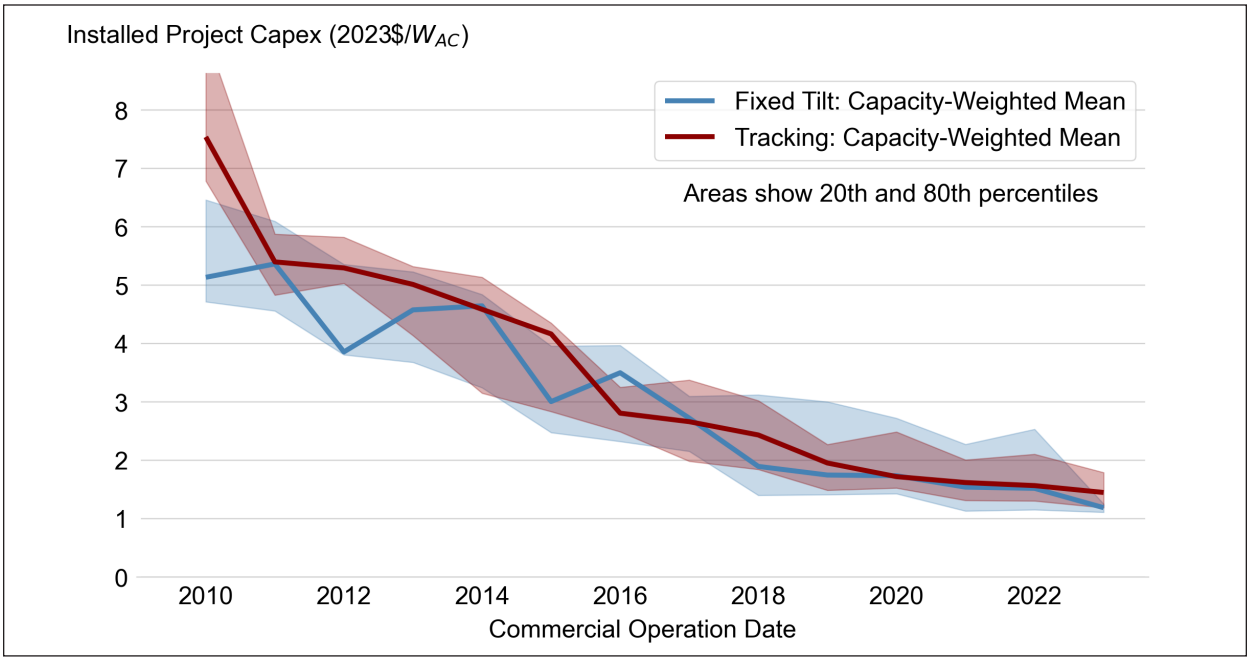
According to Figure 2.3, utility-scale PV installations jumped in the fourth quarter of 2024 to over 16,000 MWdc. Even with this large ramp-up of installations, there are an additional 60,000 MWdc of contracted utility-scale installations that have yet to be built.

Figure 2.1 – U.S. Annual and Cumulative Utility-Scale Solar Capacity Growth, 2010 – Q2, 2025



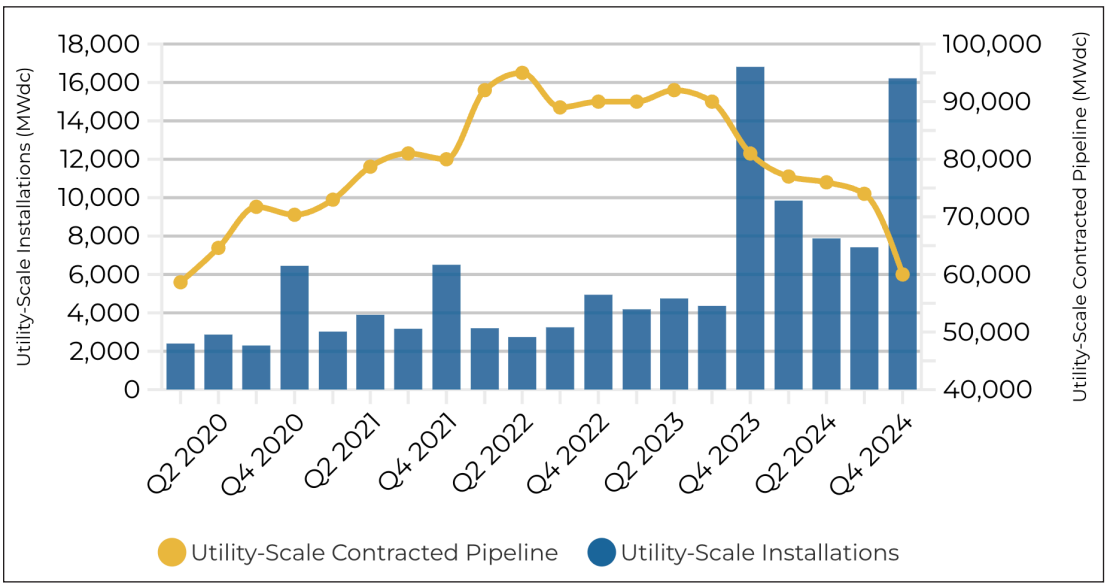
Source: ACP, Clean Power Market Report, Q2 2025

Figure 2.2 – Installed Costs of Utility-Scale Solar from 2010 to 2023 (adjusted for inflation)



Source: Lawrence Berkeley National Laboratory, Utility-Scale Solar, 2024 Edition

Figure 2.3 – U.S. Utility PV Installations vs. Contracted Pipeline



Source: Solar Energy Industries Association, Solar Market Insight Report Q4 2024

b. North Carolina Solar PV Industry

According to the Solar Energy Industries Association (SEIA), North Carolina is ranked 5th in the U.S. cumulative installations of solar PV. Texas, California, and Florida are the top three states for utility-scale solar PV which may not be surprising because of the high solar irradiance that they receive (ACP, Q2, 2025). However, there are other states with similar solar irradiance to North Carolina that rank highly for utility-scale solar. In 2024, North Carolina installed 200.6 MW of solar electric capacity, bringing its cumulative capacity to 9,671.1 MW.

North Carolina has great potential to expand its solar installations. Table 2.1 has a list of the utility-scale solar farms in operation in North Carolina through 2023 (some small projects below 70 MW were omitted from the table).

There are 230 solar companies in North Carolina including 39 manufacturers, 87 installers/developers, and 104 others ("other" includes sales and distribution, project management, and engineering). Figure 2.4 shows the locations of solar companies in North Carolina at the time of this report. Currently, there are 7,356 solar jobs in the State of North Carolina according to SEIA.

Figure 2.5 shows the North Carolina historical installed capacity by year according to the SEIA. Solar installation saw huge growth in 2017 and is forecasted to continue to grow. Over the next five years, solar in North Carolina is projected to grow by 2,718 MW.

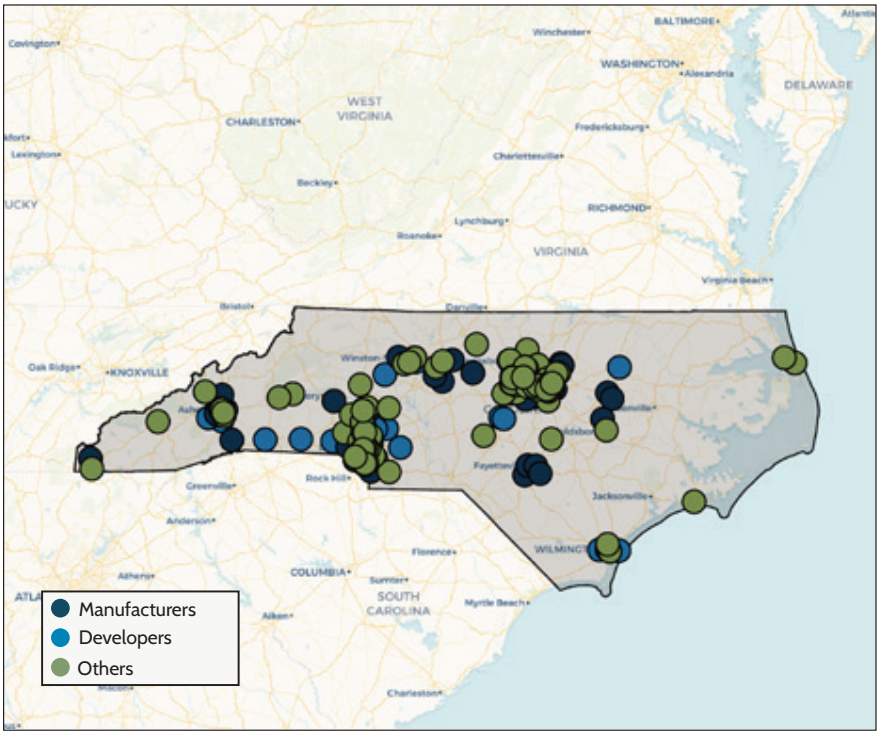
The Energy Information Administration (EIA) calculated the number of megawatt-hours generated from different energy sources in 2023. As shown in Figure 2.6, the greatest percentage of electricity generated in North Carolina came from natural gas with 41.5% followed by nuclear energy with 32.9% and coal with 11.0%. Approximately 8.8% of the total electricity power generated in North Carolina came from solar thermal and solar PV in 2023.

The U.S. Department of Energy sponsors the U.S. Energy and Employment Report each year. Electric Power Generation (EPG) 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 2.7, employment in North Carolina in the solar energy industry (10,224) is larger than natural gas generation (3,021), wind electric generation (1,731), and nuclear electric generation (1,565).

Table 2.1 – North Carolina Solar Projects

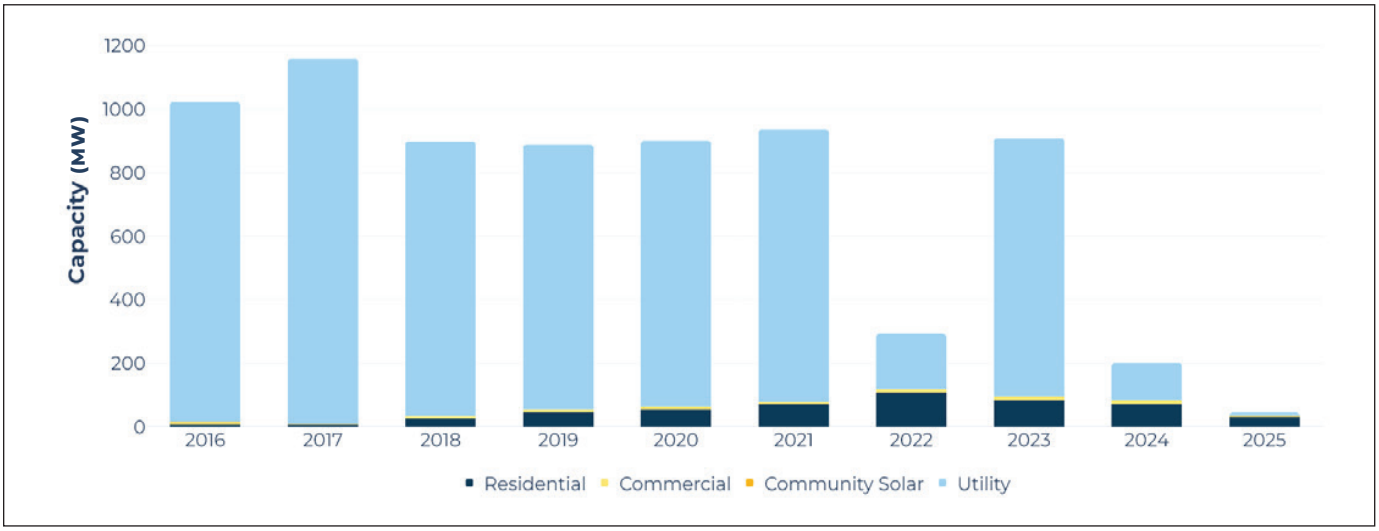
Utility-Scale Solar Farm	Capacity (MW)	County Name	Year Online
Conetoe Solar	85	Edgecombe County	2015
Innovative Solar 46	78.5	Cumberland County	2016
Rutherford Farm	74.8	Rutherford County	2016
Innovative Solar 37	79	Anson County	2017
Innovative Solar 42	71	Cumberland County	2017
Aulander Holloman Solar, LLC	80	Hertford County	2018
Pecan Solar	74.9	Northampton County	2018
NC 102 Project	74.8	Cabarrus County	2018
Gutenberg Solar	79.9	Northampton County	2019
Wilkinson Solar	74	Beaufort County	2019
Crooked Run	70.1	Pender County	2019
Fern Solar	100	Edgecombe County	2020
Albemarle Beach Solar	80	Washington County	2020
Chestnut Solar	75	Halifax County	2020
Harts Mill Solar Project	80	Edgecombe County	2021
Trent River Solar	78.7	Jones County	2021
Bay Tree	70.1	Bladen County	2021
Oak Solar	120	Northampton County	2023
Oak Trail Solar Project	100	Currituck County	2023
Phobos Solar Project	78.8	Nash County	2023
Misenheimer Solar Farm (Orion)	74.4	Stanly County	2023
Cabin Creek Solar Project	70.2	Montgomery County	2023

Figure 2.4 – Solar Company Locations in North Carolina



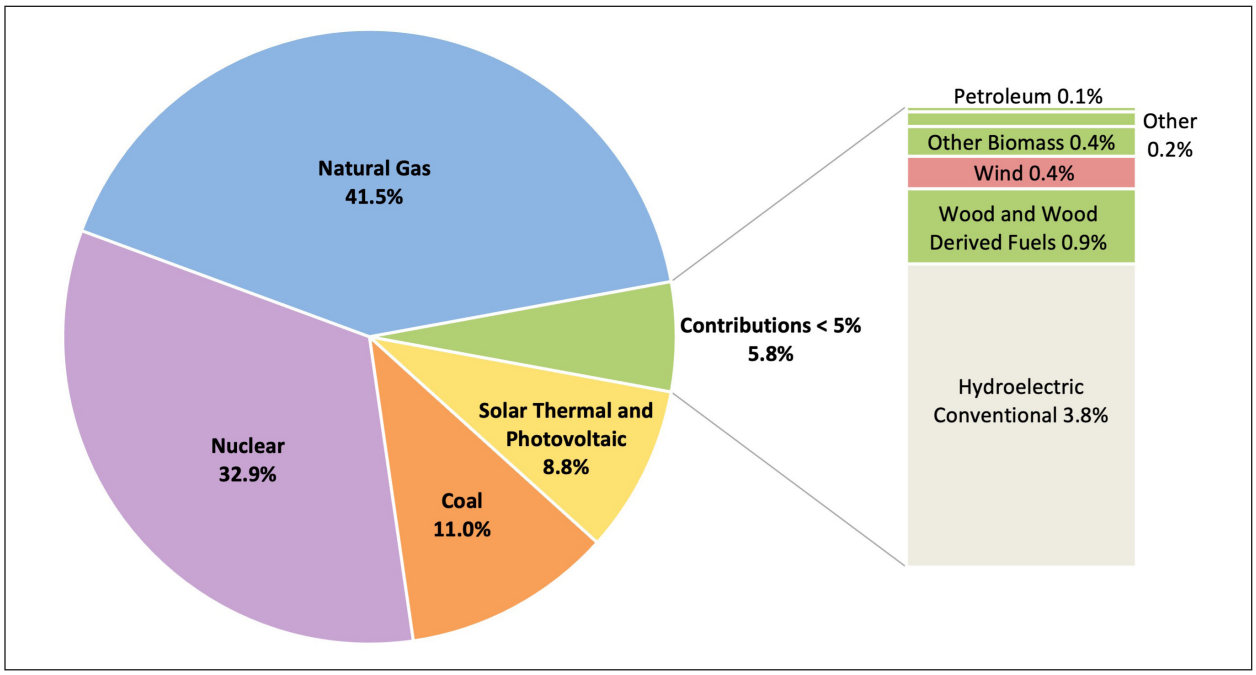
Source: Solar Energy Industries Association, Solar Spotlight: North Carolina Q2 2025

Figure 2.5 – North Carolina Annual Solar Installations



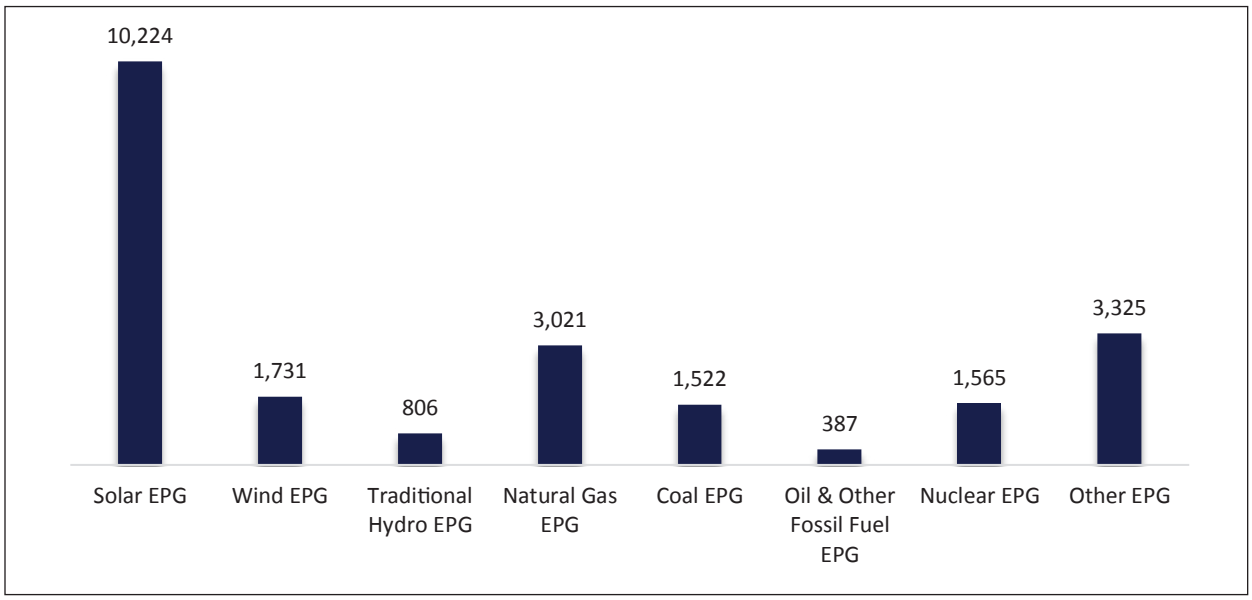
Source: Solar Energy Industries Association, Solar Spotlight: North Carolina Q2 2025

Figure 2.6 – Electric Generation by Fuel Type for North Carolina in 2023



Source: U.S. Energy Information Association (EIA): North Carolina 2023

Figure 2.7 – Electric Generation Employment by Technology



Source: U.S. Energy and Employment Report 2025: North Carolina

c. Economic Benefits of Utility-Scale Solar PV Energy

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

Bessette et al. (2024) state that the potential economic benefits of a utility-scale solar project would include "increased property tax revenue, landowner payments, and increased employment" (Bessette et al., 2024, p. 7). They highlight the fact that the tax benefits are difficult for residents to understand – perhaps because they are not quantified clearly. They also mention both the direct and indirect (supply chain) economic impacts.

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

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

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

Knapp (2021) examines the local economic impact from installing a 150 MW solar project in rural Wisconsin with a 100% local workforce. He finds that such a project would generate $11.8 million in economic activity.

Finally, Jenniches (2018) performed a literature review 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, p. 48). Input-Output analysis is the basis for the methodology used in the economic impact analysis of this report.

III. Project Description and Location

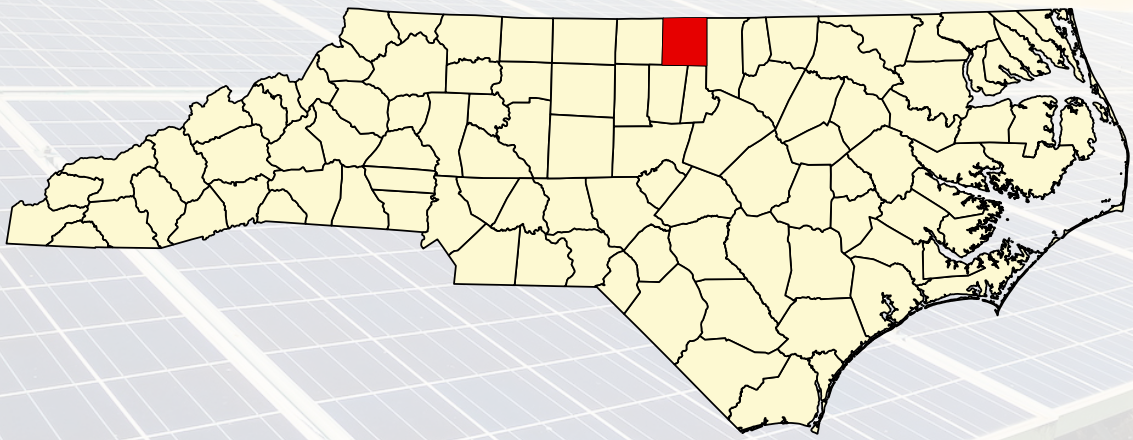
a. Hyco Solar Project

Cypress Creek Renewables is developing the Hyco Solar Project in Person County, North Carolina. The Project consists of an estimated 80-megawatt alternating current (MWac) utility-scale solar-powered electric generation facility that will utilize photovoltaic (PV) panels installed on a single-axis tracking system. The total Project represents an investment in excess of $187 million.

b. Person County Economic and Demographic Statistics

Person County is located in the northern part of North Carolina (see Figure 3.1). It has a total area of 404 square miles, and the U.S. Census estimates that the population was 39,097 in 2020 with 18,482 housing units in 2023. The county has a population density of 99.7 (persons per square mile) compared to 215 for the State of North Carolina (2020). Median household income in the county was $64,927 in 2023 (U.S. Census Bureau, 2024).

Figure 3.1 – Location of Person County, North Carolina



Source: Wikipedia, 2024. Data from nationalatlas.gov

Table 3.1 – Employment by Industry in Person County

Industry	Number	Percent
Retail Trade	1,778	12.3%
Administrative Government	1,607	11.1%
Health Care and Social Assistance	1,429	9.9%
Manufacturing	1,366	9.5%
Construction	1,148	8.0%
Accommodation and Food Services	1,099	7.6%
Other Services (except Public Administration)	802	5.6%
Administrative and Support and Waste Management and Remediation Services	766	5.3%
Wholesale Trade	635	4.4%
Professional, Scientific, and Technical Services	629	4.4%
Agriculture, Forestry, Fishing and Hunting	612	4.2%
Real Estate and Rental and Leasing	591	4.1%
Finance and Insurance	538	3.7%
Utilities	325	2.2%
Transportation and Warehousing	321	2.2%
Information	224	1.6%
Educational Services	207	1.4%
Arts, Entertainment, and Recreation	196	1.4%
Management of Companies and Enterprises	81	0.6%
Government Enterprises	72	0.5%
Mining, Quarrying, and Oil and Gas Extraction	15	0.1%

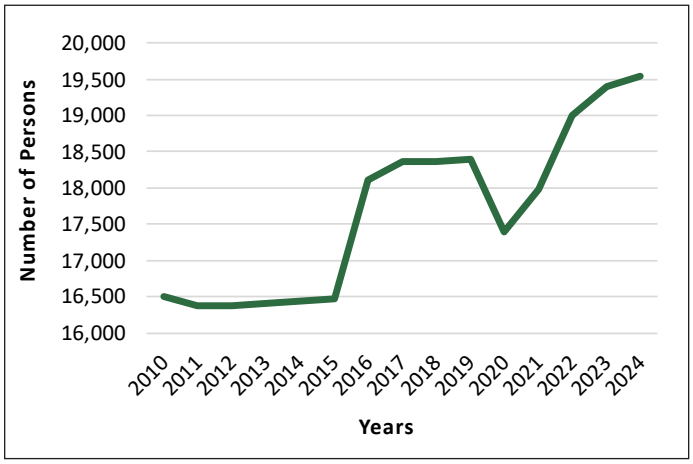
Source: Impact Analysis for Planning (IMPLAN), County Employment by Industry, 2023

As shown in Table 3.1, the largest industries in the county are "Retail Trade," "Administrative Government," and "Health Care and Social Assistance." These data for Table 3.1 come from IMPLAN covering the year 2023 (the latest year available).

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 Person County from 2010 to 2024. The total number of employed persons was at its lowest at 16,375 in 2012 and its highest at 19,544 in 2024 (FRED, 2025).

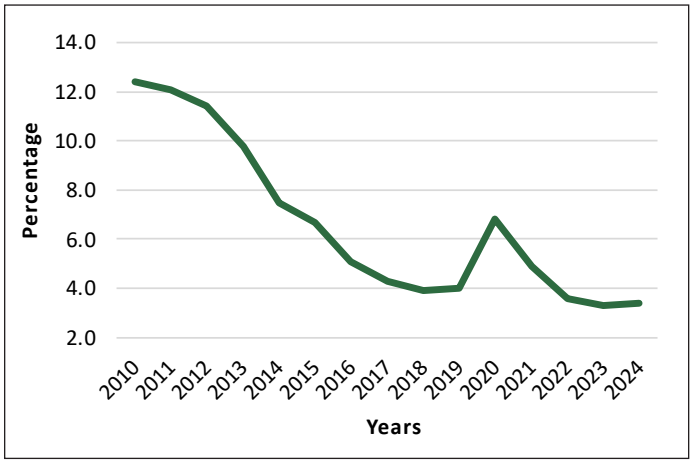
Figure 3.2 – Total Employed Persons in Person County from 2010 to 2024



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Employed Persons, 2010-2024

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 2024. Unemployment in Person County was at its highest at 12.4% in 2010 and its lowest at 3.3% in 2023 (FRED, 2025). The unemployment rate spiked to 6.8% in 2020 then normalized.

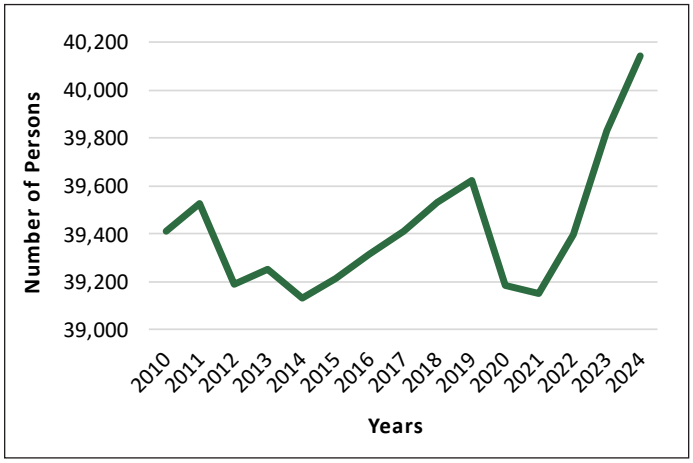
Figure 3.3 – Unemployment Rate in Person County from 2010 to 2024



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Unemployment Rates, 2010-2024

The overall population in the county has trended upward, as shown in Figure 3.4. Person County's population was 39,412 in 2010 and 40,143 in 2024, a gain of 731 people (FRED, 2025). The average annual population increase over this time period was 52 people.

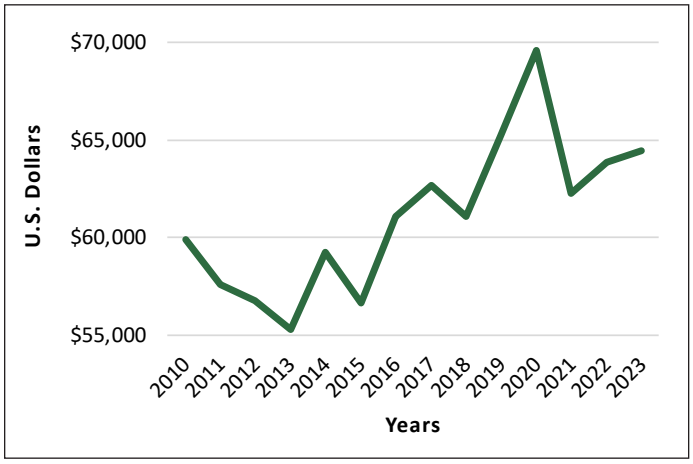
Figure 3.4 – Population in Person County from 2010 to 2024



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Population Estimates, 2010-2024

Household income has trended upward in the county. Figure 3.5 shows the real median household income in Person County from 2010 to 2023. Using the national Consumer Price Index (CPI), the nominal median household income for each year was adjusted to 2023 dollars. Household income was at its lowest at $55,297 in 2013 and its highest at $69,603 in 2020 (FRED, 2024).

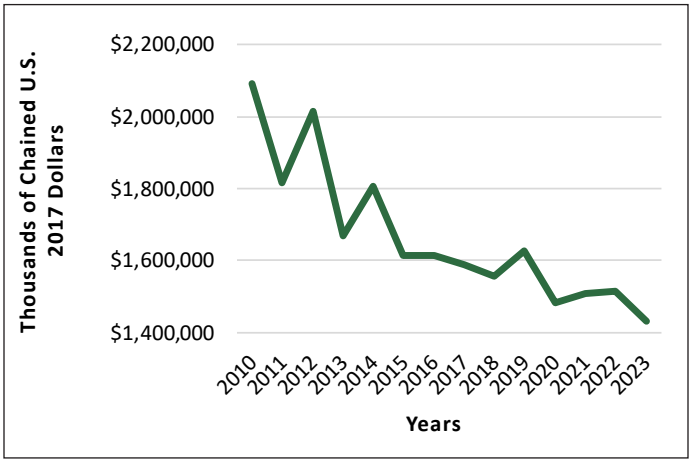
Figure 3.5 – Real Median Household Income in Person County from 2010 to 2023



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Estimate of Median Household Income, 2010-2023

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 Person County has decreased since hitting a high in 2010, as shown in Figure 3.6 (FRED, 2024).

Figure 3.6 – Real Gross Domestic Product (GDP) in Person County from 2010 to 2023



Source: Federal Reserve Bank of St. Louis Economic Data, U.S. Census Bureau, Real Gross Domestic Product, 2010-2023

IV. Economic Impact Methodology

The economic analysis of the Project was created using IMPLAN (IMpact analysis for PLANning). IMPLAN software and parameters are based on government data collected at federal, state, and local levels. IMPLAN is a leading provider of economic development software that is widely used by economists and economic development professionals. 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. In other words, IMPLAN demonstrates how one industry's output can be used as an input for another. For example, when a PV system is installed, there are both soft costs — consisting of permitting, installation, and customer acquisition costs — and hardware costs, of which the PV module is the largest component. The purchase of a module not only increases demand for manufactured components and raw materials, but it also supports the labor required to build and install the module. When a module is purchased from a manufacturing facility, the manufacturer uses some of that money to pay its employees. Then, the employees spend that money on goods and services within their community. Likewise, when a developer pays workers to install the systems, those workers spend money in the local economy which boosts economic activity and supports employment in other sectors. The goal of an economic impact analysis is to quantify all reverberations throughout the county and state economies.

IMPLAN modeling uses construction cost data, operations cost data, and data relating to the percentage of goods and services acquired in the county and state to calculate the jobs, earnings, and economic output associated with this information.

The results are split into the construction period and the annual operations period of the solar 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 on-site construction industries in which the direct final demand (i.e., spending on construction labor and services) change is made. On-site construction-related services include installation labor, engineering, design, and other professional services. **Direct impacts during operating years** refer to the final demand changes in on-site spending required for solar operations and maintenance workers, their managers, and administrative/clerical staff.

The initial spending for a project's construction and operation will create a second layer of impacts, referred to as "supply chain impacts" or "indirect impacts." **Indirect impacts during the construction period** consist of changes in inter-industry purchases resulting from the direct final demand changes. These impacts stem from construction spending on solar farm materials (PV modules, inverters, tracking systems, cabling, foundations, etc.) as well as purchases of offsite services like materials transportation, road repair, accounting/payroll, legal guidance, etc. **Indirect impacts during the operations period** also consist of changes in inter-industry purchases resulting from the direct final demand changes, but these impacts result from spending on equipment/materials pertaining to a solar farm's annual operations and maintenance (vehicles, gasoline, tools, etc.) and other services (i.e. 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.

These payments do not support the day-to-day operations and maintenance of the solar farm; they are more of a latent effect resulting from the solar farm's presence.

Induced impacts during construction refer to the changes that occur in household spending as household income increases or decreases as a result of the direct and indirect effects of final demand changes during construction. Local employees (working directly or indirectly on the project), who receive their paychecks and then spend money in the community, are supporting additional local jobs and economic activity. For example, in-county and in-state construction workers constructing the solar farm will spend a portion of their wages in the local economy at 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, when on-site solar technicians and contracted landscapers residing in-county and in-state are paid for their work on the solar farm, they can then spend their wages at local establishments which spurs more local economic activity.

To estimate the economic impacts of the Project, SER uses 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 calculates construction period impacts using the project specific county economic data in conjunction with aggregated economic data that is combined from every other county in the state. Costs are then assigned to either 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 economies. 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's county and/or state.

The second model calculates impacts stemming from the annual operations and maintenance of the solar project. Like the construction period model, the operations period model also utilizes economic data from both the project's county and a region comprised of every other county in the state combined. Results from these two regions create the state's total annual operations period economic impacts.

The majority of project employees needed during the construction phase are construction workers, but there are other occupations involved as well. Likewise, there are more occupations than solar technicians involved during the project's operations phase. A sample of those occupations, the education/training they require, and wage percentiles are contained in Table 7.1 in the Appendix. A larger description of those occupations, including their work environment and future growth potential, is located in Table 7.2 in the Appendix.

SER analyzes the gross number of jobs a new solar project development supports but not 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 economies, the client's intended spending in the project's county and state, and the labor levels within the county and state.

V. Economic Impact Results

The economic impact results[4] were derived from detailed project cost estimates supplied by Cypress Creek Renewables. In addition, Cypress Creek Renewables and SER estimated the percentages of project materials and labor that will be coming from within Person County and the State of North Carolina.

The results from these models are shown in Tables 5.1 to 5.3. Table 5.1 lists the Project's total employment impacts for Person County and the State of North Carolina. Table 5.2 shows the total earnings impacts, and Table 5.3 contains the total output impacts. The results are divided into one-time construction impacts and ongoing annually recurring operations impacts that are expected to last the Project's lifetime. Project Development and On-site Labor Impacts correspond to direct impacts as defined in the methodology section. Supply Chain Impacts are the indirect impacts during construction, and Local Revenue and Supply Chain Impacts are indirect impacts during operations.

Table 5.1 – Total Employment Impacts from the Hyco Solar Project

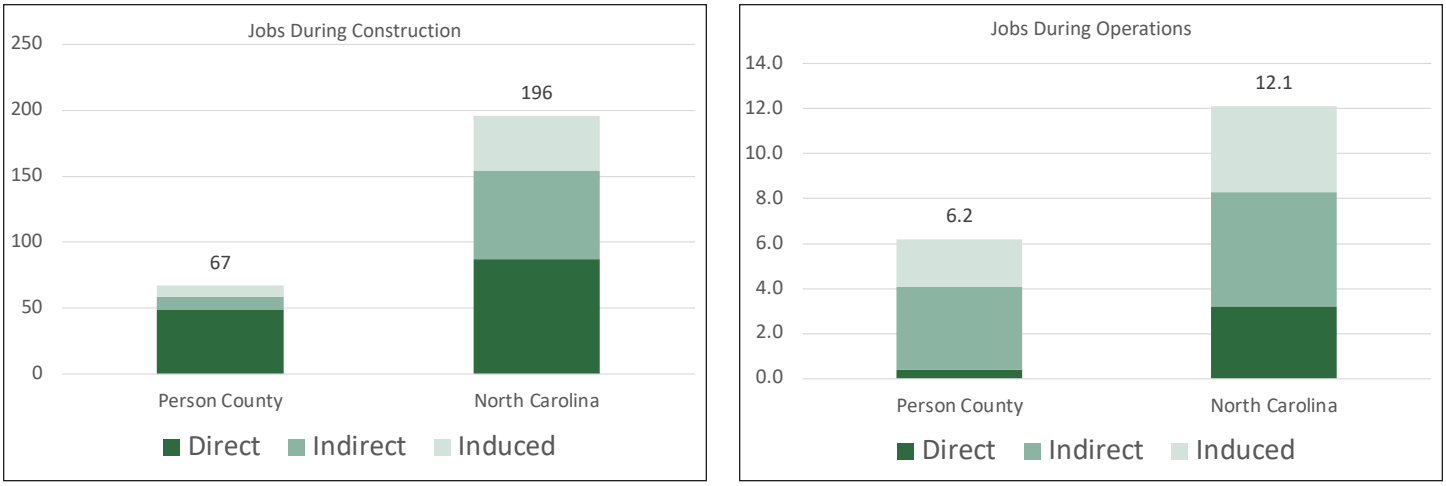
	Person County Jobs	State of North Carolina Jobs
Construction		
Project Development and On-site Labor Impacts	49	87
Supply Chain Impacts	10	67
Induced Impacts	8	42
Local Jobs during Construction	67	196
Operations (Annual/Ongoing)		
On-site Direct Impacts	0.4	3.2
Local Revenue and Supply Chain Impacts	3.7	5.1
Induced Impacts	2.1	3.8
Local Long-Term Jobs	6.2	12.1

[4] 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.

The results from the IMPLAN model show significant employment impacts from the Hyco Solar Project. Direct jobs created during the construction phase typically last anywhere from 12 to 18 months depending on the size of the project; however, the direct job numbers present in Table 5.1 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 or temporary job would constitute only a fraction of a job according to the model. For example, the IMPLAN model results show 49 new direct jobs during construction in Person County, though the construction of the project could involve closer to 98 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. Conversely, if the construction period lasts for two years, the job numbers from Table 5.1 would mean that the actual number of workers at any given time would be half of the reported number. It is important to keep this fact in mind when viewing or reporting the numbers.

As shown in Table 5.1, new local jobs created or retained during construction total 67 for Person County and 196 for the State of North Carolina. New local long-term jobs created from the Hyco Solar Project total 6.2 for Person County and 12.1 for the State of North Carolina.

Figure 5.1 – Total Employment Impacts from the Hyco Solar Project



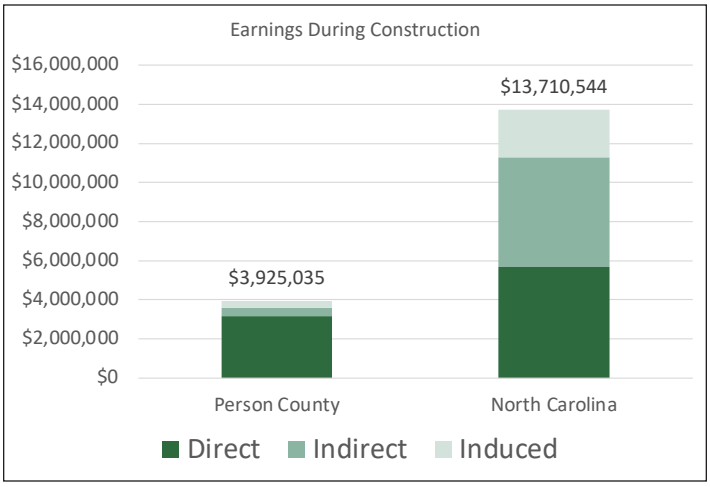
Direct jobs created during the operational phase last the life of the project, typically 20-30 years. Direct construction jobs and operations and maintenance jobs both require highly skilled workers in the fields of construction, management, and engineering. These well-paid professionals can boost economic development in communities that have experienced economic downturns. For a list of occupations expected to be employed, their wages, benefits, total compensation, and hours worked, please see Table 7.3 in the Appendix.

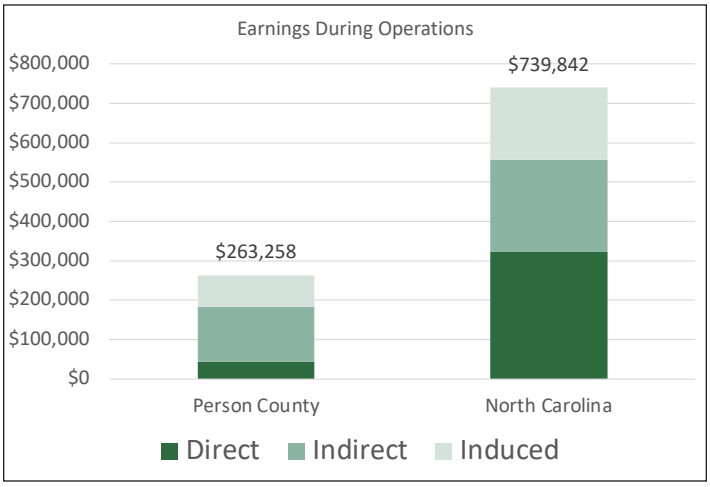
Accordingly, it is important to look at both the number of jobs and the earnings they produce. Table 5.2 shows the earnings impacts from the Hyco Solar Project, which are categorized by construction impacts and annual operations impacts. The new local earnings during construction total over $3.9 million for Person County and over $13.7 million for the State of North Carolina. The new local long-term earnings total over $263 thousand for Person County and over $739 thousand for the State of North Carolina.

Table 5.2 – Total Earnings Impacts from the Hyco Solar Project

	Person County	State of North Carolina
Construction		
Project Development and On-site Labor Earnings Impacts	$3,148,591	$5,682,145
Supply Chain Impacts	$450,229	$5,610,483
Induced Impacts	$326,215	$2,417,916
Local Earnings during Construction	$3,925,035	$13,710,544
Operations (Annual/Ongoing)		
On-site Labor Earnings Impacts	$43,552	$323,092
Local Revenue and Supply Chain Impacts	$140,375	$232,896
Induced Impacts	$79,331	$183,854
Local Long-Term Earnings	$263,258	$739,842

Figure 5.2 – Total Earnings Impacts from the Hyco Solar Project





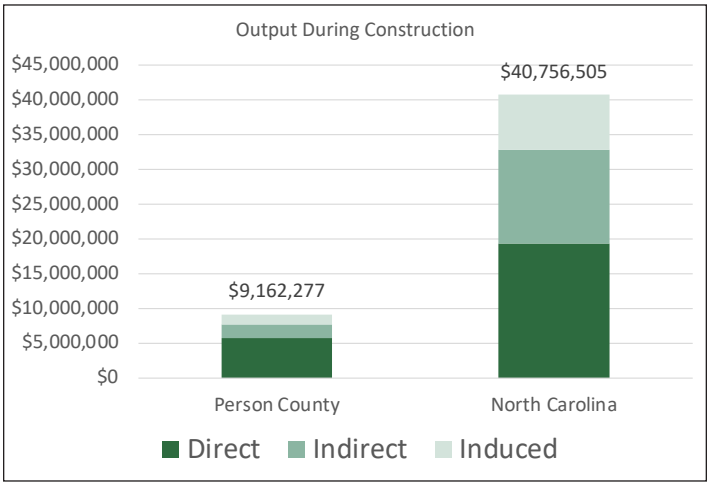
Output is akin to Gross Domestic Product (GDP) and refers to economic activity or the value of production in the state or county economy. Economic output includes the earnings reported in Table 5.2 but also measures other factors, such as landowner payments, property taxes, and other economic activity that are neither earnings nor benefits from employment.

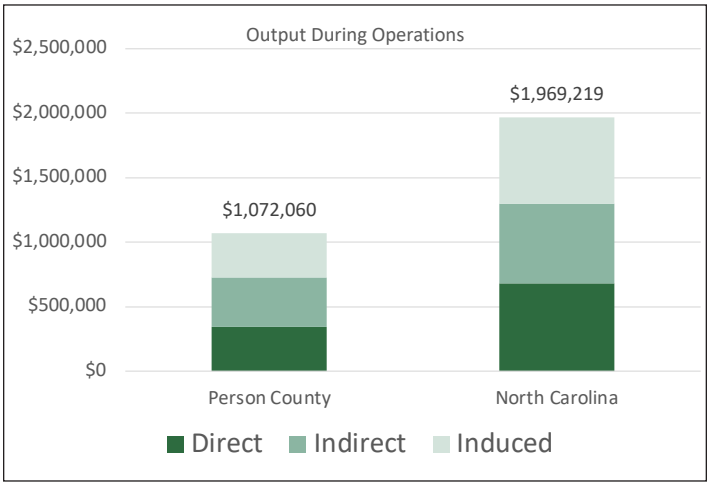
According to Table 5.3, the new local output during construction totals over $9.1 million for Person County and over $40.7 million for the State of North Carolina. The new local long-term output totals over $1.0 million for Person County and over $1.9 million for the State of North Carolina.

Table 5.3 – Total Output Impacts from the Hyco Solar Project

	Person County	State of North Carolina
Construction		
Project Development and On-site Labor Impacts on Output	$5,716,450	$19,333,288
Supply Chain Impacts	$2,034,479	$13,502,874
Induced Impacts	$1,411,348	$7,920,343
Local Output during Construction	$9,162,277	$40,756,505
Operations (Annual/Ongoing)		
On-site Labor Impacts on Output	$345,450	$682,384
Local Revenue and Supply Chain Impacts	$383,638	$618,579
Induced Impacts	$342,972	$668,256
Local Long-Term Output	$1,072,060	$1,969,219

Figure 5.3 – Total Output Impacts from the Hyco Solar Project





VI. Tax Benefits

Solar projects increase the property tax base of a county, creating a new revenue source for education and other local government services, such as fire protection, parks, health, and safety. Estimates of the taxable value of each type of property were obtained from the client.

Tables 6.1 to 6.2 detail the tax implications of the Hyco Solar Project. There are several important assumptions built into the analysis, as follows:

- It assumes that 80% of personal property taxes for solar will be abated for the length of the project.
- It assumes a personal property value of over $140 million and a real property value for the improvements and land associated with the project of over $23.4 million.
- It assumes that the personal property is depreciated according to Schedule T with an 18-year useful life, as published by the North Carolina Department of Revenue.
- It assumes that the project pays deferred taxes on the land associated with the project, and that the 3-year total for assessed value of deferred property comes to over $17.8 million.
- It assumes that the value of the real property improvements associated with the project decreases by 2.5% annually.
- All tax rates are assumed to stay constant at their 2026 (2025 tax year) rates.

- The analysis assumes that the project is placed in service on January 1st, 2029.
- The analysis assumes that the project is decommissioned in 40 years and pays no more property taxes after decommissioning.
- 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 Cypress Creek Renewables, the laws surrounding renewable energy taxation in North Carolina, or the millage rates in Person 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 Hyco Solar Project.
- No comprehensive tax payment was calculated, and these calculations are only to be used to illustrate the economic impact of the Project.

Figure 6.1 – Percentages of Property Taxes Paid to Taxing Jurisdictions

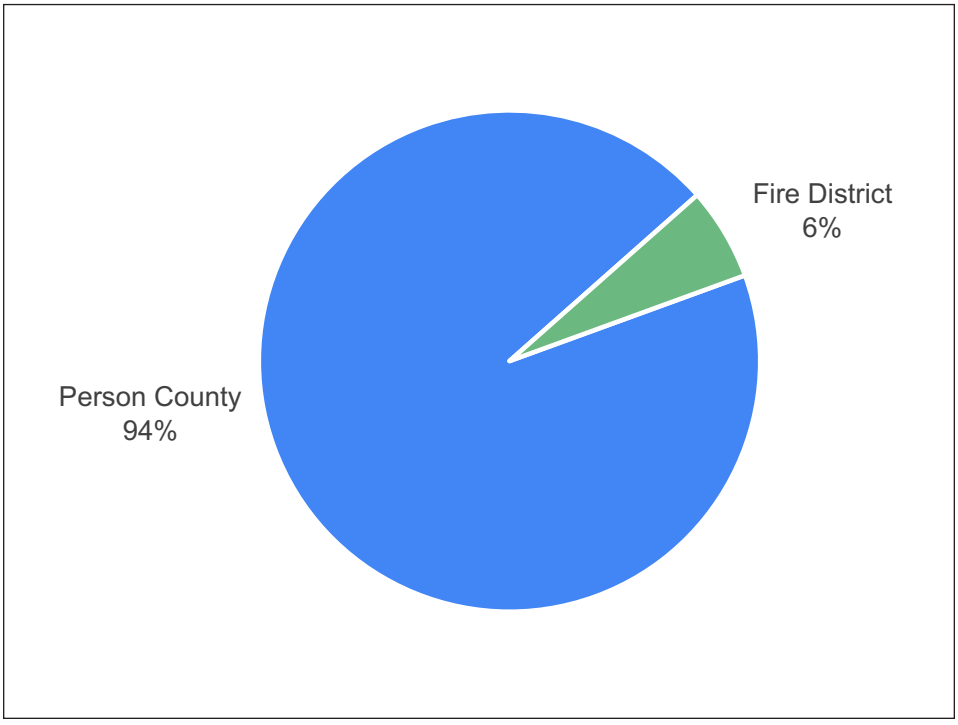


Table 6.1 – Total Property Taxes Paid by the Hyco Solar Project

Year	Total Paid
2029	$447,213
2030	$306,309
2031	$294,292
2032	$286,114
2033	$274,225
2034	$268,059
2035	$267,615
2036	$257,792
2037	$249,914
2038	$236,428
2039	$222,996
2040	$207,730
2041	$192,515
2042	$177,350
2043	$166,009
2044	$164,153
2045	$162,343
2046	$160,578
2047	$158,858
2048	$157,180
2049	$155,545
2050	$153,950
2051	$152,396
2052	$150,880
2053	$149,402
2054	$147,961
2055	$146,556
2056	$145,186
2057	$143,850
2058	$142,548
2059	$141,278
2060	$140,040
2061	$138,833
2062	$137,656
2063	$136,509
2064	$135,390
2065	$134,299
2066	$133,236
2067	$132,199
2068	$131,188
TOTAL	$7,506,574
AVG ANNUAL	$187,664

As shown in Table 6.1, a conservative estimate of the total property taxes paid by the Project starts out at over $447 thousand and declines due to depreciation until it reaches the maximum depreciation in 2043. After that, the personal property associated with the Project is fully depreciated, but the real property improvements continue to decrease in value. The expected total property taxes paid over the 40-year lifetime of the Project are over $7.5 million, and the average annual property taxes paid will be over $187 thousand.

According to Table 6.2, the total amounts paid over 40 years are over $7.0 million for Person County, and over $448 thousand for the Person Fire District over the Project's lifetime.

Table 6.2 – Tax Benefits from the Hyco Solar Project for the County

Year	Person County	Person Fire District
2029	$420,513	$26,699
2030	$288,022	$18,287
2031	$276,722	$17,570
2032	$269,033	$17,081
2033	$257,853	$16,372
2034	$252,055	$16,004
2035	$251,638	$15,977
2036	$242,402	$15,391
2037	$234,993	$14,920
2038	$222,313	$14,115
2039	$209,683	$13,313
2040	$195,328	$12,402
2041	$181,022	$11,493
2042	$166,762	$10,588
2043	$156,098	$9,911
2044	$154,353	$9,800
2045	$152,651	$9,692
2046	$150,992	$9,587
2047	$149,374	$9,484
2048	$147,796	$9,384
2049	$146,259	$9,286
2050	$144,759	$9,191
2051	$143,297	$9,098
2052	$141,872	$9,008
2053	$140,482	$8,920
2054	$139,127	$8,833
2055	$137,806	$8,750
2056	$136,518	$8,668
2057	$135,262	$8,588
2058	$134,037	$8,510
2059	$132,844	$8,435
2060	$131,680	$8,361
2061	$130,545	$8,289
2062	$129,438	$8,218
2063	$128,359	$8,150
2064	$127,307	$8,083
2065	$126,282	$8,018
2066	$125,282	$7,954
2067	$124,307	$7,892
2068	$123,356	$7,832
TOTAL	$7,058,420	$448,154
AVG ANNUAL	$176,461	$11,204

VII. Appendix

Table 7.1 – Local and Statewide Compensation by Occupation

BLS Occupation Code	Job Type	Education/ Training Required	North Carolina 10th Percentile of Wages	North Carolina 90th Percentile of Wages	North Carolina Mean Wages	Durham-Chapel Hill, NC 10th Percentile of Wages	Durham-Chapel Hill, NC 90th Percentile of Wages	Durham-Chapel Hill, NC Mean Wages	U.S. Fringe Benefits Median	Total Compensation Local Mean Wages plus U.S. Fringe
	Jobs During Construction									
47-2231	Solar Photovoltaic Installers	High school diploma or equivalent	$30,900	$64,240	$43,350	$36,300	$79,020	$54,850	$27,394	$82,244
47-3013	Helpers – Electricians	High school diploma or equivalent	$29,060	$44,830	$35,760	$30,840	$46,920	$38,370	$27,394	$65,764
47-2111	Electricians	High school diploma or equivalent	$36,260	$62,690	$50,900	$37,910	$75,450	$56,610	$27,394	$84,004
47-2061	Construction Laborers	No formal educational credential	$27,810	$46,850	$36,760	$29,430	$49,120	$38,590	$27,394	$65,984
47-2073	Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	$35,080	$57,330	$45,500	$36,870	$58,280	$48,150	$27,394	$75,544
47-1011	First-Line Supervisors of Construction Trades	High school diploma or equivalent	$45,130	$94,980	$66,720	$46,190	$96,050	$68,690	$27,394	$96,084
13-1082	Project Management Specialists and Business Operations Specialists		$54,950	$154,130	$99,770	$62,830	$162,190	$107,960	$27,394	$135,354
49-9071	Maintenance and Repair Workers, General (Operations)	High school diploma or equivalent	$28,630	$63,080	$44,170	$32,790	$65,860	$49,250	$27,394	$76,644
13-1111	Management Analysts	Bachelor's degree	$58,040	$160,270	$102,310	$64,160	$157,050	$104,930	$27,394	$132,324
11-1021	General and Operations Managers	Bachelor's degree	$45,520	$221,180	$124,490	$54,710	#N/A	$145,630	$27,394	$173,024
17-2071	Electrical Engineers		$66,280	$142,260	$104,240	$68,720	$166,760	$117,900	$27,394	$145,294
41-3091	Sales Representatives of Services		$35,030	$139,100	$76,690	$41,890	$157,640	$88,720	$27,394	$116,114
53-7062	Laborers and Freight, Stock and Material Movers	No formal educational credential	$24,690	$44,190	$33,940	$23,960	$44,760	$34,390	$27,394	$61,784
43-3031	Bookkeeping, Accounting and Auditing	Some college, no degree	$28,660	$59,420	$43,450	$32,090	$67,900	$48,900	$27,394	$76,294
	Jobs during Operations									
51-8013	Power Plant Operators	High school diploma or equivalent	$49,810	$108,730	$78,010	$49,810	$127,450	$87,720	$27,394	$115,114
37-3011	Landscaping and Groundskeeping	No formal educational credential	$25,670	$45,290	$34,180	$27,240	$47,100	$36,210	$27,394	$63,604
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	$37,750	$95,940	$64,250	$38,480	$105,840	$70,890	$27,394	$98,284

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%)
37-3011	Landscaping and Groundskeeping	Landscape or maintain grounds of property using hand or power tools or equipment. Workers typically perform a variety of tasks, which may include any combination of the following: sod laying, mowing, trimming, planting, watering, fertilizing, digging, raking, sprinkler installation, and installation of mortarless segmental concrete masonry wall units. Excludes "Farmworkers and Laborers, Crop, Nursery, and Greenhouse" (45-2092).	Most grounds maintenance work is done outdoors in all weather conditions. Some work is seasonal, available mainly in the spring, summer, and fall. The work may be repetitive and physically demanding, requiring frequent bending, kneeling, lifting, or shoveling.	1,299,000	61,300 (5%)
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%)

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

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%)
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%)
47-2231	Solar Photovoltaic Installers	Assemble, install, or maintain solar photovoltaic (PV) systems on roofs or other structures in compliance with site assessment and schematics. May include measuring, cutting, assembling, and bolting structural framing and solar modules. May perform minor electrical work such as current checks. Excludes solar PV electricians who are included in "Electricians" (47-2111) and solar thermal installers who are included in "Plumbers, Pipefitters, and Steamfitters" (47-2152).	Most solar panel installations are done outdoors, but PV installers sometimes work in attics and crawl spaces to connect panels to the electrical grid. Installers also must travel to jobsites.	17,100	4,600 (27%)
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%)
51-8013	Power Plant Operators	Control, operate, or maintain machinery to generate electric power. Includes auxiliary equipment operators. Excludes "Nuclear Power Reactor Operators" (51-8011).	Most power plant operators, distributors, and dispatchers work full-time. Many work rotating 8- or 12-hour shifts.	43,700	(6,500) (-15%)
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%)

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

This table is directly modeled for this project.

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	14.37	$630,086.14	$108,519.87	$738,606.01	27,793.76
49-9000	Other Installation, Maintenance, and Repair Occupations	11.45	$590,826.56	$101,758.18	$692,584.74	24,219.93
47-1000	Supervisors of Construction and Extraction Workers	3.81	$243,266.67	$41,897.87	$285,164.54	8,247.60
49-1000	Supervisors of Installation, Maintenance, and Repair Workers	2.75	$190,860.61	$32,871.96	$223,732.57	5,989.39
13-1000	Business Operations Specialists	2.35	$154,961.72	$26,689.09	$181,650.81	4,710.63
11-9000	Other Management Occupations	1.84	$168,582.58	$29,035.01	$197,617.59	3,946.06
11-1000	Top Executives	1.36	$156,260.84	$26,912.84	$183,173.68	2,989.73

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 on-site construction industries in which the direct final demand change is made.

During operating years: the final demand changes that occur in the on-site 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

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 that 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 goods and off-site 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.

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.

Pp

PV (photovoltaic) system

Solar modules, each comprising a number of solar cells, which generate electrical power.

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.

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.

Uu

Utility-scale solar

Solar-powered electric generation facilities intended for wholesale distribution typically over 5MW in capacity.

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X. Curriculum Vitae (Abbreviated)

DAVID G. LOOMIS

Strategic Economic Research, LLC

President

Education

Doctor of Philosophy (PhD), Economics, Temple University, Philadelphia, Pennsylvania, May 1995

Bachelor of Arts (BA), Mathematics and Honors Economics, Temple University, Magna Cum Laude, May 1985

Experience

2011 – present, Strategic Economic Research, LLC

- Supervises all aspects of analysis and report creation
- Performed over 500 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 levels
- Provided expert testimony more than 100 times in formal proceedings before state legislative bodies, state public utility commissions, and county boards regarding wind, solar, and transmission projects
- Grew the company from a single employee to over 25 team members

1996 – 2023, Department of Economics at Illinois State University, Normal, IL

Professor Emeritus – (2023 - present)

Full Professor – (2010 - 2023)

Associate Professor – (2002 - 2009)

Assistant Professor – (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 five 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 five companies to 16 organizations
- Doubled the number of workshop/training events annually
- Supervised two directors, administrative staff, and the 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 an 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 by-laws

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 four professional staff members and supervised three faculty members as Associate Directors
- Reviewed renewable energy manufacturing grant applications for the 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
- Raised over $7.7 million in grants and over $2.7 million in external funding

BRYAN A. LOOMIS

Strategic Economic Research, LLC

Vice President

Education

Master of Business Administration (MBA), Belmont University, Nashville, Tennessee, 2017

Experience

2019 – present, Strategic Economic Research, LLC

- Serves as lead analyst on economic impact reports, overseeing all aspects of analysis and report creation
- Communicates with developers about economic impact, property tax, and land use analyses
- Provides third-party expert testimony on behalf of developers for special-use permitting hearings
- Conducts non-standard analyses and memos for unique energy-related projects, such as statewide legislation, property tax impacts on school district state aid, and analyzing eligibility for energy community bonus adders to tax credits
- Oversees improvements to both reports and team processes

Expert Testimony

- Provided expert testimony in formal proceedings before county boards and boards of zoning appeals in Kansas, Illinois, Indiana, Missouri, Iowa, Kentucky, and Colorado

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 a LinkedIn following to 3,500

CHRISTOPHER THANKAN

Strategic Economic Research, LLC

Director of Economic Impact Analysis

Education

Bachelor of Science in Sustainable & Renewable Energy (BS), Minor in Economics, Illinois State University, Summa Cum Laude, Normal, IL, 2021

Experience

2021 – present, Strategic Economic Research, LLC

- Creates economic impact results for hundreds of renewable energy projects
- Utilizes IMPLAN software and Excel for analyses and update models, procedures, methodologies, etc.
- Quality checks internal team members' analysis and project cost information from clients
- Addresses client questions and concerns about analysis and reports
- Developed SER's proprietary economic impact analysis model
- Improved property tax analysis methodology and conducted property tax analysis for different U.S. states
- Researched taxation in states outside research portfolio
- Researched school funding and the impact of renewable energy on state aid to school districts and completed ad hoc research requests given by the company president

Expert Testimony

- Provided expert testimony in formal proceedings before county boards and boards of zoning appeals in Kansas, Illinois, and South Dakota
- Served as an economic impact expert for open house meetings in Colorado and New Mexico
- Presented on economic impacts of renewable energy projects in Missouri for the 2024 Midwest Energy Policy Series Renewables & Efficiency Conference in Columbia, MO
- Hosted and presented on numerous SER webinars discussing economic impacts and successful permitting

DEBORAH DINGESS

Strategic Economic Research, LLC

Director of Property Tax Research

Education

Master of Science in Taxation (MST), University of Cincinnati - Carl H. Lindner College of Business, Cincinnati, OH, August 2021

Bachelor of Arts in Financial Economics and Business Management (BA), Capital University, Columbus, OH, August 2012

Experience

2025 – present, Strategic Economic Research, LLC

- Leads property tax research for utility-scale renewable energy projects across all 50 states
- Analyzes state and local property tax codes, regulations, and case law related to renewable energy projects
- Develops and refines standardized property tax research templates, process documentation, and modeling tools
- Delivers property tax guidance to clients, permitting teams, zoning boards, and local government stakeholders
- Provides third-party expert testimony on tax methodology in local permitting proceedings on behalf of developers

Expert Testimony

- Provided expert testimony in formal proceedings before county boards and boards of zoning appeals in Ohio

2024 – 2025, Lumen Technologies, Denver, CO

Senior Tax Analyst, Transaction Tax and Compliance

- Prepared U.S. and Canadian transaction tax filings (sales/gross receipts/excise; GST/HST/PST); leveraged SAP and Alteryx
- Streamlined SOPs and training; researched U.S./international tax changes; resolved jurisdictional notices and exams

2019 – 2024, IGS Energy, Dublin, OH

Senior Tax Analyst (2023 - 2024)

Tax Analyst (2019 - 2023)

- Filed multi-state sales, property, and excise taxes across entities
- Established automations and tax reporting improvements
- Partnered with Finance and cross-functional teams on tax-sensitive initiatives

2016 – 2019, OhioHealth, Columbus, OH

Tax Analyst (2018 - 2019)

Senior Accountant (2017 - 2018)

Accountant (2016 - 2017)

- Managed CAT, local, and multi-state tax filings; coordinated with external firms on tax return preparation; supported month-end close

2014 – 2015, Penn National Gaming, Columbus, OH

Accountant (2015)

Revenue Auditor (2014)

2013, American Electric Power, Columbus, OH

Cost Coordinator (2013)

SAWYER KEITHLEY

Strategic Economic Research, LLC

Manager of Research & Analysis

Front Matter Team Lead

Education

Master of Science in Applied Economics (MS), Sequence in Electricity, Natural Gas, and Telecommunications, Illinois State University, Normal, IL, 2024

Bachelor of Science in Managerial Economics (BS), Minor in Business Administration, Magna Cum Laude, Illinois State University, Normal, IL, 2022

Experience

2021 – present, Strategic Economic Research, LLC

- Uses cost inputs from customers to forecast potential new employment, output, and earnings impacts created by the proposed energy project
- Leads a team to gather data, write, and edit narratives for county-specific or state-specific tables and graphs
- Compiles project-specific information and researches property tax information for the county of interest
- Designed and implemented a standardized land use reporting framework for project analysis, successfully quantifying and highlighting the net land use impacts of solar projects across agricultural and forestry sectors (cropland, pastureland, and timberland)

Expert Testimony

- Provided expert testimony in formal proceedings before a county board and board of zoning appeals in Iroquois County, Illinois (July 2025)

June 2023 – August 2023 Nicor Gas, Rates Department

Rates Intern

- Conducted independent research to update the cost factors used by the company for feasibility studies
- Gathered historical and current information about the natural gas industry and analyzed patterns in legislation surrounding the future of natural gas
- Wrote a summary report for project findings

TIMOTHY ROBERTS

Strategic Economic Research, LLC

Manager of Data Analysis
Property Tax Team Lead

Education

Institute for Professionals in Taxation (IPT) – Property Tax School, Certificate of Completion (2025)

Experience

2022 – present, Strategic Economic Research, LLC

- Oversees the company's property tax team, manages a group of analysts, and ensures accuracy and consistency across deliverables
- Leads client communication by reviewing project inputs, addresses technical questions, and provides explanations of tax law and research
- Researches state and county property tax policies and develops state-specific valuation templates across multiple renewable energy technologies
- Designs, manages, and maintains the company's internal database, ensuring data accuracy across projects
- Develops custom programs and applications using Python and other programming tools to streamline workflows, automate repetitive tasks, and improve data quality
- Creates external-facing websites to support company projects
- Provides training, mentorship, and oversight to analysts
- Conducted and reviewed over 300 property tax analyses, as well as economic impact analyses, land use analyses, and county-level economic analyses for renewable energy projects nationwide
- Contributed to company recognition, including a prestigious award from Google for Renewable Energy Leadership

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

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