MOONLIGHT SOLAR

ECONOMIC AND FISCAL CONTRIBUTION TO ISLE OF WIGHT COUNTY, VIRGINIA

Prepared for

PALLADIUM ENERGY

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About Mangum Economics, LLC

Mangum Economics is a Glen Allen, Virginia based firm that was founded in 2003. Since then, we have become known as a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. The Mangum Team specializes in producing objective and actionable quantitative economic research that our clients use for strategic decision making in a variety of industries and environments. We know that our clients are unique, and that one size does not fit all. As a result, we have a well-earned reputation for tailoring our analyses to meet the specific needs of specific clients, with a specific audience.

Most of our research falls into four general categories:

- **Information Technology:** Working with some of the largest names in the industry, to date the Mangum Team has produced analyses of the economic and fiscal impact of the data center industry in Virginia, home to the largest concentration of data centers in the world, and in five other states.
- **Energy:** The Mangum Team has produced analyses of the economic and fiscal impact of over 19 GW of proposed solar, wind, battery storage, and hydro projects spanning nineteen states. Among those projects was Dominion Energy's 2.6 GW Coastal Virginia Offshore Wind project off of Virginia Beach. In addition, the Mangum Team has also performed economic and fiscal impact analyses for the natural gas, nuclear, oil, and pipeline industries.
- **Economic Development and Special Projects:** The Mangum Team has performed hundreds of analyses of proposed economic development projects. Most recently, we were called upon by Henrico County to provide an analysis of the proposed $2.3 billion Green City "net-zero eco district." The Mangum Team has also authored multiple economic development plans, including identifying industries that were likely recruitment targets because of the high-speed MAREA and BRUSA sub-sea cable landings in Virginia Beach.
- **Education and Workforce:** The Mangum Team has worked with multiple post-secondary and secondary education institutions to quantify their economic contribution to their host communities as well as their impact on regional and statewide workforce needs.

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Executive Summary

This report assesses the economic and fiscal contribution that the proposed Moonlight Solar project would make to Isle of Wight County, Virginia. The primary findings from that assessment are as follows:

1) **Moonlight Solar is a proposed 44-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The project would be located along Moonlight Road and Burwells Bay Road in Isle of Wight County, Virginia. The total acreage to be leased for the project encompasses approximately 523 acres of agricultural land. The actively used, fenced-in portion of the solar site would be approximately 250 acres.**

2) **The proposed Moonlight Solar project would make a significant economic contribution to Isle of Wight County:**

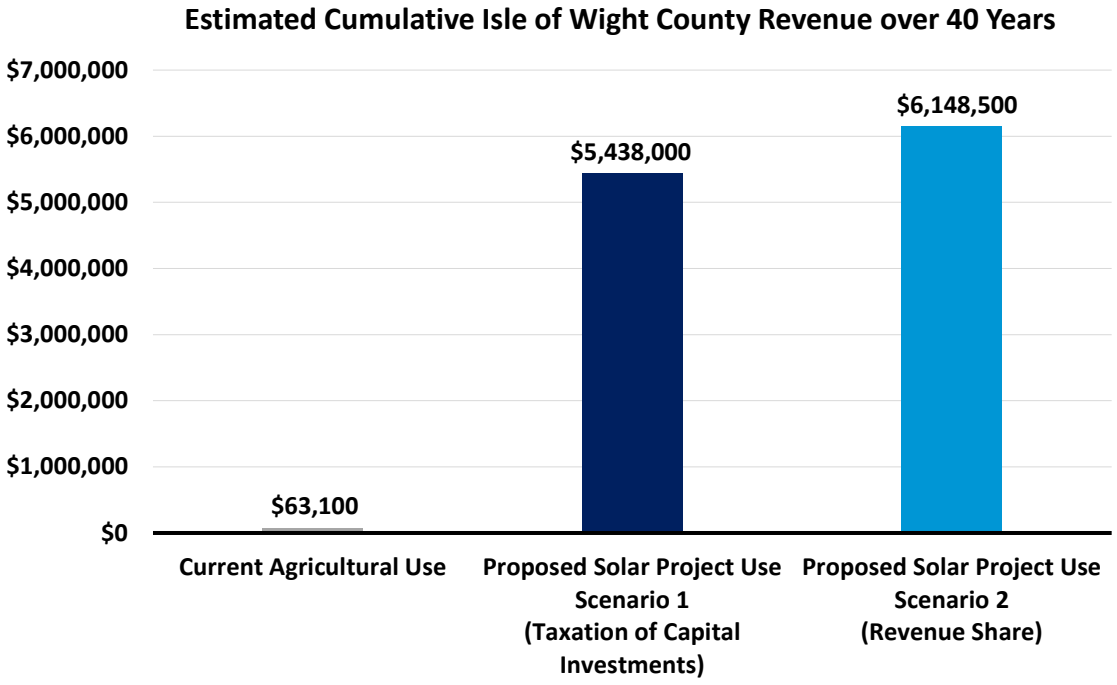
   - The proposed Moonlight Solar project would provide an estimated one-time pulse of economic activity to Isle of Wight County during its construction phase supporting approximately:
     - 25 direct, indirect, and induced jobs.
     - $1.2 million in associated wages and benefits.
     - $8.0 million in economic output.
   - The proposed Moonlight Solar project would provide an estimated annual economic impact to Isle of Wight County during its ongoing operational phase supporting approximately:
     - 2 direct, indirect, and induced jobs.
     - $84,600 in associated wages and benefits.
     - $297,800 in economic output.

3) **The proposed Moonlight Solar project would also make a significant fiscal contribution to Isle of Wight County. The proposed project would generate approximately:**

   - $140,900 in state and local tax revenue from the one-time pulse of economic activity associated with the project's construction.
   - $5.4 million in cumulative county revenue over the facility's anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property, a siting agreement between Isle of Wight County and Moonlight Solar, and the taxation of the associated capital investments (Scenario 1); or
   - $6.1 million in cumulative county revenue over the facility's anticipated 40-year operational life assuming revenues are generated from the reassessment of the real property, a siting agreement between Isle of Wight County and Moonlight Solar, and payments associated with a locally adopted revenue share ordinance. The payments would be based on the project's generation capacity and would include a 10 percent escalator every five years (Scenario 2).

4) **The proposed Moonlight Solar project would have a significantly greater fiscal impact on Isle of Wight County than the property generates in its current agricultural use:**

- The proposed Moonlight Solar project would generate approximately $5.4 million in cumulative county revenue over the facility's anticipated 40-year operational life under Scenario 1 and approximately $6.1 million in cumulative county revenue over the facility's anticipated 40-year operational life under Scenario 2, as compared to approximately $63,100 in cumulative county revenue in the property's current agricultural use – a difference of approximately $5.4 million and $6.1 million respectively.



5) **The proposed Moonlight Solar project would provide a boost to Isle of Wight County's construction sector:**

- At 507 jobs, construction is Isle of Wight County's sixth largest major industry sector.[1]
- The construction sector also posted the third largest job gain of any industry sector in the county between the third quarter of 2021 and the third quarter of 2022 (a gain of 41 jobs).[2]
- The proposed Moonlight Solar project would directly support approximately 16 jobs and $1.2 million in wages and benefits in Isle of Wight County's construction sector.

[1] Data Source: U.S. Bureau of Labor Statistics.
[2] Data Source: U.S. Bureau of Labor Statistics.

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The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

Introduction

This report assesses the economic and fiscal contribution that the proposed Moonlight Solar project would make to Isle of Wight County, Virginia. This report was commissioned by Palladium Energy and produced by Mangum Economics.

The Project

Moonlight Solar is a proposed 44-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The project would be located along Moonlight Road and Burwells Bay Road in Isle of Wight County, Virginia. The total acreage to be leased for the project encompasses approximately 523 acres of agricultural land. The actively used, fenced-in portion of the solar site would be approximately 250 acres.

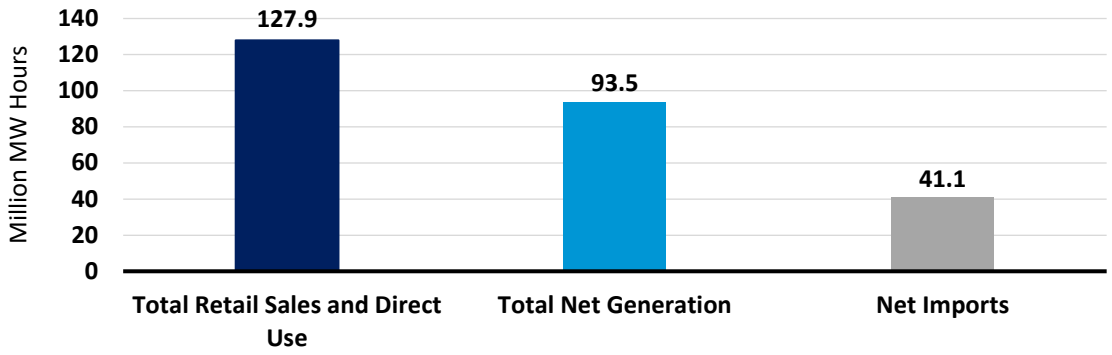
Electricity Production in Virginia

This section provides a backdrop for the proposed Moonlight Solar project by profiling Virginia's electricity production sector and the role that solar energy could play in that sector.

Overall Market

As shown in Figure 1, in 2021 electricity sales and direct use in Virginia totaled 127.9 million megawatt hours, ranking the state 10th among the fifty states in terms of electricity consumption. However, only 73 percent of that demand was met by in-state utilities, independent producers, and other sources. As a result, Virginia had to import the remaining electricity it consumed from producers in other states. As with all imports, this means that the jobs, wages, and economic output created by that production went to localities in those states, not to localities in Virginia.

Figure 1: Demand and Supply of Electricity in Virginia in 2021 (in millions of megawatt-hours)[3]



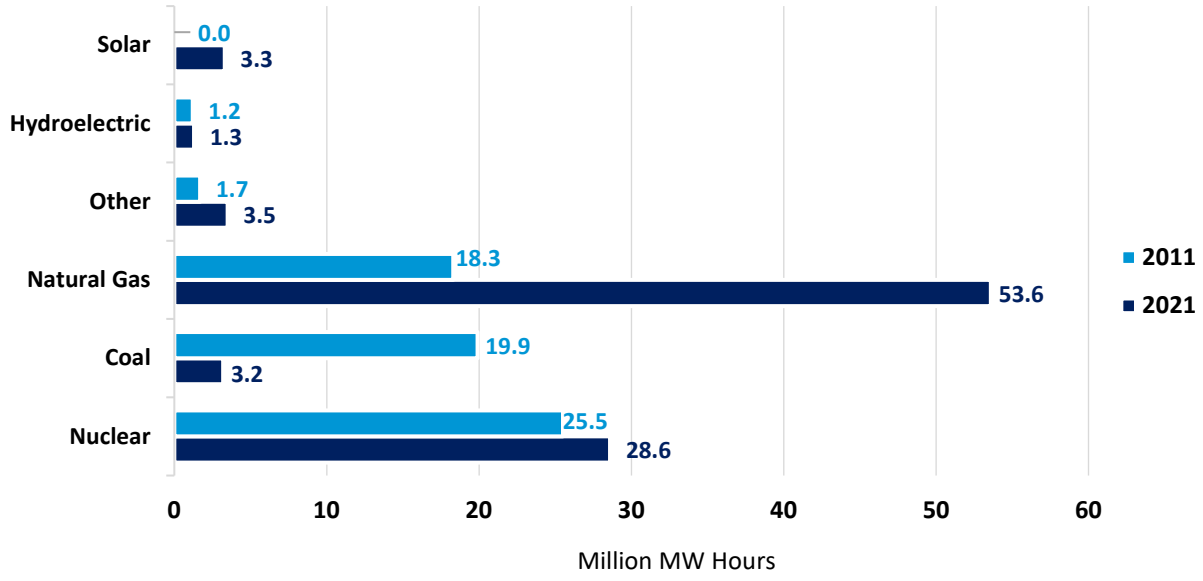
[3] Data Source: U.S. Energy Information Administration. In this chart, "Net Imports" also takes into account losses during transmission. As a result, it does not directly equal the residual of "Total Net Generation" minus "Total Retail Sales and Direct Use."

Sources of Production

Between 2011 and 2021, the total amount of electricity produced in Virginia increased from 66.7 to 93.5 million megawatt hours, while retail and direct consumption of electricity increased from 112.1 to 127.9 million megawatt hours. Consequently, imports of electricity decreased by 11.8 million megawatt hours (or 22 percent) during this time.[4] Figure 2 provides a comparison of the energy sources that were used to produce electricity in Virginia in each of those years. As these data show, the most significant change between 2011 and 2021 was a decrease in the use of coal and an increase in the use of natural gas. Where coal was the state's second largest source of electricity in 2011, accounting for 19.9 million megawatt hours (or 29.9 percent) of production, by 2021 production had fallen by 16.7 million megawatt hours, making coal a distant fifth place source of electricity with only 3.4 percent of production.

In contrast, the share of electricity produced using cleaner-burning low-emissions energy sources increased over the period. Where natural gas accounted for only 18.3 million megawatt hours (or 27.5 percent) of Virginia's electricity production in 2011, by 2021 that proportion had almost tripled to 53.6 million megawatt hours (or 57.3 percent of production), making natural gas the state's largest source of electricity. In addition, solar, which entered the Virginia electricity production market in 2016, increased its share to 3.3 million megawatt hours in 2021.

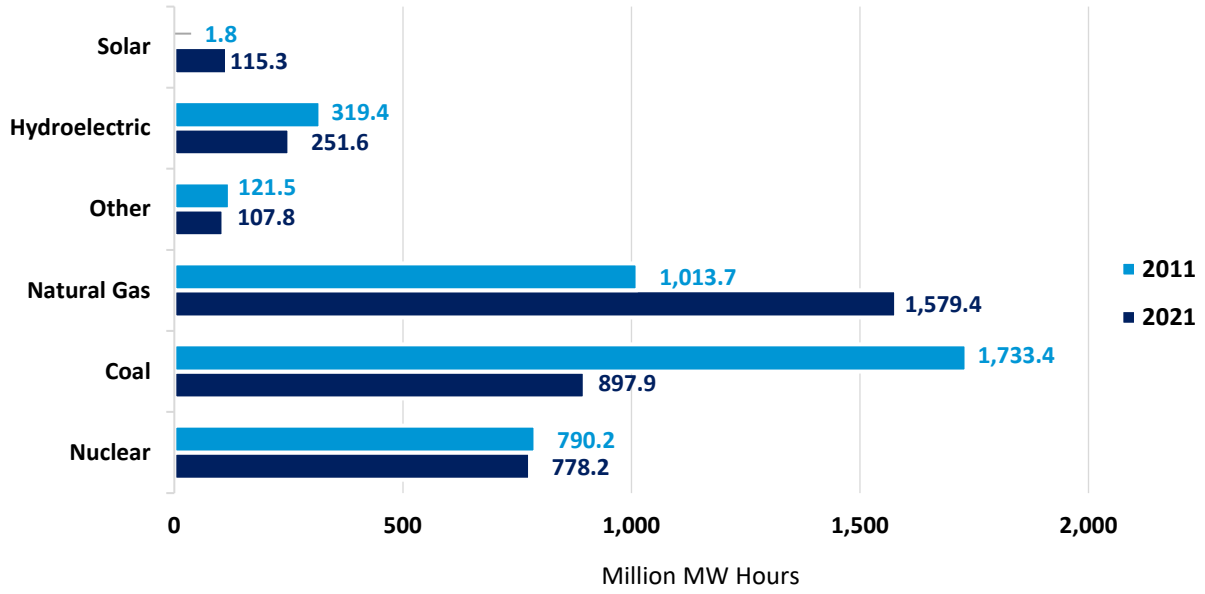
Figure 2: Electricity Generation in Virginia by Energy Source in 2011 and 2021 (in millions of megawatt-hours)[5]



[4] Imports also takes into account losses during transmission. As a result, totals do not equal sum of components.
[5] Data Source: U.S. Energy Information Administration. The "Other" category includes battery, wood, petroleum, other biomass, "other", and pumped storage.

Figure 3 provides similar data for the U.S. as a whole. A quick comparison of Figures 2 and 3 shows that although the degree of reliance on specific energy sources for electricity production is quite different between the U.S. and Virginia, the trend toward lower-emissions energy sources is the same. Nationally, between 2011 and 2021 the amount of electricity produced using coal declined by 835.5 million megawatt hours from 42 to 22 percent of production, while in contrast the amount of electricity produced using natural gas increased by 565.7 million megawatt hours from 25 to 38 percent of production. Nationwide, as in Virginia, the reliance on renewable energy sources such as solar increased during this time but at a slower pace than in Virginia. Between 2011 and 2021, the amount of electricity produced using solar increased by 113.5 million megawatt hours to 2.8 percent of total electricity production in the nation compared to 3.5 percent of total electricity production in Virginia.

Figure 3: Electricity Generation in the United States by Energy Source in 2011 and 2021 (in millions of megawatt-hours)[6]

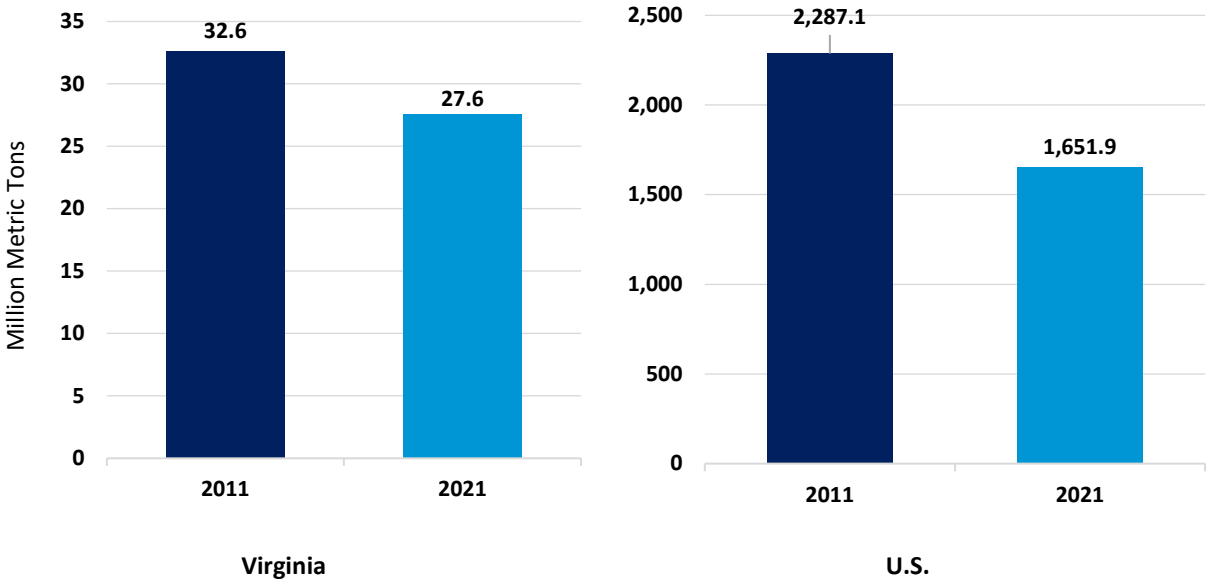


Impact on the Environment

In discussing the impact of these trends on the environment, it is important to realize that electricity production is one of the U.S.'s largest sources of greenhouse gas emissions. Figure 4 depicts carbon dioxide emissions from electricity production in 2011 and 2021 for both Virginia and the U.S. As these data indicate, between 2011 and 2021, as the share of electricity produced in Virginia by coal fell from 29.9 to 3.4 percent, carbon dioxide emissions from electricity production fell from 32.6 to 27.6 million metric tons. Where at the national level, as the share of electricity produced by coal fell from 42 to 22 percent, carbon dioxide emissions from electricity production fell from 2,287.1 to 1,651.9 million metric tons.

[6] Data Source: U.S. Energy Information Administration. "Other" includes battery, geothermal, hydroelectric, other, other biomass, other gas, petroleum, pumped storage, wind, and wood.

Figure 4: Carbon Dioxide Emissions from Electricity Production (millions of metric tons)[7]



[7] Data Source: U.S. Energy Information Administration.

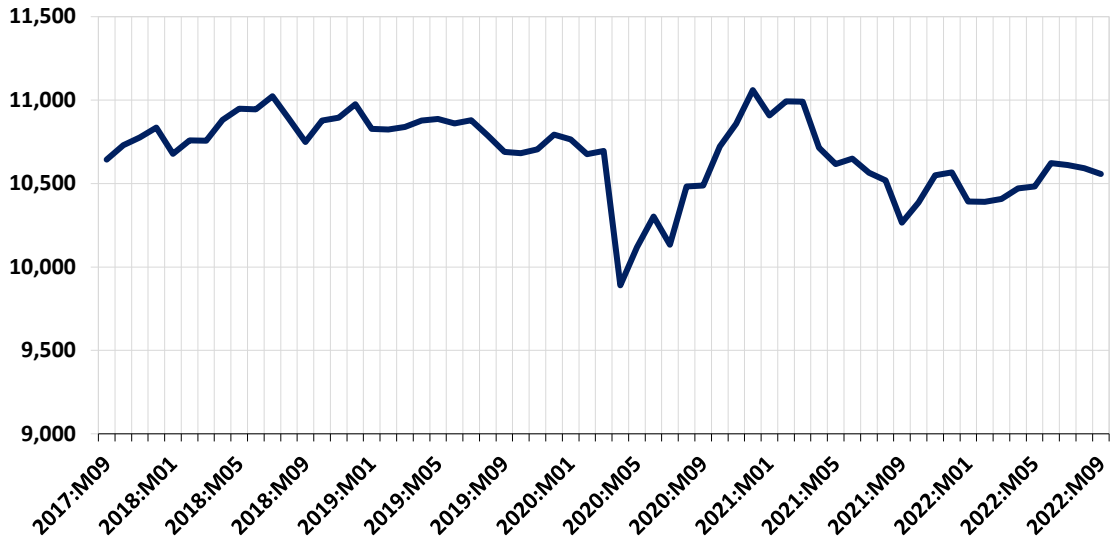
Local Economic Profile

This section provides context for the economic and fiscal impact assessments to follow by profiling the local economy of Isle of Wight County.

Total Employment

Figure 5 depicts the trend in total employment in Isle of Wight County during the five-year period from September 2017 through September 2023. With the exception of seasonal variations, employment in the county was fairly stable through 2019. Then, in April 2020 total employment declined significantly due to the lockdowns imposed as a result of the COVID-19 pandemic. Employment has since rebounded and recovered to pre-pandemic levels. As of September 2022, total employment in the county stood at 10,557 jobs, which represents an overall decrease in employment of 0.8 percent (or 87 jobs) over the five-year period. To put this number in perspective, over this same period, total statewide employment in Virginia increased by 3.4 percent.[8]

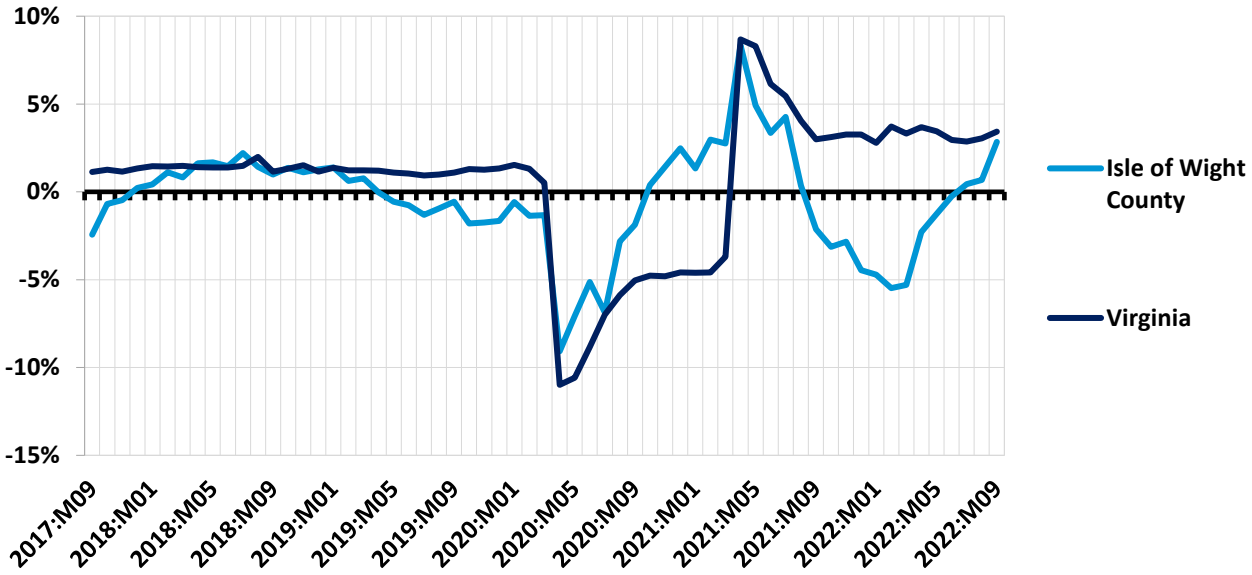
Figure 5: Total Employment in Isle of Wight County – September 2017 to September 2022[9]



To control for seasonality and provide a point of reference, Figure 6 compares the year-over-year change in total employment in Isle of Wight County to that of the state of Virginia over the same five-year period. Any point above the zero line in this graph indicates an increase in employment, while any point below the zero line indicates a decline in employment. As these data show, Isle of Wight County fluctuated around the statewide average for most of the period. As of September 2022, the year-over-year change in total employment in Isle of Wight County was 2.8 percent as compared to 3.4 percent statewide in Virginia.

[8] Data Source: U.S. Bureau of Labor Statistics.
[9] Data Source: U.S. Bureau of Labor Statistics.

Figure 6: Year-Over-Year Change in Total Employment – September 2017 to September 2022[10]



Employment and Wages by Industry Supersector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 5 and 6, Figures 7 through 9 provide data on private employment and wages in Isle of Wight County by industry supersector.[11]

Figure 7 provides an indication of the distribution of private sector employment across industry supersectors in Isle of Wight County in the third quarter of 2022. As these data indicate, the county's largest industry sectors that quarter were Manufacturing (2,805 jobs), followed by Trade, Transportation and Utilities (1,663 jobs), and Leisure and Hospitality (1,259 jobs).

Figure 8 provides a similar ranking for average private sector weekly wages by industry supersector in Isle of Wight County in the third quarter of 2022. As these data show, the highest paying industry sectors that quarter were Information ($1,834 per week), Professional and Business Services ($1,669 per week), and Financial Activities ($1,161 per week). To provide a point of reference, the average private sector weekly wage across all industry sectors in Isle of Wight County that quarter was $1,000 per week.

[10] Data Source: U.S. Bureau of Labor Statistics.
[11] A "supersector" is the highest level of aggregation in the coding system that the Bureau of Labor Statistics uses to classify industries.

Figure 7: Private Employment by Industry Supersector in Isle of Wight County – 3rd Qu. 2022[12]

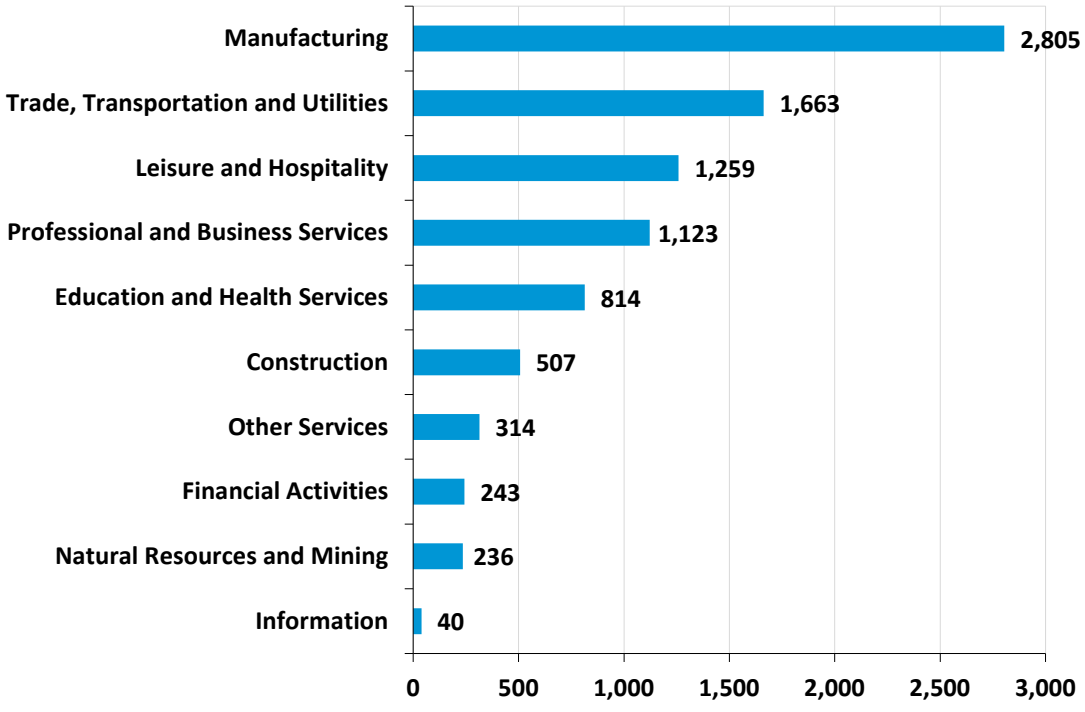
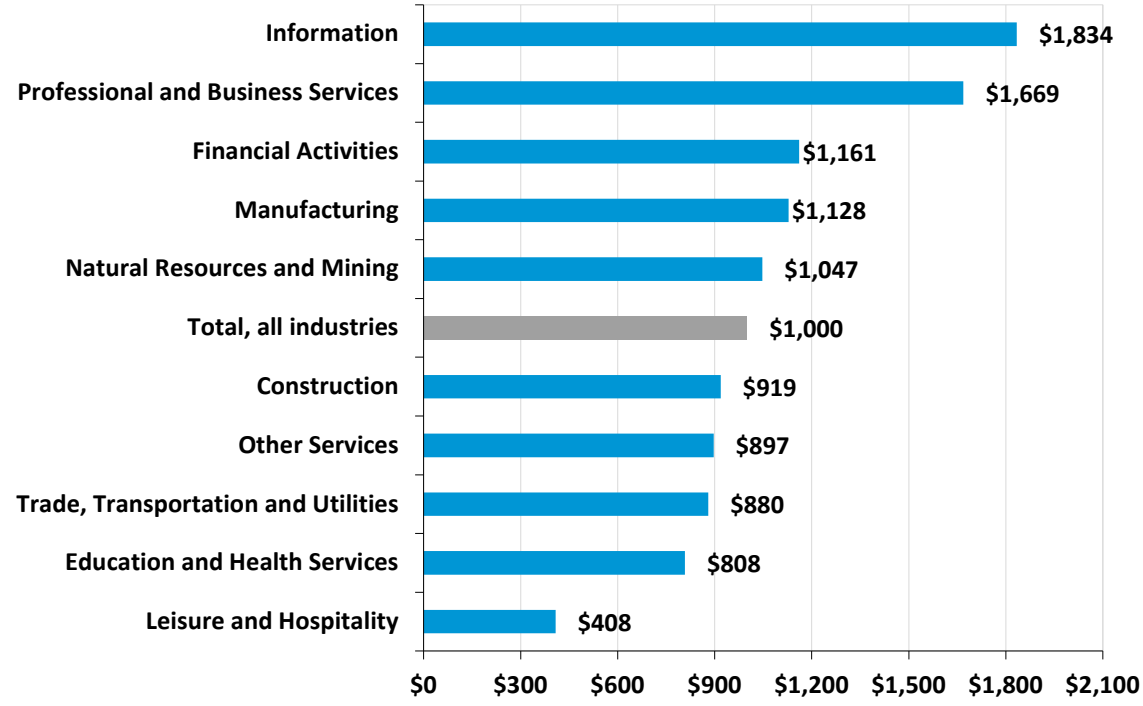


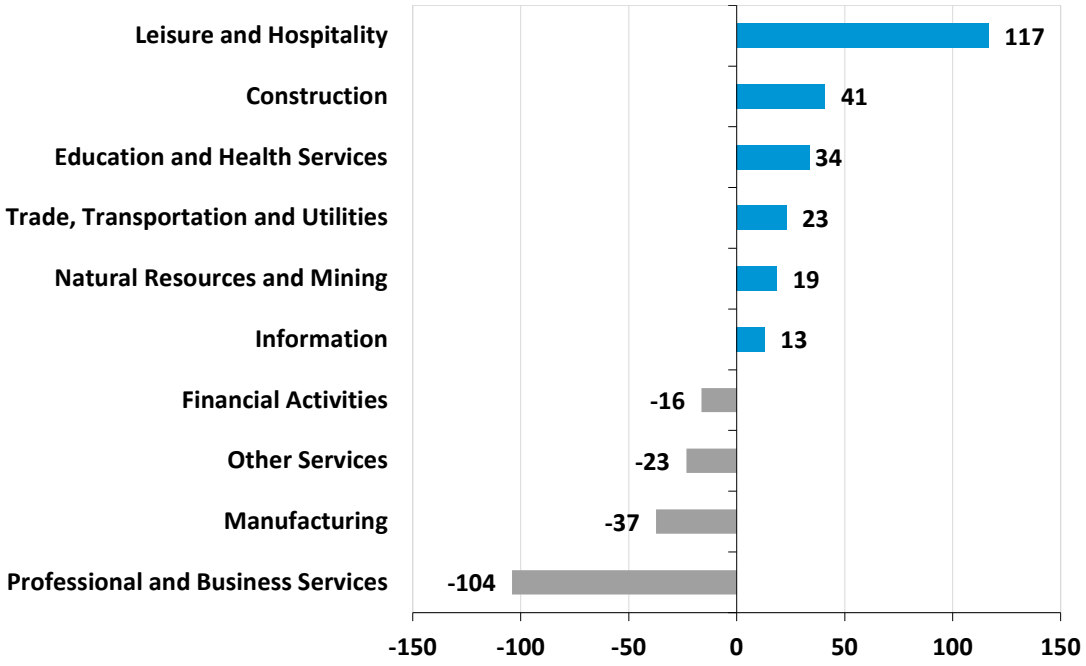
Figure 8: Average Private Weekly Wages by Industry Supersector in Isle of Wight County – 3rd Qu. 2022[13]



[12] Data Source: U.S. Bureau of Labor Statistics.
[13] Data Source: U.S. Bureau of Labor Statistics.

Figure 9 details the year-over-year change in private sector employment from the third quarter of 2021 to the third quarter of 2022 in Isle of Wight County by industry supersector. Over this period, the largest employment gains occurred in the Leisure and Hospitality (up 117 jobs), Construction (up 41 jobs), and Education and Health Services (up 34 jobs) sectors. The largest employment losses occurred in the Professional and Business Services (down 104 jobs), Manufacturing (down 37 jobs), Other Services (down 23 jobs) sectors.

Figure 9: Change in Private Employment by Industry Supersector in Isle of Wight County from 3rd Qu. 2017 to 3rd Qu. 2022[14]

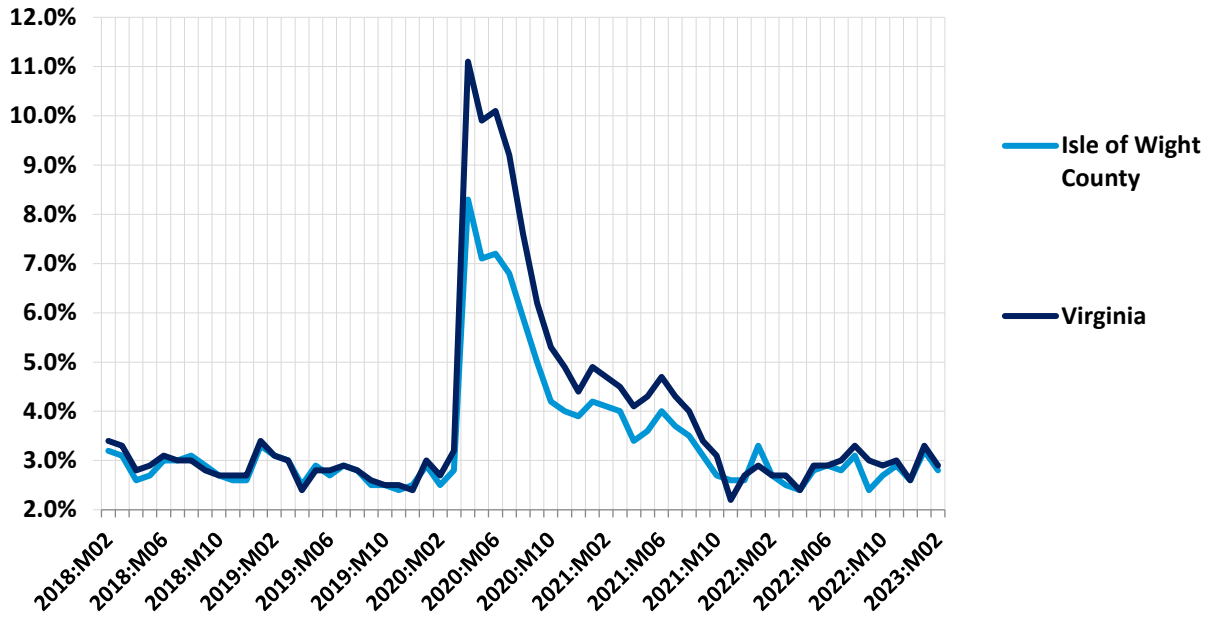


Unemployment

Figure 10 illustrates the trend in Isle of Wight County's unemployment rate over the five-year period from February 2018 through February 2023 and benchmarks those data against the statewide trend for Virginia. As these data show, unemployment rates in Isle of Wight County generally tracked closely with the statewide trend throughout the period. In April 2020 unemployment in the county and state significantly rose as a result of the labor dislocations caused by the COVID-19 pandemic. Isle of Wight County's unemployment rate peaked lower than the statewide rate and has mostly remained below the statewide average during the recovery from the pandemic. As of February 2023, unemployment stood at 2.8 percent in Isle of Wight County compared to 2.9 percent in Virginia as a whole.

[14] Data Source: U.S. Bureau of Labor Statistics.

Figure 10: Unemployment Rate – February 2018 to February 2023[15]



[15] Data Source: U.S. Bureau of Labor Statistics.

Economic and Fiscal Impact

This section quantifies the economic and fiscal contribution that the proposed Moonlight Solar project would make to Isle of Wight County. The analysis separately evaluates the one-time pulse of economic activity that would occur during the construction phase of the project, as well as the annual economic activity that the project would generate during its ongoing operational phase.

Method

To empirically evaluate the likely local economic impact attributable to the proposed Moonlight Solar project, the analysis employs a regional economic impact model called IMPLAN.[16] The IMPLAN model is one of the most commonly used economic impact simulation models in the U.S., and in Virginia is used by UVA's Weldon Cooper Center, the Virginia Department of Planning and Budget, the Virginia Employment Commission, and other state agencies and research institutes. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impact.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, as when the Moonlight Solar project purchases goods and services – or when contractors hired by the facility use their salaries and wages to make household purchases – thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

One of the primary advantages of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers, which are then further adjusted to reflect anticipated actual spending patterns within the specific geographic study area that is being evaluated. As a result, the economic impact estimates produced by IMPLAN are not generic. They reflect as precisely as possible the economic realities of the specific industry, and the specific study area, being evaluated.

In the analysis that follows, these impact estimates are divided into three categories. First round direct impact measures the direct economic contribution of the entity being evaluated (e.g., own employment, wages paid, goods and services purchased by the Moonlight Solar project). Second round indirect and induced impact measures the economic ripple effects of this direct impact in terms of business to business, and household (employee) to business, transactions. Total impact is simply the sum of the preceding two. These categories of impact are then further defined in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), and economic output (the total amount of economic activity that is created in the economy).

[16] IMPLAN is produced by IMPLAN Group, LLC.

Construction Phase

This portion of the section assesses the economic and fiscal impact that the one-time pulse of activity associated with construction of the proposed Moonlight Solar project would have on Isle of Wight County.

Assumptions

The analysis is based on the following assumptions:

- Total capital investment in the Moonlight Solar project is estimated to be approximately $66.8 million.[17]
- Of that total:
    - Architecture, engineering, site preparation, and other construction and development costs are estimated to be approximately $34.0 million.[18]
    - Capital equipment costs are estimated to be approximately $32.8 million.[19] It is anticipated that no capital equipment would be purchased from vendors in Isle of Wight County.[20]
- All construction expenditures are assumed to take place during a 9-month period.

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of one-time economic and fiscal impact. As shown in Table 1, construction of the proposed Moonlight Solar project would directly provide a one-time pulse supporting approximately: 1) 16 jobs, 2) $0.8 million in wages and benefits, and 3) $6.6 million in economic output to Isle of Wight County.[21]

Taking into account the economic ripple effects that direct investment would generate, the total estimated one-time impact on Isle of Wight County would support approximately: 1) 25 jobs, 2) $1.2 million in wages and benefits, 3) $8.0 million in economic output, and 4) $140,900 in state and local tax revenue.

[17] Data Source: Palladium Energy. Investment estimate is subject to change based on final design and vendor contracts.
[18] Data Source: Palladium Energy.
[19] Data Source: Palladium Energy.
[20] Data Source: IMPLAN Group LLC.
[21] It is important to note that construction sector jobs are not necessarily new jobs, but the investments made can also support an existing job during the construction of the project.

Table 1: Estimated One-Time Economic and Fiscal Impact on Isle of Wight County from Construction of the Moonlight Solar Project

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	16	$817,300	$6,613,200
2nd Round Indirect and Induced Economic Activity	9	$399,300	$1,366,300
Total Economic Activity	**25**	**$1,216,600**	**$7,979,500**
Fiscal Impact			
State and Local Tax Revenue			**$140,900**

**Totals may not sum due to rounding.*

Ongoing Operations Phase

This portion of the section assesses the annual economic and fiscal impact that the proposed Moonlight Solar project would have on Isle of Wight County during its anticipated 40-year operational phase.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- The Moonlight Solar project would spend approximately $0.2 million each year for maintenance and repair, vegetative control, and other operational expenditures.[22]
- The Moonlight Solar project would make confidential lease payments to landowners.[23]

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 2, annual operation of the proposed Moonlight Solar project would on average directly support approximately: 1) 1 job, 2) $50,600 in wages and benefits, and 3) $156,500 in economic output to Isle of Wight County.

Taking into account the economic ripple effects that direct impact would generate, the total estimated annually supported impact on Isle of Wight County would be approximately: 1) 2 jobs, 2) $84,600 in wages and benefits, and 3) $297,800 in economic output.

[22] Data Source: Palladium Energy. Expenditure estimate is subject to change based on final design and vendor contracts.
[23] Data Source: Palladium Energy.

Table 2: Estimated Annual Economic Impact on Isle of Wight County from the Ongoing Operation of the Moonlight Solar Project

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	1	$50,600	$156,500
2nd Round Indirect and Induced Economic Activity	1	$34,000	$141,300
Total Economic Activity	**2**	**$84,600**	**$297,800**

**Totals may not sum due to rounding.*

Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- The Moonlight Solar project would involve an investment of approximately $66.8 million in capital equipment and improvements to the existing property.[24]
- The proposed Moonlight Solar project would be situated on approximately 250 fenced-in acres within an approximate 523-acre tract of leased land.[25]
- The actively used, fenced-in acreage would be removed from the land use program and reassessed at $15,000 per acre.[26]
- Tax rates and locality ratios remain constant throughout the analysis.
- The initial interconnection request for Moonlight Solar was filed in January 2021.[27]
- The Moonlight Solar project's total generation capacity would be 44 MW AC.
- The Moonlight Solar project would become operational in the fourth quarter of 2027.[28]

Fiscal Impact

This portion of the section quantifies the direct fiscal contribution that the proposed Moonlight Solar project would make to Isle of Wight County. The analysis considers two scenarios. Both scenarios include the additional revenue that the Moonlight Solar project would generate for Isle of Wight County over a 40-year period from the increased property assessments associated with reassessing the site as solar use property and a siting agreement negotiated between Isle of Wight County and Moonlight Solar. Scenario 1 then describes the additional revenue Moonlight Solar would generate for Isle of Wight County from taxes levied on the capital investment, while Scenario 2 assumes tax revenue generated from the capital investment will be replaced with revenue associated with a locally adopted revenue share ordinance and based on the project's total generation capacity.

[24] Data Source: Palladium Energy. Investment estimate is subject to change based on final design and vendor contracts.
[25] Data Source: Palladium Energy.
[26] Data Source: Isle of Wight County Commissioner of Revenue's Office. Current assessment value of existing solar farm in the county.
[27] Data Source: Palladium Energy.
[28] Data Source: Palladium Energy.

Reassessment of Property

Table 3 details the increased tax revenue associated with removing the affected acreage from the land use program and reassessing the 250-acre fenced-in site as solar use property. The county real estate tax revenue from the project after reassessment is estimated to be approximately $26,600 per year, for a cumulative total of approximately $1.1 million over the project's anticipated 40-year operational life expectancy.[29] Adding one-time rollback taxes of approximately $31,600 increases that cumulative total to approximately $1.1 million. In contrast, the property currently generates approximately $1,580 per year in real estate tax revenue for the county, for a cumulative total of approximately $63,100 over 40 years.[30]

Table 3: Estimated County Revenue Generated by the Proposed Moonlight Solar Project over 40 Years from Real Estate Taxes

Estimated Increased Appraised Value of Property under Solar Use[31]	$3,750,000
Isle of Wight County Real Estate Tax Rate[32]	0.0071
Annual County Real Estate Tax – Solar Use	$26,600
Revenue over 40 years	**$1,065,000**
One-time Rollback Taxes[33]	**$31,600**
Total Cumulative Revenue over 40 years	**$1,096,600**

**Totals may not sum due to rounding.*

Siting Agreement

According to §15.2-2316.7 of the Code of Virginia, a host locality may negotiate a siting agreement with the applicant of a solar facility. Based on information provided by Moonlight Solar, LLC, Moonlight Solar is proposing to make an upfront payment of $25,000 per megawatt to Isle of Wight County at the beginning of commercial operation of the project. As shown in Table 4, this would total approximately $1.1 million in the first year of Moonlight Solar's operation.

[29] Assumes property will be reassessed at $15,000 per acre once it is under solar use.
[30] Derived from Isle of Wight County's Property Card database. Excludes value of existing structures as they will not be affected.
[31] Calculated as 250 acres times $15,000 per acre.
[32] Data Source: Isle of Wight County's Commissioner of Revenue's office.
[33] Rollback taxes are computed as the difference between the current land use value assessment tax and the tax on the fair market value for the affected acreage for five complete tax years plus the current year. Does not account for changes in assessment values over time. Includes simple interest.

Table 4: Proposed Value of Siting Agreement Between Moonlight Solar and Isle of Wight County

Moonlight Solar Total Generation Capacity in MW	44
Proposed Payment Per MW[34]	$25,000
Total Revenue from Upfront Payment	**$1,100,000**

Scenario 1: Taxation of Capital Investment

Table 5 separately details the additional annual revenue that the proposed Moonlight Solar project would generate for Isle of Wight County over a 40-year period from taxes levied on capital investment. This estimate is calculated as: 1) the taxable portion of capital investments based on the stepdown local tax exemption pursuant to Virginia Code §58.1-3660[35], times 2) the State Corporation Commission's utility assessment ratio for taxation of public utilities in Isle of Wight County, times 4) the State Corporation Commission's current depreciation guidelines for solar facilities, times 5) Isle of Wight County's real property tax rate of $0.71 per $100 of assessed value pursuant to Virginia Code §58.1-2606.

As the data in Table 5 indicate, based on these calculations the estimated additional county revenue from taxation of capital investments associated with the proposed Moonlight Solar project would be approximately $75,200 in the project's first year of operation, with that figure projected to increase to approximately $144,600 in year 11 of the project as the value of the exemption is reduced, and thereafter declining to approximately $16,700 in the project's 34th year of operation and thereafter as the value of the proposed capital investments is further depreciated, for a cumulative total of approximately $3.2 million

Table 5: Estimated County Revenue by Proposed Solar Investment Over 40 Years

Year	Total Capital Investment Subject to Exemption[36]	Depreciated Value of Taxable Capital Investment[37]	Additional Annual County Tax Revenue Solar Investment[38]
1	$66,818,707	$10,586,489	$75,164
2	$66,818,707	$10,586,489	$75,164

[34] Data Source: Palladium Energy.
[35] Virginia Code §58.1-3660 stipulates that solar facilities over 5MW and under 150MW are subject to a stepdown exemption from local property taxes if the interconnection request has been filed on or after January 1, 2019. The amount of the exemption is 80 percent in the first five years, 70 percent in years six through ten, and 60 percent thereafter.
[36] Data Source: Palladium Energy.
[37] Accounts for the State Corporation Commission's depreciation guidelines for solar facilities and the utility assessment ratio for taxation of public utilities in Isle of Wight County. Also accounts for the stepdown exemption from local property taxes pursuant to Virginia Code §58.1-3660 for projects over 5 MW and under 150 MW with an interconnection request on or after January 1, 2019. The amount of the exemption is 80 percent in the first five years, 70 percent in years six through ten, and 60 percent thereafter.
[38] Calculated pursuant to Virginia Code §58.1-2606 which stipulates that capital equipment owned by utilities is taxed as real property and the local tax rate on that capital equipment would be capped at Isle of Wight County's real property tax rate of $0.71 per $100 of assessed value.

Year	Total Capital Investment Subject to Exemption[36]	Depreciated Value of Taxable Capital Investment[37]	Additional Annual County Tax Revenue Solar Investment[38]
3	$66,818,707	$10,586,489	$75,164
4	$66,818,707	$10,586,489	$75,164
5	$66,818,707	$10,586,489	$75,164
6	$66,818,707	$15,879,733	$112,746
7	$66,818,707	$15,879,733	$112,746
8	$66,818,707	$15,879,733	$112,746
9	$66,818,707	$15,825,036	$112,358
10	$66,818,707	$15,556,845	$110,454
11	$66,818,707	$20,363,699	$144,582
12	$66,818,707	$19,963,765	$141,743
13	$66,818,707	$19,540,306	$138,736
14	$66,818,707	$19,088,615	$135,529
15	$66,818,707	$18,611,047	$132,138
16	$66,818,707	$18,105,248	$128,547
17	$66,818,707	$17,568,866	$124,739
18	$66,818,707	$17,001,901	$120,713
19	$66,818,707	$16,397,295	$116,421
20	$66,818,707	$15,759,753	$111,894
21	$66,818,707	$15,082,218	$107,084
22	$66,818,707	$14,364,689	$101,989
23	$66,818,707	$13,604,814	$96,594
24	$66,818,707	$12,797,889	$90,865
25	$66,818,707	$11,943,912	$84,802
26	$66,818,707	$11,035,826	$78,354
27	$66,818,707	$10,075,985	$71,539
28	$66,818,707	$9,057,329	$64,307
29	$66,818,707	$7,979,860	$56,657
30	$66,818,707	$6,834,167	$48,523
31	$66,818,707	$5,622,602	$39,920
32	$66,818,707	$4,338,108	$30,801
33	$66,818,707	$2,975,980	$21,129
34	$66,818,707	$2,352,553	$16,703
35	$66,818,707	$2,352,553	$16,703
36	$66,818,707	$2,352,553	$16,703
37	$66,818,707	$2,352,553	$16,703
38	$66,818,707	$2,352,553	$16,703
39	$66,818,707	$2,352,553	$16,703
40	$66,818,707	$2,352,553	$16,703
CUMULATIVE TOTAL			**$3,241,400**

**Totals may not sum due to rounding.*

Scenario 1: Total Fiscal Impact

Table 6 combines the results from the calculations depicted in Tables 3 through 5 to provide an estimate of the cumulative fiscal contribution that the proposed Moonlight Solar project would make to Isle of Wight County over its 40-year anticipated operational life under Scenario 1. As these data indicate, that cumulative total is approximately $5.4 million.

Table 6: Estimated Cumulative County Tax Revenue from the Proposed Moonlight Solar Project over 40 Years under Scenario 1

County Real Estate Tax	$1,096,600
County Revenue from Siting Agreement	$1,100,000
County Revenue from Taxation of Capital Investments	$3,241,400
TOTAL Cumulative Revenue over 40 Years	**$5,438,000**

**Totals may not sum due to rounding.*

Scenario 2: Revenue Share Ordinance

The following section describes the additional annual revenue that the proposed Moonlight Solar project would generate for Isle of Wight County assuming the county adopts an energy revenue share ordinance under Virginia Code §58.1-2636. The Virginia Code currently stipulates that a locality may assess an annual revenue share of up to $1,400 per megawatt (MW) alternating current (AC) generation capacity of a solar facility. However, legislation that was passed in the 2021 General Assembly (SB 1201/HB 2006) and went into effect on July 1, 2021, allows a 10 percent escalator to be applied to the $1,400 per MW revenue share every five years, beginning in 2026. Section 58.1-3660 further stipulates that capital investment associated with the solar project will be exempt from taxation if the county adopts an energy revenue share ordinance.

Table 7 details the revenue generated from a revenue share ordinance including the 10 percent escalator. Based on a total generation capacity of 44 MW AC and an assumed commissioning date of the fourth quarter of 2027, a revenue share ordinance would generate approximately $4.0 million over the anticipated 40-year operational life of the project.

Table 7: Estimated County Revenue Generated from a Revenue Share Ordinance over 40 Years

Year	MW	Revenue Share per MW with Escalator	Annual County Revenue
1	44	$1,540	$67,760
2	44	$1,540	$67,760
3	44	$1,540	$67,760
4	44	$1,540	$67,760
5	44	$1,694	$74,536

Year	MW	Revenue Share per MW with Escalator	Annual County Revenue
6	44	$1,694	$74,536
7	44	$1,694	$74,536
8	44	$1,694	$74,536
9	44	$1,694	$74,536
10	44	$1,863	$81,990
11	44	$1,863	$81,990
12	44	$1,863	$81,990
13	44	$1,863	$81,990
14	44	$1,863	$81,990
15	44	$2,050	$90,189
16	44	$2,050	$90,189
17	44	$2,050	$90,189
18	44	$2,050	$90,189
19	44	$2,050	$90,189
20	44	$2,255	$99,207
21	44	$2,255	$99,207
22	44	$2,255	$99,207
23	44	$2,255	$99,207
24	44	$2,255	$99,207
25	44	$2,480	$109,128
26	44	$2,480	$109,128
27	44	$2,480	$109,128
28	44	$2,480	$109,128
29	44	$2,480	$109,128
30	44	$2,728	$120,041
31	44	$2,728	$120,041
32	44	$2,728	$120,041
33	44	$2,728	$120,041
34	44	$2,728	$120,041
35	44	$3,001	$132,045
36	44	$3,001	$132,045
37	44	$3,001	$132,045
38	44	$3,001	$132,045
39	44	$3,001	$132,045
40	44	$3,301	$145,250
Cumulative Total			**$3,952,000**

Scenario 2: Total Fiscal Impact

Table 8 combines the results from the calculations depicted in Tables 3, 4 and 7 to provide an estimate of the cumulative fiscal contribution that the proposed Moonlight Solar project would make to Isle of Wight County over its 40-year anticipated operational life under Scenario 2. As these data indicate, that cumulative total is approximately $6.1 million.

Table 8: Estimated Cumulative County Revenue from the Proposed Moonlight Solar Project over 40 Years under Scenario 2

County Real Estate Tax	$1,096,600
County Revenue from Siting Agreement	$1,100,000
County Revenue from Revenue Share Ordinance	$3,952,000
TOTAL Cumulative Revenue over 40 Years	**$6,148,500**

**Totals may not sum due to rounding.*

Current Agricultural Use

This section provides a benchmark for the previous estimates of the economic contribution that the proposed Moonlight Solar project would make to Isle of Wight County by estimating the economic and fiscal contribution that the site makes to the county in its current agricultural use.

Economic Impact Assumptions

The analysis is based on the following assumptions:

- The proposed Moonlight Solar project would be situated on an approximate 250-acre tract of agricultural land used to produce cotton, corn, and soybeans.[39]

Economic Impact

Applying these assumptions in the IMPLAN model results in the following estimates of annual economic impact. As shown in Table 9, in its current use the proposed Moonlight Solar project site directly supports approximately: 1) 1 job, 2) $42,600 in wages and benefits, and 3) $148,600 in economic output to Isle of Wight County.

Taking into account the economic ripple effects that direct impact generates, on average, the total annually supported impact on Isle of Wight County is approximately: 1) 2 jobs, 2) $75,000 in wages and benefits, and 3) $232,900 in economic output.

Table 9: Total Estimated Annual Economic Impact of the Moonlight Solar Project Site on Isle of Wight County – Current Agricultural Use[40]

Economic Impact	Employment	Wages and Benefits	Output
1st Round Direct Economic Activity	1	$42,600	$148,600
2nd Round Indirect and Induced Economic Activity	1	$32,400	$84,300
Total Economic Activity	**2**	**$75,000**	**$232,900**

**Totals may not sum due to rounding.*

Fiscal Impact Assumptions

The analysis is based on the following assumptions:

- The current use assessment value of the affected acreage is approximately $222,100.[41]

[39] Data Source: Palladium Energy.
[40] Calculations based data from the U.S. Department of Agriculture and IMPLAN Group, LLC for Virginia and Isle of Wight County.
[41] Data Source: Derived from Isle of Wight County's Property Card database. Excludes value of existing structures as they will not be affected.

Fiscal Impact

Table 10 details the estimated tax revenue that the proposed Moonlight Solar site generates for Isle of Wight County in its current agricultural use. As the data in Table 10 indicate, the current county real estate tax revenue from the project site is estimated to be approximately $1,580 per year, for a cumulative total of approximately $63,100 over 40 years.

Table 10: Estimated County Revenue Generated by the Proposed Moonlight Solar Project Site over 40 Years from Real Estate Taxes – Current Agricultural Use

Estimated Assessed Value of Property – Agricultural Use[42]	$222,100
Isle of Wight County Current Real Estate Tax Rate	0.0071
Estimated Annual County Real Estate Tax – Agricultural Use	$1,580
Total Cumulative Revenue over 40 years	**$63,100**

**Totals may not sum due to rounding.*

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing the quality of that information. However, because these estimates attempt to foresee the consequences of circumstances that have not yet occurred, it is not possible to be certain that they will be representative of actual events. These estimates are intended to provide a good indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

[42] Data Source: Derived from Isle of Wight County's Property Card database. Excludes value of existing structures as they will not be affected.