Black Rock
Wind Farm

Appendix M

Pro Forma
Financial Statement

APPENDIX M

Pro Forma Financial Statements

The pro forma financial statements for the Project contain confidential and proprietary information. Consequently, these statements are being filed with the Commission under seal, accompanied by a motion for protective treatment.

Black Rock
Wind Farm

Appendix N

Economic Impact Study

JANUARY 14, 2019

BLACK ROCK WIND

ECONOMIC AND FISCAL CONTRIUBUTION TO THE COUNTIES OF GRANT AND MINERAL, AND WEST VIRGINIA

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About Mangum Economics, LLC

Mangum Economics, LLC is a Richmond, Virginia based firm that specializes in producing objective economic, quantitative, and qualitative analysis in support of strategic decision making. Examples of typical studies include:

POLICY ANALYSIS

Identify the intended and, more importantly, unintended consequences of proposed legislation and other policy initiatives.

ECONOMIC IMPACT ASSESMENTS AND RETURN ON INVESTMENT ANALYSES

Measure the economic contribution that business, education, or other enterprises make to their localities.

WORKFORCE INFORMATION

Project the demand for, and supply of, qualified workers.

CLUSTER ANALYSIS

Use occupation and industry clusters to illuminate regional workforce and industry strengths and identify connections between the two.

ENVIRONMENTAL SCANNING

Assess the economic, demographic, and other factors likely to affect your enterprise in the future.

The Project Team

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Researcher and Economic Development Specialist

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Executive Summary

This report assesses the economic and fiscal contribution that the proposed Black Rock Wind Project would make to Grant County and Mineral County, and the state of West Virginia as a whole. The principal findings from that assessment are as follows:

1) **The proposed Black Rock Wind Project would involve construction of a 32-turbine, 110-megawatt, wind energy facility that would located in Grant County and Mineral County, West Virginia.**

2) **Construction is an important industry sector in Grant County and Mineral County in terms of both employment and wages, and the proposed Black Rock Wind Project would have a significant impact on that sector during its construction phase. The Black Rock Wind Project would provide an estimated one-time pulse of economic activity during its construction phase of approximately:**

   - 307 to 376 full-time-equivalent local jobs.
   - $14.0 million to $17.2 million in local wages.
   - $52.4 million to $64.2 million in local economic output.
   - $4.8 million to $5.9 million in state and local taxes.

3) **In addition to generating approximately $300,000 per year in state tax revenue from the Business and Occupational (B&O) tax during its estimated 25 year operations phase, the proposed Black Rock Wind Project would also make a significant fiscal contribution to Grant County and Mineral County through property taxes:**

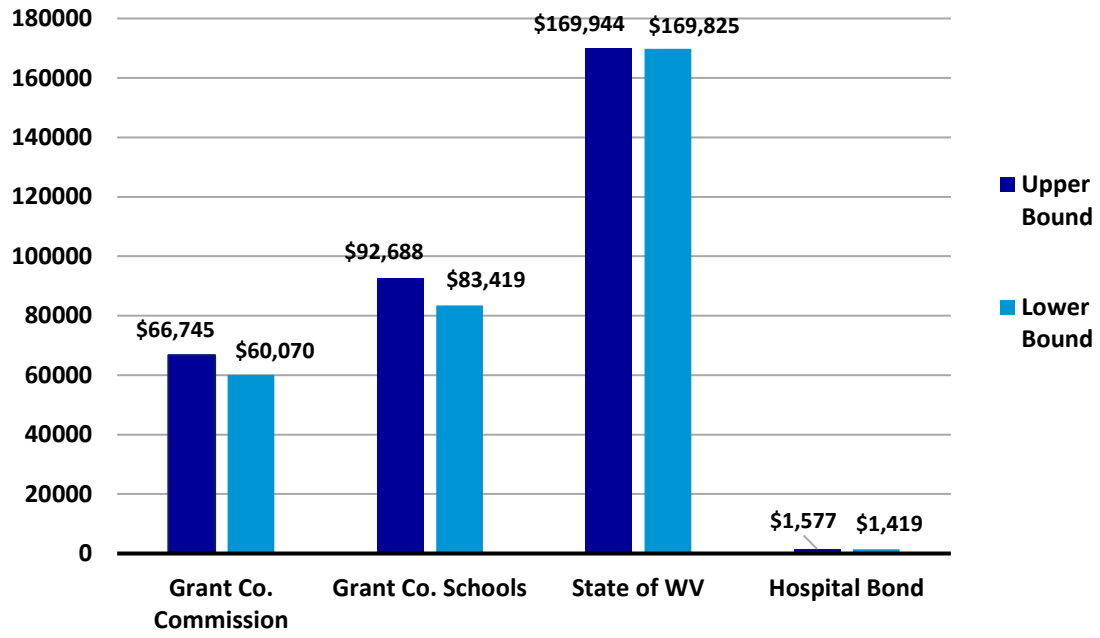
   In Grant County, the project would likely generate:

   - Cumulative property tax revenues of between $3.6 million and $4.1 million over 25 years.
   - Average annual property tax revenue of between $145,983 and $162,204. The disposition of these revenues is depicted below (graph also includes estimated B&O tax revenue).

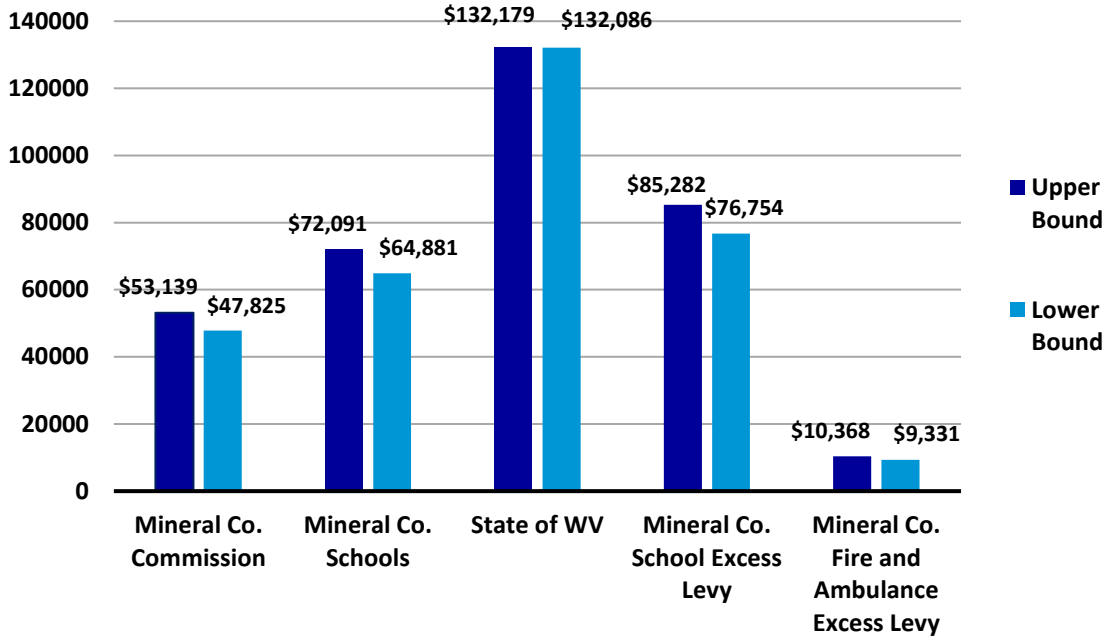
   In Mineral County, the project would likely generate:

   - Cumulative property tax revenues of between $5.0 million and $5.5 million over 25 years.
   - Average annual property tax revenue of between $199,628 and $221,808. The disposition of these revenues is depicted below (graph also includes estimated B&O tax revenue).

Average Annual Property Tax Revenue from the Proposed Black Rock Wind Project in Grant County over 25 Years



Average Annual Property Tax Revenue from the Proposed Black Rock Wind Project in Mineral County over 25 Years



4) **In short, the proposed Black Rock Wind Project would provide a significant economic and fiscal boost to Grant County and Mineral County.**

The estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general 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 Black Rock Wind Project would make to Grant County and Mineral County, and the state of West Virginia as a whole. This report was commissioned by Clearway Energy, and produced by Mangum Economics.

The Project

The proposed Black Rock Wind Project would involve construction of a 32-turbine, 110-megawatt, wind energy facility that would be located in Grant County and Mineral County, West Virginia. The wind turbines would generally be installed on the primary ridge line of Black Rock Mountain in the area north and south of the intersection of Route 50 and Route 42 North. The project site is located on privately-owned, mountain top, land and is generally comprised of uninhabited forested or timbered areas.

Electricity Production in West Virginia

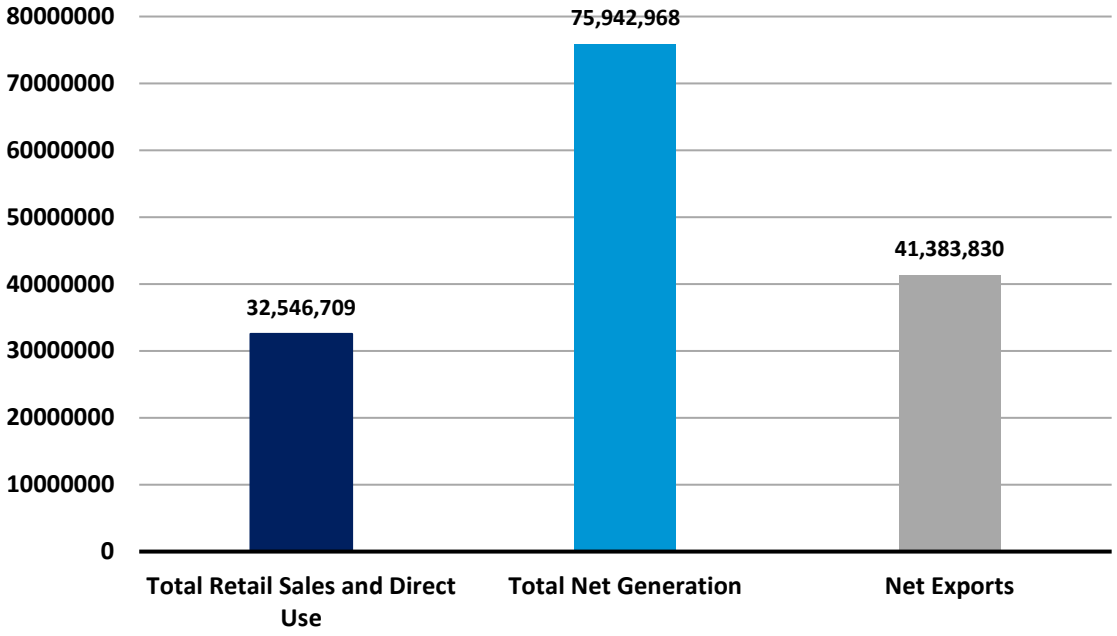
In this section, we provide a backdrop for the proposed Black Rock Wind Project by profiling West Virginia's electricity production sector and the role that wind energy plays in that sector.

Overall Market

As shown in Figure 1, in 2016 electricity sales and direct use in West Virginia totaled 32.5 million megawatt hours, while total net generation of electricity from in-state sources was 75.9 million megawatt hours. This means that West Virginia exported 41.4 million megawatt hours of electricity out of state, and as with all export industries, those exports expanded the state's economy by bringing dollars into West Virginia from other states.[1]

[1] This 41.4 million megawatt figure represents net exports and takes into account losses during transmission. As a result, it does not directly equal the difference between total electricity generated in West Virginia and total electricity used in West Virginia.

Figure 1: Demand and Supply of Electricity in West Virginia (in megawatt-hours)[2]



Sources of Production

Between 2006 and 2016, the total amount of electricity produced in West Virginia decreased from 93.8 to 75.9 million megawatt hours. Figure 2 provides a comparison of the energy sources that were used to produce electricity in West Virginia in each of those years. As these data show, the most significant change between 2006 and 2016 was a shift from high-emission sources such as coal to cleaner-burning low-emissions energy sources such as natural gas and wind power. Between 2006 and 2016, the amount of electricity produced using coal declined by 20.0 million megawatt hours, while in contrast the amount of electricity produced using natural gas increased by 0.9 million megawatt hours and the amount of electricity produced using wind energy increased by 1.3 million megawatt hours.

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 West Virginia, the trend toward low-emissions energy sources is the same. Nationally, between 2006 and 2016 the amount of electricity produced using coal declined by 751.4 million megawatt hours, while in contrast the amount of electricity produced using natural gas increased by 561.9 million megawatt hours and the amount of electricity produced using wind energy increased by 200.4 million megawatt hours.

[2] Data Source: U.S. Energy Information Administration. In this chart, "Net Exports" 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."

Figure 2: Electricity Generation in West Virginia by Energy Source (in megawatt-hours)[3]

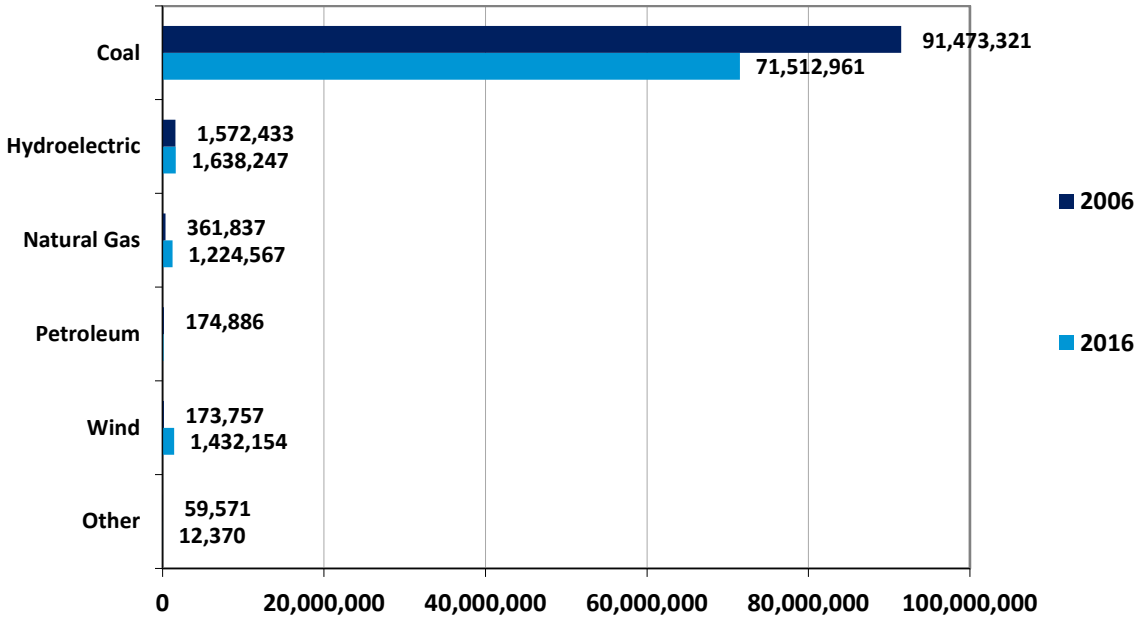
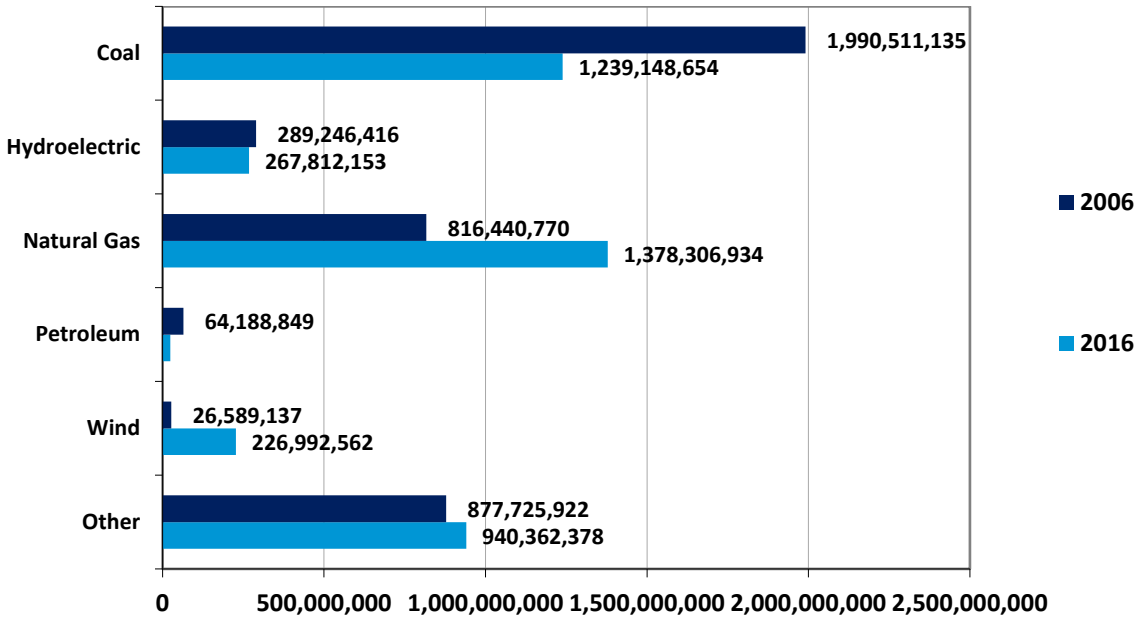


Figure 3: Electricity Generation in the U.S. by Energy Source (in megawatt-hours)[4]



[3] Data Source: U.S. Energy Information Administration. The "Other" category includes geothermal, nuclear, other biomass, other gas, pumped storage, solar, and wood.

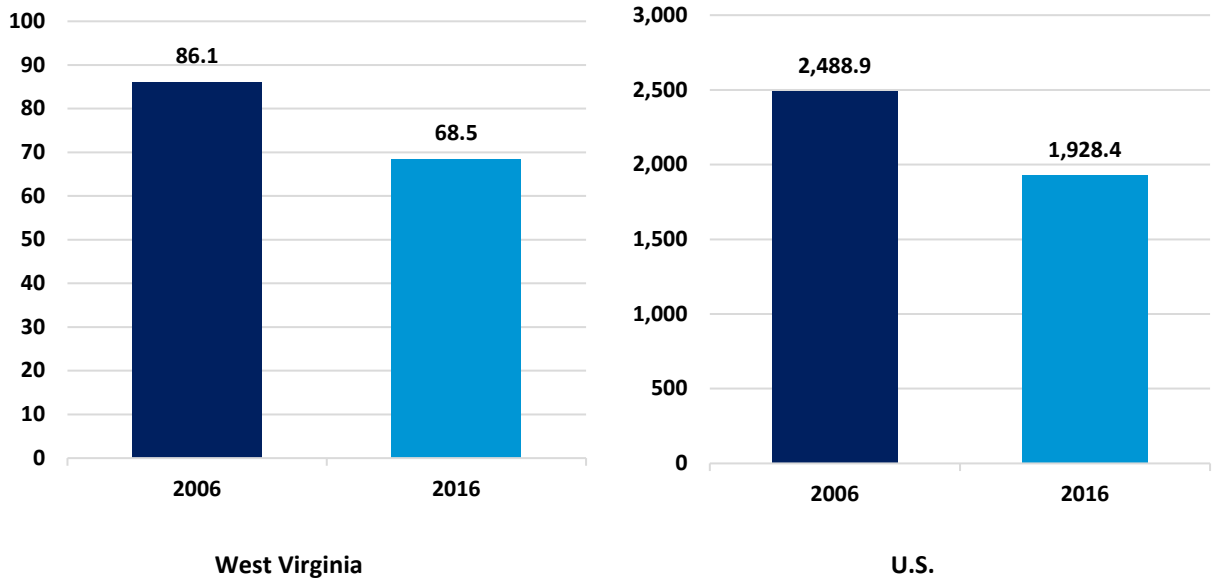
[4] Data Source: U.S. Energy Information Administration. The "Other" category includes geothermal, nuclear, other biomass, other gas, pumped storage, solar, and wood.

Impact on the Environment

In discussing the impact of these trends on the environment, it is important to realize that electricity production is the U.S.'s largest source of greenhouse gas emissions. Electricity production accounted for 40 percent of all carbon dioxide emissions from fossil fuel consumption in the U.S. in 2006, and 35 percent ten years later in 2016.[5] However, that small change in percentage share masks some very significant changes in absolute emissions.

Moreover, those changes in emissions levels were largely attributable to the shifts described above, which is to say that, as the industry has transitioned to cleaner-burning energy sources, its greenhouse gas emissions have fallen. Figure 4 depicts this change for both West Virginia and the U.S. nationally. As these data indicate, between 2006 and 2016 carbon dioxide emissions from electricity production fell from 86.1 to 68.5 million metric tons in West Virginia, and from 2,488.9 to 1,928.4 million metric tons in the U.S. nationally.

Figure 4: Carbon Dioxide Emissions from Electricity Production (millions of metric tons)[6]



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

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

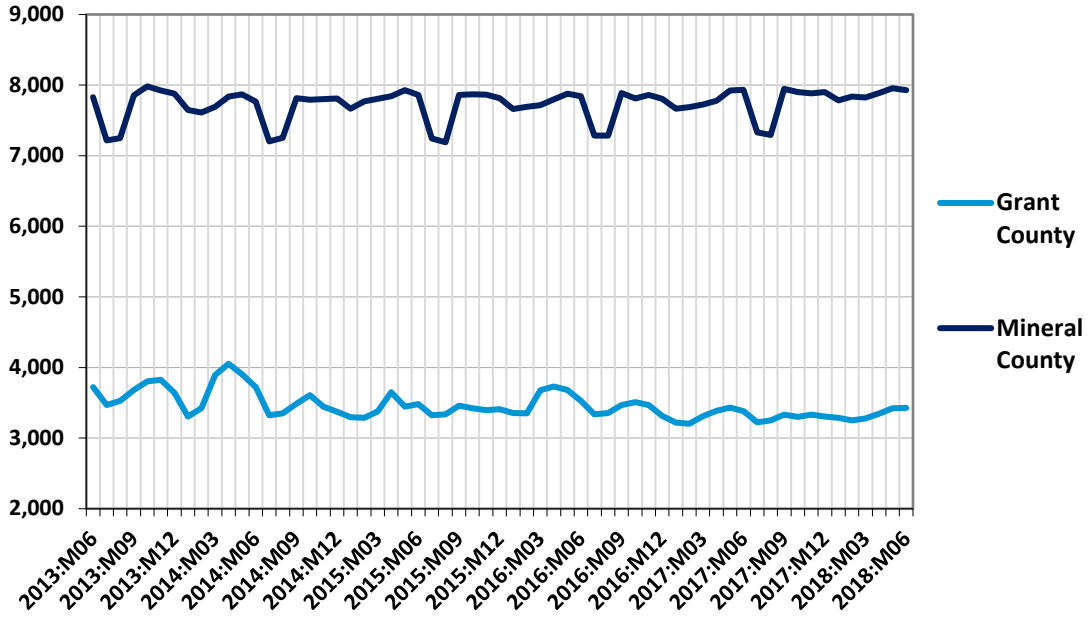
Local Economic Profile

In this section, we provide context for the economic and fiscal impact assessments to follow by profiling the local economies of Grant County and Mineral County.

Total Employment

Figure 5 depicts the trend in total employment in the Counties of Grant and Mineral from June 2013 to June 2018. As these data show, except for seasonal variations, employment in both counties remained relatively stable throughout the period. Over the period as a whole, employment decreased by 298 jobs in Grant County (down 8.0 percent), while employment increased by 98 jobs in Mineral County (up 1.3 percent). To put these numbers in perspective, over this same period, total statewide employment in West Virginia decreased by 1.5 percent.[7] As of June 2018, employment stood at 3,426 in Grant County and 7,928 in Mineral County.

Figure 5: Total Employment in Grant and Mineral Counties – June 2013 to June 2018[8]



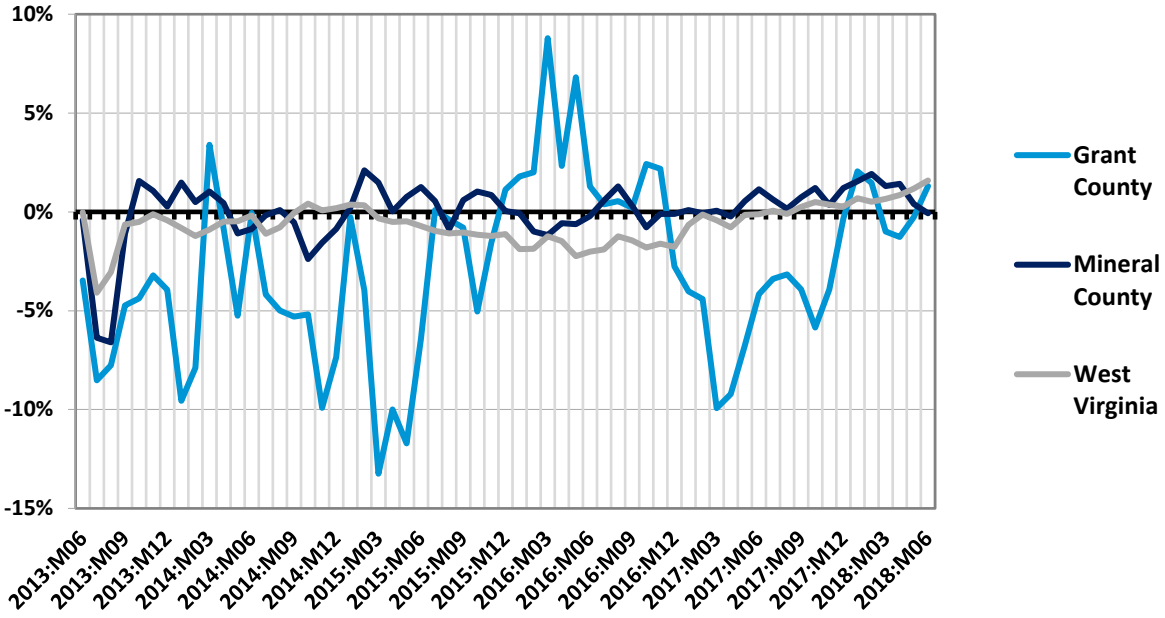
To control for seasonality and provide a point of reference, Figure 6 compares the year-over-year change in total employment in the Counties of Grant and Mineral to that of the state of West Virginia as a whole over the same five-year period. Any point above the zero line in this graph indicates an increase in year-over-year employment growth, while any point below the zero line indicates a decline in year-over-year employment. As these data indicate, whereas year-over-year employment changes in Grant

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

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

County generally under-performed the statewide average throughout the period, year-over-year employment changes in Mineral County frequently over-performed the statewide average. As of June 2018, year-over-year employment growth was 1.3 percent in Grant County and minus 0.1 percent in Mineral County, as compared to 1.6 percent statewide in West Virginia.

Figure 6: Year-Over-Year Change in Total Employment – June 2013 - June 2018[9]



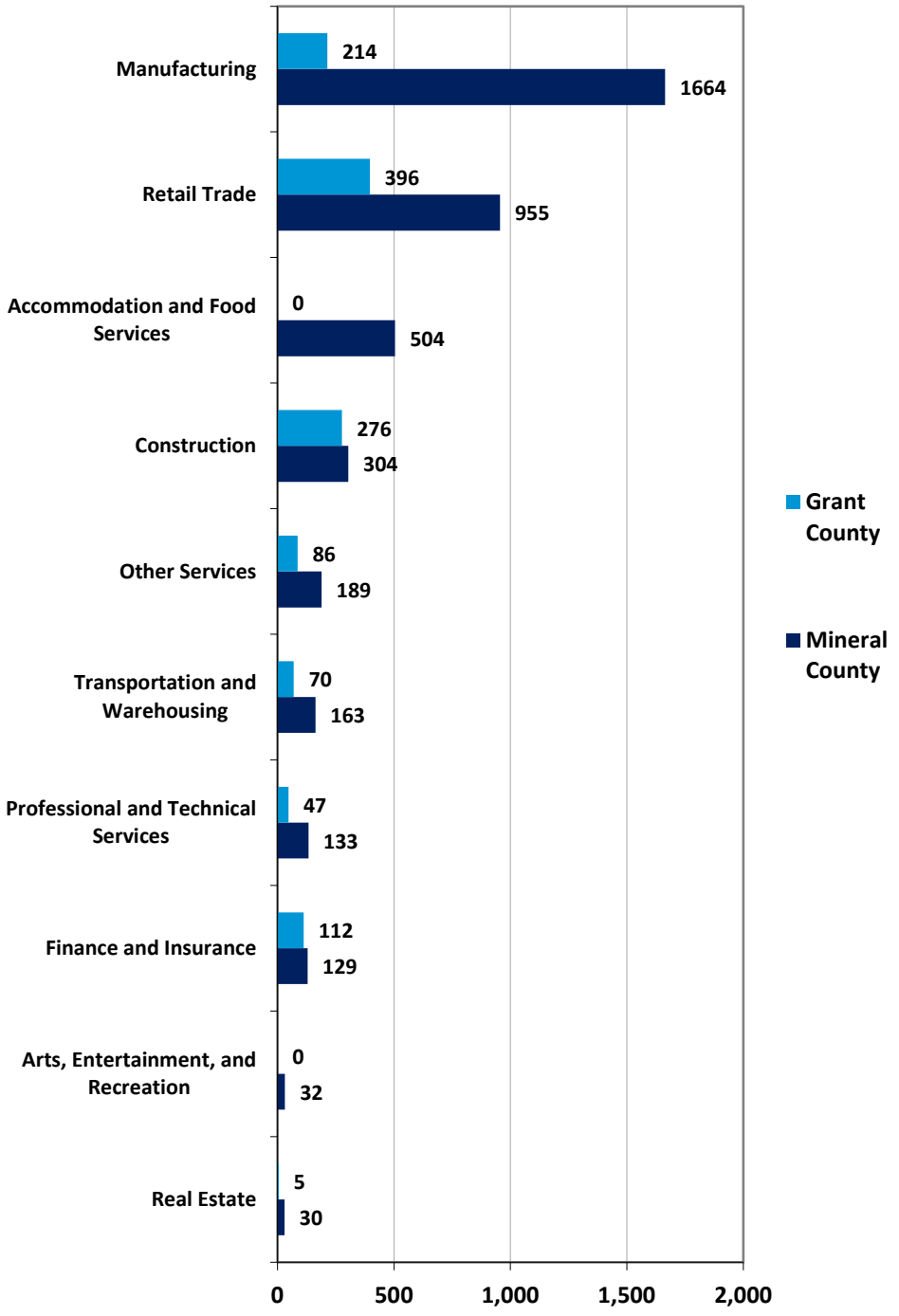
Employment and Wages by Major Industry Sector

To provide a better understanding of the underlying factors motivating the total employment trends depicted in Figures 5 and 6, Figures 7 through 9 present data on private sector employment and wages by major industry category in the Counties of Grant and Mineral.

Figure 7 provides an indication of the distribution of private sector employment across major industries in Grant County and Mineral County by ranking each industry according to total employment in 2017. As these data indicate, the three largest industry sectors in Grant County in 2017 were Retail Trade (396 jobs), Construction (276 jobs), and Manufacturing (214 jobs), while the three largest industry sectors in Mineral County were Manufacturing (1,664 jobs), Retail Trade (955 jobs), and Accommodation and Food Services (504 jobs).

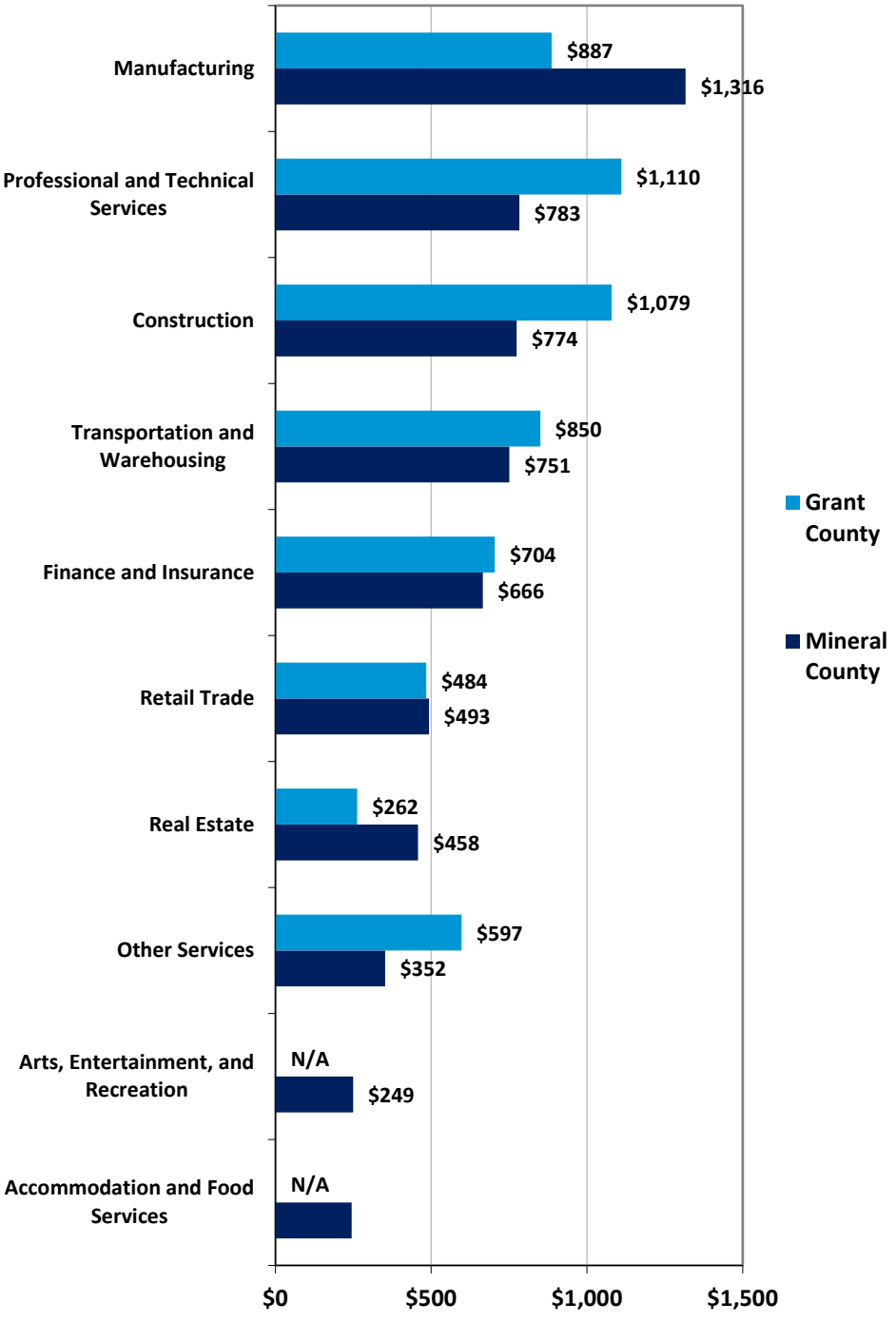
[9] Data Source: U.S. Bureau of Labor Statistics.

Figure 7: Private Sector Employment by Major Industry Category in Grant and Mineral Counties in 2017[10]



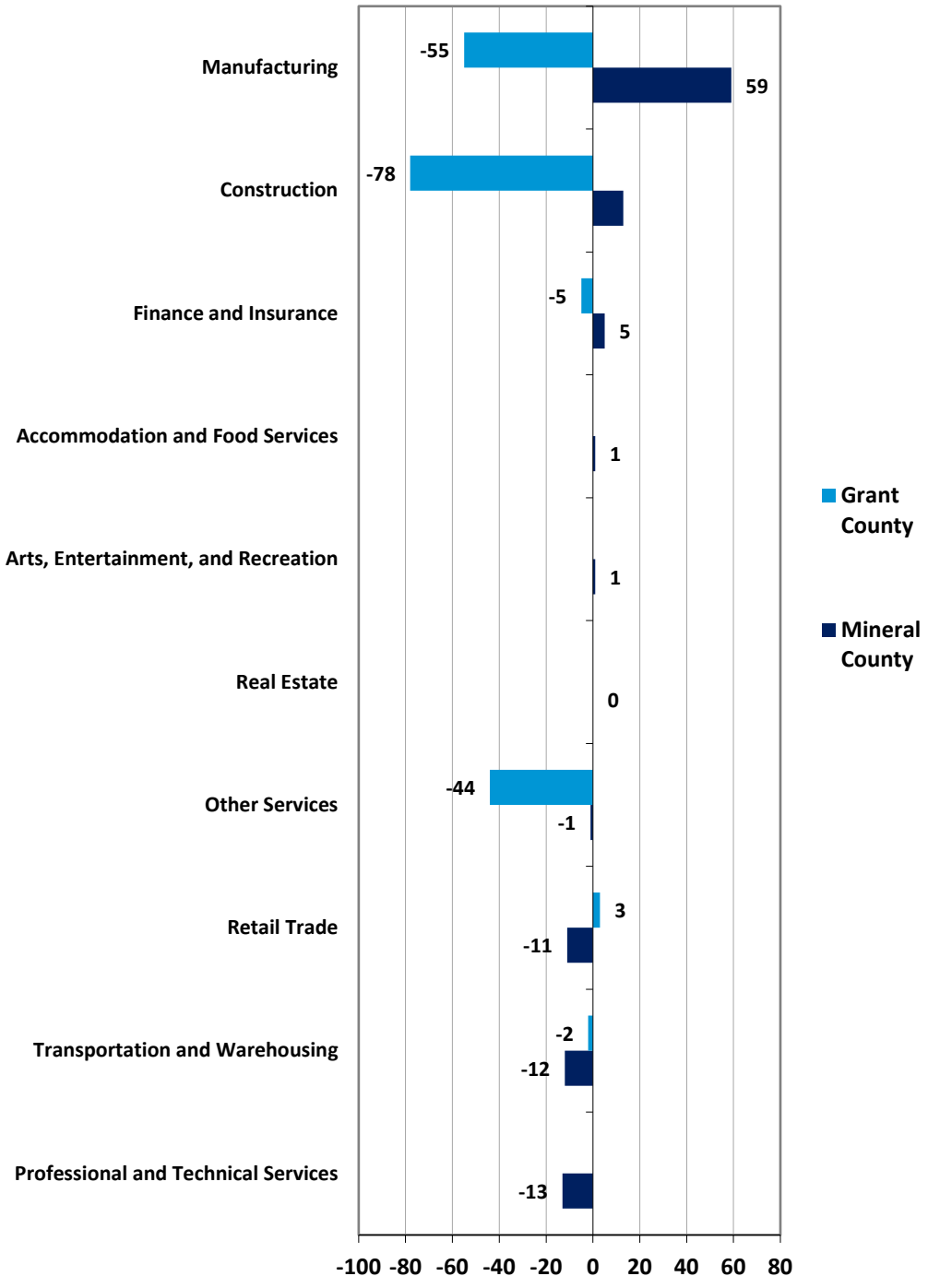
[10] Data Source: U.S. Bureau of Labor Statistics.

Figure 8: Private Sector Average Weekly Wages by Major Industry Category in Grant and Mineral Counties in 2017[11]



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

Figure 9: Change in Private Sector Employment by Major Industry Category in Grant and Mineral Counties in between 2016 and 2017[12]



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

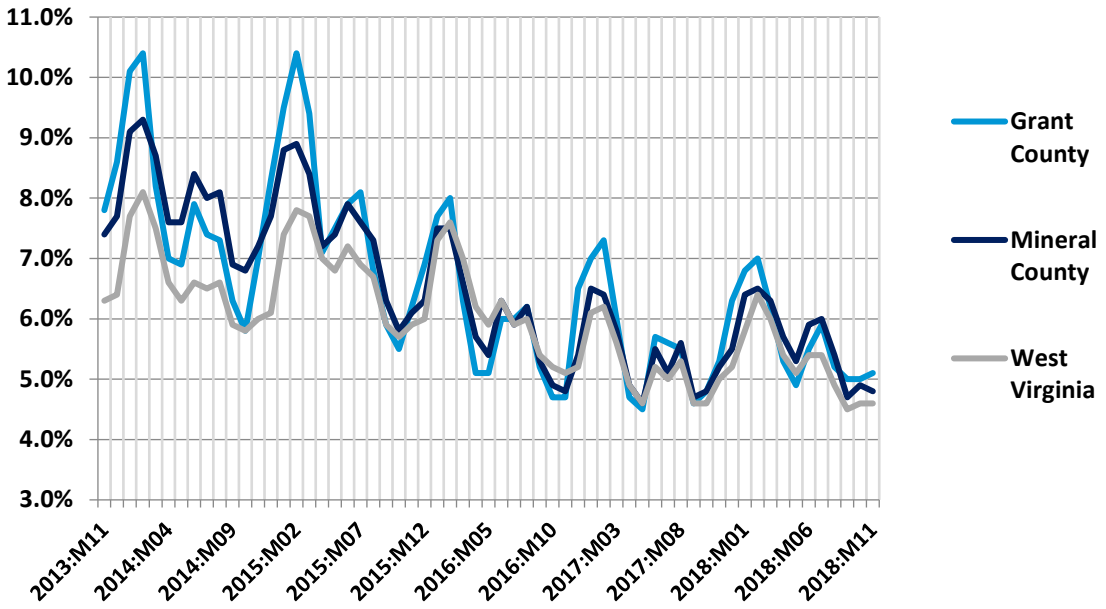
Figure 8 provides a similar ranking for average private sector weekly wages by major industry in Grant County and Mineral County in 2017. As these data show, the three highest paying industry sectors in Grant County in 2017 were Professional and Technical Services ($1,110 per week), Construction ($1,079 per week), and Manufacturing ($887 per week), while the three highest paying industry sectors in Mineral County were Manufacturing ($1,316 per week), Professional and Technical Services ($783 per week), and Construction ($774 per week). By way of reference, the average weekly wage across all private sector industries in 2017 was $816 per week in Grant County and $773 per week in Mineral County.

Lastly, Figure 9 details the change in private sector employment between 2016 and 2017 by major industry in Grant County and Mineral County. Over this period, the largest changes in private sector employment in Grant County occurred in Construction (down 78 jobs), Manufacturing (down 55 jobs), and Other Services (down 44 jobs), while the largest changes in private sector employment in Mineral County occurred in Manufacturing (up 59 jobs).

Unemployment

Figure 10 depicts the trend in Mineral County's and Grant County's unemployment rates over the five-year period from November 2013 through November 2018 and benchmarks those data against the statewide trend for West Virginia. As these data show, unemployment rates in both Mineral County and Grant County generally tracked above the statewide trend throughout this period, although those gaps have narrowed over time. As of November 2018, unemployment stood at 5.1 percent in Mineral County and 4.8 percent in Grant County, as compared to 4.6 percent in West Virginia as a whole.

Figure 10: Unemployment Rate – November 2013 to November 2018[13]



In Sum

Manufacturing and Construction are critical sectors in Grant County and Mineral County in terms of both employment and wages, and in Grant County both sectors have suffered recent employment losses.

Economic and Fiscal Impact

In this section, we quantify the economic and fiscal contribution that the proposed Black Rock Wind Project would make to Mineral County and Grant County, and to the state of West Virginia as a whole. Our analysis separately evaluates the one-time pulse of economic activity that would occur during the construction phase of the project, and the annual economic activity that the project would generate during its ongoing operations phase.

Method

To empirically evaluate the likely local and statewide economic impact attributable to the proposed Black Rock Wind Project, we employ a regional economic impact model called IMPLAN.[14] The IMPLAN model is one of the most commonly used economic impact simulation models in the U.S. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impact.

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

[14] IMPLAN v.3 is produced by Minnesota IMPLAN Group, Inc.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, as when the Black Rock Wind Project purchases goods and services – or when project employees or contractors 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 Black Rock Wind 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), economic output (the total amount of economic activity that is created in the economy), and fiscal impact (the state and local tax revenues that are generated by this economic activity).

Construction Phase

In this portion of the section, we assess the economic and fiscal impact that the one-time pulse of activity associated with construction of the Black Rock Wind Project would have on Mineral County and Grant County, and the state of West Virginia as a whole.

Assumptions

In conducting our analysis, we employ the following assumptions:

Lower Bound Scenario

- Total investment in improvements and capital equipment is estimated to be $146,040,000 for the Black Rock Wind Project.[15]
- It is anticipated that approximately 30 percent of all project development costs would be spent with vendors in Grant and Mineral County.[16]
- For ease of explication, all expenditures are treated as if they occurred in a single year, no attempt is made to phase those expenditures in over time.

Upper Bound Scenario

- Total investment in improvements and capital equipment is estimated to be $165,600,000 for the Black Rock Wind Project.[17]
- It is anticipated that approximately 33 percent of all project development costs would be spent with vendors in Grant and Mineral County.[18]
- For ease of explication, all expenditures are treated as if they occurred in a single year, no attempt is made to phase those expenditures in over time.

Results – Grant and Mineral County

By feeding these assumptions into the IMPLAN model, we obtain the following estimates of one-time economic and fiscal impact on Grant County and Mineral County.

Lower Bound Scenario

As shown in Table 1, in the lower estimate scenario construction of the proposed Black Rock Wind Project would directly provide a one-time pulse of approximately: 1) 237 full-time-equivalent jobs, 2) $11.8 million in labor income, and 3) $44.6 million in economic output to Grant County and Mineral County.

Taking into account the economic ripple effects that direct investment would generate, we estimate that the total one-time impact on Grant County and Mineral County would be approximately: 1) 307 full-time-equivalent jobs, 2) $14.0 million in labor income, 3) $52.4 million in economic output, and 4) $4.8 million in state and local tax revenue.

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[15] Data Source: Clearway Energy.

[16] Data Source: IMPLAN data and Clearway Energy. It is not possible to know with precision the proportion of services that will be purchased from Mineral and Grant County contractors and subcontractors.

[17] Data Source: Clearway Energy.

[18] Data Source: IMPLAN data and Clearway Energy. It is not possible to know with precision the proportion of services that will be purchased from Mineral and Grant County contractors and subcontractors.

Table 1: Estimated One-Time Economic and Fiscal Impact on Grant and Mineral County from Construction of Black Rock Wind Project – Lower Bound Scenario (2019 Dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	237	$11,832,574	$44,585,963
2nd Round Indirect and Induced Economic Activity	70	$2,168,753	$7,784,163
Total Economic Activity	**307**	**$14,001,327**	**$52,370,126**
Fiscal Impact			
State and Local Tax Revenue			**$4,815,497**

Upper Bound Scenario

As shown in Table 2, in the upper estimate scenario construction of the proposed Black Rock Wind Project would directly provide a one-time pulse of approximately: 1) 291 full-time-equivalent jobs, 2) $14.5 million in labor income, and 3) $54.7 million in economic output to Grant County and Mineral County.

Taking into account the economic ripple effects that direct investment would generate, we estimate that the total one-time impact on Grant County and Mineral County would be approximately: 1) 376 full-time-equivalent jobs, 2) $17.2 million in labor income, 3) $64.2 million in economic output, and 4) $5.9 million in state and local tax revenue.

Table 2: Estimated One-Time Economic and Fiscal Impact on Grant and Mineral County from Construction of Black Rock Wind Project – Upper Bound Scenario (2019 Dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	291	$14,513,416	$54,687,563
2nd Round Indirect and Induced Economic Activity	85	$2,660,115	$9,547,780
Total Economic Activity	**376**	**$17,173,531**	**$64,235,343**
Fiscal Impact			
State and Local Tax Revenue			**$5,906,518**

Results – West Virginia Statewide

By feeding the assumptions listed earlier into the IMPLAN model, we obtain the following estimates of one-time economic and fiscal impact on the state of West Virginia as a whole.

Lower Bound Scenario

As shown in Table 3, in the lower estimate scenario construction of the proposed Black Rock Wind Project would directly provide a one-time pulse of approximately: 1) 183 full-time-equivalent jobs, 2) $13.5 million in labor income, and 3) $44.6 million in economic output to the state of West Virginia as a whole.

Taking into account the economic ripple effects that direct investment would generate, we estimate that the total one-time impact on the state of West Virginia as a whole would be approximately: 1) 289 full-time-equivalent jobs, 2) $18.1 million in labor income, 3) $58.9 million in economic output, and 4) $4.3 million in state and local tax revenue.

Table 3: Estimated One-Time Economic and Fiscal Impact on West Virginia Statewide from Construction of Black Rock Wind Project – Lower Bound Scenario (2019 Dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	183	$13,468,879	$44,585,962
2nd Round Indirect and Induced Economic Activity	107	$4,635,315	$14,346,806
Total Economic Activity	**289**	**$18,104,194**	**$58,932,768**
Fiscal Impact			
State and Local Tax Revenue			**$4,345,367**

Upper Bound Scenario

As shown in Table 4, in the upper estimate scenario construction of the proposed Black Rock Wind Project would directly provide a one-time pulse of approximately: 1) 224 full-time-equivalent jobs, 2) $16.5 million in labor income, and 3) $54.7 million in economic output to the state of West Virginia as a whole.

Taking into account the economic ripple effects that direct investment would generate, we estimate that the total one-time impact on the state of West Virginia as a whole would be approximately: 1) 355 full-time-equivalent jobs, 2) $22.2 million in labor income, 3) $72.3 million in economic output, and 4) $5.3 million in state and local tax revenue.

Table 4: Estimated One-Time Economic and Fiscal Impact on West Virginia Statewide from Construction of Black Rock Wind Project – Upper Bound Scenario (2019 Dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	224	$16,520,450	$54,687,561
2nd Round Indirect and Induced Economic Activity	131	$5,685,513	$17,597,283
Total Economic Activity	**355**	**$22,205,963**	**$72,284,844**
Fiscal Impact			
State and Local Tax Revenue			**$5,329,872**

Ongoing Operations Phase

In this portion of the section, we assess the annual economic and fiscal impact that the Black Rock Wind Project would have on Mineral and Grant County, and to the state of West Virginia as a whole during its anticipated 25-year operations phase.

Economic Impact Assumptions

In conducting our analysis, we employ the following assumptions:

- The Black Rock Wind Project would spend approximately $2.7 million each year for operations and maintenance. Inclusive of that total are approximately $323,800 in total annual wages for five to seven employees.[19]
- The Black Rock Wind Project would generate approximately $450,000 in lease payments to landowners each year.[20]

Economic Impact Results – Grant and Mineral County

By feeding these assumptions into the IMPLAN model, we obtain the following estimates of annual economic impact on Grant County and Mineral County. As shown in Table 5, annual operation of the proposed Black Rock Wind Project would directly provide approximately: 1) 6 full-time-equivalent jobs, 2) $323,280 in labor income, and 3) $2.7 million in economic output to Grant County and Mineral County.

[19] Data Source: Clearway Energy.

[20] Data Source: Clearway Energy.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the total annual economic impact on Grant County and Mineral County would be approximately: 1) 16 full-time-equivalent jobs, 2) $716,791 in labor income, and 3) $4.1 million in economic output.[21]

Table 5: Estimated Annual Economic Impact on Grant and Mineral County from the ongoing Operation of the Black Rock Wind Project (2019 Dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	6	$323,280	$2,700,000
2nd Round Indirect and Induced Economic Activity	10	$393,511	$1,394,953
Total Economic Activity	**16**	**$716,791**	**$4,094,953**

Economic Impact Results – West Virginia Statewide

By feeding the above assumptions into the IMPLAN model, we obtain the following estimates of annual economic impact on the state of West Virginia as a whole. As shown in Table 6, annual operation of the proposed Black Rock Wind Project would directly provide approximately: 1) 6 full-time-equivalent jobs, 2) $323,280 in labor income, and 3) $2.7 million in economic output to the state of West Virginia as a whole.

Taking into account the economic ripple effects that direct impact would generate, we estimate that the total annual economic impact on the state of West Virginia as a whole would be approximately: 1) 25 full-time-equivalent jobs, 2) $1.2 million in labor income, and 3) $5.4 million in economic output.[22]

Table 6: Estimated Annual Economic Impact on West Virginia Statewide from the ongoing Operation of the Black Rock Wind Project (2019 Dollars)

Economic Impact	Employment	Labor Income	Output
1st Round Direct Economic Activity	6	$323,280	$2,700,000
2nd Round Indirect and Induced Economic Activity	19	$905,053	$2,710,914
Total Economic Activity	**25**	**$1,228,333**	**$5,410,914**

[21] Includes induced impact from lease payments to landowners.

[22] Includes induced impact from lease payments to landowners.

Fiscal Impact Assumptions

In conducting our analysis, we employ the following assumptions:

- Analysis is based on 2018 Trend and Percent Good Tables for Tax Year 2019.[23]
- Analysis is based on NAICS Code 2211 – Electrical Power Generation, Transmission, and Distribution.
- Equipment life is estimated at 25 years.
- 79 percent of total investment is assessed at a 5 percent salvage value.
- Overall assessment ratio is 60 percent.
- Lower bound investment in improvements and capital equipment from the Black Rock Wind Project in Grant County is estimated to be $83,835,000, and upper bound investment is estimated to be $93,150,000 million.
- The applicable property tax rate is 1.3580 in Grant County (*i.e.*, 0.5588 County Current, plus 0.7760 Schools Current, plus 0.0100 State, plus 0.0132 Hospital Bond).
- Lower bound investment in improvements and capital equipment from the Black Rock Wind Project in Mineral County is estimated to be $62,205,000, and upper bound investment is estimated to be $72,450,000.
- The applicable property tax rate is 2.3876 in Mineral County (*i.e.*, 0.5720 County Current, plus 0.7760 Schools Current, plus 0.0100 State, plus 0.9180 School Excess Levy, plus 0.1116 County Excess Levy for Fire and Ambulance).

It is also important to note that the analysis that follows pertains to fiscal impact from property tax only. In addition to the fiscal impact from property tax detailed in this portion of the section, the Black Rock Wind Project will also likely generate about $300,000 per year in Business and Occupational (B&O) tax revenue for the state of West Virginia.

Fiscal Impact Results – Grant County

Based on these assumptions, we obtain the following estimates of the annual fiscal impact of the Black Rock Wind Project in Grant County (full detail for these calculations is provided in the Appendix to this report).

[23] Data Source: West Virginia State Tax Department.

Lower Bound Scenario

As detailed in Table 7, in the lower bound scenario we estimate total county property tax revenue from the Black Rock Wind Project to be $167,561 in the project's 1st year of operation, with that figure projected to gradually decline to $105,993 in the project's 25th year of operation as the taxable value of the investment declines, for an average of $145,983 per year. Overall, we estimate the cumulative county property tax revenue from the Black Rock Wind Project to be $3.6 million over the anticipated 25-year life of the project.

Table 7: Estimated Annual Fiscal Impact on Grant County from the ongoing Operation of the Black Rock Wind Project – Lower Bound Scenario (2019 Dollars)

Year	Grant Co. Commission	Grant Co. Schools	State of WV	Hospital Bond	Total Property Tax
1	$68,949	$95,749	$1,234	$1,629	$167,561
2	$70,649	$98,110	$1,264	$1,669	$171,693
3	$68,861	$95,626	$1,232	$1,627	$167,346
4	$67,645	$93,938	$1,211	$1,598	$164,391
5	$66,966	$92,995	$1,198	$1,582	$162,742
6	$66,264	$92,020	$1,186	$1,565	$161,034
7	$64,912	$90,143	$1,162	$1,533	$157,750
8	$65,148	$90,470	$1,166	$1,539	$158,323
9	$65,313	$90,700	$1,169	$1,543	$158,725
10	$63,330	$87,946	$1,133	$1,496	$153,905
11	$62,693	$87,060	$1,122	$1,481	$152,356
12	$63,082	$87,601	$1,129	$1,490	$153,303
13	$63,908	$88,749	$1,144	$1,510	$155,311
14	$64,086	$88,995	$1,147	$1,514	$155,741
15	$65,585	$91,077	$1,174	$1,549	$159,385
16	$62,592	$86,921	$1,120	$1,479	$152,112
17	$61,087	$84,831	$1,093	$1,443	$148,454
18	$55,409	$76,945	$992	$1,309	$134,654
19	$53,248	$73,945	$953	$1,258	$129,404
20	$50,775	$70,511	$909	$1,199	$123,394
21	$50,775	$70,511	$909	$1,199	$123,394
22	$46,991	$65,256	$841	$1,110	$114,199
23	$47,464	$65,912	$849	$1,121	$115,346
24	$42,411	$58,895	$759	$1,002	$103,067
25	$43,615	$60,568	$781	$1,030	$105,993
Total	**$1,501,758**	**$2,085,476**	**$26,875**	**$35,475**	**$3,649,583**
Avg.	**$60,070**	**$83,419**	**$1,075**	**$1,419**	**$145,983**

Upper Bound Scenario

As detailed in Table 8, in the upper bound scenario we estimate total county property tax revenue from the Black Rock Wind Project to be $186,179 in the project's 1st year of operation, with that figure projected to gradually decline to $117,770 in the project's 25th year of operation as the taxable value of the investment declines, for an average of $162,204 per year. Overall, we estimate the cumulative county property tax revenue from the Black Rock Wind Project to be $4.1 million over the anticipated 25-year life of the project.

Table 8: Estimated Annual Fiscal Impact on Grant County from the ongoing Operation of the Black Rock Wind Project – Upper Bound Scenario (2019 Dollars)

Year	Grant Co. Commission	Grant Co. Schools	State of WV	Hospital Bond	Total Property Tax
1	$76,610	$106,388	$1,371	$1,810	$186,179
2	$78,499	$109,011	$1,405	$1,854	$190,770
3	$76,512	$106,252	$1,369	$1,807	$185,940
4	$75,161	$104,375	$1,345	$1,775	$182,657
5	$74,407	$103,328	$1,332	$1,758	$180,824
6	$73,626	$102,244	$1,318	$1,739	$178,927
7	$72,124	$100,158	$1,291	$1,704	$175,277
8	$72,387	$100,523	$1,295	$1,710	$175,915
9	$72,570	$100,778	$1,299	$1,714	$176,361
10	$70,367	$97,718	$1,259	$1,662	$171,006
11	$69,658	$96,734	$1,247	$1,645	$169,284
12	$70,091	$97,335	$1,254	$1,656	$170,336
13	$71,009	$98,610	$1,271	$1,677	$172,568
14	$71,206	$98,883	$1,274	$1,682	$173,046
15	$72,872	$101,197	$1,304	$1,721	$177,094
16	$69,547	$96,579	$1,245	$1,643	$169,013
17	$67,874	$94,257	$1,215	$1,603	$164,949
18	$61,565	$85,495	$1,102	$1,454	$149,616
19	$59,165	$82,161	$1,059	$1,398	$143,782
20	$56,417	$78,345	$1,010	$1,333	$137,104
21	$56,417	$78,345	$1,010	$1,333	$137,104
22	$52,213	$72,507	$934	$1,233	$126,887
23	$52,737	$73,236	$944	$1,246	$128,162
24	$47,123	$65,439	$843	$1,113	$114,519
25	$48,461	$67,297	$867	$1,145	$117,770
Total	**$1,668,619**	**$2,317,195**	**$29,861**	**$39,416**	**$4,055,092**
Avg.	**$66,745**	**$92,688**	**$1,194**	**$1,577**	**$162,204**

Fiscal Impact Results – Mineral County

Based on the assumptions listed earlier, we obtain the following estimates of the annual fiscal impact of the Black Rock Wind Project in Mineral County (full detail for these calculations is provided in the Appendix to this report).

Lower Bound Scenario

As detailed in Table 9, in the lower bound scenario we estimate total county property tax revenue from the Black Rock Wind Project to be $229,135 in the project's 1st year of operation, with that figure projected to gradually decline to $144,943 in the project's 25th year of operation as the taxable value of the investment declines, for an average of $199,628 per year. Overall, we estimate the cumulative county property tax revenue from the Black Rock Wind Project to be $5.0 million over the anticipated 25-year life of the project.

Upper Bound Scenario

As detailed in Table 10, in the upper bound scenario we estimate total county property tax revenue from the Black Rock Wind Project to be $254,594 in the project's 1st year of operation, with that figure projected to gradually decline to $161,047 in the project's 25th year of operation as the taxable value of the investment declines, for an average of $221,808 per year. Overall, we estimate the cumulative county property tax revenue from the Black Rock Wind Project to be $5.5 million over the anticipated 25-year life of the project.

Table 9: Estimated Annual Fiscal Impact on Mineral County from the ongoing Operation of the Black Rock Wind Project – Lower Bound Scenario (2019 Dollars)

Year	Mineral Co. Commission	Mineral Co. Schools	State of WV	Mineral Co. School Excess Levy	Mineral Co. Fire and Ambulance Excess Levy	Total Property Tax
1	$54,894	$74,472	$960	$88,099	$10,710	$229,135
2	$56,248	$76,308	$983	$90,271	$10,974	$234,784
3	$54,824	$74,376	$958	$87,986	$10,696	$228,841
4	$53,856	$73,063	$942	$86,432	$10,507	$224,800
5	$53,315	$72,330	$932	$85,565	$10,402	$222,544
6	$52,756	$71,571	$922	$84,668	$10,293	$220,210
7	$51,680	$70,111	$903	$82,940	$10,083	$215,717
8	$51,868	$70,366	$907	$83,242	$10,120	$216,502
9	$51,999	$70,544	$909	$83,453	$10,145	$217,051
10	$50,420	$68,402	$881	$80,919	$9,837	$210,460
11	$49,913	$67,714	$873	$80,105	$9,738	$208,342
12	$50,223	$68,134	$878	$80,602	$9,799	$209,636
13	$50,881	$69,027	$890	$81,658	$9,927	$212,383
14	$51,022	$69,218	$892	$81,885	$9,955	$212,971
15	$52,215	$70,838	$913	$83,800	$10,187	$217,954
16	$49,833	$67,605	$871	$79,976	$9,723	$208,008
17	$48,634	$65,980	$850	$78,053	$9,489	$203,006
18	$44,114	$59,846	$771	$70,798	$8,607	$184,136
19	$42,394	$57,513	$741	$68,037	$8,271	$176,956
20	$40,424	$54,842	$707	$64,877	$7,887	$168,737
21	$40,424	$54,842	$707	$64,877	$7,887	$168,737
22	$37,412	$50,755	$654	$60,043	$7,299	$156,163
23	$37,788	$51,265	$661	$60,646	$7,373	$157,732
24	$33,765	$45,808	$590	$54,190	$6,588	$140,941
25	$34,724	$47,108	$607	$55,728	$6,775	$144,943
Total	**$1,195,625**	**$1,622,037**	**$20,903**	**$1,918,853**	**$233,272**	**$4,990,689**
Avg.	**$47,825**	**$64,881**	**$836**	**$76,754**	**$9,331**	**$199,628**

Table 10: Estimated Annual Fiscal Impact on Mineral County from the ongoing Operation of the Black Rock Wind Project – Upper Bound Scenario (2019 Dollars)

Year	Mineral Co. Commission	Mineral Co. Schools	State of WV	Mineral Co. School Excess Levy	Mineral Co. Fire and Ambulance Excess Levy	Total Property Tax
1	$60,993	$82,746	$1,066	$97,888	$11,900	$254,594
2	$62,497	$84,787	$1,093	$100,302	$12,194	$260,872
3	$60,915	$82,640	$1,065	$97,762	$11,885	$254,267
4	$59,839	$81,181	$1,046	$96,036	$11,675	$249,778
5	$59,239	$80,366	$1,036	$95,072	$11,558	$247,271
6	$58,618	$79,523	$1,025	$94,075	$11,437	$244,677
7	$57,422	$77,901	$1,004	$92,156	$11,203	$239,686
8	$57,631	$78,184	$1,008	$92,491	$11,244	$240,558
9	$57,777	$78,383	$1,010	$92,726	$11,273	$241,168
10	$56,022	$76,003	$979	$89,910	$10,930	$233,845
11	$55,459	$75,237	$970	$89,005	$10,820	$231,491
12	$55,803	$75,705	$976	$89,558	$10,887	$232,929
13	$56,534	$76,697	$988	$90,731	$11,030	$235,981
14	$56,691	$76,909	$991	$90,983	$11,061	$236,635
15	$58,017	$78,709	$1,014	$93,111	$11,319	$242,171
16	$55,370	$75,117	$968	$88,863	$10,803	$231,120
17	$54,038	$73,311	$945	$86,726	$10,543	$225,562
18	$49,015	$66,496	$857	$78,664	$9,563	$204,595
19	$47,104	$63,903	$823	$75,597	$9,190	$196,618
20	$44,916	$60,935	$785	$72,086	$8,763	$187,485
21	$44,916	$60,935	$785	$72,086	$8,763	$187,485
22	$41,569	$56,394	$727	$66,714	$8,110	$173,514
23	$41,987	$56,961	$734	$67,384	$8,192	$175,258
24	$37,517	$50,897	$656	$60,211	$7,320	$156,601
25	$38,582	$52,342	$675	$61,921	$7,528	$161,047
Total	**$1,328,472**	**$1,802,263**	**$23,225**	**$2,132,059**	**$259,191**	**$5,545,210**
Avg.	**$53,139**	**$72,091**	**$929**	**$85,282**	**$10,368**	**$221,808**

Other Considerations

In this section we address some of the potential economic effects associated with the proposed Black Rock Wind Project that are not contained in the economic and fiscal impact assessments.

Property Values

There have been many studies of the effect of wind turbines on property values, sixteen of those that we were able to identify were published in peer-reviewed journals. Of the published peer-reviewed research, nine have found no statistically significant effect of wind turbines on property values once the turbines were erected over one mile away,[24] while seven studies found a statistically significant negative effect.[25] Interestingly, in one of the studies that found a negative effect, that negative effect was only

[24] B. Castleberry and J. Greene, "Wind Power and Real Estate Prices in Oklahoma," *International Journal of Housing Markets and Analysis*, 11(5), 808-827 (2018).

M. Droes and H. R.A. Koster, "Renewable Energy and Negative Externalities: The Effect of Wind Turbines on House Prices," *Journal of Urban Economics*, Elsevier, 96(C), 121-141 (2016).

B. Hoen and C. Atkinson-Palombo, "Wind Turbines, Amenities and Disamenities: A Study of Home Value Impacts in Densely Populated Massachusetts," *Journal of Real Estate Research*, 38(4), 473-504 (2016).

B. Hoen, et al., "Spatial Hedonic Analysis of the Effects of US Wind Energy Facilities on Surrounding Property Values," *Journal of Real Estate Finance and Economics*, 51(1), 22–51 (2015).

C. Lang, et al., "The Windy City: Property Value Impacts of Wind Turbines in an Urban Setting," *Energy Economics*, 44, 413–421 (2014).

I. McCarthy and H. Balli, "Windfarms and Residential Property Values," *International Journal of Strategic Property Management*, 18:2, 116-124 (2014).

S. Sims and P. Dent, Property stigma: Wind Farms Are Just the Latest Fashion. *Journal of Property Investment and Finance*, 25(6), 626–651 (2007).

S. Sims, et al., "Modelling the Impact of Wind Farms on House Prices in the UK," *International Journal of Strategic Property Management*, 12(4), 251–269 (2008).

R. Vyn and R. Mccullough, "The Effects of Wind Turbines on Property Values in Ontario: Does Public Perception Match Empirical Evidence?" *Canadian Journal of Agricultural Economics*, 62(3), 365–392 (2014).

[25] S. Gibbons, "Gone with the Wind: Valuing the Visual Impacts of Wind Turbines Through House Prices," *Journal of Environmental Economics and Management*, 72, 177–196 (2015).

M. Heintzelman and C. Tuttle, "Values in the Wind: A Hedonic Analysis of Wind Power Facilities," *Land Economics*, 88(3), 571–588 (2012).

C. Jensen, et al., "The Vindication of Don Quixote: The Impact of Noise and Visual Pollution from Wind Turbines," *Land Economics*, 90(4), 668– 682 (2014).

C. Jensen, et al., "The Impact of On-Shore and Off-Shore Wind Turbine Farms on Property Prices," *Energy Policy*, 116, 50-59 (2018).

Y. Sunak and R. Madlener, "The Impact of Wind Farm Visibility on Property Values: a Spatial Difference-In-Differences Analysis," *Energy Economics* 55 79–91 (2016).

Y. Sunak and R. Madlener, "The Impact of Wind Farms on Property Values: A Locally Weighted Hedonic Pricing Model," *Papers in Regional Science,* 96(2), 423-444 (2017).

R. Vyn, "Property Value Impacts of Wind Turbines and the Influence of Attitudes toward Wind Energy," *Land Economics*, 94(4), 496-516 (2018).

found in communities that opposed the project before construction. In communities that did not oppose construction, the study found no negative effect.[26]

The unpeer-reviewed reports are roughly divided into the same ratio of those finding no effect and those finding a negative effect. The one exception to these results is a study that showed a negative effect on property values before the construction of the turbines, but a positive effect on property values after the turbines had been constructed and in operation.[27] However, in relation to the proposed Black Rock Wind Project, studies that have been done of nearby wind farms are probably the most instructive.

In 2003 the Renewable Energy Policy Project studied the effect of wind farms on property values in nine locations around the country.[28] Two were Somerset and Fayette Counties in Pennsylvania, both less than 100 miles from Grant and Mineral Counties in West Virginia. Comparing the change in home prices for transactions within five miles of the wind farms in these counties with the change in comparable counties, the researchers were unable to discern any statistically meaningful effect on prices.

In Somerset County, homes within the five mile radius of the wind farm had monthly average sales prices growing faster than in the comparable area, but because of the limited number of transactions, the researchers concluded that analytically it would be incorrect to attribute the faster increase in prices to the presence of the turbines. Additionally, a local assessor said he had not seen any impact on property values from wind farms.

In Fayette County, monthly average sales prices grew faster or declined slower in the five mile vicinity of the wind farm than in the comparable area identified by the researchers. However, again, the researchers concluded that analytically it would be incorrect to attribute the faster increase in prices to the presence of the turbines because of the limited number of home sales. As in Somerset County, the local director of assessments said he had not seen any impact of the wind farms on property values.

In 2016, the Maryland Department of Natural Resources conducted an econometric hedonic analysis of properties transacted within seven kilometers of the Criterion or Roth Rock wind farms near Oakland, in Garrett County, Maryland (hedonic analysis is the type of analysis that is used by all of the published, peer-reviewed research on this topic).[29] In this case as well, the researchers were unable to discern any statistically meaningful effect on property values.

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[26] R. Vyn, (2018).

[27] J. Hinman, *Wind Farm Proximity and Property Values: A Pooled Hedonic Regression Analysis of Property Values in Central Illinois*, 2010.

[28] G. Sterzinger, *The Effect of Wind Development on Local Property Values*, 2003.

[29] Maryland Power Plant Research Program, Department of Natural Resources, *DRAFT Environmental Review of the Proposed Dan's Mountain Wind Force Project*, August 8, 2016.

Summary

Our analysis has shown that the Construction industry is an important industry sector in Grant County and Mineral County in terms of both employment and wages, and that this project would have a significant impact on that sector during its construction phase. More specifically, the Black Rock Wind Project would likely generate a total of approximately 307 to 376 local jobs during construction, $14.0 million to $17.2 million in local wages, $52.4 million to $64.2 million in local economic output, and $4.8 million to $5.9 million in state and local taxes.

Our analysis has also shown that, in addition to generating approximately $300,000 per year in state tax revenue from the Business and Occupational (B&O) tax during its ongoing operational phase, the Black Rock Wind Project will also have a large annual fiscal impact on Grant County and Mineral County.

In Grant County, the project would likely generate:

- Cumulative property tax revenues of between $3.6 million and $4.1 million, with $1.5 million to $1.7 million of that total going to the Grant County Commission, $2.1 million to $2.3 million going to Grant County Schools, $26,875 to $29,861 going to the state of West Virginia, and $35,475 to $39,416 going to the Hospital Bond.
- Total average annual tax revenue of between $145,983 and $162,204, with $60,070 to $66,745 of that total going to the Grant County Commission, $83,419 to $92,688 going to Grant County Schools, $1,075 to $1,194 going to the state of West Virginia, and $1,419 to $1,577 going to the Hospital Bond.

In Mineral County, the project would likely generate:

- Cumulative property tax revenues of between $5.0 million and $5.5 million, with $1.2 million to $1.3 million of that total going to the Mineral County Commission, $1.6 million to $1.8 million going to Mineral County Schools, $20,903 to $23,225 going to the state of West Virginia, $1.9 million to $2.1 million going to the Mineral County School Excess Levy, and $233,272 to $259,191 going to the Mineral County Fire and Ambulance Excess Levy.
- Total average annual tax revenue of between $199,628 and $221,808, with $47,825 to $53,139 of that total going to the Mineral County Commission, $64,881 to $72,091 going to Mineral County Schools, $836 to $929 going to the state of West Virginia, $76,754 to $85,282 going to the Mineral County School Excess Levy, and $9,331 to $10,368 going to the Mineral County Fire and Ambulance Excess Levy.

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

Appendix

Detail for Property Tax Estimates for Grant County

Initial Assessment Value Calculations for Grant County – Lower Bound		Capital Costs	Ratio	Rate	Value
Maximum Portion of Property assessed at Salvage Value	79.0%	$66,229,650	60%	5%	$1,986,890
All Other (or balance of) Property	21.0%	$17,605,350	60%	N/A	$10,563,210
Total	100.0%	$83,835,000			

Initial Assessment Value Calculations for Grant County – Upper Bound		Capital Costs	Ratio	Rate	Value
Maximum Portion of Property assessed at Salvage Value	79.0%	$73,588,500	60%	5%	$2,207,655
All Other (or balance of) Property	21.0%	$19,561,500	60%	N/A	$11,736,900
Total	100.0%	$93,150,000			

Tax Rates	Tax Rate	% of Assumed Prop Tax Rate
County Current	0.5588%	41.14875%
Schools Current	0.7760%	57.14286%
State	0.0100%	0.73638%
Hospital Bond	0.0132%	0.97202%
Assumed Property Tax Rate	1.3580%	100.00000%

Lower Bound Scenario

Year	Percent Good	Trend	Declining Value	Turbines, Towers & Foundations Assessed Value	Turbines, Towers & Foundations Property Tax	Other Capital Costs Assessed Value	Other Capital Costs Property Tax	Total Property Tax
1	98%	100%	98.00%	$1,986,890	$26,982	$10,351,946	$140,579	$167,561
2	97%	104%	100.88%	$1,986,890	$26,982	$10,656,166	$144,711	$171,693
3	95%	103%	97.85%	$1,986,890	$26,982	$10,336,101	$140,364	$167,346
4	93%	103%	95.79%	$1,986,890	$26,982	$10,118,499	$137,409	$164,391
5	91%	104%	94.64%	$1,986,890	$26,982	$9,997,022	$135,760	$162,742
6	89%	105%	93.45%	$1,986,890	$26,982	$9,871,320	$134,053	$161,034
7	86%	106%	91.16%	$1,986,890	$26,982	$9,629,422	$130,768	$157,750
8	84%	109%	91.56%	$1,986,890	$26,982	$9,671,675	$131,341	$158,323
9	82%	112%	91.84%	$1,986,890	$26,982	$9,701,252	$131,743	$158,725
10	79%	112%	88.48%	$1,986,890	$26,982	$9,346,328	$126,923	$153,905
11	76%	115%	87.40%	$1,986,890	$26,982	$9,232,246	$125,374	$152,356
12	74%	119%	88.06%	$1,986,890	$26,982	$9,301,963	$126,321	$153,303
13	71%	126%	89.46%	$1,986,890	$26,982	$9,449,848	$128,329	$155,311
14	68%	132%	89.76%	$1,986,890	$26,982	$9,481,537	$128,759	$155,741
15	65%	142%	92.30%	$1,986,890	$26,982	$9,749,843	$132,403	$159,385
16	61%	143%	87.23%	$1,986,890	$26,982	$9,214,288	$125,130	$152,112
17	58%	146%	84.68%	$1,986,890	$26,982	$8,944,926	$121,472	$148,454
18	54%	139%	75.06%	$1,986,890	$26,982	$7,928,745	$107,672	$134,654
19	51%	140%	71.40%	$1,986,890	$26,982	$7,542,132	$102,422	$129,404
20	47%	143%	67.21%	$1,986,890	$26,982	$7,099,533	$96,412	$123,394
21	47%	143%	67.21%	$1,986,890	$26,982	$7,099,533	$96,412	$123,394
22	40%	152%	60.80%	$1,986,890	$26,982	$6,422,432	$87,217	$114,199
23	40%	154%	61.60%	$1,986,890	$26,982	$6,506,937	$88,364	$115,346
24	34%	156%	53.04%	$1,986,890	$26,982	$5,602,727	$76,085	$103,067
25	34%	162%	55.08%	$1,986,890	$26,982	$5,818,216	$79,011	$105,993
		162%		**Total**	**$674,549**		**$2,975,034**	**$3,649,583**

Upper Bound Scenario

Year	Percent Good	Trend	Declining Value	Turbines, Towers & Foundations Assessed Value	Turbines, Towers & Foundations Property Tax	Other Capital Costs Assessed Value	Other Capital Costs Property Tax	Total Property Tax
1	98%	100%	98.00%	$2,207,655	$29,980	$11,502,162	$156,199	$186,179
2	97%	104%	100.88%	$2,207,655	$29,980	$11,840,185	$160,790	$190,770
3	95%	103%	97.85%	$2,207,655	$29,980	$11,484,557	$155,960	$185,940
4	93%	103%	95.79%	$2,207,655	$29,980	$11,242,777	$152,677	$182,657
5	91%	104%	94.64%	$2,207,655	$29,980	$11,107,802	$150,844	$180,824
6	89%	105%	93.45%	$2,207,655	$29,980	$10,968,133	$148,947	$178,927
7	86%	106%	91.16%	$2,207,655	$29,980	$10,699,358	$145,297	$175,277
8	84%	109%	91.56%	$2,207,655	$29,980	$10,746,306	$145,935	$175,915
9	82%	112%	91.84%	$2,207,655	$29,980	$10,779,169	$146,381	$176,361
10	79%	112%	88.48%	$2,207,655	$29,980	$10,384,809	$141,026	$171,006
11	76%	115%	87.40%	$2,207,655	$29,980	$10,258,051	$139,304	$169,284
12	74%	119%	88.06%	$2,207,655	$29,980	$10,335,514	$140,356	$170,336
13	71%	126%	89.46%	$2,207,655	$29,980	$10,499,831	$142,588	$172,568
14	68%	132%	89.76%	$2,207,655	$29,980	$10,535,041	$143,066	$173,046
15	65%	142%	92.30%	$2,207,655	$29,980	$10,833,159	$147,114	$177,094
16	61%	143%	87.23%	$2,207,655	$29,980	$10,238,098	$139,033	$169,013
17	58%	146%	84.68%	$2,207,655	$29,980	$9,938,807	$134,969	$164,949
18	54%	139%	75.06%	$2,207,655	$29,980	$8,809,717	$119,636	$149,616
19	51%	140%	71.40%	$2,207,655	$29,980	$8,380,147	$113,802	$143,782
20	47%	143%	67.21%	$2,207,655	$29,980	$7,888,370	$107,124	$137,104
21	47%	143%	67.21%	$2,207,655	$29,980	$7,888,370	$107,124	$137,104
22	40%	152%	60.80%	$2,207,655	$29,980	$7,136,035	$96,907	$126,887
23	40%	154%	61.60%	$2,207,655	$29,980	$7,229,930	$98,182	$128,162
24	34%	156%	53.04%	$2,207,655	$29,980	$6,225,252	$84,539	$114,519
25	34%	162%	55.08%	$2,207,655	$29,980	$6,464,685	$87,790	$117,770
		162%		**Total**	**$749,499**		**$3,305,593**	**$4,055,092**

Detail for Property Tax Estimates for Mineral County

Initial Assessment Value Calculations for Grant County – Lower Bound		Capital Costs	Ratio	Rate	Value
Maximum Portion of Property assessed at Salvage Value	79.0%	$51,511,950	60%	5%	$1,545,359
All Other (or balance of) Property	21.0%	$13,693,050	60%	N/A	$8,215,830
Total	100.0%	$65,205,000			

Initial Assessment Value Calculations for Grant County – Upper Bound		Capital Costs	Ratio	Rate	Value
Maximum Portion of Property Assessed at Salvage Value	79.0%	$57,235,500	60%	5%	$1,717,065
All Other (or balance of) Property	21.0%	$15,214,500	60%	N/A	$9,128,700
Total	100.0%	$72,450,000			

Tax Rates	Tax Rate	% of Assumed Prop Tax Rate
County Current	0.5720%	23.95711%
Schools Current	0.7760%	32.50126%
State	0.0100%	0.41883%
School Excess Levy	0.9180%	38.44865%
County Excess Levy - Fire/Ambulance	0.1116%	4.67415%
Assumed Property Tax Rate	2.3876%	100.00000%

Lower Bound Scenario

Year	Percent Good	Trend	Declining Value	Turbines, Towers & Foundations Assessed Value	Turbines, Towers & Foundations Property Tax	Other Capital Costs Assessed Value	Other Capital Costs Property Tax	Total Property Tax
1	98%	100%	98.00%	$1,545,359	$36,897	$8,051,513	$192,238	$229,135
2	97%	104%	100.88%	$1,545,359	$36,897	$8,288,129	$197,887	$234,784
3	95%	103%	97.85%	$1,545,359	$36,897	$8,039,190	$191,944	$228,841
4	93%	103%	95.79%	$1,545,359	$36,897	$7,869,944	$187,903	$224,800
5	91%	104%	94.64%	$1,545,359	$36,897	$7,775,462	$185,647	$222,544
6	89%	105%	93.45%	$1,545,359	$36,897	$7,677,693	$183,313	$220,210
7	86%	106%	91.16%	$1,545,359	$36,897	$7,489,551	$178,821	$215,717
8	84%	109%	91.56%	$1,545,359	$36,897	$7,522,414	$179,605	$216,502
9	82%	112%	91.84%	$1,545,359	$36,897	$7,545,418	$180,154	$217,051
10	79%	112%	88.48%	$1,545,359	$36,897	$7,269,366	$173,563	$210,460
11	76%	115%	87.40%	$1,545,359	$36,897	$7,180,635	$171,445	$208,342
12	74%	119%	88.06%	$1,545,359	$36,897	$7,234,860	$172,740	$209,636
13	71%	126%	89.46%	$1,545,359	$36,897	$7,349,882	$175,486	$212,383
14	68%	132%	89.76%	$1,545,359	$36,897	$7,374,529	$176,074	$212,971
15	65%	142%	92.30%	$1,545,359	$36,897	$7,583,211	$181,057	$217,954
16	61%	143%	87.23%	$1,545,359	$36,897	$7,166,669	$171,111	$208,008
17	58%	146%	84.68%	$1,545,359	$36,897	$6,957,165	$166,109	$203,006
18	54%	139%	75.06%	$1,545,359	$36,897	$6,166,802	$147,239	$184,136
19	51%	140%	71.40%	$1,545,359	$36,897	$5,866,103	$140,059	$176,956
20	47%	143%	67.21%	$1,545,359	$36,897	$5,521,859	$131,840	$168,737
21	47%	143%	67.21%	$1,545,359	$36,897	$5,521,859	$131,840	$168,737
22	40%	152%	60.80%	$1,545,359	$36,897	$4,995,225	$119,266	$156,163
23	40%	154%	61.60%	$1,545,359	$36,897	$5,060,951	$120,835	$157,732
24	34%	156%	53.04%	$1,545,359	$36,897	$4,357,676	$104,044	$140,941
25	34%	162%	55.08%	$1,545,359	$36,897	$4,525,279	$108,046	$144,943
		162%		**Total**	**$922,424**		**$4,068,265**	**$4,990,689**

Upper Bound Scenario

Year	Percent Good	Trend	Declining Value	Turbines, Towers & Foundations Assessed Value	Turbines, Towers & Foundations Property Tax	Other Capital Costs Assessed Value	Other Capital Costs Property Tax	Total Property Tax
1	98%	100%	98.00%	$1,717,065	$40,997	$8,946,126	$213,598	$254,594
2	97%	104%	100.88%	$1,717,065	$40,997	$9,209,033	$219,875	$260,872
3	95%	103%	97.85%	$1,717,065	$40,997	$8,932,433	$213,271	$254,267
4	93%	103%	95.79%	$1,717,065	$40,997	$8,744,382	$208,781	$249,778
5	91%	104%	94.64%	$1,717,065	$40,997	$8,639,402	$206,274	$247,271
6	89%	105%	93.45%	$1,717,065	$40,997	$8,530,770	$203,681	$244,677
7	86%	106%	91.16%	$1,717,065	$40,997	$8,321,723	$198,689	$239,686
8	84%	109%	91.56%	$1,717,065	$40,997	$8,358,238	$199,561	$240,558
9	82%	112%	91.84%	$1,717,065	$40,997	$8,383,798	$200,172	$241,168
10	79%	112%	88.48%	$1,717,065	$40,997	$8,077,074	$192,848	$233,845
11	76%	115%	87.40%	$1,717,065	$40,997	$7,978,484	$190,494	$231,491
12	74%	119%	88.06%	$1,717,065	$40,997	$8,038,733	$191,933	$232,929
13	71%	126%	89.46%	$1,717,065	$40,997	$8,166,535	$194,984	$235,981
14	68%	132%	89.76%	$1,717,065	$40,997	$8,193,921	$195,638	$236,635
15	65%	142%	92.30%	$1,717,065	$40,997	$8,425,790	$201,174	$242,171
16	61%	143%	87.23%	$1,717,065	$40,997	$7,962,965	$190,124	$231,120
17	58%	146%	84.68%	$1,717,065	$40,997	$7,730,183	$184,566	$225,562
18	54%	139%	75.06%	$1,717,065	$40,997	$6,852,002	$163,598	$204,595
19	51%	140%	71.40%	$1,717,065	$40,997	$6,517,892	$155,621	$196,618
20	47%	143%	67.21%	$1,717,065	$40,997	$6,135,399	$146,489	$187,485
21	47%	143%	67.21%	$1,717,065	$40,997	$6,135,399	$146,489	$187,485
22	40%	152%	60.80%	$1,717,065	$40,997	$5,550,250	$132,518	$173,514
23	40%	154%	61.60%	$1,717,065	$40,997	$5,623,279	$134,261	$175,258
24	34%	156%	53.04%	$1,717,065	$40,997	$4,841,862	$115,604	$156,601
25	34%	162%	55.08%	$1,717,065	$40,997	$5,028,088	$120,051	$161,047
		162%		**Total**	**$1,024,916**		**$4,520,294**	**$5,545,210**