Economic and Fiscal Impacts of the Proposed New Highland Winds Project on Highland County, Virginia

Preliminary Report

Prepared by:
Michael Siegel

Presented at the Highland County Wind Forum

Sponsored by
the Chamber of Commerce of Highland County, Virginia

May 20, 2004

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Background

This preliminary report has been prepared on behalf of a group of local residents and landowners for a community forum in Highland County sponsored by the Chamber of Commerce. Information about the proposed project was obtained from an application for federal grant assistance filed on behalf of the project, reports from an informational meeting hosted by the County, local news articles, and other sources.

Highland County anticipates that it will soon receive a land use application on behalf of the New Highland Winds project ("the Highland Windfarm" or "the Windfarm") that has recently been proposed to be located in the County. As currently anticipated, this project would consist of about 16 - 18 wind turbines with a generation capacity of about 30 - 35 megawatts (MW) of electricity. The project would be located on about 4,000 acres of privately owned land on Red Oak Knob, Tamarack Ridge and Bear Mountain near the border of West Virginia.

The project was originally to be a 50 - 50 partnership between Community Energy, Inc. (CEI), a regional marketer of wind-generated electricity, and Red Oak, LLC, a local corporation whose primary asset is the Red Oak Ranch in Highland County. Subsequently, CEI has announced its withdrawal from the project.

Power produced by the project would be transmitted to Allegheny Power via the Monterey-Durbin transmission line. Currently, this line has the capacity to transmit an additional 35 MW of power. Beyond that, it would need to be upgraded.

Based on similar projects elsewhere, construction of the Highland Winds project could probably be completed in less than twelve months once all approvals have been obtained. The actual schedule would depend on weather, local site conditions and/or other factors. Based on an application for funding assistance submitted to the U.S. Department of Agriculture (USDA), the cost of the project as currently anticipated (30 - 35 MW) is estimated to be about $46.5 million in 2003 dollars, inclusive of construction, equipment, administrative and legal, and miscellaneous costs.

The project would be the first large, commercial-sized ("utility-scale"), windfarm built in Virginia, although a number of such facilities have been constructed or approved nearby in West Virginia.

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Summary of Impacts on Highland County

Jobs

- Few, if any, of the project's temporary construction-related jobs would be filled by local residents. Most such jobs will be held by employees and contractors of the turbine manufacturer who are trained and experienced in the installation of this highly specialized equipment. Some jobs, such as earth-moving and/or grading jobs might be filled by residents of Highland County or other nearby areas.

- Few, if any, of the materials necessary to construct and equip the project would be produced or acquired in Highland County. A significant exception might be for acquisition of aggregate and/or fill material and possibly timber, if required.

- The project might result in one or two permanent jobs in Highland County for minor maintenance, monitoring and security for the project. This position(s) could be filled by someone residing outside of the County.

- The project's ability to attract significant net new tourism and recreational outlays to the County is virtually zero.

Property Taxes

- The project will be assessed for local real property tax purposes by the State Corporation Commission (SCC).

- The project's ability to generate additional real property tax revenue to the County will depend upon: the "market value" and "stated" ratios, and depreciation schedule applied by the SCC, and the local real property tax rate to which it would be subject.

- The potential of the project to cause a reduction in real property tax revenue to the County will depend largely upon its negative impact on neighboring and nearby properties, and potential losses to the County's recreational, tourism and hunting operations and enterprises.

- Based on current SCC practices, the amount of real property tax revenue that would be generated by the project would be highest in the first few years after construction, and would decline annually to some fraction of this amount in the last few years of its depreciation cycle.

- Based on a 20-year period depreciation cycle, an initial year taxable assessed value of about $32.6 million, and a local tax rate of $0.62 per $100, the project would generate an annual average of about $105,000 in real property tax revenue to the County. This amount could

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be somewhat greater if depreciation is significantly limited in the later years.

- Based on the foregoing, the net present value of the twenty-year real property tax revenue paid to the County over the depreciable life of the project would be about $1.5 million.

- These amounts would be offset by any loss in local tax revenues caused by: I) reductions in value of neighboring and nearby properties, ii) other economic losses to existing County businesses, and; iii) costs for the provision of County services to the project, such as Sheriff's patrol (though these costs can be expected to be low).

- For a neighboring or nearby property with a current taxable assessed value of $100,000, a loss in value of 25 percent would cause a reduction in real property tax revenue of $155, annually. Over twenty years, the net present value of this loss is $2,230. A loss in value of 50 percent would cause an annual reduction of $310 annually which, over twenty years, represents a net present value loss of $4,456.

- For a combination of such parcels with a current taxable assessed value of $10.0 million, a 25 percent loss in value represents a net present value loss of $223,000 in real property tax revenue over a twenty year period. This amount would be double for a reduction in value of 50 percent.

- Because the County's Local Composite Index is statutorily set, the amount of State assistance for local public schools would be unaffected by the project.

- A change in State statutes or regulations could cause local real property tax payments by the project to be lower than estimated herein.

Local Services

- Aside from Sheriff's patrol, the project would generate little demand for local County services.

- Since the project would generate few, if any, jobs and new residents to the County, the County there would be little, if any, demand for additional services off-site.

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Highland County Economy

Highland County is the least populated of Virginia Counties. In the Year 2000, it had a population of 2,536. This figure is estimated to have declined to 2,415 in the Year 2003 (U.S. Department of the Census). Highland County's economy is very small and is reflective of its remote and predominantly rural status.

As of the Fourth Quarter of 2002 the Virginia Employment Commission (VEC) reports there were a total of 107 employment establishments in the County. These establishments are reported to have employed 564 persons. Of these, 161 were in government (local, state, federal) which is the largest employment sector in the County, followed by: information (58), construction (44), manufacturing (43), agriculture (42), accommodation (39), retail trade (35), other services (33), finance, insurance (29), professional/technical (7). The remainder were in the utility, real estate, management, administrative/waste services, health care/social assistance, educational services, and arts and entertainment sectors.

The Virginia Employment Commission reports the County's top 50 employers in 2002 were:

1. Highland County School Board
2. Highland County
3. Highland Data Services Company
4. Allen Lowry Logging
5. Hooke Brothers Lumber Company
6. The Highland Inn
7. First Citizens Bank
8. Taylor Ramsey Corporation
9. The Recorder
10. Rexrode Masonry and Title Inc.
11. Highs Restaurant
12. Rexrode Masonry and Title Inc.
13. The Blue Grass Valley Bank
14. Highland Oil Company Inc.
15. Monterey Livestock Sales Inc.
16. Highland Telephone Company Co-op
17. J & W Logging
18. Miracle Ridge Limestone Company
19. Royal Pizza and Subs
20. Highland Medical Center Inc.
21. Mary Heath Sweet
22. Youth Development Inc.
23. Allegheny Mountain Trout Company
24. Jack's Construction
25. United States Postal Service
26. Obaugh Funeral Home Inc.
27. Town of Monterey
28. Westvaco Corporation
29. Highland Gladstone LLC
30. Kelly Farms Inc.
31. Moyers Auto Parts
32. Virginia State Department of Health
33. Blanchard Woodworking Inc.
34. Americans For Immigration
35. Spruce Hill Excavating Inc.
36. Shamrock Stephenson Realty
37. Frostie Bun Shoppe
38. VPI and State University Cooperative Extension
39. Virginia Department of State Police
40. United States Postal Service
41. Elderly Life Management Services
42. Neil Trucking Inc.
43. Donald Botkin General Contractor
44. H.T. Smith Inc.
45. Gutshall Exxon Station
46. Country Convenience
47. McDowell Gas
48. Allie L Hull Trucking Inc.
49. Darrin Peterson Design
50. The Farmland Store

Local Economic Impact

Local economic impacts are the effects a project will have on the local economy. These include quantifiable measures such as employment, population and earnings.

Only a few windfarms utilizing the more technologically advanced turbines such as would be utilized for this project have been operational for more than just a few years. Accordingly, many studies of the economic impact of utility-scale windfarms have relied upon various economic models. Some such studies purport to demonstrate significant local economic benefits of windfarms in host counties. Most such economic models have limited or little usefulness when applied to small, remote "micro" economies such Highland County.

More recently, however, it has become possible to assess the actual economic impact of some of the more recently constructed utility-scale windfarms on small, rural Counties using actual Census population and employment data. These data allow the economic impact of such projects to be evaluated using objective, actual data and avoid the use of abstract and/or inapplicable models.

For this report, population and employment data for three small, rural Counties hosting recently constructed, utility-scale windfarms were obtained from the U.S. Department of Census. Reported employment data for the utility and construction sectors were checked to determine the number of such jobs before, during and after completion of three windfarm projects..

Based on these data, it appears that the economic impact of utility-scale windfarms on small, rural host communities is itself small and virtually unmeasurable.

Southwest Wind Energy Project, Texas

The Southwest Wind Energy Project was initiated in February 1999 and completed in June of the same year by the West Texas Energy Partners, LLP (an operating subsidiary of FPL Energy) in Crockett County, Texas. Crockett County had a population of 4,099 persons in 2000, according to the U.S. Census. The Census estimates the County's population to have declined to 3,807 persons in 2003, two years after the Southwest Wind Energy Project came online.

The generating capacity of the Southwest Wind Energy Project in Crockett County, Texas is two times greater than that proposed for Highland County, Virginia. Similar to the proposed Highland County Windfarm, it also utilizes N.E.G Micon turbines. Other economic indicators show this project to have had virtually zero economic impact on the County. For example, the number of persons employed in the County's utility sector stood at 18 in 1998 (the year immediately preceding construction). It remained at 18 in 1999 while the project was being constructed and also in 2000, the first full year of project operations, but fell to 15 employees in 2001. Construction employment for these same years was 84, 83 , 87, and 87 (1998 - 2003, respectively).

Lake Benton 1, Minnesota

Lincoln County, Minnesota is the site of one of the two largest windfarms in the United States. The Lake Benton 1 project was completed in 1998 by Enron Wind Corporation. The facility is reported to have a generating capacity of 107 MW - more than three times that of the proposed Highland Windfarm.

The Lake Benton 1 project, consisting of 143 Enron Z-48 wind turbines produced little discernible economic impact on the host County. Lincoln County's 2000 population of 6,429 fell to an estimated 6,232 in 2003. The impact of the project on the County's utility sector cannot be specifically determined since these data are reported for a range. However, the range of such jobs remained unchanged at between 20 and 99 from 1998 through and including 2001. Construction employment stood at 50 in 1998, 54 in 1999, between 20 and 99 in 2000, and 73 in 2001. The rise in 2001 occurred long after the project was completed.

Lake Benton 2, Minnesota

At the time it was completed, the Lake Benton 2 Project - located in neighboring Pipestone County - was the second largest wind generation project in the U.S. It was completed in May 1999 and has a generating capacity of 103.5 MW generated by 138 Enron Z-50 wind turbines. Pipestone's 2000 population of 9,895 is estimated to have declined to 9,761 in 2003. The County's utility sector employment has remained at between 0 and 19 from 1998 through and including 2001. Construction employment stood at 111 in 1998, 94 in 1999, 102 in 2000 and 111 in 2001.

Based on the foregoing case studies, large, utility-scale windfarms appear to have little to no significant economic impact on small, rural host counties. Employment in the utility sector - which might be expected to show an increase once a large project becomes operational - shows little or no discernible change. In the case of the SouthWest Wind Energy Project in Texas, employment in this sector actually declined after the project became operational. Similarly, construction employment in the three host Counties shows little to any discernible change that can be attributed to the period corresponding to when these projects were under construction.

These results are likely explained by a combination of factors. Installation and on-site assembly of the turbines and related facilities is ordinarily accomplished by employees or specialized contractors of the turbine manufacturers who are brought in from out of the area and possibly even from out-of state. These crews may be on-site for only part of the construction and assembly process. Such workers local expenditures are typically limited, and may occur outside of the host community. Other short-term construction jobs may be filled by transient workers, or by residents of nearby counties. Consequently, only a few construction jobs may be filled by local residents or go to locally-based contractors. The large majority of expenditures on materials, equipment and supplies also occurs outside of the host community. Much of the necessary equipment is highly specialized, and with the possible exception of gravel, sand, aggregate, and a few sundry items, most materials

may not be able to be acquired locally, or can be acquired at a much lower cost from outside the area.

Local operational employment appears to be even less consequential. Most advanced utility-scale windfarms are operated and monitored remotely, using SCADA systems that have become common in the utility industry over the last decade or so. SCADA systems are electronic, computer and telecommunications-aided remote-sensing, monitoring and operational controls that allow these facilities to be monitored and operated from dozens or even hundreds of miles away. On-site jobs typically consist of minor maintenance, repair and security – and these workers can commute from elsewhere. Accordingly, there is little in the way of permanent local employment generated by utility-scale windfarms in small, rural host communities.

Though some local landowners undoubtedly experienced an increase in income from lease payments, little of this increase appears to have found its way into the local economy.

Local Fiscal Impact

Fiscal impacts are the effect of the project on the budget of the County government. They consist of local government revenue that result from construction and operation of the project and the cost of services required to serve the project. Fiscal impacts would also normally include the impact of any new residents (and school children) that might move to the community as a result of new employment opportunities. However, experience in other host counties, many of which have larger populations than Highland and in which much larger facilities have been built, has shown the County can expect little if any net gain in employment or households as a result of the project.

Highland County is reported by the Virginia Auditor of Public Accounts to have had total revenues of $5.7 million in FY 2003. Approximately half of this amount was derived from local sources and half was in the form of aid from the Commonwealth. The County collected $1.54 million in real property tax revenue in that year. The next largest local revenue source for the County consisted of various charges for service ($0.44 million), followed by other local taxes ($0.27 million). Of this latter amount $0.1 million was from consumer utility taxes and $0.08 million was the local share of sales taxes.

The fiscal impacts of the Highland Windfarm project on the County consist almost entirely of those that are directly related to the project. On the revenue side, these impacts would consist primarily of changes in real property tax revenue for the project itself, and for neighboring and nearby properties. On the expenditure side, these impacts would consist largely of increased need for law enforcement - primarily patrol.

In Virginia, public utility property is assessed by the Public Taxation Division of the State Corporation Commission. Communications with the Division indicate that were it to be built, the Highland Windfarm would be their first experience with assigning a value to this type of property. Typically, the Division would use a ratio of 90 percent of the capitalized value of the project to

determine the full market value. This value is then adjusted by the stated ratio (determined annually by the Department of Taxation), which was 77.9 percent in 2003 for Highland County. The resulting amount would be decremented each year to account for depreciation.

To date, the Public Taxation Division has not determined the appropriate life expectancy for this type of facility. However, an upper estimate of life expectancy (which would correspond with the highest real property tax revenue the project would generate) is probably 25 years. A lower estimate of life expectancy (which would correspond with the lowest real property tax revenue the project would generate) is probably 15 years. These two life expectancies can be used to estimate the likely real property tax revenue the project would generate to the County. The SCC may determine that the turbines could be depreciated to zero, or there may be a maximum amount of allowable depreciation (e.g., 80 percent), and/or some modest residual value could be retained toward the end of the depreciation cycle.

An application submitted to the USDA by the project's developer indicates that the capitalized cost of the project, at 50 MW, would be approximately $69 million. This figure is used to estimate a lower capitalized cost of $46.5 million that would be associated with a generating capacity of 30 - 35 MW, as currently anticipated. This amount is reduced by the full market value ratio (.90) and the County's stated ratio (.779) to obtain the project's initial assessed (taxable) value.

The County's real property tax revenue from the project, in each year, would be determined as follows: the initial taxable assessment, less accumulated depreciation, divided by $100, times the County's real property tax rate. The County's real property tax rate is $0.62 per $100 of value.

Based on a 20-year straight-line depreciation cycle, the project would generate a total of about $2.1 million in local real property taxes over twenty years, for a net present value of about $1.5 million. The net present value of these payments would be affected only modestly if the project were to retain a nominal un-depreciated value for the last few years.

Declines in real property values experienced by neighboring and nearby Counties will depend upon their proximity to the turbines and their visibility. The greatest negative impacts will likely be on those properties that are nearest to the turbines and those with the highest exposure to their visibility and/or noise.

Intangibles

Intangible economic and/or fiscal impacts are those which do not lend themselves to ready quantification, or which can be highly variable from place to place and thus cannot be fully known or estimated in advance.

Highland County, well known for its scenic views – and with a dependence for much of its economic well being on hunting, tourism and recreation – could be more susceptible to intangible negative impacts than other areas.

Transmission Interconnect

Based on the application to USDA, the proposed Windfarm would interconnect with Allegheny Power's transmission system operated by PJM, LLC (PJM), which is a holding partnership of Allegheny Power's transmission system.

Community Energy Incorporated (CEI), one of two original 50-50 partners in the Windfarm - and which has since withdrawn from the project - prepared an interconnection study that, according to the USDA application "concluded the existing Allegheny Power Monterey to Durban 69 kV line has incremental capacity for 30 - 35 MW".

As originally proposed, the Windfarm's generating capacity of 50 MW exceeds the capacity of the existing line. If other sources of new generating capacity are also planned or proposed to utilize this same line, its capacity for the proposed Windfarm would be reduced even further.

CEI estimated that it would cost approximately $7.75 million to expand the capacity of the existing power line to 80 MW. However, there is no indication in the USDA application or in PJM's queue of pending and proposed projects that indicates such an expansion is planned or how the cost of such an expansion would be allocated.

In August 2001, CEI initiated the first step of a four step process with PJM to increase the capacity of the Monterey-Durbin transmission line. CEI indicated in its USDA application that it expected to complete the interconnection process by mid-2004, but this project does not appear to have obtained required review and approvals.. An April 2004 listing of projects in PJM's queue shows the current status of this project as "withdrawn", (refer to online source, http://www.pjm.com/planning/project-queues/queue-j-withdrawn.jsp , as viewed April 25, 2004).

Because of the costs involved, an upgrade to the existing transmission line would likely not be accomplished until a second phase of the proposed project is implemented, or a second (or third) such project is approved elsewhere in the County or nearby. Once this upgrade is accomplished, there would be sufficient transmission capacity for additional turbines and/or windfarms.

About the Author

Mr. Michael Siegel has over twenty-six years of experience in the field of public finance and environmental finance. He is currently the Principal of Public and Environmental Finance Associates based in Washington, DC. Previous positions include regional impact specialist for the Colorado West Area Council of Governments, Director of the Office of Commercial Revitalization for the State of Maryland, and Assistant Director of the Research Center of the Government Finance Officer's Association.

While at the Office of Commercial Revitalization, Mr. Siegel authored legislation and regulations for the State's targeted revitalization loan program and subsequently prepared underwriting and project packaging for projects seeking loan assistance and for the State's Community Development Block Grant economic development projects.

In the 1980's, he prepared the economic and fiscal impact analyses of the deployment of the U.S. Air Force's Peacekeeper Missile in Wyoming and Nebraska. Subsequently, he assisted with preparation of economic and fiscal impact analysis of Homeport Everett for a carrier vessel battle group to be stationed in Washington State.

In the early 1990's, Mr. Siegel formed his own consultancy, Public and Environmental Finance Associates. His clients include State and local governments, land owners and public interest groups. He specializes in fiscal impact analysis, utility rate setting, demand forecasting and needs analysis. He has developed a number of econometric and allocation-based fiscal impact models and analyses for various clients including the U.S. Virgin Islands, Loudoun County Virginia, Shelby County Tennessee, the Minnesota Department of Agriculture and Lancaster/Lincoln Nebraska. These models incorporate general purpose, education and water and wastewater services and revenue streams. He has also analyzed the impact of various projects on local government service providers including the proposed Disney *America* project in Prince William County, Virginia, and the corporate headquarters for the WorldCom corporation in Loudoun County, Virginia.

In addition to the education elements of these models, Mr. Siegel has analyzed the impact on State education funding formula of exempt real property in Rappahannock County, Virginia and prepared a comparative analysis of enrollment, outlays and approved reimbursement rates for high intensity special education students in three States and the District of Columbia for the District's State Education Office.

Mr. Siegel has also prepared rate studies, needs analysis and fiscal planning for water and wastewater utility systems. In the 1990's, he was commissioned by the U.S. Environmental Protection Agency to develop rate setting software for small and medium size water and wastewater utilities. This software has been utilized by over 500 small and mid-size utility *systems throughout the U.S.