

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

**Petition of BNE Energy Inc. for a
Declaratory Ruling for the Location,
Construction and Operation of a 4.8 MW
Wind Renewable Generating Project on
Rock Hall Road in Colebrook,
Connecticut (“Wind Colebrook North”)**

Petition No. 984

March 24, 2011

PRE-FILED TESTIMONY OF JOEL M. RINEBOLD

Q1. Mr. Rinebold, please state your name and position.

A. Joel Rinebold. I am Director of Energy Initiatives at the Connecticut Center for Advanced Technology (“CCAT”). CCAT is located at 222 Pitkin Street , East Hartford, Connecticut.

Q2. Please state your qualifications.

A. At CCAT, a federally-supported program established to strengthen technology-led economic competitiveness, I focus on energy and infrastructure planning, the advancement of advanced technologies such as renewable technology, fuels cell and hydrogen technology, and the deployment of renewable and sustainable energy facilities.

I administer several energy related grants and am the Project Manager and Prime Investigator for the US Department of Energy for two programs: Local Energy Assurance Planning for five Connecticut municipalities and for the development of regional hydrogen / fuel cell “Roadmap” guidance documents for the New England states, New York, and New Jersey; I administer and am the founder of the Connecticut Hydrogen-Fuel Cell Coalition and administer the Connecticut Hydrogen Economy Program; I

administer the Connecticut Biodiesel Program; I am Project Manager and Prime Investigator for the US Small Business Administration to manage the regional Northeast Electrochemical Energy Cluster in New England and New York; and I administer energy planning activities for other public entities including the University of Connecticut.

I was the founding Executive Director of the Institute for Sustainable Energy at Eastern Connecticut State University, established to promote an improved awareness of energy uses, efficient use of energy, and protection of environmental resources. I was Chair of the Legislative Task Force to assess energy infrastructure of southwest Connecticut and Chair of the Legislative Task Force to assess energy infrastructure crossing Long Island Sound. Previously, I was the Executive Director of the State of Connecticut Siting Council where I directed all activities for electric forecasting and the site regulation of energy, telecommunications, and waste management facilities. Prior to serving with the Connecticut Siting Council, I worked as the District Manager for the U.S. Department of Agriculture, Litchfield County Conservation District.

I have served as adjunct faculty at Middlesex Community College and Central Connecticut State University teaching senior and graduate level environmental planning classes. I am considered an expert in energy and telecommunications issues, and have presented papers and lectured on these issues throughout the United States and Canada. I am a Board Member of the Connecticut Power and Energy Society, a member of the Citizens Advisory Committee for the EPA Long Island Sound Study, and a recipient of

the Connecticut Department of Environmental Protection 2004 Green Circle Program Award.

I hold a Bachelor of Urban Planning from Central Connecticut State University and a Master of Community Planning and Area development from the University of Rhode Island.

Q3. Please describe your involvement in this matter.

A. CCAT was responsible for preparing an Economic Energy Analysis for this proposed. All work was conducted by me or under my direct supervision.

Q4. Please describe the process for conducting the Economic Energy Analysis.

A. At the request of BNE, CCAT conducted the Economic Energy Analysis which included an analysis of economic output that estimated job creation, provided a comparative analysis of the project to residential development, and estimated benefits to the State of Connecticut including provision of renewable energy credits to meet Connecticut's Renewable Portfolio Standards, reduction of greenhouse gases, and energy reliability.

Q5. Please describe how you prepared the Economic Energy Analysis.

A. Calculations to estimate property tax amounts were based on personal communication with Town of Colebrook Tax Office, and information from the CERC Town Profile, 2010. Job creation was based on information from the Connecticut Renewable Energy / Energy Efficiency Economy Baseline Study and US DOE models.

Renewable Portfolio Standard calculations are based on state law and Connecticut DPUC documents, greenhouse gas reduction estimates are based on US EPA models, and energy reliability calculations are based information from the US EIA and CERC.

Q6. Please describe your conclusions.

A. Wind Colebrook North will provide numerous and significant benefits to the residents of Colebrook. The direct value to the Town of Colebrook can be best characterized in terms of air quality and environmental benefits, local tax revenue, job creation, economic output, and alternative development to residential land use. An additional value while not direct to the Town of Colebrook is energy reliability and compliance with state policy for renewable energy generation and meeting Renewable Portfolio Standards (RPS).

Wind Colebrook North with Colebrook South will be one of the first commercial wind projects in the state of Connecticut and it will help make the Town of Colebrook greener by producing renewable energy to exceed all of the Town's residential electric users usage on average over the course of a year. The wind turbines will produce 100 percent clean, renewable electricity with zero emissions and no water consumption, which will result in significant environmental benefits for the Town. Wind Colebrook North along with Colebrook South will also set a positive example for other communities that renewable energy is important to our future.

In addition to the environmental benefits, there are numerous economic benefits of the project that will directly benefit the residents of the Town. While I recognize that

economic impacts, both positive and negative, are outside the Council's jurisdiction and consideration, for illustrative purposes to better understand the reasons for development of renewable wind generation facilities, I have estimated that BNE may become the largest taxpayer in town, and the project will avoid residential development that would cost the town tens of thousands of dollars per year in additional taxes due to the additional services and educational costs that would result. The project will also provide economic development and green jobs to the local economy. There will be numerous jobs created during construction and at least one permanent position created as a direct result of the project. Again, while economic issues are not relevant to the Council's jurisdiction and decision-making criteria, the economic benefits of the wind project are significant and directly beneficial to the town. In addition, BNE is proposing to construct an on-site Renewable Energy Center for tours to educate and inform students, organizations and members of the public about the need for and benefits of wind energy and other sources of renewable energy.

Q7. Will there be direct environmental benefits associated with the development of the Project?

A. Yes, it has been calculated that the production of 12,614 MWh of clean renewable energy from the Project will reduce CO2 emissions, a greenhouse gas, by approximately 6,332 tons per year and generate approximately \$20,450 through the sale of carbon credits. The sale of the carbon credits will be through the Regional Greenhouse Gas Initiative (RGGI). RGGI is an auction process that Connecticut participates in to require

electric generators to purchase carbon allowances for generating carbon dioxide emissions produced from conventional fossil fuel power generation.

In addition, the Project is expected to result in the following emissions reductions benefits:

- 3,532 (lbs/yr) total nitrogen oxides reduction
- 7,190 (lbs/yr) total sulfur oxides reduction
- 12,664,858 (lbs/yr) total carbon dioxide

To put this further into perspective, the Project would provide 12,614 MWh of clean, renewable energy without carbon emissions, which is equivalent to the following:¹

- cars taken off the road – 1,731
- barrels of oil not combusted for electric generation – 21,069
- number of tree seedlings grown for 10 years – 232,299
- acres for carbon sequestered annually by pine or fir forests – 1,932

While these environmental benefits are primarily of regional and state benefit, the local community would also benefit directly by the potential improvement in air quality.

Q8. Will there be direct tax benefits to the Town of Colebrook?

A. Yes. The total tax assessment for the proposed turbines, ancillary equipment and the remaining vacant land is estimated to be \$215,912,² which may make the Project the

¹ Greenhouse Gas equivalency values were computed using the United States Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator located at <http://www.epa.gov/cleanenergy/energy-resources/calculator.html> by entering in the total KWh expected to be generated annually from the project, 12,614 KWh.

² The local property tax for the wind turbines and ancillary equipment is estimated to be \$208,404 based on the current mill rate of 24.81, and an assessment of \$8.4 million representing 70 percent of the total

largest single source of tax revenue in the Town of Colebrook.³ It is anticipated that, on average, each household's taxes could be reduced by approximately \$385 per year because of the local property taxes that would be paid by the Project.⁴

Q9. Will the project create jobs?

A. Yes. In a recent study, a baseline was developed that identified the number of renewable energy and energy efficiency companies in Connecticut, the number and types of jobs in these companies, and the revenue and employment income generated by this sector. There are currently 72 companies in Connecticut that are engaged in the renewable energy industry, which accounts for 1,691 direct jobs and 2,706 indirect and induced jobs, \$92 million in direct job employment income, and \$217 million in direct revenue. It was reported that the wind industry accounts for approximately 5 percent of the total direct jobs; this equates to 85 direct jobs, \$4.6 million in direct employment income, and approximately \$11 million in industry revenues.⁵

estimated installed cost for the Project of \$12 million. The approximately 125 acre parcel located off Rock Hall Road is currently assessed at \$73,350. This assessment is much lower than 70 percent of the current appraised value of \$432,300 because the parcel falls under the provisions of Connecticut Public Act 490. Connecticut Public Act 490 "allows farm, forest, or open space land to be assessed at its use value rather than its fair market or highest and best use value (as determined by the property's most recent "fair market value" revaluation) for purposes of local property taxation". Based on this current assessment and a mill rate of 24.81, the property taxes to the Town of Colebrook for the parcel located at Rock Hall Road is approximately \$1,820. However, if the parcel were no longer eligible for a reduced assessment, consistent with the provisions of Connecticut Public Act 490, the estimated property taxes on the land for the parcel at Rock Hall Road would be \$7,508. The combined \$208,404 plus the \$7,508 equals the estimated assessment of \$215,912 for the Project.

³ Personal communication with Colebrook Tax Office.

⁴ CERC Town Profile, 2010 – The number of households is approximately 560.

⁵ CT Renewable Energy / Energy Efficiency Economy Baseline Study, Phase 1 Deliverable: Full Report, Navigant Consulting, Inc., March 27, 2009.

With respect to the employment impact during the construction phase of this project, it is expected that 9 local jobs will be generated in construction, management and administration occupations paying an average wage of approximately \$63,000 per year in salaries and benefits. An additional 16 jobs will be generated in the wind power equipment manufacturing industry paying an average wage of approximately \$45,000 per year in salaries and benefits. Seven additional indirect/induced jobs will result from changes in household spending as a result of the direct and indirect spending from the project.⁶

During the operational phase of the Project, approximately \$37,400 of local spending is expected annually on operations and maintenance. This is expected to support approximately one part time job. In addition, other local spending impacts totaling \$48,400 are expected annually, which will support part time employment opportunities in Connecticut's service sector.⁷

While BNE has not secured contracts for local employment for the construction of the project at this time, BNE has identified local resources, including persons directly from the Town of Colebrook, which would likely be used during site preparation, construction, and operation/maintenance if the project is approved and advances.

Q10. Will the project create economic revenues for the town?

⁶ The value of jobs is calculated by dividing the cumulative sector incomes by the total employment expected within the sector.

⁷ US DOE JEDI Model

A. Yes. The Project is expected to result in economic benefits for the Town and State:

- \$2.4 million in expenditures for local/regional services and materials associated with the development of the Project; and
- \$3.9 million in additional gross state/domestic product.⁸

The Project is also expected to result in annual revenues for BNE Energy Inc. These revenue streams would result in additional corporate income tax revenue for the State of Connecticut. In addition, the Project will contribute to the development of Connecticut's wind industry and supply chain.

Q11. What economic impact would result to the Town of Colebrook if the project site were developed for residential use?

A. As discussed above, the Project is expected to result in \$215,912 in the first year in property taxes for the Town of Colebrook; or approximately \$5.4 million over the 25 year life of the project using 2010 dollars. This projected tax revenue for the community would ease pressure on strained municipal budgets.

A comparative land use analysis was developed to assess the Project's net benefits associated with tax revenues compared to developing the property as residential housing. It should be noted that the land use analysis for the Project only considers the potential impact on the Town's expenditures for education, which constitutes approximately 70

⁸ Gross State/Domestic Product (GSP) includes the final market value of all finished goods and services produced by the state economy in one year.

percent of the Town's total annual expenditures.⁹ Unlike residential development, it is not anticipated that the Project would require any significant town services.

As detailed below, potential residential development of the project site could provide tax revenue estimated at \$44,286, but education costs for the potential residential development is estimated at \$186,246, resulting in a net cost to the Town of Colebrook of \$141,960 for one year. The annual tax revenue associated with the Project is estimated at \$215,912 for the first year. Consequently, the range of the impact spread is estimated at \$357,872 for the first year.

Chart 1: Residential Comparative Analysis¹⁰

Housing Analysis	
Acres in Development	125
Potential Home Construction	10

Education Cost Analysis	
Children Per Home ¹¹	1.35
Education Cost Per Child ¹²	\$13,796
Potential Education Costs	\$186,246

Tax Revenue Analysis	
Median House Price ¹³	255,000
Assessed Value @ 70%	178,500
Property Tax Per House @ 24.81 mills	\$4,429
Total Property Tax Revenue (house only)	\$44,286

Net Education/Tax Revenue Analysis	
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⁹ CERC Town Profile, 2010

¹⁰ Analysis assumes revenues and costs for one year

¹¹ Residential Demographic Multipliers – Estimates of the Occupants of New Housing, Rutgers University, Center for Urban policy Research, June 2006.

¹² CERC Town Profile, 2010

¹³ CERC Town Profile, 2010

Potential Education Costs	\$186,246
Total Annual Property Tax Revenue (house only)	\$44,286
Net Community Benefit/(Cost)	(\$141,960)

BNE Wind Prospect Tax Revenue Analysis	
Assessed Project Value	\$8,400,000
Taxable Value As % of Assessed Value	2.481
Property Tax Revenue (includes land assessment of \$7,508)	\$215,912

Total Potential Net Annual Project Revenue Analysis	
Net Community Benefit/(Cost)	(\$141,960)
Project Tax Revenue	\$215,912
Total Potential Project Impact Spread	\$357,872

Note: Chart 1 depicts the education costs and tax revenues associated with residential development of the Project site. Education costs are then subtracted from the estimated tax revenues associated with residential development, which produces a net community cost estimated at \$141,960 because education expenditures would exceed tax revenue. Chart 1 also depicts the projected tax revenue associated with the Project. The total potential Project impact spread is estimated at \$357,872.

Q12. Will the project help meet state policy for the provision of renewable energy?

A. Yes. The Project will provide support to Connecticut's existing public policy framework including Connecticut's Renewable Portfolio Standards (RPS). The RPS require electric distribution companies to procure a percentage of the power they sell from Class I renewable energy sources. The most recent RPS compliance report published by the Connecticut Department of Public Utility Control (DPUC) indicates that electric distribution companies have been unable to procure sufficient amounts of Class I

renewable energy to meet mandated goals.¹⁴ The production of 12,614 MWh of clean renewable energy will generate 12,614 renewable energy credits (RECs), which would be approximately 0.5 percent of the 2011 RPS goal. In addition, the Project will increase the supply of Class I renewable energy in the State of Connecticut by approximately 12,614 MWh per year.

Q13. Will the project provide benefits for energy reliability?

A. Yes. The Project would also improve energy reliability to the Town of Colebrook and the region. The project would provide the equivalent of over twice the annual electric power needs for the Town's residential electric users on average. The project would, on average, meet the electric needs of approximately 1300 homes in the region. The project would provide this energy into the electric distribution and transmission system at wholesale for subsequent retail distribution to customers. The placement of this distributed renewable resource within the Colebrook load area would provide additional energy to meet local consumer demand and potentially offset the construction of new or upgraded transmission facilities to move power in from remote facilities, and be value and benefit to the state, region, and local community.

Q 14. How will the facility be connected to the grid to improve energy reliability?

A. Interconnection will be made to the CL&P 23 kV distribution system at an existing 23 kV distribution feeder on the existing distribution system at Route 44, Winsted Norfolk Road in accordance with CL&P technical standards and State of

¹⁴<http://www.dpuc.state.ct.us/FINALDEC.NSF/0d1e102026cb64d98525644800691cfe/922bc6404463e2a88525742000594c8b?OpenDocument&Highlight=0.07-09-14>

Connecticut, ISO-New England (“ISO-NE”), and the Federal Energy Regulatory Commission (“FERC”) requirements. The interconnection will be made pursuant to CL&P and United Illuminating Company (“UI”) Guidelines for Generator Interconnection and will include Company Scoping, an Application Request, Application Review, a Feasibility Study, a System Impact Study, a Transmission Study, an Interconnection Agreement, Interconnection Authorization, Installation, Commissioning Test(s), and final approval to energize. BNE has successfully completed Company Scoping, an Application Request, and Application Review, and is now completing the Feasibility Study. A System Impact Study will be completed next which will include Circuit Modeling, Power Flow Analysis, Voltage Impact Study, Thermal Impact Study, Short Circuit Study, Review of Distribution Equipment Interrupting Ratings, Protection Coordination Review, Assessment of Transfer Trip Requirements, and Review of Protection Schemes. Upon completion of the System Impact Study, BNE will engage in the Transmission Study as a final step for an Interconnection Agreement, Interconnection Authorization, Installation, Commissioning Test(s), and final approval to energize.

Q15. Do you wish to make any remarks regarding the use or application of setbacks?

A: Yes. BNE has in my opinion established an adequate buffer of at least 1,040 feet to the nearest residential dwelling to protect the public and safety. This buffer to a residential dwelling would exceed the maximum tip height of the proposed facility with the proposed 100 meter tower and either an 82.5 meter diameter or 100 meter diameter blade. This buffer would also exceed a setback equal to 1.5 times the maximum tip height of the tower with either an 82.5 meter diameter blade or a 100 meter diameter

blade. This buffer would also meet a setback equal to 1.5 times the maximum height of the tower plus the diameter of the blade with either an 82.5 meter diameter blade or a 100 meter diameter blade. I do point out that there may be some lightly traveled areas on Rock Hall Road would be within the 1,040 foot buffer for one windmill, but the proximity of the one windmill to this lightly traveled road does not appear to violate the GE setback recommendations.

Q 16. Does BNE comply with GE recommended setbacks?

A: Yes. I have reviewed GE's recommended setbacks and the BNE Colebrook North project appears to comply with the recommended residence setback recommendations for facilities using an 82.5 meter or 100 meter diameter blade. As I have previously stated, there may be some lightly traveled areas on Rock Hall Road that would be within the 1,040 foot buffer, but these lightly traveled areas do not appear to violate the GE setback recommendations. Furthermore, GE will also have the opportunity to reach its own conclusion regarding compliance with its setback considerations for wind turbine siting. GE is a Connecticut based company and the leading manufacturer of wind turbines in the United States. There are more than 15,000 GE wind turbines installed worldwide with nearly 300 million operating hours and 140,000 GWh of energy produced, enough to power 6.5 million homes. The proposed turbine is one of the world's most widely used wind turbines. I am not aware of any other wind turbine manufacturer that has setbacks requirements more stringent than those used by GE. It is also my understanding that GE will not sell a wind turbine unless there is compliance with setback considerations, setback recommendations, and a safety

review. It is my understanding that GE cannot compete for various wind turbine installations that are located nearby homes and schools. That apparently is the case in Templeton at the Narragansett Regional High School. The wind turbine is a 1.65 MW AAER turbine owned by Templeton Municipal Light & Water Plant (“TML”), and located at the high school. The closest home is less than approximately 500 feet from the wind turbine, the school is approximately 640 feet from the wind turbine, and there are 14 homes less than approximately 920 feet from the turbine. According to the TML, originally GE was engaged with the TML to build the wind turbine, but subsequently GE had to decline development due to the application of GE setback considerations which include setback recommendations and a detailed safety review. As a result, TML contracted with AAER for the wind turbine. It should be noted, that according to TML the wind turbine began operations in September 2010 and the project has been extremely successful even though the setbacks are less than what is required by GE. TML has not received any complaints from nearby residents, and has indicated that the only time people call is over concern when the turbine is not spinning due to the lack of wind on that particular day. It is therefore, my opinion that compliance with GE recommended setbacks and safety review will be adequate to ensure safe and reliable service and protect public health and safety.

Q 17. Is it typical for regulatory jurisdictions to use setbacks for wind facilities?

A: There does not appear to be a standard or typical state setback. In fact, most states do not have minimum setback requirements for wind facilities. Based on a recent OLR analysis of state wind turbine regulations, only ten states (California, Delaware,

Illinois, Maine, New Hampshire, Ohio, South Dakota, Vermont, Wisconsin, and Wyoming) have siting statutes or regulations with specific provisions on wind projects. The OLR report is attached hereto. Based on this OLR report and my own research it appears that 15 out of 50 state regulatory jurisdictions have established formal setbacks or guidelines for wind facilities. In addition, formal provisions for noise control are not uncommon. States including Delaware, Illinois, New Hampshire, Ohio, and South Dakota use setback standards that are 1.0 to 1.5 times the maximum tip height (MTH).

A few states require setbacks that exceed 1,000 feet or 1.5 times the maximum tip height; however these provisions do not appear to be widely agreed upon. Further, these setbacks may unnecessarily have a detrimental effect to preclude or reduce opportunities for development of wind facilities and would be considered problematic by wind developers. For example, Wisconsin's current setback requirements are 1.1 to 3.1 times MTH, but proposals to increase setbacks have become controversial and if enacted may have a significant effect to reduce the development of wind facilities in the state. This effect would also reduce the development of renewable energy, reduce the curtailment of foreign supplied energy, reduce the establishment of "green" jobs, and reduce the reduction of air pollutants and carbon emissions that generally occur with the development of wind facilities.

Other jurisdictions such as Maine and Vermont exercise their jurisdiction on a case by case basis to balance the public need for renewable energy with the site specific characteristics identified at and near a proposed facility. Some states such as

Massachusetts and California defer to local jurisdictions. Below is a chart of state setback requirements:

State/Possession	Wind Setback Requirement
ALABAMA	NO
ALASKA	NO
ARIZONA	NO
ARKANSAS	NO
CALIFORNIA	BY COUNTY
COLORADO	NO
CONNECTICUT	NO
DELAWARE	1 MTH BY LOCAL
DISTRICT OF COLUMBIA	NO
FLORIDA	NO
GEORGIA	NO
HAWAII	NO
IDAHO	NO
ILLINOIS	1.1 MTH BY LOCAL /COUNTY
INDIANA	NO
IOWA	NO
KANSAS	NO
KENTUCKY	NO
LOUISIANA	NO
MAINE	BY LOCAL
MARYLAND	NO
MASSACHUSETTS	BY LOCAL
MICHIGAN	Guides 1.5 (HH + BD)
MINNESOTA	3.0 to 5.0 ROTOR DIAMETER
MISSISSIPPI	NO
MISSOURI	NO
MONTANA	NO
NEBRASKA	NO
NEVADA	NO
NEW HAMPSHIRE	1.5 MTH BY LOCAL
NEW JERSEY	NO
NEW MEXICO	NO
NEW YORK	BY LOCAL OR COUNTY
NORTH CAROLINA	NO
NORTH DAKOTA	NO
OHIO	1.1 MTH or 750'
OKLAHOMA	NO
OREGON	LOCAL WITH STATE OVERRIDE

PENNSYLVANIA	NO
PUERTO RICO	NO
RHODE ISLAND	NO
SOUTH CAROLINA	NO
SOUTH DAKOTA	1.1 MTH OR 500'
TENNESSEE	NO
TEXAS	NO
UTAH	NO
VERMONT	BY LOCAL
VIRGIN ISLANDS	NO
VIRGINIA	NO
WASHINGTON	NO
WEST VIRGINIA	NO
WISCONSIN	1.1 to 3.1 MTH OR 1,250'
WYOMING	5.5 MTH or 1000' BY COUNTY

Q.18. Does this particular site have attributes that should require a larger buffer than that proposed?

A: No, I believe that this Colebrook North site is relatively large open land area buffered by rural development, forested land, and is nearby a State transportation artery. I believe that the 1,040 foot buffer to residences is appropriate for a facility using the 82.5 meter or 100 meter blade, but that that noise restrictions should be enforced. BNE has demonstrated that the proposed turbine locations comply with state and local sound regulations. Restrictions in excess of these limits may have a general effect to preclude wind development in the State and may be considered inconsistent with State policy that seeks to promote the development and use of wind energy for the common public good to improve energy sustainability, reduce import of foreign energy products, protect environmental resources including air resources and the global climate, and to promote the development of “green” jobs centered around a sustainable energy economy.

Q. 19. Please describe FAA lighting requirements.

A. Based on wind turbine lighting guidelines from the FAA, flashing red (L864), or white (L-865) lights may be used to light wind turbines. The FAA has indicated that studies have shown that red lights are most effective, and should be the first consideration for lighting recommendations of wind turbines. As a result, BNE proposes to utilize red lights on at least two of the wind turbines. The light fixtures will be placed on the turbine nacelle and will flash simultaneously.

The FAA guidelines also indicate that the white paint most often found on wind turbine units is the most effective daytime early warning device. Other colors, such as light gray or blue, appear to be significantly less effective in providing daytime warning. Daytime lighting of wind turbine farms is not required by the FAA, as long as the turbine structures are painted in a bright white color or light off-white color most often found on wind turbines. The GE 1.6-82.5 wind turbines will be white and therefore not require daytime lighting.

The specifications of the red lighting option that BNE proposes to utilize to comply with FAA lighting requirements are as follows:

1. IFH-1710-000 Red LED Obstruction Light (Red at night only)

Specifications: Complies with FAA AC150/5345-43F Type L-864 and ICAO Annex 14, Medium Intensity, Type B

Night Intensity: 2,000 \pm 25% effective candelas

Beam Pattern: 360°C Horizontal, \geq 3°C Vertical

Flash Rate: 20FPM or 30FPM Red Night, selectable

Q19. Can you summarize your conclusions?

A. Yes. The Project will provide significant environmental and economic benefits to the Town of Colebrook. The Project will significantly reduce emissions of harmful air pollutants thereby improving public health. The Project will also reduce greenhouse gas emissions by **6,332 tons** annually with the production of **12,614 MWh** of renewable energy. In addition, the Project is expected to result in **\$2.4 million** in expenditures for local/regional services and materials associated with the development of the Project; **\$3.9 million** in additional gross state/domestic product; and approximately **32 jobs**, with at least 9 of these locally in Connecticut. The Project is estimated to generate approximately **\$215,912** in property taxes in the first year for the Town of Colebrook or approximately **\$5.4 million** over the 25 year life of the project without requiring any significant town services. The total potential project impact spread is estimated at **\$357,872** based on tax revenue provided by the Project and deferred education costs (or savings) to the Town associated with residential development. The ongoing operation of the Project is also expected to support local jobs. Lastly, the Project supports public policies designed to increase Connecticut's use of Class 1 renewable energy and help meet Connecticut's 2011 RPS goals, which will provide some direct and indirect benefits to the Town of Colebrook.

Q.20. Does this conclude your testimony?

A. Yes.

3.24.11
Date


Joel M. Rinebold