

STATE OF NEW HAMPSHIRE
BEFORE THE SITE EVALUATION COMMITTEE
Docket No. SEC 2015-02

APPLICATION OF ANTRIM WIND ENERGY, LLC
FOR A CERTIFICATE OF SITE AND FACILITY

**PREFILED DIRECT TESTIMONY OF MATTHEW MAGNUSSON ON BEHALF OF
ANTRIM WIND ENERGY, LLC**

September 10, 2015

1 **Qualifications of Matthew Magnusson**

2 **Q. Please state your name, title and business address.**

3 A: My name is Matthew Magnusson. I am owner of Seacoast Economics. My
4 business address is PO Box 302, Hampton Falls, NH 03844.

5 **Q. Please describe the services provided by Seacoast Economics.**

6 A: Seacoast Economics provides project-based economic analysis and report
7 authorship consulting services. The firm has typically focused on analysis and evaluation of NH-
8 based projects or policies. Seacoast Economics has provided economic analysis for several NH-
9 based clients including the New Hampshire Port Authority, Department of Health and Human
10 Services, the Community College System of New Hampshire, and the NH Community
11 Development Finance Authority.

12 **Q. Briefly summarize your educational background and work experience.**

13 A: I am a graduate of the University of New Hampshire's Whittemore School of
14 Business and Economics with a Masters of Business Administration. I have performed economic
15 research on each of the three commercial wind farms currently operating in New Hampshire as
16 well as the previously-proposed 30 MW wind farm by Antrim Wind Energy, LLC. I have also
17 performed economic analyses on energy policy in the state of New Hampshire, including the NH
18 Renewable Portfolio Standard, the Regional Greenhouse Gas Initiative, the NH Greenhouse Gas
19 Emissions Reduction Fund, and the NH Better Buildings program.

20 Additional detail regarding my education, background and experience is contained in my
21 curriculum vitae which is attached hereto as Attachment MM-1.

22

1 **Q. Have you ever testified before the New Hampshire Site Evaluation**
2 **Committee (“SEC”)?**

3 **A.** Yes. I presented testimony regarding the potential effect of the Antrim Wind
4 Project on regional employment, economics, and property values in connection with Antrim
5 Wind Energy, LLC’s (“AWE”) application for a certificate of site and facility in Docket 2012-
6 01.

7 **Purpose of Testimony**

8 **Q. What is the purpose of your testimony?**

9 **A.** The purpose of this testimony is to provide information on the anticipated
10 economic impacts of the proposed Project upon the region in which the Project is proposed to be
11 located. More specifically, my testimony focuses on the impacts that the Project is anticipated to
12 have upon the region’s economy, employment, and property values.

13 **Q. Are you familiar with the Project proposed by AWE in this matter?**

14 **A.** Yes. In connection with the application that was the subject of Docket 2012-01,
15 AWE retained Professor Ross Gittell and me, then both at the University of New Hampshire, to
16 assess the potential effects of the Project upon the region’s economy, employment, and property
17 values. I assisted in the preparation of Professor Gittell’s economic impact analysis of the
18 Project in Docket 2012-01, and ultimately adopted the Professor’s testimony when he accepted
19 new employment during the course of the Docket. During the course of my current engagement,
20 I have been provided with further information about the proposed Project and therefore am
21 familiar with it.

22

1 **Q. Are you also familiar with the finding of the New Hampshire Site Evaluation**
2 **Committee (SEC) with respect to the economic impacts of the Project in Docket 2012-01?**

3 **A.** The SEC considered the testimony and studies that Professor Gittell and I
4 submitted in the broader context of its deliberations regarding the orderly development of the
5 region. After considering our submissions in combination with other evidence, the SEC
6 concluded that the Project would not unduly interfere with the orderly development of the
7 region.

8 **Q. In your opinion, have circumstances relative to the Project changed in a way**
9 **that would affect the SEC’s finding on these issues in Docket 2012-01?**

10 **A.** No. For the reasons summarized below and described more fully in the updated
11 studies attached as Appendices 14A and 14B to the Application, my findings with respect to the
12 economic impacts of the Project and the potential effect of the Project on local and regional
13 property values have not changed. In my opinion, the Project will have both positive short and
14 long term impacts on the regional economy and employment, and will not affect local or regional
15 property values or tourism.

16 **Economic and Employment Impacts**

17 **Q. Please describe the methodology that you employed to assess the potential**
18 **effects of the Project on regional employment and economic activity.**

19 **A.** I reviewed the economic impact analysis “Economic Impact of the Proposed
20 Antrim 30 MW Wind Power Project in Antrim, New Hampshire” (“EIS”) that Professor Ross
21 Gittell and I performed in 2012. The purpose was to review and update the EIS as necessary. I
22 then conducted a literature review of studies that have examined economic impacts of wind
23 power projects, including studies submitted as part of Wild Meadows Docket No. 2013-02 and

1 other economic studies performed since the date of the EIS. I also obtained updated financial and
2 construction information on the Project provided by Antrim Wind Energy, LLC and its
3 construction partner Reed & Reed, Inc.

4 The updated EIS considers the net direct, indirect and induced economic impacts of the
5 Project on the local area economy, defined in this case as Cheshire, Hillsborough, Merrimack,
6 Rockingham and Sullivan counties. The update includes evaluation of the local area economic
7 impacts during the construction phase and the on-going operations phase. Economic factors
8 incorporated into economic modeling include employment, local capital expenditures, tax
9 revenue, local material and supplies purchases, landowner payments and the broader economic
10 “multiplier” impacts of the Project.

11 I performed the economic modeling for the initial EIS using the MIG IMPLAN and JEDI
12 economic models, and I am familiar with the application of these models to wind power projects.
13 Based on the literature review and the information provided to me in connection with the Project,
14 I determined that the methodology used in the EIS remains valid and appropriate for use in an
15 update. Both the JEDI model and the IMPLAN model are widely used and cited economic
16 input-output models that are frequently applied to economic impact analysis of wind power
17 projects. I updated the MIG IMPLAN model to use the latest economic data available (2013),
18 and utilized the latest version of the JEDI Land-based Wind Model. I then performed the
19 economic analysis using these updated models with the latest financial and construction data
20 provided on the Project.

21 The updated economic impact analysis also considers the Project in the context of the
22 broader regional electricity market as well as any potential impacts the Project might have on
23 residential property values or tourism.

1 **Q. Please summarize the results of the updated economic analysis.**

2 A. The results of the economic analysis are incorporated into a written update to the
3 EIS, included in Appendix 14A to the Application. The results of my updated analysis indicate
4 that the Project is expected to bring \$53.4 million in increased economic activity to Cheshire,
5 Hillsborough, Merrimack, Rockingham and Sullivan counties in NH over the next twenty years.

6 The construction phase of the Project is the time period when there will be the greatest
7 economic activity and benefits for these counties. During the construction phase, the Project is
8 expected to contribute \$11.6 million in economic activity and generate 25 full-time equivalent
9 (FTE) construction-related jobs and support an additional 59 FTE jobs paying a total of \$5.9
10 million in wages and earnings in the local area economy. In the on-going operating phase after
11 construction, the economic and jobs impact of the wind power project is reduced but still
12 positive. The project is expected to contribute \$2.2 million annually to the local economy, as
13 well as create an estimated 4 FTE new jobs for employees of Antrim Wind and support an
14 additional 8 FTE jobs in the local area. Antrim Wind has signed an annual Payment In Lieu of
15 Taxes (PILOT) agreement with the Town of Antrim in the amount of \$11,250 per MW for the
16 first post-construction year, escalating at 2.5% per year during the 20 year operating term. This
17 agreement results in a total of approximately \$8.4 million being paid to the Town of Antrim in
18 PILOT payments during construction and the first 20 years of operations.

19 As discussed below, the Project is not expected to affect local or regional property values.
20 Moreover, there is no evidence indicating that a relationship exists between wind power projects
21 and tourism in the region, and as such I do not anticipate that the Project will have any effect
22 upon local or regional tourism.

1 **Q. Based on your analysis, what are your conclusions regarding the economic**
2 **effects of the Project?**

3 A. For the reasons discussed above and in the updated EIS, it is my opinion that the
4 Project will have a positive economic impact on Cheshire, Hillsborough, Merrimack,
5 Rockingham and Sullivan counties in NH, with the greatest positive impact during the
6 construction phase of the Project but continuing thereafter for the operational life of the Project.
7 I do not expect the Project to have any effect upon local or regional property values or tourism.

8 **Property Values**

9 **Q. Please summarize the analysis that you performed regarding the Project's**
10 **anticipated impacts on area property values.**

11 A. My analysis incorporates and updates the study entitled *Impact of the Lempster*
12 *Wind Power Project on Local Residential Property Values* (“Study”) that Professor Gittell and I
13 submitted in Docket 2012-01. The Study as initially prepared included an in-depth review of six
14 studies that performed statistical analysis to examine the relationship between wind power
15 projects and residential property values. These studies did not find a wide-spread, consistent
16 change in property values associated with wind power projects, though none of the studies
17 included NH wind power projects. To validate the studies’ findings in New Hampshire,
18 Professor Gittell and I reviewed 2,593 arms-length, single-family home sales transactions from
19 January 2005 through November 2011 for all of the towns and cities located in Sullivan County.
20 Eighty-eight of those sales transactions occurred in the towns immediately surrounding the
21 Lempster Wind Power Project after it was constructed. Utilizing GIS mapping software and a
22 visual inspection of each property sold, we determined the distance of the property to the nearest
23 turbine of the Lempster Wind Power Project and whether the property had a view of the turbine.

1 Utilizing two statistical tests, simple linear regression and ANOVA, we concluded that there was
2 no relationship between the proximity of a property to a wind turbine or views of wind turbines
3 and the selling prices of properties.

4 In the update to the Study, I reviewed a total of twenty studies, including ones that were
5 performed after the Study that statistically examined the relationship between wind power
6 projects and residential real estate values using observations of property transactions. I also
7 repeated the statistical tests on the Lempster property transaction data set and obtained identical
8 statistical results. The purpose of replication was to ensure that the results were repeatable and
9 still supported the original findings in the Study.

10 Additionally, I conducted a study of the impact of the proposed Wild Meadows Wind
11 Farm on local residential property values (“Wild Meadows Study”) in December 2013. That
12 study reviewed 382 single family home property transactions (occurring between January 2008
13 and July 2013), including 132 post-construction transactions around both the Lempster Wind
14 Power Project and the Groton Wind Farm located in Grafton County, NH. The results from the
15 Wild Meadows Study are discussed in the updated study.

16 The Wild Meadows Study combined with the Study provide almost five years of real
17 estate transactions in the communities surrounding the Lempster Wind Power Project. This
18 period of time was sufficient to observe any potential post-construction impacts on residential
19 property values surrounding the Lempster Wind Power Project.

20 **Q. What were the conclusions of the original property values study?**

21 A. The Study concluded that there was no evidence that the Project has had a
22 consistent, statistically-significant impact on property values within the Lempster region. This
23 finding was based not only reviewing property transactions surrounding the Lempster Wind

1 Power Plant, but also the findings of the six other studies referenced in the Study that found no
2 conclusive evidence of wide spread, statistically-significant changes in property values resulting
3 from wind power projects.

4 **Q. Have those conclusions changed as a result of your updated analysis?**

5 A. No. A complete report of my updated study is contained in Appendix ___ to the
6 Application. The updated study confirms that single family homes surrounding the Lempster
7 Wind Power Project have not experienced an overall change in their assessed values, nor have
8 they been observed to sell for a value that was consistently different from their expected market
9 value. There has been no overall change observed in the residential real estate market value
10 surrounding the Lempster Wind Power Project that differs from the trends of the overall area real
11 estate market. This observation holds true even when considering the types of residential
12 properties that would be expected to be the most impacted by the presence of a wind power
13 project, including properties that are in close proximity to a turbine and/or that have direct views
14 of one or more turbines.

15 The updated study supports the original conclusion that the Lempster Wind Power
16 Project has not had any consistent, statistically-significant impact on property values. The
17 experiences of other New England states are consistent with this finding. Studies reviewing wind
18 power projects in Massachusetts, Rhode Island, and Vermont have not found evidence of a
19 consistent difference in property values associated with the presence of wind power projects.
20 Furthermore, the findings from this update study agree with the substantial body of evidence
21 from international, national, and regional studies that also have not found evidence of systematic,
22 wide-spread changes in property values associated with wind power projects.

1 Therefore, it is my opinion that there will not be a decrease in the value of the overall
2 residential market around the proposed Antrim Wind Energy Project, including those properties
3 that would be in close proximity to a turbine and/or that would have direct views of one or more
4 turbines, if the Project is developed.

5 **Q. In your opinion, taking into consideration potential economic, employment**
6 **and property value impacts, will the Project unduly interfere with the orderly development**
7 **of the region?**

8 A. No. In my opinion, for the reasons set forth above and contained within
9 Appendices 14A and 14B to the Application, I continue to believe that the Project will have a
10 positive impact upon the local economy and employment, and will not adversely affect property
11 values. Therefore, the Project will not unduly interfere with the orderly development of the
12 region.

13 **Q. Does this conclude your pre-filed testimony?**

14 A. Yes.

Matthew Magnusson

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 Dover, NH 03820
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Experience:

2012 - 2015

KPItrac, LLC d.b.a Seacoast Economics, Hampton Falls, NH*Owner*

Provide data collection, analysis, presentations and report authoring on project-based energy and economic research.

- **2015 - Economic Impact of the Proposed 28.8 MW Antrim Wind Power Project in Antrim, New Hampshire**
Sponsor: Antrim Wind Energy, LLC
- **2014 – Impact of the Lempster Wind Power Project on Local Residential Property Values Update**
Sponsor: Antrim Wind Energy, LLC
- **2014– New Hampshire Cleantech 2014 Market Report**
Sponsor: New Hampshire Cleantech Council
- **2014– New Hampshire Medicaid Program Enrollment Forecast SFY 2014-2016**
Sponsor: New Hampshire Department of Health & Human Services
- **2013 - The Impact of the Wild Meadows Wind Farm on Local Residential Property Values**
Sponsor: Iberdrola Renewables, LLC
- **2013 – An Evaluation of the NH BetterBuildings Program**
Sponsor: NH Community Finance Development Authority
- **2012– Climate Impacts on the Winter Tourism Economy in the United States**
Sponsor: Natural Resources Defense Council, Protect Our Winters
- **2012 – The Economic Impact of the Piscataqua River and the Ports of Portsmouth and Newington**
Sponsor: Piscataqua River Economic Development Committee
- **2012 - Economic Impact of the Proposed Antrim 30 MW Wind Power Project in Antrim, New Hampshire**
Sponsor: Antrim Wind Energy, LLC
- **2012 - Impact of the Lempster Wind Power Project on Local Residential Property Values**
Sponsor: Antrim Wind Energy, LLC

2012 – Present

Community College System of New Hampshire, Portsmouth, NH*Grant Researcher & Analyst*

Responsible for establishing reporting systems, ensuring compliance with U.S. Dept. of Labor performance reporting, and evaluating grant performance across 8 different consortium campuses for \$19.1 million Trade Adjustment Assistance Community College and Career Training Grant awarded to NH Community College System. Designed, programmed, and released ASP.net based reporting system that was recognized by the Dept. of Labor. Reported student outcomes from Oracle and Cognos.

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2005–2013

University of New Hampshire, Durham, NH*Research Associate (Most recent official position: Project Director II)*

Provide project leadership, data collection, analysis, presentations and report authorship on project-based grant-funded research.

Summary of Work

- **2013– New Hampshire Medicaid Program Enrollment Forecast**
Sponsor: New Hampshire Department of Health & Human Services
- **2012 – Energy & Economic Impacts of the NH Greenhouse Gas Emissions Reduction Fund**
Sponsor: New Hampshire Public Utility Commission
- **2012– “The Sustainable Business Case Book”**, co-author with Professor Ross Gittel and Professor Michael Merenda textbook published by Flat World Knowledge
- **2010 – The Economic Impact of the Local Sea Food Industry in New Hampshire – Opportunity for Sustainability**
Sponsor: University of New Hampshire Cooperative Extension
- **2010 – New Hampshire Medicaid Program Enrollment Forecast SFY 2011-2013 Update**
Sponsor: New Hampshire Department of Health & Human Services
- **2010 – The Economic Impact of Local Food Systems in New Hampshire - Current Status and Prospects for Growth**
Sponsor: University Office of Sustainability, NH Charitable Foundation
- **2010 – Economic Impact of the Proposed Groton Wind 50 MW Wind Power Project in Groton, New Hampshire**
Sponsor: Groton Wind LLC
- **2009 – “Sustainability and Business”** Chapter in “Exploring Business” textbook published by Flat World Knowledge
- **2009 – Economic Impact of Granite Reliable Power Wind Power Project in Coos County, New Hampshire**
Sponsor: Granite Reliable Power LLC
- **2009– Economic & Greenhouse Gas Impacts of the New 2009 Fuel Economy (CAFE) Standards in New England**
Sponsor: Carbon Solutions New England
- **2009– New Hampshire’s Green Economy and Industries: *Current employment and future opportunities***
Sponsor: Rockingham Economic Development Committee (REDC), U.S. Dept. of Commerce-Economic Development Administration

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- **2009 – Economic Analysis of Policies Proposed by the NH Climate Change Policy Task Force for the Governor's NH Climate Change Action Plan**
Sponsor: New Hampshire Charitable Foundation
- **2008 - Economic Impacts of Regional Greenhouse Gas Initiative on New Hampshire**
Sponsor: New Hampshire Department of Environmental Services, The Energy Foundation
- **2007- Economic Impacts of a State Renewable Portfolio Standard in New Hampshire**
Sponsor: New Hampshire Department of Environmental Services
- **2006- Economic Modeling of Low Sulfur Heating Oil in the Northeast**
Sponsor: Northeast States for Coordinated Air Use Management (NESCAUM)

- 2012 **University of New Hampshire, Durham, NH**
Adjunct Lecturer
 Taught senior-level undergraduate Sustainable Business Models course. Instruction included grading, and course development.
- 2005–2012 **University of New Hampshire, Durham, NH**
Lead Recitation Instructor
 Lead classroom instruction for the Introduction to Business course. Instruction included grading, leading classroom discussion and course development.
- 2000–2008 **University of New Hampshire, Durham, NH**
Information Technologist III
 Project manager for UNH Information Technology projects including management reporting and ERP system. Responsible for employee training of new IT related systems. Web application and database development of in-house applications for undergraduate student admissions.

Education:

- 2005 **Whittemore School of Business and Economics, University of New Hampshire, Durham, NH**
 Masters Degree in Business Administration
- 1997 **University of New Hampshire, Durham, NH**
 Bachelor of Science Degree in Kinesiology

Technical Skills:

- Data extraction, manipulation, integration, query development and reporting of complex data sets from government and proprietary sources
- Application and programming experience includes: IMPLAN 3.0, SQL Server, Oracle, JavaScript, HTML 5.0, C#, ASP.NET MVC, Windows Azure, Excel, PowerQuery, PowerPivot, DAX, MDX, R, Python

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<http://www.bsc-eoc.org/download/bithreport.pdf>.
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