

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

SUPPLEMENTAL PREFILED DIRECT TESTIMONY OF
HENRY D. WEITZNER AND ERIC SHAW
IN SUPPORT OF ANTRIM WIND ENERGY, LLC

1 **Q: Have you read Ms. Linowes' Pre-Filed Testimony.**

2 A: Yes.

3 **Q: Are there any topic in Ms. Linowes' Pre-Filed Testimony that you would**
4 **like to address?**

5 A: Yes. I would like to address Ms. Linowes' statements regarding financial
6 capability, her statements regarding managerial capability, and her analysis of the energy
7 and REC markets.

8 **I. FINANCIAL CAPABILITY**

9 **Q: Ms. Linowes states "the application offers no concrete information in**
10 **support of obtaining financing beyond two non-binding, largely pro-forma letters."**
11 **(Page 15) Is this correct?**

12 A: No this is not correct. I believe Ms. Linowes lack of understanding and
13 experience in project finance has led her to an erroneous conclusion.

14 The typical financing structure for U.S. wind projects is comprised of three parts
15 – construction equity, tax equity, and project debt. Construction equity is the most
16 important part of the financing structure as it evidences the readiness of the project
17 sponsor to take the risk of construction. Construction equity is invested in the project
18 first, before construction debt and tax equity. AWE stated clearly in its Application that
19 "Walden, through the backing of RWE, will provide 100% of the construction equity
20 necessary to construct the project." (Application, Page 66).

21 It is not standard for third party financing providers – lenders or tax equity
22 investors – to commit capital to a project before all final permits required for a project's
23 construction are in place. The requirement that a project has a final permit was stated

1 clearly as a condition precedent in the letters of support filed with AWE's application. In
2 assessing the potential risk of a project being built, third party financing providers
3 attribute significant weighting to the financial strength, experience and operational track
4 record of the project's sponsors. RWE, Walden's backer, is a major international energy
5 company with a multi-billion balance sheet and over 2,500 MW of operational onshore
6 and offshore wind projects. Subject to final approvals, RWE is committed to providing
7 the construction equity to build the Project. Once the Project has received a permit, third
8 party financing parties will provide debt and tax equity in conjunction with RWE's equity
9 commitment.

10 Walden has received letters of interest in providing construction debt financing
11 for the Antrim project from Bayerische Landesbank and KeyBank (Appendix 18b and
12 18c to AWE's application). In addition, Walden has received letters of interest in
13 providing tax equity for the project from Citigroup and Boston-based State Street, as well
14 as CCA Group, the preeminent tax equity advisor to the industry. See Attachment W/S -
15 1, Attachment W/S - 2, and Attachment W/S - 3. These letters of interest from some of
16 the most reputable and active funding providers to the U.S. wind sector demonstrate
17 AWE's extensive network of financing counterparts, their confidence in the project's
18 sponsors, the competitive economics of the project relative to other U.S. wind project,
19 and speak to the ease with which AWE will be able to secure construction debt and tax
20 equity once the project has received a final permit.

21 **Q: Ms. Linowes states in her Pre-Filed Testimony that "it would not be**
22 **prudent for the Committee to simply establish a condition in the certificate that all**

1 **financing be in place before construction.” (Page 20) Do you agree with this**
2 **statement?**

3 A: No. The Committee’s requirement that all financing is in place before start of
4 construction guarantees that: 1) there will be sufficient capital to complete construction
5 of the Project in a manner compliant with industry standards; 2) the Project will generate
6 sufficient cash flow during operation to meet all operating costs and service of its
7 financing obligations; and 3) there will be sufficient capital assurance to cover the cost
8 of decommissioning the Project at the end of its useful life, whenever that should occur.
9 Walden will employ a traditional project financing structure for U.S. wind projects, as
10 described in our application, in which construction equity and construction debt will be
11 sized to ensure that the project can always meet its operating costs and debt payments.
12 (See Application Page 66, describing Debt Service Coverage Ratio).

13 Placing a condition in the Certificate that all construction financing be in place
14 before start of construction is very prudent and ensures the project will operate safely and
15 be decommissioned at the end of its useful life. It is also a condition that the Committee
16 has found it prudent to require in the past for wind projects, such as in the Granite
17 Reliable Wind Docket.

18 **Q: Ms. Linowes’ also asserts in her Pre-Filed Testimony that “a lower**
19 **negotiated price could raise doubts about the project’s financial viability.” (Page**
20 **20) Is this statement accurate?**

21 A: No. Ms. Linowes is conflating the concept of financial viability with an
22 investor’s return objectives. The Project will be financially viable if it meets the three
23 conditions listed above: 1) there will be sufficient capital to complete construction of the

1 project in a manner compliant with industry standards; 2) the project generates sufficient
2 cash flow during operation to meet all operating costs and service any financing costs;
3 and 3) there is sufficient capital assurance to cover the cost of decommissioning the
4 project at the end of its useful life.

5 An investor's return objectives are highly variable depending on the investor's
6 profile, experience, the composition of their existing wind portfolio, the risk
7 diversification impact of adding Antrim Wind to such portfolio and a multitude of
8 additional investor specific factors. Therefore, Ms. Linowes cannot accurately make
9 general statements about this topic. As stated in AWE's Application, RWE has invested,
10 built and operates more than 2,500 MW of wind projects, and has very significant
11 experience in evaluating whether a project meets its investment return hurdles. Walden
12 and RWE have deep familiarity with power and REC markets, have secured a PPA for
13 25% of the output of the Project, and are in late stage conversations for numerous other
14 off-take options for the Project, as described further in this testimony. Walden and RWE
15 believe the Project will provide sufficient returns to justify the investment, which is why
16 RWE has made the commitment to provide the equity for the Project.

17 **Q: Regarding tax equity, Ms. Linowes quotes from the Application that "a**
18 **tax equity investor will come in and replace part of the construction loan." She**
19 **believes that RSA 162H "requires the showing of financial support prior to**
20 **construction, not prior to commercial operation." (Page 15). Has Ms. Linowes**
21 **correctly characterized project financing?**

22 A: No. It is industry standard that a tax equity investor would only invest in a
23 project just prior to the project becoming operational (ITC structure), or after it has

1 become operational (PTC structure). The purpose of a tax equity investment is to
2 monetize the ITC or PTC, and the investor cannot do that unless the project construction
3 is already complete (i.e. in the case of ITC), or the project is already operational and
4 producing electricity, thereby qualifying for being awarded Production Tax Credits.
5 Therefore, tax equity is not part of the capital structure during a project's construction
6 phase. The capital required to complete construction in the project's construction phase
7 is comprised of construction equity from RWE (as discussed, it is invested first and
8 therefore is the riskiest part of the capital structure), and a construction loan from a bank
9 like Bayerische Landesbank or KeyBank. This is all the capital required to build the
10 project, reach commercial operation, service the operating expenses and debt, and
11 provide for decommissioning whenever decommissioning should be called for. Tax
12 equity replaces a part of this capital, either just before commercial operation, or after
13 commercial operation depending upon the final structure of the tax equity investment.

14 **Q: Ms. Linowes asserts that the Production Tax Credit (PTC) will be**
15 **reduced by 20% unless the project starts construction before Dec 31, 2016. Is this**
16 **statement accurate?**

17 A: No. Ms. Linowes' statement ignores IRS regulations regarding qualification
18 for the PTC. (https://www.irs.gov/irb/2013-20_IRB/ar09.html) The IRS requires that a
19 project "start construction" in 2016 in order to qualify for the full value of the PTC. IRS
20 Notice 2013-29 defines start of construction as: "Construction of a qualified facility
21 begins when physical work of a significant nature begins." (Section 4.01). "Both on-site
22 and off-site work ... may be taken into account for purposes of demonstrating that
23 physical work of a significant nature has begun" (Section 4.02). The IRS clarifies

1 exactly what work qualifies as start of construction of a significant nature. It provides
2 one example, stating that “physical work on a custom-designed transformer that steps up
3 the voltage of electricity produced at the facility to the voltage needed for transmission is
4 physical work of a significant nature” (Section 4.05). Starting construction on the
5 project’s main transformer has become a standard route to qualify a project for the PTC.
6 This is a cost effective, low risk route for Antrim to lock in 100% of the value of the PTC
7 and Antrim has the capital to enter into a binding contract for a main transformer.

8 In addition, the IRS recently clarified that start of construction “safe harbors” the
9 PTC for 4 years. IRS Notice 2016-31 states that “Accordingly, if a taxpayer places a
10 facility in service by the later of (1) a calendar year that is no more than four calendar
11 years after the calendar year during which construction of the facility began or (2)
12 December 31, 2016, the facility will be considered to satisfy the Continuity Safe Harbor.”
13 (<https://www.irs.gov/pub/irs-drop/n-16-31.pdf>)

14 Therefore, Antrim is not at risk of missing the full value of the PTC and this
15 argument in no way factors into financial viability.

16 **Q: Ms. Linowes states “It is evident from AWE’s application and**
17 **testimonies that securing a long-term PPA is of singular import to the project’s**
18 **viability.” (Page 17) Is this an accurate statement?**

19 A: No. Nowhere in AWE’s Application or our testimony does it state that
20 securing a PPA is of singular importance to the Project’s viability. A PPA provides
21 revenue certainty for the project, however, it is not essential to the project’s financial
22 viability. There are three paths open to AWE for securing certainty for its revenue
23 stream, with multiple precedent transactions evidencing the financeability of the Project.

1 1. Power Purchase Agreement (PPA): A PPA is a contract to sell physical
2 electrons (and/or RECs) for a fixed price. It is the most traditional way of
3 contracting the sale of a project’s output, and has typically been employed by
4 utilities or municipal coops to procure green energy for their members and
5 ratepayers. AWE has entered into a PPA with NHEC for 25% of the output of the
6 project. AWE is in late stage discussions with one highly credit worthy
7 counterpart for an additional 35% of the project. AWE has a deep knowledge of
8 the PPA counterparties in New England and expects that the bulk of the facility
9 output will be contracted under a PPA.

10 2. Financial Bank Hedge: A financial hedge replicates the financial component
11 of a PPA without exchanging physical electrons. It is sometimes called a swap.
12 AWE can enter in a financial hedge or swap with a highly creditworthy bank to
13 lock in the revenue of the project for a sufficiently long term, thereby creating
14 similar economics as a PPA. Financial hedges have become a standard and
15 readily financeable option for wind projects in the U.S. Approximately one-third
16 of the 4,800 MW of U.S. wind projects that came online in the earlier part of last
17 year relied on financial hedges (Source: Windpower Monthly). Given its
18 investment banking and commodity trading background, Walden’s team has
19 extensive experience in structuring financial hedges and swaps, and is in detailed
20 conversations with several of the largest wind financial hedge providers in the
21 U.S.

22 3. Synthetic PPA, such as Proxy Revenue Swaps: Synthetic PPAs are a financial
23 hedge instrument that replicates the economics of a financial hedge, but instead of

1 price denominated in dollar per MWhr, they guarantee a total hedged cash flow
2 amount over a period of time. Synthetic PPAs are not new to the U.S. financing
3 market, and have been used for many years for hedging the revenue of gas-fired
4 power plants. Proxy Revenue Swaps are a form of a synthetic PPA, and were
5 developed specifically for wind projects by established insurer Allianz and
6 experienced wind risk management provider REsurety. Similar in concept to a
7 tolling agreement or capacity payments, the hedge swaps the floating revenues of
8 a wind farm – those driven by the hourly wind resource and power prices – for a
9 fixed annual payment. The most recent executed transaction was for the Bloom
10 Wind Farm, to be constructed near Dodge City, Kansas.
11 ([https://www.gtnews.com/industry-updates/allianz-risk-transfer-swap-hedges-
12 wind-farm-revenues/](https://www.gtnews.com/industry-updates/allianz-risk-transfer-swap-hedges-wind-farm-revenues/)). The counterparty to the swap is AA-rated Allianz, whose
13 strong credit backstops the delivery of the fixed hedged cash flow to the project.
14 As a result, the transaction structure has been approved by several leading tax
15 equity providers in the U.S. and is gaining momentum as an alternative to
16 traditional PPAs or bank hedges.

17 Based on this information, Ms. Linowes' assertion that a PPA is of singular
18 importance to the Project is not correct. AWE has three different paths open to securing
19 an offtake for the Project. Each path has different risks and rewards, which Walden and
20 RWE have extensive experience in evaluating. All of these three paths guarantee that the
21 Project is viable, and will be constructed and operate in accordance with industry
22 standards and any conditions contained in an SEC Certificate.

1 **Q: On Page 16 of her Pre-Filed Testimony Ms. Linowes states “...working**
2 **capital (is) \$1.3 million ... well below the amount needed to demonstrate financial**
3 **viability.” (Page 16). Does the capital on AWE’s balance sheet have anything to do**
4 **with the financial viability of the Project or the financial capability of the**
5 **Applicant?**

6 A: No, it does not. AWE is set up as a lightly capitalized LLC that maintains a
7 balance sufficient to complete the process of permitting the Project. If more capital is
8 required to complete permitting, AWE will receive more capital from its investors. Once
9 AWE is ready to start construction on the Project, the balance sheet will show the
10 requisite construction equity to build and operate the Project. The Committee has seen
11 this structure in the past in the Granite Reliable Wind Docket. “The Subcommittee notes
12 that the financing of large scale renewable energy facilities is a complicated endeavor.
13 Such facilities are rarely financed from the existing balance sheet assets of the developer.
14 The financing of such projects normally occurs through non-recourse project financing
15 such as proposed by the Applicant in this Docket.” SEC Docket 2008-004, Final Order,
16 page 31. There the Subcommittee found that “The Applicant has demonstrated, by a
17 preponderance of the evidence, that is (sic) has the financial capability to finance,
18 construct and operate the project” and required the applicant to notify the committee with
19 the name and address of the lenders prior to construction once all construction financing
20 was in place, just as AWE has agreed to do in this Docket. (Final Order, Page 32).

21 **II. MANAGERIAL CAPABILITY**

22 **Q: Ms. Linowes states “The responsibility for project construction and**
23 **operation ultimately falls to AWE and Walden and there is no information in the**

1 **record that either has experience with a project like this.” (Page 16). Do you wish**
2 **to respond to this assertion?**

3 A: Yes. Ms. Linowes is trying to draw a distinction where none exists. AWE is
4 100% owned by Walden Green Energy LLC, which is in turn majority owned by RWE as
5 described in greater detail in AWE’s Application, as amended following Walden’s
6 acquisition of Eolian in March 2016. Walden’s Board consists of members of RWE as
7 well as the original Walden Founders, Mr. Weitzner, Mr. Manahilov and Ms. Valdovinos.
8 The Walden team has very broad managerial experience as evidenced by the team’s
9 background discussed in AWE’s Application on Page 65. The team has extensive
10 experience in selecting best in class partners and managing large project investments,
11 project financings, and the execution of such investments. Walden’s management and
12 Walden’s backer RWE have a demonstrated track record of success managing the
13 development, financing and construction of energy facilities that range from distributed
14 solar projects in the northeast U.S., to coal and LNG facilities, to both onshore and
15 offshore wind assets in Europe.
16 In addition, Walden and AWE’s team is comprised of project execution partners with
17 vast U.S. and New England regional track record in constructing wind projects, and
18 supported by the deep international operational expertise provided by Walden’s backer
19 RWE.

20 • Reed & Reed, the project’s EPC contractor, is the undisputed leader in wind
21 construction in New England, and has executed most of the region’s recent
22 projects. As noted in Appendix 19A of AWE’s application, this experience
23 includes construction of 16 wind projects in New Hampshire, Maine, Vermont

1 and Massachusetts, consisting of over 400 turbines and nearly 1,000 MW of
2 installed capacity.

3 • Siemens, the project’s turbine supplier, has sold more than 4,300 MW of wind
4 turbines in North America. Siemens occupies a leading position within onshore
5 wind power, having been awarded the world’s largest single onshore order to date
6 - a 1,050 MW order from MidAmerican Energy in the U.S. for 448 onshore wind
7 power turbines in Iowa. (Source: Siemens North America website).

8 • DNV GL will act as owners engineer. DNV GL is recognized as the world’s
9 leading technical authority on wind power generation and construction, and will
10 assist AWE in monitoring all aspects of construction and ensuring all parties meet
11 the highest industry standards. In addition, the project will benefit from RWE’s
12 extensive experience in building and operating wind projects, as evidenced by the
13 2,500 MW of wind that RWE currently owns and operates. RWE’s expertise is
14 already guiding planned project construction and will continue to guide project
15 operation.

16 In summary, Walden will rely on its broad managerial experience, the
17 construction and operations expertise of its project execution partners Reed & Reed,
18 Siemens, DNV GL, and the deep track record of Walden’s backer RWE, to ensure the
19 safe and compliant with industry standards project construction and operation.

20 **III. MARKET ANALYSIS**

21 **Q: Ms. Linowes provides a fair amount of analysis on energy markets and**
22 **REC markets. Mr. Weitzner, would you like to comment on this analysis?**

1 A: Yes. I have traded energy and commodity markets for well over 10 years. I
2 have also traded many other markets over the course of a 25-year trading career. I am
3 very familiar with market forecasting and analysis. While there are a number of errors in
4 Ms. Linowes' analysis which I will discuss below, it is most important for the Committee
5 to understand that a market forecast is nothing more than a guess about future pricing.
6 The guess can be roughly accurate, or wildly inaccurate. Markets are constantly going up
7 and down as they try to make better guesses about the future. Deriving any conclusions
8 about the financial viability of the Antrim project from a forecast about the future does
9 not make sense, and is again conflating market forecasting with well-established
10 standards for financing U.S. wind projects. As discussed above, once the full financing
11 for the construction of the project is in place, the project is financially viable. Viability
12 does not depend on a forecast.

13 **Q: Do you agree with Ms. Linowes fair market forecast for a PPA of 61.97 to**
14 **69.97 \$/MWH that she provided in WA-TS26?**

15 A: No. There are many flaws in this analysis, as discussed below.

16 Regardless of what Ms. Linowes or anyone else thinks the markets will do in the
17 future, the financial viability of AWE is going to be evidenced by its ability to attract the
18 required capital to construct and operate the project. The Committee's requirement that
19 all financing is in place before start of construction guarantees that, as discussed
20 previously.

21 Specifically, here are the inaccuracies in Ms. Linowes' statement:

22 1. Ms. Linowes pulls natural gas price data from the CME website. Her data for
23 July-2025 to Dec-2025 is incorrect.

1 2. Ms. Linowes suggests that transportation costs to New England are on the low
2 end of \$0.25 to 1.25 /MWh. This is a complete misunderstanding of the US
3 natural gas pipeline system. The farther you have to move gas from production
4 centers, either the Marcellus region in Pennsylvania or Texas, the higher the costs.
5 The Algonquin Gas Transmission system (AGT) pipeline delivers gas into the
6 Connecticut Massachusetts market, and is an accurate estimate for the cost of gas
7 in New England. \$1.00/MWh is a conservative estimate for that cost.

8 Correcting for these errors, and accepting Ms. Linowes' assumptions for RECs,
9 RGGI, and heat rate pricing, you arrive at a price of \$67.79 / MWh for 8 years, from
10 2018 to 2025. However, 8 years is the incorrect forecasting horizon for Antrim Wind.
11 The project will have an equipment life of at least 25 years, and AWE has already signed
12 a 20-year PPA. We can adjust Ms. Linowes' corrected price of \$67.79 / MWh for a 20
13 year tenor by looking at how the price increases year over year. Long dated energy
14 prices typically increase at a stable rate over time. We can see that Ms. Linowes' energy
15 price (excluding RECs) increases at approximately \$1.50 / MWh every year. If we
16 assume that increase from year 8 to year 20, then we end up with an average price of
17 \$74.36 / MWh for a 20 year period (See table below). This price is not very far away
18 from the price assumption in the project's financial pro forma and represents a
19 conservative assumption for how prices will evolve over 20 years, given the historically
20 cheap price for natural gas in the U.S.

21 The corrected annual price curve is presented in the below table:

Year	Annual Average	Year over year difference	Final price (extrapolation in Green)
2018	\$75.45		\$75.45
2019	\$75.74		\$75.74
2020	\$61.55		\$61.55
2021	\$62.87	\$1.32	\$62.87
2022	\$64.36	\$1.49	\$64.36
2023	\$65.93	\$1.57	\$65.93
2024	\$67.48	\$1.55	\$67.48
2025	\$68.98	\$1.50	\$68.98
2026			\$70.48
2027			\$71.98
2028			\$73.48
2029			\$74.98
2030			\$76.48
2031			\$77.98
2032			\$79.48
2033			\$80.98
2034			\$82.48
2035			\$83.98
2036			\$85.48
2037			\$86.98
Average 20-year price			\$74.36

1 Ms. Linowes’ analysis affirms that Antrim has used a reasonable assumption for
2 energy prices in the pro forma.

3 **Q: Ms. Linowes also provides her views on the value of New England**
4 **Renewable Energy Credits (RECs). Is any of this analysis relevant to the financial**
5 **viability of the Project?**

6 A: No, it is not relevant. Ms. Linowes picks one moment in time when RECs
7 happened to be trading low. She illustrates this by saying that RECs for 2015 were
8 trading as low as \$25. The price for a 2015 REC contract is not relevant for a facility that
9 will be operational from 2018 to at least 2042. She then provides a broker sheet from the
10 firm ICAP showing RECs for 2016 at \$25. Looking at RECs for 2018, 2019 and 2020,
11 we can see that the price increases substantially over time. And since providing this

1 broker sheet, prices for 2018 and beyond have increased substantially as one can see from
2 a more recent broker sheet in Attachment W/S - 4.

3 Looking at disparate pieces of data that have limited relevance to the project does
4 not demonstrate lack of financial viability.

5 **Q: Does this complete your testimony?**

6 A: Yes.