

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN**

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Application of Forward Energy LLC  
for a Certificate of Public Convenience and  
Necessity to Construct a Wind Electric  
Generation Facility and Associated High  
Voltage Electric Transmission Lines, to be  
Located in Dodge and Fond du Lac Counties

Docket No. 9300-CE-100

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**AMENDED DIRECT TESTIMONY OF KEVIN L. ZAREM, MAI**

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1 Q. Please tell the Commissioners your name and occupation.

2 A. My name is Kevin Zarem. I am the President of Metropolitan Appraisal in  
3 Mequon, Wisconsin.

4 Q. Please describe your education and work experience.

5 A. I received two degrees from the University of Wisconsin-Madison. I earned my  
6 Bachelors of Business in 1987, majoring in real estate and urban development and  
7 marketing. In 1988, I earned my MS in Real Estate Appraisal and Investment Analysis.  
8 I started my career performing investment analysis and asset management on the west  
9 coast for three years. I then returned to Wisconsin and have continued to analyze  
10 investments and to appraise real estate in Wisconsin and throughout the United States. I  
11 am a Member of the Appraisal Institute (MAI # 11364). I am also a Wisconsin Certified  
12 General Appraiser (WCGA # 598). 22 other states have also granted me temporary  
13 appraisal certification privileges.

14 Q. Do you keep a current resume?

15 A. Yes. It is attached to my written report. (Exhibit \_\_, KZ1.)

16 Q. Have you been hired as an expert to testify in this proceeding?

17 A. Yes, Horicon Marsh System Advocates, Inc. hired me.

18 Q. And, what were you asked to do for them?

19 A. I was asked to review the proposed project and evaluate its impact, based on my  
20 knowledge and experience, on residential property values.

21 Q. What materials have you reviewed?

1 A. The relevant parts of the project description, the relevant parts of the EIS,  
2 pertinent materials referenced in my written report, Peter Poletti's testimony. I'm sure  
3 that there were other materials, as well.

4 Q. Essentially, you believe that you've reviewed the relevant portions of the record  
5 regarding the impact to residential property values.

6 A. Correct.

7 Q. Based on your education, experience and review of the record in this proceeding,  
8 have you formed any opinions, to a reasonable degree of professional certainty, regarding  
9 the impact of the proposed project on residential property values?

10 A. I have.

11 Q. Would you please share those opinions with the Commissioners?

12 A. Certainly. In specific circumstances, negative impacts from the project due to  
13 view loss alone, may cause 17-20% land value loss. The specific circumstances I am  
14 referring to are described in detail in my report. Exhibit 3 in my report demonstrates the  
15 types of views where specific view loss is gauged.

16 Q. On what do you specifically base that conclusion?

17 A. My analysis of market data in an analogous situation, electrical transmission lines.

18 Q. Why didn't you use existing data from existing wind turbine projects/

19 A. Many reasons. Foremost among them is the lack of reliable data.

20 Q. What about the REPP study?

21 A. The REPP study suffers from several flaws. It is methodologically unsound and it  
22 relies on data that fail to isolate for particular negative impacts from wind turbines.

1 Q. Do others agree with your critique of the inadequacies of Forward’s reliance on  
2 the REPP study?

3 A. Yes, both the PSC and DNR agree with me. The REPP Report fails to properly  
4 screen data leading to critical flaws. The variable being tested for, impact on market  
5 value due to the presence of wind turbines, is not properly isolated for comparison  
6 purposes. According to the PSC Report, 70% of the data used in the REPP Report was  
7 found to be related party transactions and is therefore, in my opinion, not representative  
8 of market value; and 72% of data used in the REPP Report does not have actual views of  
9 wind turbines, the effect being tested for. The REPP Report data appears only to have  
10 been broken out into sales within a 5-mile “view shed” of the wind turbines and sales  
11 from comparable communities outside of the view shed. Actual views from each sale  
12 site are a critical variable in addressing impacts due to wind turbines, and this attribute  
13 does not appear to have been addressed in the REPP Report. Important variables  
14 effecting value such as land size, highest and best use (i.e. residential or agricultural), and  
15 the construction characteristics of building improvements on the site, if any, must also be  
16 accounted for to properly isolate an effect if one does exist. If these characteristics differ  
17 among the comparables, the results will likely be significantly skewed. Based on my  
18 review of the REPP Report, it appears as though the only differences accounted for  
19 among the comparables are date of sale, sale price, and location inside or outside of the  
20 defined 5-mile view shed.

21 The REPP Report inconsistently references the Kewaunee County, Wisconsin  
22 data to have both “slower property value growth after the on-line date” in Case 2 (page 2)  
23 and faster view shed growth after the on-line date in Case 2 (page 6).

1           The selection of the comparable community in the REPP Report is based on a  
2 combination of demographic statistics and the impressions of local assessors – noted to  
3 be an inherently subjective process within the REPP Report. The proper analysis should  
4 involve paired data analysis which varies only in the views of wind turbines discussed  
5 below.

6 Q.       Could you describe what you mean by paired data analysis and what importance it  
7 has in this proceeding?

8 A       Yes. Paired data analysis is defined in the The Dictionary of Real Estate  
9 Appraisal as follows: “A quantitative technique used to identify and measure  
10 adjustments to the sale prices or rents of comparable properties; to apply this technique,  
11 sales or rental data on nearly identical properties are analyzed to isolate a single  
12 characteristic’s effect on value or rent.”

13           In order to reliably discern view impacts on property values due to wind turbines  
14 it is critical to find market data that isolates the impact being studied from all other  
15 variables that affect value. The best way to do this is paired data analysis between sales  
16 which differ only in the characteristic being tested.

17           Paired data analysis does not provide statistically significant results unless a  
18 critical number of paired data is available. Typically, paired data is not available in  
19 sufficient quantity for reliable statistical analysis, but it is very effective at isolating a  
20 reasonable specific impact for a specific variable being tested and is the best appraisal  
21 technique for doing so with limited data.

22           An important problem for the analysis of wind turbine impacts is the lack of good  
23 paired data for the isolation of the effect. For paired sales data analysis to be effective,

1 the sales data that is compared must be similar in every way with the exception of the  
2 presence of wind turbines. Even a moderate variance in one variable can skew the  
3 conclusions unless the variable can be effectively accounted for. Typically, sales have  
4 numerous differences that dilute the effect of any one variable, and render the data  
5 unusable for the isolation of the desired effect.

6 Q. What did you do to overcome this important problem?

7 A. I chose an alternative that isolated potential view impacts.

8 Q. Could you describe how you did that?

9 A. Sure. I derived an alternative paired data analysis for determining view impacts  
10 on property values due to wind turbines from readily available data. One such alternative  
11 is Transmission Line view impacts on the prices of single-family residential lots in  
12 subdivisions. Sufficient paired data isolating the effects of view loss due to Transmission  
13 Lines exist in the marketplace to reach reasonable conclusions as to market tendencies.  
14 This data isolates impacts due to view loss associated with Transmission Lines.

15 Q. What did your analysis involve and what did you conclude from analyzing this  
16 paired data isolating view loss?

17 A. My analysis looked at two suburban metropolitan Milwaukee area subdivisions  
18 built along Transmission Line easements. I analyzed these as case studies to derive view  
19 impacts due to the Transmission Lines. The subdivisions are the Westin Hills  
20 subdivision in Brookfield, Wisconsin and the Bayberry Fields subdivision in Mequon,  
21 Wisconsin. Both subdivisions are developed with high quality homes, many of which  
22 have sold in recent years for over \$500,000.

1 Westin Hills subdivision was developed in multiple phases with 200 +/- home  
2 sites between approximately 1994 and 2000. The development proceeded west to east  
3 from Auburn Drive to Brookfield Road in Brookfield, Wisconsin. The first phases of  
4 development along Auburn Drive border a Wisconsin Electric Power Company  
5 Transmission Line easement. The Transmission Line towers are located in a ravine with  
6 varying elevations and distances from the residential lots within the subdivision. Some  
7 lots have relatively direct views of the Transmission Lines and others have largely  
8 blocked or completely blocked views.

9 As many of these lots have very similar characteristics other than Transmission  
10 Line views, a good paired data analysis can be performed on the lot sales prices to isolate  
11 the impact on price due to impaired views. Exhibit 1-A in the addenda highlights four  
12 lots in blue which have clear views to the Transmission Lines from their backyards, four  
13 similar lots highlighted in yellow across the street with largely blocked views of the  
14 Transmission Lines, and three similar lots highlighted in black with largely blocked or  
15 completely blocked views of the Transmission Lines.

16 Exhibit 1-B in the addenda is a paired data analysis which determines the average  
17 sales price, date sold, lot size, and lot price per square foot for each of the groups of data  
18 highlighted on the plat map in blue, yellow, and black. As the table indicates, the average  
19 lot size and date sold are very similar in each case, thereby isolating the impact of views  
20 effectively. Having a similar average lot size is important as this characteristic has a  
21 significant impact on the price per square foot. Larger lots in this subdivision have a  
22 lower overall price per square foot. Inclusion of significantly larger lots in the paired  
23 data analysis would skew the data for the view impacts and significantly reduce the

1 reliability of the analysis. No adjustments for site size are necessary. Small time  
2 adjustments are required.

3 Exhibit 1-C in the addenda adjusts the paired averages for time of sale based on a  
4 5% annual rate of appreciation. This appreciation rate is reasonably supported by the  
5 sales data within the subdivision, and the necessary adjustments are very small.  
6 Therefore, the impact due to Transmission Line views is well isolated by the analysis.  
7 The paired data analysis determines that the lot prices for properties with clear views to  
8 the Transmission Lines from their backyards are between 17% and 20% lower on a price  
9 per square foot basis than prices for lots that have a largely blocked view or no view to  
10 the Transmission Lines.

11 High quality homes were constructed on each lot analyzed. As the lots with clear  
12 views to the Transmission Lines were developed, no impact on pricing is applied to the  
13 value of the building improvements. The cost to construct the homes paid to the building  
14 contractors by the buyers of the lots was not discounted due to the presence of the  
15 Transmission Lines. Therefore, the market indicates that the negative view impacts due  
16 to the electrical towers are between approximately 17% and 20% of the lot price only in  
17 these cases.

18 Exhibit 1-D in the addenda includes a plat map for the Westin Hills subdivision  
19 with numbered arrows indicating the perspective for each of the photographs included  
20 with Exhibit 1-D. The photographs give a sense of the view impact, but are limited to  
21 one perspective taken from the street. In the case of the sales highlighted in blue with a  
22 clear view to the Transmission Lines from their backyards, the view is particularly  
23 difficult to demonstrate from the street pictures as the Transmission Lines cross a large



1 area and are located in a ravine with differing elevations. Nonetheless, the pictures help  
2 to convey the type of view loss involved with each piece of data and can be correlated  
3 subjectively to similar pictures of wind turbine views.

4 The same methodology used for the analysis of Westin Hills subdivision is  
5 incorporated for the analysis of the Bayberry Fields subdivision in Mequon, Wisconsin.  
6 This subdivision was developed between approximately 1998 and 2001 and includes 42  
7 single-family lots. Exhibits 2-A, 2-B, 2-C, and 2-D in the addenda correlate to Exhibits  
8 1-A, 1-B, 1-C, and 1-D. The Transmission Lines bordering Bayberry Fields subdivision  
9 are located on level topography in closer proximity to the homes than in the Westin Hills  
10 subdivision. A railroad easement extends behind the Transmission Lines, and industrial  
11 uses border the railroad easement.

12 In the case of the Bayberry Fields subdivision, the paired data analysis determines  
13 that the lot prices for properties with clear views to the Transmission Lines from their  
14 backyards are between 17% and 18% lower than lots that have a largely blocked view to  
15 the Transmission Lines. These adjustment factors include the influence of a railroad  
16 easement and nearby industrial uses as well as the Transmission Lines. Based on  
17 discussions with the seller, the lot price discount was mainly due to the Transmission  
18 Lines. As was the case with the Westin Hills subdivision, each of the lots in Bayberry  
19 Fields was developed with a high quality single-family home. The average date of sale  
20 for the view impacted lots, however, was more delayed, and therefore a relatively larger  
21 adjustment for time of sale is required in the analysis. The influence of the railroad  
22 easement and the larger time adjustment reduces the reliability of the analysis.

23 Q. Are there any other factors that need to be mentioned in using this analysis?

1 A. Yes. Weaknesses in this analogous approach include differences in the physical  
2 characteristics (including moving parts) and noise levels between Transmission Lines and  
3 wind turbines, the market's familiarity with Transmission Lines and lack of familiarity  
4 with wind turbines, and the significantly different locational and highest and best use  
5 characteristics between the Transmission Line data analyzed in this case and the locations  
6 of the proposed wind turbines.

7 Q. Even considering all of those factors or weaknesses, what is your conclusion  
8 regarding the impact on residential property values from the proposed project?

9 A. Under certain circumstances as described in my report, the negative impact may  
10 be similar. Also, in significant view loss situations, as described in my report, I would  
11 conclude that, within a reasonable degree of professional certainty, land values may be  
12 negatively impacted 17% - 20%.

13 Q. Did you perform any independent interviews or new field studies?

14 A. No independent interviews or new field studies were performed for this project.  
15 We simply did not have the resources in the client's budget. However, I did inspect and  
16 observe the Kewaunee turbines. Exhibit 3 in the addenda includes a photograph  
17 perspective map and several pictures of wind turbines in Kewaunee County, Wisconsin  
18 taken from the Energy Center Report. These perspectives and my inspection and  
19 observation allowed me to make a professional, subjective comparison of view loss  
20 between the wind turbines and the Transmission Lines in both the Westin Hills  
21 subdivision and Bayberry Fields subdivision.

22 Based on my professional, subjective review of the view loss in each case, it is  
23 clear that the type of view loss in Exhibit 3 - Figure 3, an unabated view of several wind

1 turbines from a single-family residence, the closest within approximately one quarter  
2 mile of the residence, has a negative impact on the value of the residential property.  
3 Here, the view loss is gauged to be at or above the 17% to 20% land value loss indicated  
4 by the Transmission Line paired data analysis. I did not consider potential loss due to  
5 wind turbine noise, motion, or shadows in this analysis. Exhibit 3 – Figure 4 clearly is a  
6 view that requires no adjustment for view loss as is the case with the perspectives from  
7 Exhibit 3 - Figures 6 and 7. Exhibit 3 - Figures 5 and 8 are borderline cases relative to  
8 the others.

9 Q. What is your view of anecdotal evidence like that on which Mr. Poletti relied?

10 A. That type of evidence, like public opinion and assessor opinion surveys, cannot be  
11 used to reliably assess impacts on property values. Market sales data should be used.

12 Q. And, your conclusions are based on market sales data?

13 A. Correct.

14 Q. Did your report consider other factors that would contribute to the project's  
15 negative impact on residential property values?

16 A. Although wind turbine noise could contribute to negative residential property  
17 values, as could the motion and shadows of the wind turbines, no consideration of  
18 potential value loss due to wind turbine noise, motion or shadows is included in the  
19 analysis. Only view loss was considered and analyzed.

20 Noise, in particular, has many examples of clear negative impacts on property  
21 values. The most obvious of these is airport noise. Air traffic is well documented to  
22 adversely impact residential property values in certain circumstances.

23 Q. Is that the end of your pre-filed written testimony?

1 A. Yes.