

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

*In the Matter of the Complaint by Oak Tree Energy LLC against  
NorthWestern Energy for refusing to enter into a Purchase Power Agreement*

EL11-006

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Responsive Testimony of

**Richard J. Green**

On behalf of NorthWestern Energy

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Submitted: November 28, 2012

Hearing Date: December 5, 2012

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## Exhibits

None

# 1 Testimony

## 2 Introduction

3 **Q: Please state your name and business address.**

4 A: My name is Richard J. Green. I am an independent operations consultant contracted to provide  
5 services for NorthWestern Energy. My business address is 165 S. Circle Drive in Huron, South  
6 Dakota 57350.

7 **Q: Are you the same Richard J. Green that previously filed testimony in this docket?**

8 A: Yes.

## 9 Purpose of Testimony

10 **Q: What is the purpose of your testimony?**

11 A: My testimony responds to the Additional Testimony of J. Richard Lauckhart submitted on  
12 November 21, 2012.

## 13 Mr. Lauckhart's Testimony

14 **Q: Do you agree with Mr. Lauckhart's use of a fixed 20% capacity credit applied to a 19.5 MW**  
15 **rating throughout the 20-year forecast? (See Lauckhart Test. 15:17 & the "Key Inputs" tab of**  
16 **Attachment 2.)**

17 A: No. Due to its nature, wind generation is a highly unpredictable and intermittent energy and  
18 capacity resource. Capacity contribution by wind generation can vary greatly from hour to hour,  
19 day to day, and year to year. Its capacity value is solely dependent on the amount of wind  
20 output that occurs coincident with system peak load hours when capacity is most needed. One  
21 example of wind generation variability is the eight-year MISO fleet historical record of Effective  
22 Load Carrying Capability (ELCC), which has ranged from 2.8% to 39.6% with a median value of  
23 14.75%. This record includes eight years of data and currently includes nearly 12,000 MW of  
24 wind generators.

25 The fixed 20% capacity credit value used by Mr. Lauckhart appears to be chosen arbitrarily and  
26 without technical basis. In lieu of a 20-year fixed approach to capacity credit, NorthWestern  
27 proposes to calculate an annual capacity credit on a historical peak hour(s) output basis. In this  
28 manner, the annual capacity credit value would be based on measured performance, similar to  
29 the treatment of energy volumes which are derived from kilowatt-hour meter readings. More

1 detailed information about this approach is provided in my pre-filed testimony on page 4,  
2 starting at line 16.

3 The use of a 19.5 MW maximum wind farm rating does not appear to be a net rating, but rather  
4 a rating based simply on the combined nameplate ratings of the wind farm generators. Electrical  
5 losses within the wind farm facility and potential under- or over-performance of the turbine-  
6 generators will affect the net maximum capacity that is available at the point of interconnection  
7 with the utility. NorthWestern proposes, at the start of commercial operation, to base the initial  
8 (first month) capacity payment on Oak Tree's filed FERC Form 556 (QF Certification) estimated  
9 net rating of 18.915 MW, in combination with the capacity credit (in %) from above and the  
10 monthly capacity rate (in \$/kw-mo) as directed by the Commission in this proceeding. Following  
11 initial operation, after wind speeds have been experienced that cause the wind generators to  
12 meet the manufacturer's maximum output rating, the net maximum capacity, as measured at  
13 the point of interconnection, will become available. Future (month 2, etc.) payments will be  
14 computed using this measured maximum value until circumstances dictate otherwise.  
15 NorthWestern's experience at Titan I indicates that the net maximum capacity should become  
16 apparent in only a few weeks and, once established, will not change.

17 **Q: Does this conclude your testimony?**

18 **A:** Yes, it does.

Affidavit of Richard J. Green

STATE OF SOUTH DAKOTA)

: ss

COUNTY OF BEADLE )

Richard J. Green, being first duly sworn upon oath, states and alleges as follows:

1) I am an independent operations consultant working for NorthWestern Corporation d/b/a NorthWestern Energy.

2) I have read this document and am familiar with its contents, and the same are true to the best of my knowledge and belief.

Further affiant sayeth naught.

Dated at Huron, South Dakota, this 28<sup>th</sup> day of November, 2012.

Richard J. Green  
Richard J. Green

SUBSCRIBED AND SWORN to before me this 28<sup>th</sup> day of November, 2012.

Jo Anne H Peterson  
Notary Public, South Dakota  
My commission expires: June 10, 2016

