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WHISTLING RIDGE ENERGY LLC
RON NIERENBERG
PREFILED REBUTTAL TESTIMONY
EXHIBIT NO. 15.00r

BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of Application No. 2009-01: WHISTLING RIDGE ENERGY LLC; WHISTLING RIDGE ENERGY PROJECT	EXHIBIT NO. 15.00r
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APPLICANT'S PREFILED REBUTTAL TESTIMONY

WITNESS #16: RON NIERENBERG

Q Please state your name and business address.

A My name is Ron Nierenberg. My business address is 850 NW View Ridge Court,
Camas, Washington 98607.

Q What is your present occupation and profession, and what are your duties and
responsibilities?

A I am a Consulting Meteorologist with over 30 years of experience in the wind
industry. I have assessed with the siting of wind farms totaling over 11,000 MW of
nameplate capacity in the U.S. and 3,000 MW in the Pacific Northwest alone. I have

1 made wind energy estimates for many wind farms in the Pacific Northwest.

2

3 Q Please identify what has been marked for identification as Exhibit No. 15.01r.

4

5 A Exhibit No. 15.01r is a résumé of my education background and employment
6 experience.

7

8 Q What services have you provided to the Whistling Ridge Energy Project (Project)?

9

10 A I have conducted wind energy studies for the Project site since 2006. Prior to my
11 involvement in the Project, another entity installed the original meteorological towers
12 and collected data on the Project site for four years. My duties regarding this Project
13 are to establish a wind monitoring program and analyze the wind data from
14 meteorological test towers, including making long term wind speed and energy
15 forecasts. This data is extremely important to wind energy facility developers, and
16 constitutes closely guarded confidential commercial information. I have also assisted
17 in project turbine layout design and energy projections for the Project. Again, the
18 energy projections constitute highly confidential and proprietary information.

19

20 Q Are you able to answer questions under cross examination regarding your testimony?

21

22 A Yes.

23

24 Q Please describe the purpose of your testimony.

25 /////

26 /////

1 A I am providing this testimony to respond to Friends/SOSA Exhibit Nos. 24.01-24.09,
2 and also to respond to questions that have been raised regarding the wind energy
3 capability of the Project site. While Friends/SOSA did not provide any testimony
4 specifically addressing or accompanying the Exhibit documents, they have been
5 dropped into the record as attachments to Richard F. Till's sworn declaration. While
6 I am aware that the Applicant will likely object to these documents, the Applicant has
7 asked me to respond to them.
8

9 Q Were you involved in the production of the AWS wind speed maps, which were used
10 to create the exhibits attached to Mr. Till's sworn declaration? If so, are there flaws
11 in these maps of which the Council should be aware?
12

13 A Yes. These maps were prepared for the National Renewable Energy Lab (NREL) by
14 a company called AWS Truepower, formerly AWS Truewind (AWS). NREL hired
15 me to be a wind validator of the AWS wind speed maps of the western United States,
16 including the map of wind resources within the State of Washington. As a validator, I
17 was responsible for reviewing the accuracy of the wind maps produced by AWS and
18 providing wind data to AWS to make corrections to the maps. As a participant in the
19 process of refining these wind maps, I have first hand information on their accuracy.

20 Despite any claims by AWS, the wind maps for the State of Washington and
21 other western states had a root mean square (RMS) mean speed error of +/-11% and
22 are generally accurate to +/- 1.0 meter per second (mps). An error of +/-11% on wind
23 speed can translate to an error band of up to +/-37% on wind power, as power is
24 proportional to the wind speed cubed. An error band in the +/-20% to +/-40% range
25 makes these wind maps of questionable value and can cause conclusions based on
26 these maps to be flawed.

1 These maps are quite accurate in areas with very low wind speeds but are
2 inaccurate in areas with high wind speeds. Unfortunately, these are the very areas
3 that wind farm developers are interested in. In fact, the AWS wind maps failed to
4 identify nearly every high wind area in the Pacific Northwest, including the locations
5 of the largest wind farms that existed at the time these maps were made. For
6 example, at the time these maps were made, the 300 MW Stateline wind farm west of
7 Walla Walla had measured annual wind speeds of 8 mps at numerous met tower
8 locations. However, the AWS wind map showed this location to have wind speeds of
9 5 to 6 mps. The worst case was in Medicine Bow, Wyoming, which is an area with
10 one of the largest wind power potentials in the western United States. At that location
11 the AWS map under-predicted the annual wind speed by 5 mps (11 mph).

12
13 Q Does the financing community rely on these maps when financing the construction of
14 wind farms?

15
16 A No, the financing community does not rely on them. They insist on actual measured
17 wind speeds at a wind farm site before providing financing. The AWS state wind
18 maps and the re-analysis wind datasets upon which these maps are based are not
19 accurate enough to finance a wind farm. Estimates made on actual measured on-site
20 met data are far more accurate than estimates based on a state AWS wind map.

21
22 Q Is the accuracy of these maps sufficient to base wind speed and energy estimates for
23 the Project site?

24
25 A No.

26 //

1 Q Have you made an energy estimate of the wind resource at the Project site, and how
2 does the Project site compare to other sites for which you have made estimates?
3

4 A Yes, I have made an estimate of the wind resource at the Project site. Wind data has
5 been collected at the Project site for almost nine years, and there have been nine 50-
6 meter or 60-meter met towers on the Project site. Considering both the length of time
7 for which wind data has been collected at the Project site and the number of met
8 towers, it is possible to make very definitive energy estimates of the wind resource at
9 the Project site.

10 I have made similar energy estimates for many other wind farms in the Pacific
11 Northwest, including the Windy Flats wind farm near Goldendale, which is the
12 commercial scale wind farm in Washington that is closest to the Project site, and the
13 Shepherds Flat wind farm, which will be the world's largest wind farm, and is now
14 under construction near Arlington, Oregon. The estimated net capacity factor at the
15 Whistling Ridge Project site is higher than the Shepherds Flat wind farm site and on
16 par with the energetic Windy Flats wind farm.
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