

1 BEFORE THE STATE OF WASHINGTON
2 ENERGY FACILITY SITE EVALUATION COUNCIL
3
4

5 In the Matter of Application No. 2004-01

EXHIBIT 50.0 (TU-T)

6
7 WIND RIDGE PARTNERS, L.L.C.

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9 WILD HORSE WIND POWER PROJECT
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12 **PREFILED DIRECT TESTIMONY**
13 **WITNESS # 50 – TONY USIBELLI**
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15 Q Please state your name and business address.

16 A My name is Tony Usibelli and my business address is 925 Plum Street SE, Building 4,
17 Olympia, Washington, 98504.
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20 Q What is your present occupation, profession; and what are your duties and
21 responsibilities?

22 A I am the director of the Energy Policy Division of the Washington State Department of
23 Community, Trade, and Economic Development (CTED). In that capacity I am
24 responsible for analysis, development, and implementation of state energy policies.
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1 These include policies related to state and regional electricity, energy efficiency,
2 renewable energy development, energy emergency and security preparedness and
3 response, development and implementation of the state energy strategy, retention and
4 expansion of our clean/smart energy industry, and management of federal energy
5 contracts. In addition, I represent the state of Washington as the vice-chair of the
6 Western Interstate Energy Board (WIEB) (an affiliate of the Western Governors
7 Association), as the state's representative to the Governors Ethanol Coalition, and as a
8 member of the National Association of State Energy Officials (NASEO). Also, as a
9 member of the CTED management team I am involved in establishing policies for state
10 economic development.
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14 Q Would you please identify what has been marked for identification as Exhibit 50.1
15 (TU-1)

16 A Exhibit 50.1 (TU-1) is a résumé of my professional energy experience and my educational
17 background.
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19 Q Are you sponsoring any other exhibits for entering into the record, and if so would you
20 please identify each exhibit that you are sponsoring?
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22 A Yes. I am sponsoring the following exhibits.

23 Exhibit 50.2 (TU-2) Portion 2003 Biennial Energy Report (*Energy Strategy Update:*
24 *Responding to the New Electricity Landscape*, February, 2003
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1 Exhibit 50.3 (TU-3) Northwest Power and Conservation Council, *Draft Fifth*
2 *Northwest Power Plan, Action Plan*, December 2004.

3 Exhibit 50.4 (TU-4) Governor Gary Locke Press Release, *West Coast States Strengthen*
4 *Joint Climate Protection Strategy*, November, 2004.

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7 Q Are you able to answer questions under cross examination regarding these sections and
8 exhibits?

9 A Yes.

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11 Q. What will be the subject of your testimony.

12 A. My testimony will focus on four major areas: 1) The role of wind and renewable energy
13 development with respect to state energy policy, 2) the large scale economic benefits of
14 wind development, 3) the environmental benefits of wind compared to other fossil
15 fueled electricity production technologies, and 4) electricity system benefits of wind
16 projects.
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20 **Policy**

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22 Q Is it the policy of the state of Washington to support the development of wind energy
23 facilities?

24 A Yes. State law states "It is the policy of the state of Washington that: (1) [t]he
25 development and use of a diverse array of energy resources with emphasis on
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1 renewable energy resources shall be encouraged.” (RCW43.21F.015) In subsection (7)
2 of the same statute the State Energy Strategy is established as an authoritative policy
3 document which “...shall provide primary guidance for implementation of the state’s
4 energy policy.” The 2003 State Energy Strategy identifies wind as a renewable
5 resource and supports its development in Guiding Principle #2. The principle is:
6 “Encourage the development of a balanced, cost-effective and environmentally sound
7 resource portfolio that includes conservation, renewables, (e.g. *wind*, geothermal,
8 hydro, biomass, and solar technologies), and least-cost conventional resources.”
9 (Emphasis added). (Exhibit 50.2) (TU-2) In addition, CTED is identified in RCW
10 43.21F.045 (g) as the state department that shall “Serve as the official state agency
11 responsible for coordinating implementation of the state energy strategy.” It is state
12 policy to encourage the development of wind resources, and CTED supports the Wild
13 Horse Wind Power Project to that end.
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17 Q Is that support unconditional?

18 A No, of course not. A policy of support for the development of wind energy in general
19 does not translate automatically to support for any particular wind project regardless of
20 site specific conditions. State law also says that the promotion of renewable energy
21 sources must be “...consistent with other considerations of state policy...and with the
22 promotion of reliable energy sources, the general welfare, and the protection of
23 environmental quality...” (RCW 43.21F.010) This means that in order to garner state
24 support, the Wild Horse Wind Power Project needs to prove a reliable, cost-effective,
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1 environmentally sound energy resource. I believe the evidence to date, in the
2 application, the Draft Environmental Impact Statement, the applicant's prefiled
3 testimony, and the process in general - though not yet finished - demonstrates that.
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6 Q Why is it state policy to support the development of renewable energy resources,
7 particularly wind?

8 A State policy does not support wind, de facto, over any other renewable resource, it
9 supports the development of all renewable resources equally, except that, as I said
10 above, preferred projects will be those that prove themselves most reliable, cost-
11 effective and environmentally sound. Wind is particularly to be encouraged now
12 because it is the most cost effective of the renewable resources, especially for utility
13 scale projects. Wind is proving itself to have few significant environmental impacts.
14 In addition, wind can provide a measure of improved reliability when integrated into
15 the unique characteristics of our existing electric system that is so highly dependent on
16 hydropower. Finally, wind is an indigenous resource. RCW 43.21F.010 Legislative
17 finding and declaration says "The legislature finds and declares that it is the continuing
18 purpose of state government...to promote energy self-sufficiency through the use of
19 indigenous and renewable energy sources..."
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22 23 **Economics**

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26 Q. What are the economic benefits of wind energy development?

1 A. I believe the council will receive testimony from an EcoNorthwest representative on the
2 direct benefits of this project to Kittitas County. This testimony is based in large
3 measure on a study of those economic impacts that was funded by CTED. I do not
4 intend to cover that analysis in my testimony.
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7 Q. If you are not discussing the specific economic impacts of the Wild Horse Wind Power
8 Project on the county, what are the general economic benefits of wind?

9 A. Electricity produced from wind projects can have a number of economic benefits.
10 Because of technological improvements over the last several decades including
11 improved turbine and blade design and construction and enhanced computer control
12 systems, the cost of wind generated electricity has become highly competitive with all
13 other new generating resources including generation from fossil fuels. The actual cost
14 of wind generation is most dependent on the location of the project and the intensity
15 and duration of the wind at a given location. The recent and continued siting of wind
16 projects in Washington State by itself demonstrates its economic competitiveness. In
17 the Draft Fifth Northwest Power Plan, the Northwest Power and Conservation Council,
18 in its recommended option, "...foresees the construction of up to 5,000 Megawatts of
19 wind capacity over the next twenty years." (Exhibit 50.3) (TU-3) Wind clearly has
20 economic benefits.
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24 Wind generation also has the benefit of not incurring highly volatile operating costs.

25 Wind turbines are not dependant on commercial fuel sources such as coal, oil, or, in
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1 particular, natural gas. Over the last several years we have seen significant volatility in
2 the price of fossil fuels. Just as one example, wholesale natural gas prices at the
3 Sumas, Washington trading hub for the week of December 28, 2004 to January 3, 2005
4 were \$5.53 per million BTU, up from an average of approximately \$2.00 per million
5 BTU in 1999. Such price volatility represents a significant concern, because fuel costs
6 are by far the largest single component of the total cost of natural gas electricity
7 generation. At \$4.00 per million BTU, the cost of gas would represent about 75 percent
8 of the total cost of constructing and operating a natural gas-fired combined cycle
9 combustion turbine. This kind of price volatility raises serious concerns about the
10 future cost of electricity from natural gas-fired generation.
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14 In my testimony in support of the Kittitas Valley Wind Power Project I stated my belief
15 that the best way to illustrate the competitive position of wind projects was to provide
16 examples of significant commitments by some of Washington's largest electric utilities
17 to new wind projects. I stated that these utilities, whether investor-owned utilities
18 regulated by the state, or publicly-owned and controlled utilities, were required to make
19 economically prudent investments for their customers and that wind generation was
20 clearly an economically prudent investment. I then cited examples from Puget Sound
21 Energy (PSE), Seattle City Light, Pacific Power, and the Bonneville Power
22 Administration (BPA). This argument has been fully demonstrated for the Wild Horse
23 Wind Power Project, because it is being purchased by PSE. There is no stronger
24 evidence of the competitiveness of wind power than its purchase by the largest utility in
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1 the state of Washington.

2
3 Q What will the economic impacts be for Washington citizens?

4 A PSE serves about a million electricity customers in Washington state. The low cost
5 electricity supplied by the Wild Horse Wind Power Project will be melded into PSE's
6 rates. All PSE customers will benefit from the project. In addition, all citizens in
7 general will benefit from its low environmental impacts.
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10 Q How will citizens of Kittitas County benefit?

11 A Different citizens will benefit in different ways, but all will see some economic benefit.
12 Some combination of increased revenue to the county or a reduced tax burden on
13 existing property owners will result, but again I understand that details about this are
14 being provided through the testimony of EcoNorthwest. PSE serves approximately 50
15 percent of the electricity customers in Kittitas County. Those customers will directly
16 benefit from the low-cost supply of the Wild Horse Wind Power Project.
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19 The Wild Horse Wind Power Project also represents benefits to the state that would
20 otherwise leave the state. For example, if electricity is purchased from out-of-state, the
21 entire payment leaves the state. Even if the electricity is generated in Washington a
22 percentage of the cost is likely to leave the state. Washington has no indigenous natural
23 gas reserves. Generating electricity from new natural gas-fired combined cycle
24 combustion turbines requires a generating entity to purchase fuel from out of state,
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1 either from Canada or the Rocky Mountain region. While Washington citizens may
2 have investments in such companies, the out-of-state purchase represents a cost that
3 does not exist for wind generation because the fuel (wind) is indigenous and free, and
4 therefore there are no payments to go out-of-state. Neither wind turbines nor
5 combustion turbines are built in Washington, but the cost of fuel, purchased out-of-
6 state, is a cost not borne in wind generation.
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9 According to the Wild Horse Wind Power project draft environmental impact
10 statement, about 80 percent of the turbine site is to be located on land zoned Forest and
11 Range, with the remainder zoned Commercial Agriculture. According to Kittitas
12 County Code, “Natural resource management is the highest priority...” for the Forest
13 and Range zone. (Chapter 17.56.010 Kittitas County Code) Wind generation represents
14 the utilization of an indigenous natural resource, i.e. wind, that does not require utilities
15 to go out-of-state to purchase either electricity or the fuel to generate it.
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17 18 **Environmental**

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21 Q. What are the environmental benefits of wind energy development compared to
22 electricity from fossil fuel sources?

23 A. There are a number of environmental benefits when comparing wind with fossil fuel
24 generated electricity. I believe that this is one of the primary reasons that CTED’s
25 statutory authority cites a preference for renewable energy development. These
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1 benefits include no direct criteria air pollutant emissions or water pollution emissions
2 from operation of wind turbines, no need for water for power plant cooling, and
3 relatively small and largely mitigatable land use impacts. However, I do not propose
4 to focus on these areas in my testimony as they are well described in the draft
5 environmental impact statement and will likely be covered by other witnesses. Rather
6 I will concentrate on the greenhouse gas emissions benefits of wind development and
7 other renewable energy resources.
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10 Q. Why is the state concerned about global warming and climate change?

11 A CTED believes that reducing our state's carbon dioxide production is one of the most
12 important actions we can take to protect the state's economy in the future. The costs of
13 climate change to the state are potentially devastating, especially in the area of
14 electricity generation. Wind power helps in two ways; it is an alternative to
15 hydropower (which is threatened by global warming as our snow pack declines), and it
16 does not generate additional greenhouse gases. Some resources, such as natural gas-
17 fired combustion turbines are beneficial in that they too offer an alternative to
18 hydropower, but they exacerbate global warming by generating carbon dioxide.
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22 Q. Why are greenhouse gas emissions an important consideration in this project?

23 A In the 2004, the legislature and governor enacted legislation that requires fossil fueled
24 power plants to mitigate a portion of their CO2 emissions (Substitute House Bill 3141).
25 This bill requires developers of fossil fueled power plants to mitigate 20 percent of the
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1 total greenhouse gas emissions (chiefly carbon dioxide) for the life of the plant. The
2 law clearly recognizes that greenhouse gas emissions are an important concern to the
3 state and that fossil fueled power plants make significant contributions to those
4 emissions. The Wild Horse Wind Power Project will have no direct greenhouse gas
5 emissions.
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8 Q What other Washington State policy statements support the relationship between
9 renewable (wind) energy development and greenhouse gas emissions reduction or
10 elimination?

11 A In September 2003, Governors Locke, Kulongoski, and Davis entered into a West
12 Coast Governors' Climate Change Initiative for the purpose of reducing greenhouse gas
13 emissions in Washington, Oregon, and California. Following Governor Davis's
14 departure, Governor Schwarzenegger continued California's participation in the
15 initiative. Among the actions called for in the initiative are measures "[r]emoving
16 barriers to and encouraging the development of renewable energy generation resources
17 and technologies." (Exhibit 50.4) (TU-4) This is a clear recognition of the benefits of
18 renewable energy as a source of low or no carbon dioxide emissions. We fully expect
19 Governor Gregoire to continue Washington's participation in the initiative.
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Electricity System Benefits

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4 Q You indicated previously that there were some electric system benefits from building
5 wind power projects, can you expand on that?

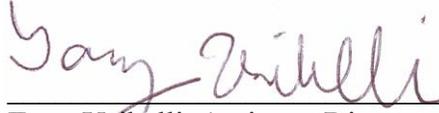
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7 A Yes. Our existing electricity system in Washington and the region is highly dependent
8 on hydropower. During a good water year, approximately 70 percent of the generation
9 in Washington is from hydroelectric dams. This has been a great benefit to Washington
10 because the price of power from these facilities has been very low – virtually the lowest
11 cost electricity in the nation. Another benefit of hydropower is its large capacity
12 relative to the amount of electricity generated on average. For example, the Grand
13 Coulee dam generates about 2,200 Megawatts on average each year, but it has an
14 operating capacity three times greater – 6,800 Megawatts – that greatly aids in meeting
15 periods of peak demand. Washington State typically has not faced capacity shortages,
16 unlike many parts of the country. The down side of this is that we are heavily
17 dependent on timely precipitation and annual snow pack. We must have sufficient rain
18 and snow every single year to meet electricity demand with our own resources. There
19 is not enough reservoir capacity in the system to carry over from a wet year to a dry
20 year, and if our water deficit is greater than our import capacity (or import power is not
21 available) we can face a shortage of electric energy in a drought year. This is what
22 occurred in 2001. Stream flow in the Columbia River system measured about 50
23 percent of normal, and California was unable to guarantee sufficient import power to
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1 meet our peak winter demand. We ended up shutting down about 2,000 megawatts of
2 aluminum plant, and the power we were able to buy on the spot market was hugely
3 expensive. This vulnerability is due to the fact that we depend so heavily on
4 hydropower. We have, in essence, put all our electricity “eggs” in the same basket.
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7 A key solution to this vulnerability is to diversify our portfolio of generating resources.
8 CTED publicly testified before EFSEC in support of the now certificated BP Cherry
9 Point Cogeneration Project for this purpose, as well as its high conversion efficiency
10 due to cogeneration. Construction of regional wind projects would help diversify our
11 resource portfolio away from hydropower, and add another dimension of diversity
12 beyond generation with variable priced natural gas. Each resource type has
13 characteristics that bring benefits to the system, and costs. Natural gas generation, as
14 previously stated, may be more reliable than hydropower but it is more costly, and the
15 risk of increased costs in the future is high compared to hydropower or wind. Wind is
16 low cost, and like hydropower has minimal risk of future cost increases because there is
17 no cost for the fuel (wind, like water, is free). Wind reliability also contrasts well when
18 compared to hydropower. Hydropower reliability is excellent on a daily basis, but can
19 be very unreliable annually. Wind can be unreliable on an hourly basis, but it will be
20 there every year, year after year. Integrating large amounts of regional wind generation
21 into our existing system will provide significant reliability benefits (along with its cost
22 and cost risk benefits). State and regional utilities are examining ways to link the wind
23 and hydro systems more efficiently – using wind generated electricity to defer the need
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1 to run water through hydro turbines, thus effectively providing a storage medium for
2 intermittent wind resources.
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6 Respectfully Submitted,

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8 _____
9 Tony Usibelli, Assistant Director
10 Energy Division
11 Department of Community, Trade
12 and Economic Development
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