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

APPLICANT’S PREFILED REBUTTAL TESTIMONY
WITNESS #19: CAMERON YOURKOWSKI

Q Please state your name and business address.

A My name is Cameron Yourkowski. My business address is 917 SW Oak, Suite 303, Portland, Oregon 97205.

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

A I am a Transmission Policy Associate for Renewable Northwest Project (“RNP”). My duties and responsibilities include providing technical analysis and policy...
recommendations related to renewable energy development, transmission scheduling and policy, and variable energy resource integration.

Q Please describe RNP, its composition and mission.

A RNP was founded in 1994, as a broad coalition of public interest and environmental organizations and energy companies created to actively promote development of the Northwest region’s renewable energy resources. RNP works for a clean energy future by: (1) working with local organizations and energy companies to get workable renewable projects on the ground; (2) actively promoting policies supporting renewable energy development; (3) encouraging utilities and customer groups to invest in new renewable energy resources; and (4) nurturing the development of a market for renewable energy.

Q Please identify what has been marked for identification as Exhibit No. 18.01r.

A Exhibit No. 18.01r is a résumé of my education background and employment experience.

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

A Yes.

Q Please describe the purpose of your testimony.

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Although RNP does not, as a practice, advocate for particular wind energy projects or other renewable energy projects, RNP offers this testimony to address the significant omissions and misstatements in the testimony of Professor Robert J. Michaels, Friends/SOSA Exhibit Nos. 30.00-30.18 (the “Michaels’ Testimony”), which appears to have been prepared by a witness who is unfamiliar with our regional electricity market and its related policies. This testimony corrects erroneous conclusions in the Michaels’ Testimony regarding the level and nature of demand for renewable energy in the Pacific Northwest, how renewable energy is integrated into the regional transmission grid, the benefits of renewable energy in displacing fossil fuels and their associated emissions, and the role of the Bonneville Power Administration (“BPA”) in both renewable energy markets and in operating BPA’s transmission grid.

Q: Do you agree with the conclusion of the Michaels’ Testimony at page 5, lines 7-9, that “WRE is unlikely to produce abundant energy at reasonable cost, both in context of northwest power markets and relative to alternative sources of energy or energy services.”

A: No, the testimony mischaracterizes how renewable energy is integrated into the region’s electric transmission grid and marketed in the Northwest and California energy markets. The Michaels’ Testimony mischaracterizes (1) how renewable energy is reliably integrated in the Northwest, (2) how renewable energy is scheduled in the Northwest, and (3) BPA’s role in buying and consuming, and relative demand for, renewable energy in the Pacific Northwest. The Michaels’ Testimony gave no weight to the broad public support in the Pacific Northwest and California for expanding the use of new, renewable energy resources as a way to reduce reliance on

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fossil fuels and offset the emission of greenhouse gases associated with the generation of electricity from coal and natural gas.

Q  Please describe the broad public support for new renewable energy in Washington, Oregon and California.

A  The broad public interest for supporting new, renewable energy resources and reducing greenhouse gases has been codified in Washington, Oregon, and California through laws requiring utilities to gradually increase the percentage of their electricity supply from renewable energy resources. This legislation is referred to generally as “renewable portfolio standards” or “RPSs.” As a result of Washington’s, Oregon’s, and California’s RPSs, and the cost competitiveness of new renewable resources, there has been and will continue to be strong demand from utilities for renewable energy.

Q  How have the citizens of Washington demonstrated their support for renewable energy?

A  In 2006, the citizens of Washington passed a state-wide initiative (I-937) requiring certain utilities in the state of Washington to invest in cost-effective energy efficiency and to procure at least 15 percent of their electricity supply from qualifying renewable energy resources by 2020.

Q  Would the WRE wind energy facility be a qualifying renewable energy resource under the Washington RPS?

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A Yes, the WRE wind energy facility will be a qualifying resource under the
Washington RPS, as well as under the Oregon RPS and possibly under the California
RPS.

Q Do you agree with the statement at page 7, lines 2 that “Whether it is exported or kept
in the Pacific Northwest, wind power in excess of current amounts is of little value to
Washington State”?

A No, the statement ignores several factors, including the broad public interest in
Washington in increasing the amount of new, renewable energy in the region, as
demonstrated by voter initiative I-937, the significant contribution to local economic
development that a new renewable resource makes to the state, and the diversity new
renewable energy facilities add to the electricity system.

Q Please comment on the statement in the Michaels’ Testimony’s claims at page 6, lines
2-3, that “[wind projects] can be costly for the system operator to integrate reliably.”

A Wind, hydroelectric, coal, gas-fired, and nuclear energy generating facilities each
impose their own costs and constraints on the transmission grid. In fact, BPA is
currently proposing a separate balancing charge for the cost of integrating fossil fuel-
fired electric generation resources. BPA has already imposed a rate to recover the
costs of providing balancing reserves to wind generators. BPA is currently not
expecting to increase the rates for wind integration (currently $5-6/MWh) for the next
rate period by more than 2-3%, showing that there is rate stability. In addition, BPA
is undertaking various pilot projects in an effort to improve its ability to better
integrate additional amounts of wind energy at lower cost to wind generators.
Q Please comment on the statement at page 6, lines 5-6, that “… fossil-fuel generators can also be used for balancing… … wind power may have environmental consequences even though it does not directly burn any fuels.”

A This statement is not relevant to balancing renewable energy in the Pacific Northwest because the region relies primarily on BPA’s hydroelectric resources for so-called “within-hour” balancing of wind output, not fossil-fuel generators, as the testimony suggests.

Q Please comment on Professor Michaels’ characterization of BPA’s effect on regional demand for energy and renewable energy.

A On page 6, lines 8-11, Professor Michaels claims “Currently, BPA is able to meet nearly all of its customers’ power demands from available resources, including improved efficiency of use, and the growth of wind power on its grid will not be of help in meeting expected future shortfalls in peaking capacity.” BPA’s loads, resource mix, efficiency measures, and capacity needs are not particularly relevant to evaluating the value of the WRE wind facility. First, Professor Michaels’ analysis of the Pacific Northwest’s demand for energy (he does not separately look at the demand for renewable energy) appears to begin and end with BPA; however, BPA is but one of many utilities in the Pacific Northwest. As Professor Michaels’ notes at page 17, lines 20-21, BPA provides no more than 1/3 of the wholesale energy in the Pacific Northwest. Second, and more importantly, unlike most other large utilities in the Pacific Northwest and California, BPA is not subject to state RPS requirements to purchase certain minimum amounts of renewable energy. BPA owns the majority of the high-voltage transmission system in the Pacific Northwest and therefore plays a
major role in transmitting renewable energy to other utilities; however, of the over
3000 MW of wind generating capacity located in BPA’s transmission balancing
authority, less than 250 MW is under contract for sale to BPA. Therefore, although
BPA is certainly one of many potential customers for the output of the project, there
are several other utilities that have a much greater demand for the output of the WRE
facility due to their RPS compliance obligations.

Q Do you agree with the statement page 11, lines 13-15, that “The implication is clear: a
system dependent on wind must also invest in dispatchable generation equal to
significant fraction of that capacity.”

A No. This statement has little relevance to the current situation in the Pacific
Northwest. Increasingly, the region is finding new ways to access the flexible
capacity embedded in the existing interconnected mix of generators, decreasing
integration costs without investing in any new capacity.

Q Please address the assertions on page 13, lines 3-6, that “Here the added costs (e.g.
extra balancing reserves for integration) are likely to be higher when pre-existing
wind capacity is larger. The added benefits at the margin will be smaller, since a later
addition to the wind fleet will displace fossil generation with lower incremental costs
than an early addition.”

A These statements also have little relevance to the current situation in the Pacific
Northwest. Because of the within-hour diversity (e.g., the effect of wind variation
from one project to offset the variation from another project) of wind projects (even
within the Columbia River Gorge), BPA is actually seeing declining reserve
requirements per installed MW of wind capacity. I believe that what Professor Michaels is referring to is a scenario where a system reaches a level of wind penetration that crosses a threshold and begins using more costly balancing reserves (thus moving up the supply curve); however, the Pacific Northwest is nowhere near this level of wind penetration and is not exhibiting the marginal cost relationships Michaels describes. I reach this conclusion because BPA and its wind and other transmission customers are currently developing, considering or implementing several operational changes that will reduce the need for BPA to provide balancing reserves for wind energy. For example, BPA and the region’s utilities and wind and independent energy producers have a pilot underway to allow wind generators (and eventually other electricity generating resources) to adjust their transmission schedules on a more frequent basis. This is also known as the “intra-hour scheduling pilot.” This one step alone will significantly reduce the amount and the cost of resources that BPA is required to maintain. Similarly, proposed rules recently published by the Federal Energy Regulatory Commission (“FERC”) also call for transmission providers to allow more frequent schedule changes as a way to minimize costs associated with balancing the output of variable energy resources. See Notice of Proposed Rulemaking on Integration of Variable Energy Resources, 133 FERC ¶ 61,149 (2010). In addition, BPA and wind companies are increasingly accessing new, more cost effective and environmentally preferred sources of balancing reserves, such as formalized arrangements that reduce or shut off completely natural gas and coal fired generators during periods of high wind energy production. BPA has also facilitated a “self-supply” program, which significantly reduces BPA’s balancing reserve requirement by allowing wind generators to access non-BPA resources to balance the variable output of wind generating facilities. See Exhibit No. 18.02r.
Q  Do you agree with the testimony at page 16, lines 8-10, that “BPA now states that further use of hydro capacity for balancing will affect efficiency and reliability, as well as its ability to meet non-electrical obligations such as fish migrations”?

A  There is no citation for the BPA statement that the testimony references and such a statement ignores the fact that BPA and the region’s utilities and wind generators are taking active steps to increase the capacity of the Federal Columbia River Power System (“FCRPS”) to integrate renewable energy resources while at the same time preserving reliability of the BPA transmission grid. In addition to the initiatives discussed above, BPA has implemented Dispatcher Standing Order (DSO) 216, which allows BPA to manage the costs of integrating wind by limiting the need for balancing reserves that would be rarely used. Through its intra-hour scheduling pilot program and other wind integration initiatives, BPA and its wind generator customers are working to increase its ability to integrate additional renewable energy while preserving system reliability. See Bonneville Power Administration, “Summary of the Upcoming BPA Wind Integration Team Work Plan 2.0” (Nov. 2010), which is attached as Exhibit No. 18.02r.

Q  Please comment on the statement at page 16, lines 10-12, that “… hydro operations to accommodate wind power do not provide the same rate payer benefits that would accrue if wind displaced thermal capacity.”

A  This statement highlights the Professor Michaels’ lack of understanding of BPA and the Pacific Northwest energy market and wind industry. Roughly 80% of the wind in BPA’s transmission balancing area is exported out of BPA’s transmission balancing area in firm hourly (and sometimes half-hourly) scheduled amounts. Every single
MWh of wind energy delivered to a receiving utility is serving a MWh of customer load that would have otherwise been met by a conventional resource. Wind energy is most often displacing the carbon dioxide and associated emissions from natural gas fired power plants and, increasingly, coal fired plants. See GE Energy Consulting, California Energy Commission Intermittency Analysis Project: Appendix B, Impact of Intermittent Generation on Operation of California Power Grid, 126-28 (July 2007), which is attached as Exhibit No. 18.03r and available in full at http://www.energy.ca.gov/2007publications/CEC-500-2007-081/CEC-500-2007-081-APB.PDF; PJM, Potential Effects of Proposed Climate Change Policies on PJM’s Energy Market, 2-3, 17-18 (Jan. 2009), which is attached as Exhibit No. 18.04r and available in full at http://www.state.nj.us/dep/cleanair/hearings/pdf/09_potential_effects.pdf. Wind energy is a zero-emission energy resource with no fuel costs and the receiving utility and its customers avoid the environmental risks and costs associated with thermal generation.

Q At page 18, lines 6-8, Professor Michaels claims, “[BPA] also has legal obligations to accept power from qualifying wind turbines in the area and integrate it into the region’s electricity supply if sufficient transmission capacity is available [cites to high water report].” Is this correct?

A BPA generally follows FERC guidelines for the interconnection, transmission, and within-hour balancing for all requesting generators, renewable or conventional. BPA is not obligated to buy or consume the power and so the interconnecting wind generation has no direct impact on BPA’s load/resource balance, as this section of the testimony suggests.
Q At page 21, lines 5-7, Professor Michaels claims, “Exhibit 30.09 states that [BPA] currently carries nearly 2,000 MW of balancing capacity, an amount which must increase as its wind obligations rise.” Is this correct?

A No. Professor Michaels’ number represents roughly 1,000 MWs of incremental, or \textit{inc}, generating capacity and 1,000 MWs of decremental, or \textit{dec}, generating capacity. Only \textit{inc} capacity has an impact on capacity requirements consistent with the testimony’s focus on long-term peaking requirements. Second, that balancing capacity is for wind, load, and thermal generators. Third, FY10-11 to FY12-13 BPA rate case documents show the reserve requirement decreasing in absolute terms and per unit, primarily due to self-supply and the value of diversity, respectively.

Q At page 22, lines 4-17, Professor Michaels claims, “Low flows in April and high flows in June demonstrated to BPA that events ‘can stress the hydro system to the brink with the current wind fleet’ [cites to BPA resource program].” Please comment on this.

A I don’t actually see this citation in the exhibits. BPA’s high water report describes several simultaneous system conditions that stressed the system, from my perspective, the least of which is the within-hour balancing of wind energy. This section of the testimony seems very carefully crafted; without directly attributing cause and effect, the line of questioning implies wind is the cause of BPA’s system problems, yet not even BPA has drawn this conclusion. Professor Michaels testified on page 22, lines 12-14 that

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“Over the same interval, BPA reached the limits of its abilities to balance wind output that it was bound to accept when feasible, and had to order wind
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generators to stop producing or curtail their access to transmission.”

The choice of words here implies that technical abilities were met or exceeded. BPA reached the limit of balancing reserves that had been previously agreed to in its transmission rate and requested wind generators to curtail generation back to the schedule. This represents an economic choice between BPA and the wind generators, not a technical reliability issue. Roughly 1,000 MWa of wind were generated during the June event; only a fraction of wind energy potential was curtailed over this time period.

Q Professor Michaels seems to suggest that BPA is somehow incapable of integrating the increasing amounts of wind energy. Do you agree?

A If this is what Professor Michaels is suggesting, I heartily disagree. As explained above, BPA and its wind generator customers are working on several programs that are and will continue to increase the amount of wind energy that can be integrated on BPA’s system, while retaining system reliability.

Q At page 23, lines 19-21, Professor Michaels claims “Q. Will the growing amount of wind power interconnected with BPA be of use in meeting the needs described in its Resource Plan? A. In general, no.” How do you respond?

A BPA’s resource plan is nearly irrelevant to the value of wind power to the region or the state of Washington. BPA is not the major load center or center of load growth; BPA has no RPS requirement or cost exposure to carbon taxes. Again, BPA is consuming roughly 8% of the wind connected to its system; the remaining 92% is consumed by other utilities.
Q At page 24, lines 9-11, Professor Michaels claims, “In the PNW, however, the wind-generated megawatt-hour will most often displace hydro energy…” Is this correct?

A The author has presented no evidence to support this statement. The testimony ignores the fact that the utilities receiving wind energy transmitted over BPA transmission lines are displacing higher-cost resources, which are typically either natural gas or coal. Displacing fossil fuels and associated emissions and carbon dioxide production, along with reduced exposure to natural gas price uncertainty and volatility, is a primary benefit of wind and other forms of renewable energy.

Q Please summarize your testimony.

A In several key areas, the Michaels Testimony is either incorrect or ignores relevant facts. First, BPA’s job is to market the power from the federal dams in the Pacific Northwest and the region’s only nuclear facility. It owns and operates 70% of the transmission capacity in the region. It is not a retail utility and therefore is not subject to state RPSs. There is broad public support for renewable energy in the Pacific Northwest and California, which has been codified through state laws requiring utilities to procure a certain percentage of electricity supply from renewable energy. These state RPS programs, in addition to the cost-competitiveness of new, renewable resources, provide an important basis for demand for renewable energy. The Michaels Testimony talks about the costs and challenges of integrating wind energy, however, his conclusions should be rejected because he has not taken into account the several wind integration initiatives currently underway at BPA to both expand the flexibility of the federal hydroelectric system to integrate variable energy resources and to preserve system reliability. Similarly, the conclusions in the Michaels
Testimony regarding the environmental benefits of using wind energy to displace or offset conventional fossil-fuel resources are not particularly relevant to the resources in the Pacific Northwest (primarily hydro-electric) that are used to balance the within-hour variability of wind energy. In addition, they fail to acknowledge that one MWh of renewable energy is generally offsetting one MWh of electricity that would otherwise be generated by the receiving utility from natural gas or coal-fired resources.

Q Does this conclude your testimony?

A Yes.