DOCKET NO. UM 1802

EXHIBIT: ODOE/100

WITNESS: DIANE BROAD

# Before the

# PUBLIC UTILITY COMMISSION OF OREGON

# OREGON DEPARTMENT OF ENERGY

# REPLY TESTIMONY OF DIANE BROAD

# May 5, 2017

## QUALIFICATIONS

**Q. Please state your name and employer, and then briefly describe your education and professional experience.**

A. My name is Diane Broad, and I work as a senior policy analyst at the Oregon Department of Energy (ODOE, Department). I have particular expertise in electric utility transmission and distribution systems and operations, renewable generator interconnection standards and procedures, and integration of variable energy resources. I gained this expertise through eighteen years of practice as an electrical engineer in consulting, serving electric utilities and renewable project developers, and in three years as a policy analyst at ODOE. I hold a Bachelor's Degree in Electrical Engineering from Colorado State University, and I am a registered Professional Engineer in the State of Oregon.

## PURPOSE AND SUMMARY OF TESTIMONY

**Q. What is the purpose of your testimony in this proceeding?**

A. My testimony, on behalf of the Oregon Department of Energy, addresses the following issues related to calculating avoided costs for non-standard renewable projects for PacifiCorp (the company):

1. The market price floor during the sufficiency period
2. The company's proposal to restrict renewable avoided cost to the type of technology that is avoided
3. The company's proposals for updating inputs
4. The company's proposal for calculating avoided costs for projects in the QF negotiation queue

**MARKET PRICE FLOOR DURING THE SUFFICIENCY PERIOD**

**Q. What is the company's argument against setting non-standard avoided cost prices at the market price floor?**

A. In its opening testimony the company states:

> *The company does not have unutilized transmission rights adequate to deliver all of these solar resources to market, and must back down its thermal generation instead of making incremental market sales. As a result, QFs that receive payments based on the market price floor will receive payments appreciably greater than the Company's avoided cost.* [1]

**Q. Should non-standard prices continue to be set at the market price floor when transmission is available?**

A. Yes. The Commission in Order No. 16-337 noted:

> *We acknowledge arguments that certain transmission constraints **could** exist that prevent otherwise economic market sales of low cost energy, but note that PacifiCorp previously indicated that such transmission conditions do not exist in Oregon. We encourage the utilities to notify us when such conditions actually exist in Oregon.* (emphasis in original).[2]

While ODOE understands the challenges facing the company in delivering the sum of the power currently represented by qualifying facilities (QF) in the queue within the constraints of existing transmission arrangements, the company has conflated the transmission congestion issue with the load pocket issue. When the Commission opened this docket in Order No. 16-429, it ordered an "expedited investigation."[3] The department questions the utility of the company's inclusion of the congestion issue into this expedited proceeding. Considering current, ongoing activity at the PUC, it is likely procedures will be established to address the load pocket issue. As will be shown below, there is no need to address the effect of transmission congestion on the use of a market price floor outside of the load pocket issue.

**Q. Why is transmission congestion not an issue if a QF is not in a load pocket?**

[1] PAC/100, MacNeil/11; lines 2-5.
[2] Order No. 16-337, page 6
[3] Order 16-429, page 1

A. The department views the company's argument that increased solar QF generation will force it to back down its thermal generation rather than making incremental market sales, quoted above, as an incorrect characterization of the company's transmission rights limitations. If the QF is not in a load pocket, the company does not have to deliver the QF power to market. Instead, QF generation decreases apparent load to the transmission system. Thermal generation that would have been delivered to load is now available to deliver to market. Because the Mid-Columbia (Mid C) market is between the company's generation and its Oregon loads, if the company could have delivered the power to load, it should always be able to deliver the power to the Mid C market. Absent a load pocket issue, there cannot be a transmission congestion issue. Because the thermal generation would run in either scenario, the value to the company of one MWh hour of QF generation that displaces load is the market price.

**Q. What if the QF is in a load pocket and there are times when the company cannot move the QF power to the Mid C market?**

A. The resolution of the load pocket issue will likely require that the QF acquire some kind of transmission access to move the excess power from the load pocket to market or to another load area that does not have excess generation. Because the load pocket issue has not been resolved, the effect of transmission congestion on the use of market prices cannot be resolved in this docket.

**RESTRICTING THE RENEWABLE AVOIDED COST TO THE AVOIDED TECHNOLOGY**

**Q. Does ODOE support the company's proposal to restrict the renewable avoided cost to the type of renewable technology being avoided, such as solar or wind?**

A. No, this proposal is not consistent with the reason that the Commission adopted a renewable avoided cost. This proposal would also have the effect of excluding a diverse mix of renewable QF resource types, given that the company has not to date identified a resource portfolio that would include biomass, geothermal, wave/tidal or small hydro renewable technologies.

**Q. Why did the Commission adopt a renewable avoided cost?**

A. The Commission adopted a renewable avoided cost to provide a way for QFs to be compensated for the renewable portfolio standard compliance costs that the company would avoid by purchasing a bundled renewable energy certificate (REC) from a QF. Since all bundled RECs are interchangeable under ORS 469A, it does not matter if the QF technology is the same as the avoided REC.

**Q. What about the company's concern about "Maintaining capacity equivalence between resources with widely disparate capacity contribution could introduce unintended consequences and unreasonable results?"[4]**

A. The company does not describe or elaborate on how such consequences or results might arise. The purpose of the avoided capacity calculations made during the deficiency period is to assure that the capacity of the planned renewable resource that is avoided is equivalent to the capacity contribution of the QF renewable resource. If the company has problems with the adopted method for the capacity calculations, it should make specific recommendations. ODOE believes the method adopted in Order No. 16-174 is correct.

**Q. What of the company's assertion that this issue does not arise when a non-renewable resource is deferred?**

A. The department finds the company's characterization unpersuasive. Calculating the capacity deferral of a planned company renewable resource by a renewable QF is no more complicated than with a planned non-renewable resource. The company states: "Because wind and solar have different seasonal and hourly shapes, this [substitution] could rapidly create an imbalance. Deferring a smaller quantity of a thermal resource with little seasonality would create **less** of a potential mismatch" (emphasis added).[5] As noted above the calculation of the capacity credit by the method adopted in Order No. 16-174 is correct in comparing a renewable QF with either

[4] PAC/100, MacNeil/5; lines 21-23
[5] PAC/100, MacNeil/6; lines 11-14

a planned renewable or thermal resource. The company provides no evidence about why an "imbalance" would be created, what the nature of that imbalance would be, or why it would be a concern for calculating the capacity credit between different renewable technologies but not between a renewable technology and a thermal technology. If there is a "mismatch" between a thermal resource and a renewable QF, ODOE would like to see the company propose a method to resolve it, whether it is "less" of an issue of not.

Q. **Is there another reason ODOE does not support the company's proposal to limit the renewable avoided cost price to the type of renewable resource in the company's IRP preferred portfolio?**

A. Yes. The company produces a preferred portfolio in each integrated resource plan (IRP) cycle, typically every two years, with an action period in the near term (three to four years) and resource projections in the preferred portfolio up to 20 years in the future. In the last several IRPs produced by the company, renewable resources were not needed in the action period and were not included in the resource mix until 2026 or later. The exact mix of renewables added into the preferred portfolio in these "out years" has been characterized by the company in public meetings as a "best guess". The resource types, capacity additions by year, and location of the renewable resources have varied significantly between IRPs that are only two years apart.

Q. **What are the potential consequences of making this link between QF eligibility for renewable avoided cost pricing and the company's current IRP preferred portfolio?**

A. The proposal to limit the renewable avoided cost price to the company's current preferred portfolio for the "first deployed" renewable resource type places an unreasonable barrier on the QF coming into the queue. Since the next major renewable resource of the same type has been observed to change from one IRP to the next, the QF must play a guessing game as to the best time to enter the queue and begin negotiations with the company. Given that non-standard QF projects can have long timelines from application to online date (not only the power purchase agreement, or PPA, but also interconnection process and development), and the company's

proposal that the QF must choose between the renewable and the non-renewable queues, the company's proposal also could introduce confusion and extra work if QFs in the queue go from eligible to ineligible for the renewable avoided cost price (or vice versa) when there is an updated IRP preferred portfolio.

**THE COMPANY'S PROPOSALS FOR UPDATING INPUTS**

**Q. When should the inputs to the GRID model be updated?**

A. The company proposes that "GRID model inputs are updated to reflect the latest system conditions and market prices."[6] The company further notes that "Studies being prepared for the 2017 IRP now identify integration requirements and costs for solar."[7] These seem to imply that the inputs to the GRID model would not be updated on the schedule adopted in Order No. 14-058.

> *We adopt a new requirement for utilities to provide a limited update to avoided cost prices on May 1 each year. We retain our requirement for an update to avoided cost prices within 30 days after acknowledgement of an Integrated Resource Plan (IRP), but may use our discretion to waive the post IRP update if it falls within 60 days of May 1 in a particular year. We retain our current provisions for requests for mid-cycle updates.*[8]
>
> *Annual updates, filed every May 1, will include the following four factors:*
> *(1) Updated natural gas prices;*
> *(2) On- and off-peak forward-looking electricity market prices;*
> *(3) Changes to the status of the Production Tax Credit; and*
> *(4) Any other action or change in an **acknowledged** IRP update relevant to the calculation of avoided costs (emphasis in original).*[9]
>
> *We agree on the need to adjust for capacity contribution of each resource type and adopt Staffs proposed method for calculating capacity adjustments, as set forth in Staff/102-103, using input estimates derived from the utility's acknowledged IRP.*[10]

The Commission should clarify in this docket that the update schedule adopted in Order No. 14-058 is to be used for non-standard avoided cost, both renewable and non-renewable.

[6] PAC/100, MacNeil/10; lines 10-11
[7] PAC/100, MacNeil/10; lines 15-16
[8] Order 14-058 at page 2
[9] Order 14-058 at pages 25-26
[10] Order 14-058 at page 15

**CALCULATING AVOIDED COSTS FOR PROJECTS IN THE QF NEGOTIATION QUEUE**

**Q. How should avoided costs for QF projects in the queue be updated?**

A. The company's current practice is to place proposed QF projects in a queue with the assumption that the projects which are ahead in the queue will be placed into service. If a previously proposed project withdraws from the queue, the department strongly recommends that the avoided cost prices for projects that are later in the queue should be updated to reflect their new position in the queue. This update should apply the corrected avoided cost prices, which will be higher than earlier estimates for those same projects which assumed that proposed projects ahead in the queue would be placed in service. This update should take place until the project goes into service to ensure that the avoided costs are correctly calculated.

**Q. Does this conclude your reply testimony?**

A. Yes.