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**DEPARTMENT OF JUSTICE**
GENERAL COUNSEL DIVISION

November 19, 2014

Attention: Filing Center
Public Utility Commission of Oregon
3930 Fairview Industrial Drive SE
P.O. Box 1088
Salem OR 97308-1088

Re: *In the Matter of PUBLIC UTILITY COMMISSION OF OREGON Staff Investigation into Qualifying Facility Contracting and Pricing*
PUC Docket No.: UM 1610
DOJ File No.: 330-030-GN0240-12

On behalf of the Oregon Department of Energy, enclosed for filing with the Commission in the above-captioned matter are an original and five copies of the REPLY TESTIMONY OF KACIA BROCKMAN ON SOLAR CAPACITY ADJUSTMENT TO RENEWABLE AVOIDED COST PRICES.

Sincerely,

Renee M France
Senior Assistant Attorney General
Natural Resources Section

Enclosures
RMF:jrs/#6017880
c: UM 1610 service list

DOCKET NO. UM 1610
EXHIBIT: ODOE/700
WITNESS: KACIA BROCKMAN

# Before the
# PUBLIC UTILITY COMMISSION OF OREGON

## OREGON DEPARTMENT OF ENERGY

## Reply testimony of Kacia Brockman
## On Solar Capacity Adjustment to
## Renewable Avoided Cost Prices

## November 19, 2014

**Q. PLEASE STATE YOUR NAME AND ORGANIZATION.**

A. I am Kacia Brockman with the Oregon Department of Energy (ODOE). I am the same witness as in ODOE/600.

**Q. WHAT IS THE PURPOSE OF THIS REPLY TESTIMONY?**

A. I will draw from other parties' testimony to clarify my recommendation that the Commission adopt Staff's proposed revised method for adjusting the capacity component of the renewable avoided costs for solar QFs corrects the double-discounting error.

**Q. IS PACIFICORP CORRECT THAT, PRIOR TO ORDER NO. 14-058, SOLAR QFS RECEIVED ONLY A FRACTION OF THE CAPACITY DOLLARS OF THE PROXY CAPACITY RESOURCE?**

A. Yes. PacifiCorp correctly identified that, prior to the capacity adjustment in Order No. 14-058, a solar QF did not receive 100% of the total proxy capacity dollars.[1] Instead, the solar QF received just a fraction of those capacity dollars proportional to the solar QF's on-peak capacity factor, or the ratio of energy actually delivered by the QF during on-peak hours compared to the energy the QF would have delivered if it had operated at maximum capacity during all on-peak hours.

In PacifiCorp's example of a typical Oregon solar QF with an annual capacity factor of 22.5%, the solar QF's on-peak capacity factor would be 33.7% (not 39.5% as stated by PacifiCorp)[2]. Over the course of a year, the example solar

[1] PAC/600, Duvall/2-3.
[2] Because a solar QF generates during daylight hours largely between 6 am and 10 pm, the only off-peak hours of solar generation occur on Sundays and holidays. Therefore, on-peak capacity factor of

QF would have received capacity payments totaling just 33.7% of the total capital costs of the proxy resource. In other words, historically, a variable resource QF was compensated for avoided capacity costs in proportion to the QF's on-peak capacity factor.

**Q. IF QFS WERE ALREADY BEING COMPENSATED FOR AVOIDED CAPACITY IN PROPORTION TO THEIR ON-PEAK CAPACITY FACTOR, WHY DID ORDER NO. 14-058 SPECIFY AN ADJUSTMENT FOR CAPACITY CONTRIBUTION?**

A: In Order No. 14-058, the Commission agreed that adjusting the capacity component in the avoided cost rates based on the expected capacity contribution of each resource type would "produce more accurate avoided cost estimates."[3]

Other witnesses have correctly explained that capacity factor is not the same as capacity contribution (also called capacity value). According to PacifiCorp, "The capacity *factor* of a generating resource is a measure of how much energy that resource is expected to produce over a given period of time."[4] Capacity factor is a characteristic of the QF resource independent of the utility system to which it is delivering energy, and therefore may not produce an accurate estimate of a utility's avoided capacity costs.

solar is calculated by multiplying the annual capacity factor (22.5%) by the percent of solar generation that occurs during on-peak hours (85.5%), and dividing by the ratio of on-peak hours to all hours (57%). 22.5% x 85.5% / 57% = 33.7%.

[3] Order No. 14-058, at 15.

[4] PAC/600, Duvall/4.

Also according to PacifiCorp, "The capacity *contribution* of a generating resource takes into account the timing of the generation and how it contributes to system reliability."[5] Capacity contribution depends on both the characteristics of the QF and the characteristics of the system to which it is delivering energy, and therefore will produce a more accurate estimate of a utility's avoided capacity costs.

If the generation from a solar resource is not well matched to the utility's capacity needs, the solar resource's capacity contribution may be significantly less than its on-peak capacity factor. In that case the historic method may have overcompensated the QF for avoided capacity.

**Q. WAS THE CAPACITY CONTRIBUTION ADJUSTMENT INTENDED TO BE APPLIED IN ADDITION TO THE ON-PEAK CAPACITY FACTOR REDUCTION THAT WAS ALREADY OCCURRING PRIOR TO ORDER NO. 14-058?**

A. I don't think so. The on-peak capacity factor and the capacity contribution are two different ways to estimate the portion of proxy capacity costs that are avoided by a QF resource. Capacity factor and capacity contribution both take into account the generating characteristics of the QF resource. Therefore, reducing the proxy capacity costs by *both* the capacity factor and the capacity contribution creates the double-discounting that I described in my opening testimony.[6] As described above, capacity contribution will produce a more accurate estimate of the utility's avoided costs than capacity factor because

[5] PAC/600, Duvall/4.
[6] ODOE/600, Brockman/2-3.

capacity contribution considers how the QF resource contributes to system reliability.

**Q. IS STAFF'S REVISED METHODOLOGY ALREADY IN USE BY ANY OF THE UTILITIES?**

A. Yes. Staff's revised methodology for determining the capacity rate paid to a solar QF under a standard contract is the same methodology currently used by Idaho Power to develop *negotiated* capacity rates, with one difference. For its negotiated rates, Idaho Power determines a custom capacity payment based on the QF's *project-specific* capacity contribution and *project-specific* forecasted annual energy deliveries. Under Staff's revised methodology, a standard capacity payment would be determined based on the capacity contribution and forecasted annual energy deliveries of the *proxy solar resource* rather than of the specific QF project.

Under Idaho Power's method for negotiated rates, the "project-specific capacity contribution is multiplied by the annual capacity cost of the SCCT, and then spread over the project's forecasted annual energy deliveries to determine the avoided cost of capacity rate for that specific project."[7] This method calculates the capital costs of the capacity resource that are avoided by the specific QF based on its capacity contribution, and establishes a payment rate based on the QF's expected energy deliveries. That way, the QF will receive the full value of the fraction of the SCCT capacity that is avoided by the QF, if

[7] Idaho Power/600, Youngblood/10.

the QF delivers energy as expected. By customizing the rate to each QF, this method accurately represents actual avoided capacity costs.

Staff's proposal uses this same method to create standard rates by substituting the proxy solar resource for the specific QF. The calculation results in a capacity payment based on the proxy solar resource, which, for now, is a reasonable approximation of any solar QF. The method calculates the capital costs of the capacity resource that are avoided by the proxy solar resource, and establishes a payment rate based on the proxy solar resource's expected energy deliveries.

Adoption of Staff's revised methodology for calculating the capacity payment under standard avoided cost rates would be consistent with the methodology already used by Idaho Power for its negotiated rates.

**Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

A. Yes.

CERTIFICATE OF SERVICE

I hearby certify that on November 19, 2014, I served the foregoing REPLY TESTIMONY OF KACIA BROCKMAN ON SOLAR CAPACITY ADJUSTMENT TO RENEWABLE AVOIDED COST PRICES upon all parties of record in this proceeding by electronic mail as all parties have waived paper service.

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**(C)=Confidential**

DATED this 19 day of November, 2014.

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