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December 18, 2014

VIA ELECTRONIC FILING & U.S. MAIL

Oregon Public Utility Commission
Attn: Filing Center
P.O. Box 1088
Salem, Oregon 97308-1088

Re: In the Matter of Public Utility Commission of Oregon Investigation Into
Qualifying Facility Contracting and Pricing
Docket No. UM-1610 (Phase II)

Dear Filing Center:

Enclosed please find the original and five (5) copies of Obsidian Renewables LLC's
Post-Hearing Brief in the above-referenced docket.

Thank you for your assistance with this filing. Should you have any questions, please
feel free to contact me.

Very truly yours,

/s/ Chad M. Stokes

Chad M. Stokes

CMS:tjb
Enclosures
cc: UM-1610 Service List

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1610 (Phase II)

In the Matter of)
)
PUBLIC UTILITY COMMISSION OF)
OREGON Investigation Into Qualifying)
Facility Contracting and Pricing)
)
)
)

I. INTRODUCTION

Obsidian Renewables LLC (“Obsidian”) respectfully submits this post-hearing brief to address the calculation of the capacity contribution payment to renewable solar qualifying facilities (“QF”). Obsidian is in the business of developing renewable generating facilities, many of which are and will be located in the State of Oregon. Although Obsidian is not limited to a single generating technology, Obsidian does have particular experience in developing utility-scale renewable solar projects in Oregon.

As explained below, in Order 14-058 the Commission adopted Staff’s initial proposal concerning the calculation of capacity payments. Obsidian later discovered, and informed the Commission and its Staff, that the initial proposal would result in an inadvertent double discount to the total capacity payment amount for renewable solar QFs. The capacity payment paid to solar renewable QF projects would be discounted once in the calculation of the resource-specific capacity rate, and then it would be discounted again by only applying that rate for a subset of high-load or peak hours. Staff now agrees with Obsidian’s assessment of the initial proposal.

In order to eliminate the double discount problem, Obsidian urges the Commission to adopt Staff’s *revised* proposal as the basis for calculating the capacity payment for renewable solar QF projects. Staff’s revised proposal provides that a purchasing utility’s avoided capacity cost should be multiplied by the renewable solar QF

project's capacity value to determine a target annual capacity payment amount. The target annual capacity payment is the basis of the volumetric rate paid to the renewable solar QF project. By starting with the total annual capacity payment amount, the double discount problem is resolved.

In order to properly implement Staff's revised proposal, the purchasing utilities should be required to calculate the solar capacity value using the industry standard ELCC method (or an accepted approximation of that method) rather than the discredited Exceedance Method. PacifiCorp's use of the Exceedance Method in its 2013 IRP has been rejected by the Utah Public Service Commission ("Utah PSC"). As a result, PacifiCorp switched to the ELCC method in its 2015 IRP. PacifiCorp recently testified in another jurisdiction that the ELCC capacity value from its 2015 IRP is the appropriate measure of solar capacity value in its service territory. Portland General Electric actually included the ELCC method in its 2013 Integrated Resource Plan ("IRP"), but then chose to adopt the much lower capacity value derived from the Exceedance Method.

II. PROCEDURAL HISTORY

On February 24, 2014, the Commission issued Order 14-058 in Phase I of this docket. Among many other things, the Commission held that "[w]e agree on the need to adjust for capacity contribution of each resource type and adopt Staff's proposed method for calculating capacity adjustments, as set forth in Staff/102-103, using input estimates derived from the utility's acknowledged IRP." In other words, the Commission agreed that it would be appropriate for purchasing utilities to compensate QFs for capacity consistent with the methodology described by Staff. The intent of Staff's initial proposal was to discount the capacity payment made to QF projects so that it is proportionate to the capacity that it contributes to the purchasing utility. When applied to renewable solar QF projects, however, Staff's initial proposal actually resulted in a *double* discount of the capacity payment. Obsidian confirmed with Staff that this double discount was *not* intentional and should be corrected.

On April 24, 2014, Obsidian filed a Motion for Clarification of that portion of Order 14-058 that applies to capacity payments to renewable solar QF projects. Obsidian explained how Staff's initial proposal for calculating the capacity contribution payments results in a double discount of the payment amount. None of the other parties to this proceeding objected to Obsidian's Motion for Clarification. Specifically, none of the purchasing utilities that now support the Staff's initial proposal opposed or contradicted Obsidian's interpretation of Staff's initial proposal in its Motion for Clarification. OneEnergy and the Community Renewable Energy Association filed their own motion concurring with Obsidian's motion.

On May 9, 2014, Staff filed a response to Obsidian's Motion for Clarification in which it agreed that its initial proposal would result in an unintentional double discount of the capacity contribution payment for renewable solar QF projects and therefore should be clarified. *"Staff agrees with Obsidian . . . that there appears to be a second and unintended discounting of the avoided capacity value in the design of the volumetric avoided cost prices."* (Emphasis added). Staff's response further states that "Staff recommends that the Commission allow parties to address this limited question regarding the design of the volumetric avoided cost prices in the investigations currently open to address the utilities' recent filings to comply with Order No. 14-058."

On June 10, 2014, the Administrative Law Judge ("ALJ") issued a Ruling granting Obsidian's Motion for Clarification. The ALJ's Ruling notes that "Staff agreed with the concerns raised by Obsidian . . . regarding the application of Staff's methodology to renewable solar QF resources" The ALJ notes that Staff recommended further input from interested parties in order to clarify the issue raised by Obsidian. In light of this, the ALJ's Ruling states that Obsidian's "request for clarification of Staff's methodology for adjusting rates to reflect a solar QF's capacity contribution is granted. The parties should address the methodology applicable to

renewable solar QF resources . . . in the investigations currently taking place for Pacific Power's and Idaho Power's compliance filings in this docket.”

Staff, PacifiCorp and several intervening parties entered into a Partial Stipulation on or about August 11, 2014, in which PacifiCorp's compliance filing in this docket was allowed to go into affect subject to the subsequent resolution of several outstanding issues in Phase II. In this Partial Stipulation, the stipulating parties agreed that the renewable solar capacity issue would be resolved on an expedited basis in Phase II. Staff subsequently set a procedural schedule specific to the renewable solar QF capacity payment issue to allow for its resolution independent from the other issues to be addressed in Phase II of this docket.

The question now before the Commission is whether it will adhere to Staff's initial proposal, which Staff itself has since repudiated, or adopt Staff's revised proposal, which was carefully crafted to address the concerns raised by Obsidian and others.

III. THE INITIAL PROPOSAL WOULD RESULT IN AN UNINTENDED DOUBLE DISCOUNT TO RENEWABLE SOLAR CAPACITY PAYMENTS

a. Staff's initial proposal inadvertently created a double discount that should be clarified.

Staff's testimony in Phase I stated that it is appropriate under PURPA for purchasing utilities to compensate renewable QFs for capacity. Staff's Phase I testimony included detailed analysis concerning the methodology by which the capacity contribution payment should be calculated and allocated for different types of QF projects. The Staff testimony concludes that the capacity contribution should be discounted for certain types of QF projects in proportion to their expected availability during the purchasing utility's high load hours. Baseload QF resources would receive the full capacity payment, whereas the capacity payment paid to variable resources would be discounted on a proportionate basis to reflect their reduced availability during high load

hours. This discount is reflected in the capacity value assigned to each resource type, which produces a capacity payment that varies by resource type.

As Obsidian noted in its Motion for Clarification, the problem with Staff's initial proposal is that the already discounted capacity payment *rate* would only be paid to the QF during a discounted number of high load *hours*. Thus, the capacity payment paid to solar renewable QF projects would be discounted not once but twice. It is discounted in the calculation of the resource-specific capacity rate, and then it is discounted again by only applying that rate only to a subset of high load hours. The fact that a variable resource is not available for all high load hours is, by definition, already reflected in the discounted resource specific capacity rate and it should not be reflected again by limiting the number of hours to which that discounted rate is applied.

As stated above, Staff filed a response to Obsidian's Motion for Clarification in which it expressly agreed that its initial proposal would result in an unintentional double discount of the capacity contribution payment for renewable solar QF projects and therefore should be clarified. "Staff agrees with Obsidian . . . that there appears to be a second and unintended discounting of the avoided capacity value in the design of the volumetric avoided cost prices."

The double discount issue was again confirmed by both Staff and the Oregon Department of Energy in their testimony on this issue in Phase II of this Docket. Both Staff and ODOE explain that the "double discount" problem in the original Staff testimony arises from the fact that the original methodology starts with the calculation of a discounted capacity *rate* for renewable solar QF projects, rather than starting from a total annual capacity value. *See* Staff/300; Andrus/7-9; ODOE/600; Brockman/2. Staff and ODOE further explain that by starting from a discounted rate, and then applying it as an adder to the renewable solar QF projects energy payment amount, the total capacity payment to the renewable solar QF project ends up being disproportionately low. *Id.* By

starting with the total annual capacity value, however, the volumetric rate can be designed so as to avoid a double discount. *Id.*

b. PacifiCorp's testimony that the Commission *intended* to apply a double discount finds no support in Staff's testimony or the Commission's Order.

PacifiCorp's testimony in Phase II of this proceeding admits that the compensation paid to a renewable solar QF project under Staff's original methodology would be disproportionately low as compared to the renewable solar QF project's contribution to PacifiCorp's capacity requirements. The Opening Testimony of Gregory N. Duvall explains that a solar QF project having an assumed capacity contribution of 13.6% should only be paid "5.4 percent of the proxy CCCT capacity costs." PAC/600, Duvall/7. Mr. Duvall further testifies that if a renewable solar QF project were assumed to have a capacity contribution of 39.5%, it would be "senseless" to pay such project 39.5% of the CCCT capacity costs. *Id.* Thus, PacifiCorp's position appears to be that the compensation paid to a renewable solar QF project *should* be disproportionately low in comparison to the amount of capacity that it actually provides.

PacifiCorp's testimony that the Commission *intended* to disproportionately under compensate renewable solar QFs finds no support in the Commission's Order or Staff's analysis of its own position. In its response testimony for Phase II, Staff responded directly to PacifiCorp by clarifying that "Staff did not . . . recommend implementing a methodology that significantly undercompensates intermittent QFs for their capacity contribution." Staff/400, Andrus/7. Staff further explains that, in its revised proposal, a renewable solar QF that contributes 9.4% more capacity than the renewable proxy project should receive 9.4% of the total annual capacity value of baseload resource. In other words, Staff's intent in both its initial and revised proposals was that the capacity payment for renewable solar QF projects would be proportionate to the incremental increase in capacity contributed by such projects as compared to the renewable proxy

project. Because Staff's initial methodology failed to achieve that goal, Staff developed its revised proposal.

c. Idaho Power's testimony confirms that double discount.

Whereas PacifiCorp argues in favor of the double discount, Idaho Power testifies in Phase II that there is no double discount. Idaho Power explains that its avoided cost of capacity from its proxy resource is \$13.62 per MWh. The capacity contribution of solar is 32% of the capacity contribution of the baseload resource, so Idaho Power concludes that the rate paid to the solar project should be 32% of \$13.62, which is \$4.36. Idaho Power/600, Youngblood/13. Idaho Power asserts that this is consistent with Staff's initial proposal. Idaho Power's own mathematical examples, however, show that \$4.36 would only be the appropriate adder if it were applied to *all* on-peak hours, not just the on-peak hours of solar production.

The error of Idaho Power's conclusion is revealed in its own mathematic examples. *See generally*, Idaho Power/600; Youngblood/14. Idaho Power's mathematical examples show that the annual capacity cost of a baseload resource is calculated as follows: $\$13.62 \times 4,862 \text{ on-peak hours} = \$66,220.44 \text{ per MWh}$. *Id.* Idaho Power explains that the annual capacity cost of solar resource is calculated as follows: $\$13.62 \times 4,862 \text{ on-peak hours} \times 32\%$ (capacity contribution of solar as compared to the baseload resource) = \$21,190.54. *Id.* Idaho Power's mathematical example correctly calculates the solar project's total annual capacity cost because it uses the full capacity value of \$13.62 (and not the discounted capacity rate of \$4.36) multiplied by a discounted number of on-peak hours (32% of all on-peak hours) in which the solar project delivers energy. In other words, Idaho Power discounted *only* the number of on-peak hours to which the full rate is applied, and not the capacity rate.

If Idaho Power had followed Staff's initial proposal, however, the equation would have discounted both the number of hours and the rate by 32%. In such case, the total annual payment would have been disproportionate to the renewable solar QF project's

capacity contribution. The mathematical example would have looked like this: $\$13.62 \times 32\% \times 4,862 \text{ on-peak hours} \times 32\% = \$6,780.97$. In its own example, Idaho Power applied a single discount and correctly calculated the annual capacity cost of $\$21,190.54$, rather than applying a double-discount to calculate a disproportionately low annual capacity value of $\$6,780.97$.

Idaho Power then confirms this analysis in the next paragraph of its Phase II testimony by moving the discount factor of 32% from the total number of on-peak hours to the hourly capacity rate. *Id.* Idaho Power testifies that “[a]nother way of viewing this is that the total annual capacity cost for the solar QF is $\$21,190.54$ per MW, *and if that amount were spread over all 4,862 on-peak hours, the result would be a $\$4.36$ per MWh capacity adder* [$\$21,190.54 \text{ per MW} \div 4,862 \text{ on-peak hours} = \4.36 per MWh]” (Emphasis added). *Id.* Again, Idaho Power’s example is correct because it only applies a single discount, this time to the capacity rate but not the number of on-peak hours. This is precisely what Obsidian pointed out in its Motion for Clarification. The capacity value methodology works only by discounting *either* the capacity rate *or* the number of on-peak hours to which the rate is applied, *but not both*.

As stated above, PacifiCorp testifies that it would be “senseless” to pay a solar project with a capacity value of 39.5% a capacity payment that is equal to 39.5% of the capacity cost of the proxy resource. PAC/600, Duvall/7. In Idaho Power’s testimony, however, a solar QF project having a capacity value of 32% would, in fact, receive a capacity payment that is 32% of the capacity cost of the proxy resource. Idaho Power/600; Youngblood/14. Idaho Power computes the annual capacity cost of the proxy resources to be $\$66,220.44$ per MW. *Id.* Idaho Power then determines the total annual capacity cost of a solar QF with a 32% capacity value to be $\$21,190.54$. *Id.* The amount paid to the solar QF ($\$21,190.54$) is precisely 32% of capacity cost of the proxy resource ($\$66,220.44$). Idaho Power’s own mathematical example, which is correct, yields the exact outcome that PacifiCorp dismisses as “senseless.”

IV. STAFF'S REVISED CAPACITY PAYMENT PROPOSAL SHOULD BE ADOPTED

As both Staff and ODOE explain in their opening testimony, the error in Staff's initial proposal was that it started with a discounted capacity *rate* that is derived from the number of hours that the baseload resource is expected to operate rather than the number of hours that the renewable solar QF project is expected to operate. *See* Staff/300; Andrus/7-9; ODOE/600; Brockman/2. When this rate is paid only during on-peak hours in which the renewable solar QF project is delivering energy, it results in total annual capacity payments that are disproportionately low. *Id.*

To correct this, Staff developed a revised proposal for calculating renewable capacity contribution payments. The first step of Staff's revised proposal is to calculate the total annual capacity payment to the renewable solar QF project taking into account both: (i) The purchasing utility's annual baseload capacity costs; and (ii) The renewable solar QF project's incremental capacity value (or CTP). *See* Staff/300; Andrus/10-13. In simple terms, Staff's revised proposal is derived from the target annual capacity payment to the renewable solar QF project rather than an already discounted capacity rate. Returning to Idaho Power's numerical example, Staff's revised proposal would compensate the renewable solar QF project \$21,190.54 per year for its capacity contribution, rather than simply paying it \$4.36 per on-peak generation hour (which would yield an annual payment of just \$6,780.97).

The second step of Staff's revised proposal is to design a volumetric rate that spreads the quantity of dollars determined in the first step over a set number of on-peak hours in which the capacity payment is made to the renewable solar QF project. *See* Staff/300; Andrus/10-13. Staff explains that there are multiple rate design options, and Staff describes two of them. *Id.* In Option 1, the volumetric payment for capacity would be added to the energy payment for each on-peak hour of the year in which the renewable solar QF delivers energy to the purchasing utility. *Id.* In Option 2, the volumetric payment would be made only in those hours having the highest loss of load probability.

Id. In either case, and this is key, the volumetric rate would be set at a level that is expected to pay the same target capacity dollars over the course of a year. *Id.* at 12.

Staff's revised proposal fixes the double discount problem by ensuring that the total annual capacity payments to the renewable QF project remain proportionate with the avoided capacity costs of the purchasing utility's proxy resource. *See* Staff/400, Andrus/7.

V. PURCHASING UTILITIES SHOULD BE REQUIRED TO USE THE ELCC METHOD OF CALCULATING CAPACITY CONTRIBUTION FACTORS CONSISTENT WITH THEIR MOST RECENT IRPs

a. The Exceedance Method for calculating capacity contribution factors is not industry-standard and has been rejected.

As explained above, the key to eliminating the double-discount error is to derive the volumetric rate from the target annual capacity payment. The target annual capacity payment is a function of the purchasing utility's avoided baseload capacity cost multiplied by the renewable solar QF project's incremental contribution to capacity during peak hours—which staff labels “CTP” in its revised proposal. Under this formula, if the CTP is understated then the target annual capacity payment will likewise be understated. The CTP must therefore be determined correctly in order to calculate the renewable solar QF projects CTP or incremental capacity value.

The solar capacity values stated in both PacifiCorp's and PGE's 2013 IRPs are grossly understated because they are based on a flawed methodology. PacifiCorp's current solar capacity value is 13.6% and PGE's is only 5%. The capacity contribution value of a single axis tracking solar project in Oregon actually should be about 38-39%. *See* Obsidian/200; Brown/11. The utilities' numbers are unreasonably low because they are based on a flawed methodology that has already been rejected by other state regulators.

On August 16, 2013, the Utah PSC issued an Order in Docket 12-035-100 in which it expressly rejected PacifiCorp's Exceedance Method of calculating solar capacity

value. *See generally* Obsidian /200; Brown/12. The Utah PSC stated that “PacifiCorp’s Exceedance Method is not an industry standard approach.” The Utah PSC explained that PacifiCorp’s method “arbitrarily weights company data” and “fails to consider reliability measures” in the determination of the hours evaluated. The Utah PSC concluded that “[g]iven the evidence demonstrating significant flaws in the Exceedance Method and the fact that it results in a . . . capacity contribution assumption for reliability planning and QF capacity payments substantially different from values used or approved in the past, we reject its use in this case.” The Utah PSC directed PacifiCorp to calculate the capacity contribution of solar resources using either the ELCC method or an approximation of that method.

b. PacifiCorp is already using the revised capacity contribution factor in its 2015 IRP.

PacifiCorp has already updated its draft 2015 IRP using an approximation of the ELCC method. PacifiCorp’s solar capacity value in Oregon is now 36.7%, up from 13.6%. *See* Obsidian/200; Brown/13. In other jurisdictions, even PacifiCorp agrees that its revised solar capacity value should be used for calculating solar capacity payments.

On November 7, 2014, PacifiCorp (dba Rocky Mountain Power) filed for an adjustment of its Schedule 37 avoided cost rates applicable to QF projects in Wyoming. *See generally* Obsidian/300; Brown/12. In support of the requested rate adjustment, PacifiCorp offered testimony from Gregory N. Duvall, the same witness that has provided testimony on PacifiCorp’s behalf in this proceeding. With respect to capacity contribution of solar resources, Mr. Duvall testified that PacifiCorp recently completed a capacity contribution study in support of its 2015 IRP. The methodology used by PacifiCorp in that capacity study was not the discredited Exceedance Method but the capacity factor approximation method (“CF Method”). The CF Method is an accepted approximation of the ELCC method. PacifiCorp’s CF Method study shows an average capacity value for tracking solar PV of 37.9% in Wyoming (and 36.7% in Oregon).

PacifiCorp testified that the capacity value of 37.9% from its 2015 IRP should serve as the basis for any avoided capacity cost payments in Wyoming.

Just as PacifiCorp itself requested in Wyoming, PacifiCorp should be required to use its updated capacity contribution numbers from its 2015 IRP for purposes of updating its Schedule 37 rates in Oregon.

c. PGE has *two* capacity contribution factors in its 2013 IRP.

PGE's 2013 IRP actually runs both the Exceedance Method and the ELCC method. *See generally* Obsidian/200; Brown/13-14. The Exceedance Method yields a number that PGE averages to 5%. The ELCC methodology, on the other hand, produces a capacity value that is closer to 20%. Nevertheless, PGE would simply ignore the higher ELCC results and use only the Exceedance Method. PGE should be required to use the industry standard ELCC methodology from its own IRP, rather than the Exceedance Method, for purposes calculating the capacity value for renewable solar QF projects. Because the ELCC capacity valuation is included in PGE's 2013 IRP, using it as the basis for the renewable solar QF project capacity payment would be consistent with the Commission's directive to use cost estimator derived from the utilities' IRPs.

VI. CONCLUSION

Obsidian respectfully requests the Commission adopt Staff's revised proposal as the basis for calculating the capacity payment for renewable solar QF projects. Staff's revised proposal states that the purchasing utilities' avoided capacity costs should be multiplied by the renewable solar QF project's capacity value to determine a target annual capacity payment amount. The target annual capacity payment is the basis of the volumetric rate paid to the renewable solar QF project. By starting with the total annual capacity payment amount, the double discount problem identified by Obsidian in its Motion for Clarification is resolved. In order to properly implement Staff's revised proposal, the capacity contribution payment should be based on the solar capacity values

calculated by the purchasing utilities in their most recent IRPs using the industry standard ELCC method (or an accepted approximation of that method).

DATED this 18th day of December 2014.

Respectfully submitted,

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