BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

UM 1610

In the Matter of PUBLIC UTILITY COMMISSION OF OREGON Investigation into Qualifying Facility Contracting and Pricing.	Closing Brief of Renewable Northwest – Solar

Renewable Northwest ("Renewable NW") respectfully submits this Brief in support of testimony by Oregon Public Utility Commission Staff ("Staff"), the Oregon Department of Energy ("ODOE"), and various qualifying facility ("QF") parties. In order to accomplish the intent of the Oregon Public Utility Commission's ("Commission") Order No. 14-058—*i.e.*, to accurately reflect capacity value differences among resource types in avoided cost payments[1]—the Commission must clarify that its new approach to capacity value adjustments is not complete or accurate without additional, downstream changes in the avoided cost payment mechanics.

To correct this "unintended double-discounting of a solar qualifying facility's capacity payment,"[2] Renewable NW recommends that the Commission adopt the simplest of the several solutions that Staff offers (Option 1).[3] All of Staff's solutions would accurately adjust for capacity value,[4] but the more complicated options do not offer sufficient advantages to justify their added complexity. In addition to adopting this solution for the renewable avoided cost, Renewable NW agrees with Staff and ODOE that there is a need to

[1] Order No. 14-058, at 15; ODOE/700, Brockman/2
[2] ODOE/600, Brockman/1
[3] *See* Staff/300, Andrus/11–12
[4] Obsidian/300, Brown/9

modify the methodology for calculating capacity contribution adjustment for the standard avoided cost as well.[5]

The Problem

Avoided cost rates compensate a QF not only for *energy*, but also for *capacity* that the QF brings to the system and thereby allows the utility to avoid procuring during deficiency periods.[6] Depending on the QF's resource type, a QF may avoid more or less capacity than the proxy resource—in the standard avoided cost, a combined cycle combustion turbine ("CCCT") and in the renewable avoided cost, a utility-scale wind resource.[7] Avoided cost rates should reflect these differences in QFs' capacity contributions. The question is where in the rate calculation to reflect these differences—and, importantly here, how to avoid reflecting them twice.

As background, avoided cost rates traditionally have been designed to compensate QFs for avoided capacity on a *per MWh* basis (despite capacity being a concept normally expressed and paid for *per MW*). This means that the avoided cost rate design must first calculate the per MW avoided cost of capacity, based on the fixed cost per MW of a single-cycle combustion turbine ("SCCT").[8] Then, the avoided capacity cost is distributed to QFs by spreading the avoided capacity cost across all on-peak hours to create a per-MWh capacity adder that QFs earn by generating during on-peak hours.[9] By producing energy during all on-peak hours, a baseload QF would recover 100% of the per MW cost of a SCCT. Before Order 14-058, a variable energy QF would produce energy during some, but not all, on-peak

[5] Staff/300, Andrus /13; ODOE/600, Brockman/2
[6] Staff/400, Andrus/4
[7] Staff/400, Andrus/4–5
[8] Staff/300, Andrus/4
[9] Staff/300, Andrus/4-5

hours and therefore would earn less than 100% of that total per MW cost of capacity. The amount that a variable QF earned before Order No. 14-058 would depend not on its calculated capacity value, but rather on how often it generated during on-peak hours.

In Order No. 14-058, the Commission adopted a new capacity payment adjustment approach that is based explicitly on the calculation of capacity value from the utility's IRP. However, in its Order, the Commission did not complete the transition to the new approach by adjusting the old method to accommodate the new approach. Without clarifying that the per MWh compensation methodology needs be adjusted to work with the new approach, the Commission will be left applying two duplicative methods of adjusting for differences in capacity contribution, creating a double-discount and an inaccurate assessment of resource capacity value.[10] We agree with Staff that without further adjusting the per MWh payment structure, "solar QFs would be undercompensated for the value of capacity"[11] because "spreading a discounted rate to all on-peak hours, and only paying the QF in the hours it generates, will undercompensate the solar QF for its capacity contribution."[12]

Under the approach adopted in Order 14-058, the avoided capacity cost is discounted to reflect resource capacity value calculated in the IRP.[13] For example, if an IRP concludes solar's capacity value is 25%, then solar resources avoid only 25% of the capacity that a MW of SCCT would bring to the system—and thus should be paid 25% of the SCCT's fixed cost. The problem is this: if the discounted avoided capacity cost (*i.e.*, 25% of the SCCT's cost) is paid out as a per MWh premium during *all* on-peak hours, then a solar resource would only be able to earn that discounted amount if it operated during 100% of the on-peak hours, like

[10] Obsidian/200, Brown/3; ODOE/600, Brockman/1
[11] Staff/300, Andrus/7
[12] Staff/400, Andrus/6–7
[13] Staff/300, Andrus/5

a baseload resource.[14] This is double discounting, because the solar QF's reduced availability during on-peak hours has already been captured—by definition—through the capacity value discount derived from the IRP, which produced the discount in the first place. Failing to clarify needed changes to the per MWh payment methodology would result in a solar QF receiving compensation for significantly less than its discounted proportion of the per MW SCCT capacity cost.[15]

This was not the intended outcome. As ODOE points out, one of the aims of Order No. 14-058 was to "produce more accurate avoided cost estimates."[16] In prior phases of this docket, Staff may have recommended that the Commission take into account explicit resource capacity value determinations in setting rates, but their testimony here demonstrates that they did not intend to recommend a methodology that significantly undercompensated variable QFs for their capacity contribution.[17]

The Solution

Staff's response testimony correctly points out that "using a volumetric rate based on an assumed production level for a thermal resource is not the correct starting point for calculating an adjusted capacity payment."[18] Instead, "the correct starting point is the value of capacity brought to the utilities' systems for the QF technology type."[19] In other words, the dollar per unit of capacity per year, or the "target capacity dollars."[20]

[14] *See* ODOE/600, Brockman/3
[15] *See, e.g.*, Staff/300, Andrus/8
[16] Order No. 14-058, at 15
[17] Obsidian/200, Brown/3
[18] Staff/400, Andrus 9
[19] Staff/400, Andrus 9
[20] Staff/300, Andrus 12

Thus, Staff's proposed solution starts by determining the value of capacity on a dollars-per-MW basis.[21] This value represents the annual fixed costs per MW per year of an SCCT—$140,320 per MW-year, according to Exhibit 302. This is then multiplied by the QF resource type's "CTP" (aka, capacity value identified in the IRP), relative to the proxy's, to obtain the "target capacity dollars" figure. (Again, this figure reflects the cost of the capacity that the solar QF avoids over the course of a year.) Normally, in the standard avoided cost, the "target capacity dollars" figure would be derived by multiplying the full SCCT fixed cost by solar's capacity value. For the renewable avoided cost, in Staff's example, a solar resource delivers 9.4% more capacity contribution than the proxy wind resource.[22] If solar's incremental contribution to capacity over wind's is 9.4%, then the "target capacity dollars" figure is $13,190 per MW ($140,320 [the full SCCT fixed cost per MW-year]*9.4% [the incremental capacity contribution]).[23] Calculating this "target capacity dollars" figure appropriately reflects the difference between the proxy's capacity contribution and the QF's.

Staff's proposal for converting this "target capacity dollars" figure to a per-MWh adder ensures that the capacity value difference is not reflected twice—once in the initial discounting described in the last paragraph, and again in the design of the per-MWh adder. To avoid double-discounting in designing the per-MWh adder, Staff creates the per-MWh premium by spreading the "target capacity dollars" figure over a set number of on-peak hours during which the QF could be expected to generate, rather than over all on-peak

[21] Staff/300, Andrus/9
[22] Staff/300, Exhibit 302
[23] *Id.*

hours.[24] This way, if the QF generates as expected, the QF will be paid the full value of the capacity it avoids—which, again, has already been adjusted relative to the proxy.

Staff suggests two options for accomplishing this.[25] Staff's "Option 1" calculates an "on-peak capacity factor."[26] This is a measure of how much on average the resource is expected to produce, compared to its nameplate capacity, during the 4,912 NERC designated on-peak hours.[27] Staff determines that, in general, a solar QF could be expected to achieve a 27.5% capacity factor during on-peak hours.[28] In other words, a solar QF can be expected to operate for approximately 1,351 hours out of the 4,912 on-peak hours (4,912 hours*27.5%). The target capacity dollars for the solar QF ($13,190 per MW) is converted to a per-MWh premium by spreading it across those 1,351 hours, resulting in a capacity adder of $9.76 per MWh ($13,190 per MW/1,351 hours).[29] In Option 1, that adder is applied to all on-peak hours.[30] If the solar QF operates during the expected number of on-peak hours, it will be able to recover the full "target capacity dollars" assigned to its resource type relative to the proxy.

Renewable NW supports Option 1, which Staff acknowledges would be administratively simpler.[31] We do not believe that Option 2 offers significant advantages over Option 1. It calculates a higher per-MWh adder (*i.e.*, spreads the target avoided capacity cost over fewer hours) and also pays the adder during fewer hours (*i.e.*, during some peak

[24] Staff/300, Andrus/10-11
[25] Staff/300, Andrus/10–11
[26] Staff/300, Andrus/11
[27] Staff/300, Andrus/11-12
[28] Staff/300, Exhibit 302
[29] *See id.*
[30] Staff/300, Andrus/11-12
[31] Staff/300, Andrus/12

months).[32] Staff argues that Option 2 would provide "an incentive for the QF to perform in the most valued months, which better matches the hours in which capacity will be likely needed."[33] This is not a significant advantage over Option 1. A variable solar resource will have little ability to control its seasonal production in order to respond to such an incentive to generate during particular months. (Orientation, tracking, and storage could all allow a solar QF to adjust its hourly shape, but less so its seasonal shape.) If a solar resource were able to respond to such a seasonal incentive, the IRP would have identified a higher capacity value for solar. The IRP-derived discount used to produce the "target capacity dollars" figure already accomplishes the Commission's goal, and the simpler Option 1 is an acceptable way to design the avoided cost rate to allow solar QFs the opportunity to recover this avoided capacity value.

Conclusion

When the Commission adopted a new approach to recognizing differences in peak contribution/capacity value in Order No. 14-058, it did not clarify that its old approach to calculating the per-MWh capacity adder would also have to change to accommodate the new approach. Staff offers a simple solution to this problem in Option 1, and Renewable NW recommends that the Commission adopt it.

RESPECTFULLY SUBMITTED this 18th day of December, 2014.

RENEWABLE NORTHWEST
/s/ Megan Decker
Megan W. Decker (OSB No. 034878)
421 SW 6th Avenue, Ste. 1125
Portland, OR 97204
(503) 223-4544
megan@renewablenw.org

[32] Staff/300, Andrus/12
[33] Staff/300, Andrus/13

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I served the foregoing CLOSING BRIEF OF RENEWABLE NORTHWEST—SOLAR upon the following parties on the service list, via electronic mail, on December 18, 2014:

RENEWABLE NORTHWEST

By: */s/ Megan Walseth Decker*
Megan Walseth Decker, OSB No. 034878
megan@renewablenw.org

W	THOMAS H NELSON **(C)** ATTORNEY AT LAW	PO BOX 1211 WELCHES OR 97067-1211 nelson@thnelson.com
W	***OREGON DEPARTMENT OF ENERGY**	
	KACIA BROCKMAN **(C)** SENIOR ENERGY POLICY ANALYST	625 MARION ST NE SALEM OR 97301-3737 kacia.brockman@state.or.us
	MATT KRUMENAUER **(C)** SENIOR POLICY ANALYST	625 MARION ST NE SALEM OR 97301 matt.krumenauer@state.or.us
W	***OREGON DEPARTMENT OF JUSTICE**	
	RENEE M FRANCE **(C)** SENIOR ASSISTANT ATTORNEY GENERAL	NATURAL RESOURCES SECTION 1162 COURT ST NE SALEM OR 97301-4096 renee.m.france@doj.state.or.us
W	**ANNALA, CAREY, BAKER, ET AL., PC**	
	WILL K CAREY	PO BOX 325 HOOD RIVER OR 97031 wcarey@gorge.net
W	**ASSOCIATION OF OR COUNTIES**	
	MIKE MCARTHUR EXECUTIVE DIRECTOR	PO BOX 12729 SALEM OR 97309 mmcarthur@aocweb.org
W	**CABLE HUSTON BENEDICT HAAGENSEN & LLOYD LLP**	
	RICHARD LORENZ **(C)**	1001 SW FIFTH AVE - STE 2000 PORTLAND OR 97204-1136 rlorenz@cablehuston.com
	CHAD M STOKES	1001 SW 5TH - STE 2000 PORTLAND OR 97204-1136 cstokes@cablehuston.com
W	**CITIZENS' UTILITY BOARD OF OREGON**	
	OPUC DOCKETS	610 SW BROADWAY, STE 400 PORTLAND OR 97205 dockets@oregoncub.org
	ROBERT JENKS **(C)**	610 SW BROADWAY, STE 400 PORTLAND OR 97205 bob@oregoncub.org
	G. CATRIONA MCCRACKEN **(C)**	610 SW BROADWAY, STE 400 PORTLAND OR 97205 catriona@oregoncub.org
W	**CITY OF PORTLAND - PLANNING & SUSTAINABILITY**	
	DAVID TOOZE	1900 SW 4TH STE 7100 PORTLAND OR 97201 david.tooze@portlandoregon.gov
W	**CLEANTECH LAW PARTNERS PC**	
	DIANE HENKELS **(C)**	6228 SW HOOD PORTLAND OR 97239

		dhenkels@cleantechlawpartners.com
W	**CREA**	
	BRIAN SKEAHAN	PMB 409 18160 COTTONWOOD RD SUNRIVER OR 97707 brian.skeahan@yahoo.com
W	**DAVISON VAN CLEVE PC**	
	S BRADLEY VAN CLEVE **(C)**	333 SW TAYLOR - STE 400 PORTLAND OR 97204 bvc@dvclaw.com
W	**DAVISON VAN CLEVE, PC**	
	TYLER C PEPPLE **(C)**	333 SW TAYLOR SUITE 400 PORTLAND OR 97204 tcp@dvclaw.com
W	**ENERGY TRUST OF OREGON**	
	THAD ROTH	421 SW OAK STE 300 PORTLAND OR 97204 thad.roth@energytrust.org
	JOHN M VOLKMAN	421 SW OAK ST #300 PORTLAND OR 97204 john.volkman@energytrust.org
W	**EXELON BUSINESS SERVICES COMPANY, LLC**	
	PAUL D ACKERMAN	100 CONSTELLATION WAY STE 500C BALTIMORE MD 21202 paul.ackerman@constellation.com
W	**EXELON WIND LLC**	
	JOHN HARVEY **(C)**	4601 WESTOWN PARKWAY, STE 300 WEST DES MOINES IA 50266 john.harvey@exeloncorp.com
W	**IDAHO POWER COMPANY**	
	JULIA HILTON **(C)**	PO BOX 70 BOISE ID 83707-0070 jhilton@idahopower.com
	DONOVAN E WALKER **(C)**	PO BOX 70 BOISE ID 83707-0070 dwalker@idahopower.com
W	**LOVINGER KAUFMANN LLP**	
	KENNETH KAUFMANN **(C)**	825 NE MULTNOMAH STE 925 PORTLAND OR 97232-2150 kaufmann@lklaw.com
	JEFFREY S LOVINGER **(C)**	825 NE MULTNOMAH STE 925 PORTLAND OR 97232-2150 lovinger@lklaw.com
W	**LOYD FERY FARMS LLC**	
	LOYD FERY	11022 RAINWATER LANE SE AUMSVILLE OR 97325 dlchain@wvi.com
W	**MCDOWELL RACKNER & GIBSON PC**	
	LISA F RACKNER **(C)**	419 SW 11TH AVE., SUITE 400 PORTLAND OR 97205 dockets@mcd-law.com
W	**NORTHWEST ENERGY SYSTEMS COMPANY LLC**	
	DAREN ANDERSON	1800 NE 8TH ST., STE 320 BELLEVUE WA 98004-1600 da@thenescogroup.com
W	**OBSIDIAN RENEWABLES, LLC**	
	DAVID BROWN	5 CENTERPOINT DR, STE 590 LAKE OSWEGO OR 97035 dbrown@obsidianfinance.com
	TODD GREGORY	5 CENTERPOINTE DR, STE 590 LAKE OSWEGO OR 97035 tgregory@obsidianrenewables.com
W	**ONE ENERGY RENEWABLES**	
	BILL EDDIE **(C)**	206 NE 28TH AVE, STE 202 PORTLAND OR 97232 bill@oneenergyrenewables.com
W	**OREGON SOLAR ENERGY INDUSTRIES ASSOC.**	

	OSEIA DOCKETS	PO BOX 14927 PORTLAND OR 97293-0927 dockets@oseia.org
W	**OREGONIANS FOR RENEWABLE ENERGY POLICY**	
	KATHLEEN NEWMAN	1553 NE GREENSWORD DR HILLSBORO OR 97214 k.a.newman@frontier.com
	MARK PETE PENGILLY	PO BOX 10221 PORTLAND OR 97296 mpengilly@gmail.com
W	**PACIFIC POWER**	
	R. BRYCE DALLEY **(C)**	825 NE MULTNOMAH ST., STE 2000 PORTLAND OR 97232 bryce.dalley@pacificorp.com
	DUSTIN T TILL **(C)**	825 NE MULTNOMAH ST STE 1800 PORTLAND OR 97232 dustin.till@pacificorp.com
W	**PACIFICORP, DBA PACIFIC POWER**	
	OREGON DOCKETS	825 NE MULTNOMAH ST, STE 2000 PORTLAND OR 97232 oregondockets@pacificorp.com
W	**PORTLAND GENERAL ELECTRIC**	
	V. DENISE SAUNDERS	121 SW SALMON ST 1WTC1301 PORTLAND OR 97204 denise.saunders@pgn.com
	JAY TINKER **(C)**	121 SW SALMON ST 1WTC-0702 PORTLAND OR 97204 pge.opuc.filings@pgn.com
W	**PORTLAND GENERAL ELECTRIC COMPANY**	
	J RICHARD GEORGE **(C)**	121 SW SALMON ST 1WTC1301 PORTLAND OR 97204 richard.george@pgn.com
W	**PUBLIC UTILITY COMMISSION OF OREGON**	
	BRITTANY ANDRUS **(C)**	PO BOX 1088 SALEM OR 97308-1088 brittany.andrus@state.or.us
W	**PUC STAFF--DEPARTMENT OF JUSTICE**	
	STEPHANIE S ANDRUS **(C)**	BUSINESS ACTIVITIES SECTION 1162 COURT ST NE SALEM OR 97301-4096 stephanie.andrus@state.or.us
W	**RENEWABLE ENERGY COALITION**	
	JOHN LOWE	12050 SW TREMONT ST PORTLAND OR 97225-5430 jravenesanmarcos@yahoo.com
W	**RENEWABLE NORTHWEST**	
	RENEWABLE NW DOCKETS	421 SW 6TH AVE., STE. 1125 PORTLAND OR 97204 dockets@renewablenw.org
	MEGAN DECKER **(C)**	421 SW 6TH AVE #1125 PORTLAND OR 97204-1629 megan@renewablenw.org
W	**RICHARDSON ADAMS, PLLC**	
	GREGORY M. ADAMS **(C)**	PO BOX 7218 BOISE ID 83702 greg@richardsonadams.com
	PETER J RICHARDSON **(C)**	PO BOX 7218 BOISE ID 83707 peter@richardsonadams.com
W	**ROUSH HYDRO INC**	
	TONI ROUSH	366 E WATER STAYTON OR 97383 tmroush@wvi.com
W	**SANGER LAW PC**	
	IRION A SANGER	1117 SE 53RD AVE PORTLAND OR 97215 irion@sanger-law.com

W	**SMALL BUSINESS UTILITY ADVOCATES**	
	JAMES BIRKELUND **(C)**	548 MARKET ST STE 11200 SAN FRANCISCO CA 94104 james@utilityadvocates.org
W	**STOLL BERNE**	
	DAVID A LOKTING	209 SW OAK STREET, SUITE 500 PORTLAND OR 97204 dlokting@stollberne.com