BEFORE THE PUBLIC UTILITY COMMISSION

OF THE STATE OF OREGON

UM 1610

Phase II

In the Matter of

PUBLIC UTILITY COMMISSION
OF OREGON

Investigation into Qualifying Facility
Contracting and Pricing.

OPENING TESTIMONY OF

KEVIN C. HIGGINS

ON BEHALF OF

RENEWABLE ENERGY COALITION ("REC"),

COMMUNITY RENEWABLE ENERGY ASSOCIATION ("CREA"),

ONEENERGY and

OBSIDIAN RENEWABLES, LLC

REDACTED

MAY 22, 2015

OPENING TESTIMONY OF KEVIN C. HIGGINS

Introduction

Q. Please state your name and business address.

A. Kevin C. Higgins, 215 South State Street, Suite 200, Salt Lake City, Utah, 84111.

Q. By whom are you employed and in what capacity?

A. I am a Principal with Energy Strategies, LLC. Energy Strategies is a private consulting firm specializing in economic and policy analysis applicable to energy production, transportation, and consumption.

Q. On whose behalf are you testifying in this proceeding?

A. My testimony is being sponsored by the Renewable Energy Coalition ("REC"), the Community Renewable Energy Association ("CREA"), OneEnergy, and Obsidian Renewables, LLC ("Joint QF Parties").

Q. Please describe your professional experience and qualifications.

A. My academic background is in economics, and I have completed all coursework and field examinations toward a Ph.D. in Economics at the University of Utah. In addition, I have served on the adjunct faculties of both the University of Utah and Westminster College, where I taught undergraduate and graduate courses in economics. I joined Energy Strategies in 1995, where I assist private and public sector clients in the areas of energy-related economic and policy analysis, including evaluation of electric and gas utility rate matters.

Prior to joining Energy Strategies, I held policy positions in state and local government. From 1983 to 1990, I was economist, then assistant director, for the Utah Energy Office, where I helped develop and implement state energy policy. From 1991 to 1994, I was chief of staff to the chairman of the Salt Lake County Commission, where I was responsible for development and implementation of a broad spectrum of public policy at the local government level.

Q. Have you ever testified before this Commission?

A. Yes. I have testified in twenty prior proceedings in Oregon, including five PGE general rate cases, UE 283 (2014), UE 262 (2013), UE 215 (2010), UE 197 (2008) and UE 180 (2006), the PGE Opt-Out case, UE 236 (2012), and the PGE restructuring proceeding, UE 115 (2001).

I have also testified in six PacifiCorp general rate cases, UE 263 (2013), UE 246 (2012), UE 210 (2009), UE 179 (2006), UE 170 (2005), and UE 147 (2003) and six PacifiCorp Transition Adjustment Mechanism ("TAM") proceedings, UE 264 (2014 TAM), UE 245 (2013 TAM), UE 227 (2012 TAM), UE 216 (2011 TAM), UE 207 (2010 TAM), and UE 199 (2009 TAM), as well as the PacifiCorp Five-Year Opt-Out case, UE 267 (2013).

Q. Have you testified before utility regulatory commissions in other states?

A. Yes. I have testified in approximately 180 proceedings on the subjects of utility rates and regulatory policy before state utility regulators in Alaska, Arizona, Arkansas, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Michigan, Minnesota, Missouri, Montana, Nevada, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Virginia, Washington, West Virginia, and Wyoming. I have also prepared affidavits that have been filed with the Federal Energy Regulatory Commission and prepared expert reports in state and federal court proceedings involving utility matters. My involvement in the determination of avoided costs dates back to the initial Qualifying Facility ("QF") buyback rates established for the Utah Power & Light Company in 1984.

Overview and Conclusions

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

A. My testimony addresses Question 6 in the UM 1610 Phase II Issues List: "Do the market prices used during the Resource Sufficiency Period sufficiently compensate for capacity?" I am not testifying regarding any other issues in Phase II.

Q. Could you briefly explain the Commission's current implementation scheme for avoided cost compensation during the Resource Sufficiency Period and the Resource Deficiency Period?

A. As explained in Order No. 14-058, the Commission requires electric utilities to set rates based on the cost of a proxy resource during periods of resource deficiency and on monthly market prices during periods of resource sufficiency. The Resource Deficiency Period is determined in each utility's Integrated Resource Plan ("IRP") and it is the period for which a deferrable planned resource is identified. The proxy resource is a natural gas combined-cycle combustion turbine proxy resource for standard avoided cost prices, and the next avoidable renewable resource identified in the electric company's IRP for renewable avoided cost prices. The total fixed costs of the avoided proxy resource are allocated to on- and off-peak prices. Non-standard avoided cost rates for large QFs are negotiated between the utility and the individual QF using the standard avoided cost rates as a starting point, with specific guidelines and methodologies approved by the Commission.[1]

In the PacifiCorp service territory, rates for avoided cost purchases for QFs that are 10 MW or less are presented in Schedule 37, which contains pricing provisions for both standard avoided cost rates and renewable avoided cost rates. For Portland General Electric, the analogous rate schedule is Schedule 201, and for Idaho Power Company, it is Schedule 85.

Q. What is your primary conclusion and recommendation to the Commission on the question of whether market prices used during the Resource Sufficiency Period sufficiently compensate for capacity?

A. I have concluded that the market prices used during the Resource Sufficiency Period do not sufficiently compensate for capacity in the PacifiCorp territory. There are two fundamental reasons for this conclusion.

The first is that there is a structural problem in the way the PacifiCorp IRP is interpreted for determining QF pricing. Specifically, in the IRP, small QFs are presumed to extend their contracts upon expiration – and this very assumption is then embedded in determining the value of QF capacity, resulting in a logical circularity. To remedy this problem, the assumption in the IRP that small QFs extend their contracts upon expiration should be eliminated for the purpose of determining QF pricing. This would require the development of an Alternative IRP scenario that re-determined the preferred resource portfolio absent the

[1] Order No. 14-058 at 8.

(assumed) renewing QFs in order to properly value the capacity that QFs would avoid. I want to be clear that I am not challenging how PacifiCorp plans for how QFs renew their contracts, as it is my understanding that most small QFs enter into PURPA contracts when their current contracts expire. While it is appropriate to assume that small QFs renew their contracts for *planning* purposes, this is not an appropriate assumption for QF *pricing*.

The second reason is that the extraordinarily long sufficiency period indicated by the 2015 PacifiCorp IRP is sending a price signal to prospective QFs that the long-term value of their capacity has no value except for the relatively small premium that may be included in the price of firm energy based on projected market prices. This price signal is sent despite the fact that: 1) the development of rules by the Environmental Protection Agency ("EPA") under the auspices of Section 111(d) of the Clean Air Act is creating significant uncertainty with respect to the Company's long-term resource plan; and 2) PacifiCorp itself is planning on a series of significant investments in environmental upgrades to *retain* its coal capacity. I find this dichotomy to be a source of concern. It strikes me as unwise to be signaling to QFs, particularly renewable QFs and zero-emitting QFs, that their capacity is of little long-term value, and consequently discouraging their development, at a time when new environmental regulations are placing long-term resource planning in a state of flux. This seems particularly unwise when it is understood that development of renewable QFs and zero-emitting QFs is encouraged by the pending environmental rules as a means of gaining compliance. Meanwhile, far from eschewing investment in capacity as suggested nominally by the designation of a sufficiency period based on the next deferrable resource in the IRP, PacifiCorp is in reality planning on making significant investments in capacity *retention* that the Company will ask customers to pay for.

In light of these circumstances, I recommend that the Commission adopt an interim capacity pricing mechanism for Schedule 37 sales by renewable QFs and zero-emitting QFs until the uncertainty surrounding implementation of Section 111(d) is resolved. This approach would be used until the state plans implementing the Section 111(d) rules are binding upon PacifiCorp. Under this interim approach, the value of capacity from renewable QFs and zero-emitting QFs would be determined by the net present value of the revenue requirement associated with environmental upgrades that are planned for the sufficiency period. For a renewable QF or zero-emitting QF entering a contract during the interim period, the capacity value would be added to the energy price until the pricing in the contract was governed either by the displaceable renewable IRP resource or displaceable IRP thermal resource, whichever is applicable to that contract. In other words, this adjustment to the capacity value only applies during the resource sufficiency period prices.

The mechanics for performing this calculation are presented in detail later in my testimony.

<u>**Assumed Renewal of Small QF Contracts**</u>

Q. What does PacifiCorp assume with respect to the continuation of small QF contracts after contract terms expire?

A. According to the 2015 IRP, PacifiCorp assumes that these contracts are extended when they expire.[2]

Q. Do you have any concerns or objections to this assumption?

A. I do not object to this assumption in the context of the IRP being used in its traditional role as a planning tool. That is, for *planning* purposes, it is reasonable to assume these contracts are extended, so as to avoid planning to construct or acquire duplicative facilities. REC witness John Lowe addresses in more detail contract renewals by existing QFs.

However, it is important to make a distinction when it comes to using the IRP for *determining QF prices*. In that limited context, it is <u>not</u> reasonable to assume that small QF contracts are extended when contracts expire because that assumption produces a logically circular result. That is, when the purpose of the exercise is to determine the value of QF capacity, the act of assuming that all or a portion of the QF capacity that is being valued simply “shows up” via contract extension improperly predetermines the answer to the valuation question – and will understate the value of the QF capacity.

Q. Do you have a simple example to illustrate this point?

A. Yes. Assume for illustrative purposes that a utility has 300 MW of small power QF generation selling power under standard fixed avoided cost contracts and that all of these contracts expire five years from now. For simplicity, further

[2] PacifiCorp 2015 IRP, Vol. I, p. 75.

assume that front-office transactions are near their planning maximum, load growth is flat, and there are no planned changes regarding other resources over the IRP time horizon. Under the assumptions used by PacifiCorp to value QF capacity, all 300 MW of small power QF capacity will be assumed to extend their contracts and continue to be in service from Year 6 through the end of the IRP planning horizon. Under the current method, the IRP would indicate that the Company was in a sufficiency period throughout the remainder of the time horizon and that no capacity payment (other than what is attributed to purchases of firm energy based on projected market prices) was required.

Yet it is easy to comprehend that, but for the assumption that small QF contracts were extended, the utility would require 300 MW of capacity at the end of Year 5. Properly done, the pricing method should be crediting QFs with the value of this avoided capacity. This would occur if, for the purpose of determining the value of QF capacity, the analysis assumed that QF contracts were <u>not</u> renewed at expiration. But as it is, the method yields no credit to the QFs for avoiding this capacity due to the logical circularity of the analysis that assumes that the QFs (whose value the analysis is supposed to determine) are providing this capacity, effectively for free, through their assumed contract renewals.

Q. Does the assumption that small QF contracts are renewed upon expiration have a material impact on the valuation of QF capacity?

A. According to PacifiCorp's Response to Data Request REC 8.5, Confidential Attachment REC 8.5, 122 MW of QF contracts that expire prior to

2028 are assumed to be extended in the 2015 IRP. In certain circumstances, relaxing this assumption could potentially move the deficiency period for thermal capacity up by a year, perhaps, depending on the amount of capacity attributed to the renewing QFs and how close front-office transactions are to their maximum levels. However, relaxing this assumption is not likely to have a material impact in the current IRP, for which the next thermal resource is strongly driven by the planned retirement of the Dave Johnson units in 2027, rather than the projected level of front-office transactions.

Q. What is your recommendation to the Commission on this issue?

A. I recommend that for the limited purpose of determining the capacity value of QF pricing under Schedule 37, the Commission require PacifiCorp to identify an Alternative IRP scenario that removes the assumption that small QFs will extend their contracts upon expiration. This Alternative IRP scenario would be used to help determine the year of the next deferrable resource for the purpose of valuing QF capacity.

Q. Are you taking a position on the Phase II issue regarding the appropriate forum for disputed avoided cost inputs and assumptions?

A. No. My recommendation would apply if the Commission takes up avoided cost input and assumptions in an expanded IRP process or in an avoided cost review after the utilities file their avoided cost rates. The analysis regarding the capacity value of small renewing QFs will be necessary regardless of the specific forum that the Commission decides to use when addressing the inputs and assumptions used to set avoided cost rates.

<u>Uncertainty Surrounding Compliance with Proposed Section 111(d) Rules</u>

Q. Please explain your concerns regarding the pricing of QF capacity in the context of the uncertainty surrounding PacifiCorp's compliance with EPA's proposed Section 111(d) rules.

A. Currently, PacifiCorp's Schedule 37 indicates that the sufficiency period for which no thermal resource deferrals will be recognized in QF capacity prices extends until the end of 2023, a very long period. The preferred portfolio in the Company's 2015 IRP indicates that the sufficiency period will extend even further – until the end of 2027. This extraordinarily long sufficiency period is sending a price signal to prospective QFs that the long-term value of their capacity is worth very little. At the same time, the Company is facing the challenge of compliance with EPA's proposed Section 111(d) rules, which propose significant reductions in greenhouse gas emissions. The proposed rules are creating significant uncertainty with respect to the Company's long-term resource plan. An important policy question that the Commission should consider is whether it is wise to be signaling to QFs, particularly renewable QFs and zero-emitting QFs, that their capacity is of little long-term value, and consequently discouraging their development, at this critical time of changing environmental regulations. This question is particularly important when it is understood that development of renewable QFs and zero-emitting QFs are encouraged by the pending environmental rules as a means of gaining compliance.

Q. Please describe EPA's proposed Section 111(d) rules.

A. EPA's proposed Section 111(d) rules are intended to limit carbon dioxide emissions from existing power plants. The proposed rules, which are being promulgated under Section 111(d) of the Clean Air Act, require states to submit a 111(d) compliance plan to the EPA in the 2016 to 2018 timeframe. Subject to EPA approval of these plans, states will be required to submit interim reports to the EPA beginning in 2022 to demonstrate interim goals are being met before achieving full compliance by 2030.

In the proposed rule, the EPA identified emission reduction goals for each state based on its formulation of best system of emission reduction, which is made up of four building blocks: (1) heat rate improvements at existing coal-fueled resources; (2) increased utilization of natural gas resources; (3) increased deployment of renewable resource and zero-emitting resources; and (4) increased end-use energy efficiency. The EPA applied the four building blocks to the loads and resources in each state as a whole. Each state may propose how to meet its goal and is not required to achieve emission reductions in the same manner as that used by the EPA to calculate the goal.

The proposed rule is currently in the midst of a comment period and a final rule is expected later in 2015. States will be required to submit compliance plans by 2016, although extensions are possible. The rule is likely to be subject to extensive litigation.

Q. Does PacifiCorp's 2015 IRP take compliance with Section 111(d) into account?

A. Yes. However, as the rule is not final and is the focus of extensive commentary and criticism, for planning purposes, compliance planning necessarily must consider a range of rule outcomes and interpretations. As PacifiCorp states in its IRP:

> In this IRP, the Company provides extensive analysis of potential future resource portfolios under a variety of compliance approaches to the EPA's proposed Clean Power Plan. However, *significant uncertainty regarding the implementation of this program continues to exist*. Once final, the rule is likely to be subject to litigation, the outcome of which may not be known for many years. In addition, the makeup of the final rule and the manner in which states choose to implement the program will have a significant impact on ultimate compliance approaches and similarly may not be known for some years.[3]

Q. How does the uncertainty surrounding implementation of Section 111(d) impact the formulation of the 2015 IRP?

A. To develop a preferred portfolio in the 2015 IRP, PacifiCorp necessarily had to make certain assumptions regarding implementation of the final rule. For example, all 2015 IRP cases defined as having a 111(d) emission rate target assume, for compliance purposes, that the Company can allocate *system* renewable energy toward meeting emission rate targets in any given state. The 2015 IRP also assumes that a flexible allocation of "111(d) attributes" from renewable resources is applied to cumulative Class 2 DSM energy efficiency savings from Idaho and California, where PacifiCorp does not have a 111(d) compliance obligation. Further, this Company's base case compliance approach assumes that two distinct attributes (RPS attributes and 111(d) attributes) can be used for compliance independent of one another. If the final rule permits a

[3] Id., Vol. I, p. 28. Emphasis added.

flexible allocation of renewable energy and select Class 2 DSM energy efficiency savings, as well as independence of attributes, as PacifiCorp assumes, the Company will benefit because this approach does not lead to any incremental system costs from adding resources for the purpose of meeting 111(d) requirements and results in the lowest cost compliance action.[4]

However, not all versions of the final rule will produce lowest-cost outcomes for the Company. For example, PacifiCorp has prepared a sensitivity case S-15, which assumes that state renewable portfolio standard ("RPS")-eligible RECs and 111(d) attributes must be surrendered at the same time. As explained in the 2015 IRP:

> Linking the Washington RPS program to 111(d) would force PacifiCorp to meet its share of the state 111(d) emission rate target with situs assigned renewable resources, or alternatively, PacifiCorp could eliminate its Washington 111(d) compliance obligation by retiring Chehalis at the end of 2019. Considering the low emission rate targets proposed by EPA in its 111(d) rule for Washington, a significant amount of situs assigned renewables would be required to offset emissions from Chehalis. For this sensitivity, PacifiCorp assumes a lower cost alternative *would be to retire Chehalis at the end of 2019*. With this early retirement, sensitivity case S-15 includes incremental FOTs and DSM resources, along with a *2020 west side natural gas peaking resource*.[5]

Obviously, sensitivity case S-15 produces a different thermal sufficiency period for QF pricing than does the preferred portfolio. And while PacifiCorp may advocate for adoption of a final rule that incorporates the flexibility assumed in the preferred portfolio, the disposition of this issue is yet to be determined.

---

[4] Id., Vol. I, pp. 140, 154.
[5] Id., Vol. I, p. 207. Emphasis added.

Q. What are the implications for Oregon QF pricing of the resource planning uncertainty engendered by 111(d)?

A. With the final rule yet to be decided, and with litigation certain to follow, the Commission should reflect on whether it is in the public interest to send a price signal to Oregon QFs that for an extended upcoming period, capacity from renewable QFs and zero-emitting QFs has virtually no value, particularly since increased output from renewable resources and zero-emitting resources constitute one of EPA's four building blocks. In my opinion, in light of these considerations, it would be reasonable to recognize some capacity value for renewable QFs and zero-emitting QFs in Schedule 37, at least on an interim basis, while the uncertainty surrounding the implications of 111(d) on the Company's resource planning is being sorted out.[6]

Q. On what basis should a capacity value be derived during this interim period?

A. PacifiCorp is planning a series of environmental upgrades to keep its coal plants operating. These upgrades represent planned investment in capacity *retention*. As such, the planned expenditures are indicative of the valuation the Company is placing on capacity during the IRP sufficiency period. I believe it is reasonable to use the projected per-kW revenue requirement associated with these investments in capacity retention to value the capacity contribution from renewable QFs and zero-emitting QFs while the implications from 111(d) are being determined.

[6] While certain resources are both renewable and zero-emitting, others, such as certain hydro resources, may not be classified as "renewable" for purposes of Schedule 37, but are nonetheless zero-emitting. Other resources may be renewable, but are not necessarily zero-emitting. My recommendation is directed to QFs that demonstrate either one of the characteristics of being renewable or zero-emitting (or of course both).

Q. What environmental upgrades is PacifiCorp planning?

A. According to the 2015 IRP,[7] the Company has the following environmental upgrade projects identified for planning purposes, recognizing that agency, regulator, and joint owner perspectives on acceptability have not necessarily been determined:

- Hayden 1 Selective Catalytic Reduction ("SCR") by Jun 2015
- Jim Bridger 3 SCR by Dec 2015
- Hayden 2 SCR by Jun 2016
- Jim Bridger 4 SCR by Dec 2016
- Craig 2 SCR by Jan 2018
- Naughton 3 Conversion by Jun 2018
- Craig 1 SCR by Aug 2021
- Hunter 1 SCR by Dec 2021
- Jim Bridger 2 SCR by Dec 2021
- Jim Bridger 1 SCR by Dec 2022
- Colstrip 4 SCR by Dec 2022
- Huntington 1 SCR by Dec 2022
- Colstrip 3 SCR by Dec 2023
- Hunter 3 SCR by Dec 2024
- Cholla 4 Conversion by Jun 2025

Q. How can this information be used to derive a capacity value for renewable QFs and zero-emitting QFs during your proposed interim period?

A. The cost information for these projects can be used to calculate the weighted average per-kW revenue requirement (on a present value basis) for the portfolio of environmental upgrades that the Company has planned during the Schedule 37 thermal sufficiency period. This value represents the planned cost of capacity retention.

Q. How should this value be calculated?

[7] Id., Vol. II, pp. 298-299.

A. I have prepared a sample calculation consisting of the first six environmental upgrades listed above using information provided by PacifiCorp in its Confidential Response to REC 5.7. For the purpose of determining the capacity value, I recommend using all of the projects that are identified in the IRP during the sufficiency period. My sample calculation is summarized in Confidential Exhibit Joint QF Parties/101. Step 1 of the calculation is to identify the projected stream of annual revenue requirements for each project. For this purpose I used an approach that is comparable to what PacifiCorp uses for determining the revenue requirement of a deferrable thermal plant in calculating Schedule 37 rates. This stream of revenue requirements is then converted into a nominal levelized annual value over the remaining Oregon depreciable life of the facility and expressed on a per-kW basis for each project.[8] A blended capacity value for the entire portfolio is then determined by taking an average of the individual project per-kW revenue requirements, weighted by installed capacity. The blending occurs on a net present value basis, i.e., after discounting the revenue requirements calculated over disparate time periods to a common starting date.

The resulting per-kW capacity value then can be converted into on-peak energy prices consistent with the Schedule 37 method. For a renewable QF entering a contract during the interim period, this capacity component would be added to the market energy price until the pricing in the contract was governed

[8] Conceptually, this is comparable to the nominal levelized prices calculated by PacifiCorp in its Schedule 37 workpapers, except that I am expressing the value on a per-kW basis rather than on a per-MWh basis as PacifiCorp does.

either by the displaceable renewable IRP resource or displaceable IRP thermal resource, whichever is applicable to that contract.

Q. As a reference point, what is the capacity value that results from the sample calculation you performed?

A. The capacity value that results is $47.00 per kW-year. Using the Schedule 37 method for converting capacity values into on-peak energy charges, this value translates into an on-peak capacity price of $10.25/MWH for a baseload resource, $0.43/MWH for a wind resource, and $1.39/MWH for a solar resource, using the capacity contribution assumptions currently incorporated in Schedule 37. In using the current Schedule 37 capacity contribution assumptions I am not endorsing these assumptions, which I understand are being addressed separately. Also, for purposes of this proceeding, I have treated these prices as confidential because the underlying projected costs of the individual projects are deemed to be confidential by the Company. However, I do not believe that a composite capacity valuation or corresponding composite energy prices should ultimately be viewed as confidential.

Q. Please summarize your recommendation to the Commission regarding the use of environmental upgrade costs to derive a QF capacity value.

A. I recommend that the Commission adopt an interim capacity pricing mechanism for renewable QFs and zero-emitting QFs selling power to PacifiCorp under the Schedule 37 until the uncertainty surrounding implementation of Section 111(d) is resolved. Under this interim approach, the value of QF capacity would be determined by the net present value of the revenue requirement associated with environmental upgrades that PacifiCorp is planning for the sufficiency period. For a renewable QF or zero-emitting QF entering a contract during the interim period, the capacity value would be added to the market energy price until the pricing in the contract was governed either by the displaceable renewable IRP resource or displaceable IRP thermal resource, whichever is applicable to that contract.

Q. Is your recommendation limited just to PacifiCorp or does it have more general applicability?

A. My proposal is limited to PacifiCorp at this time because of its extraordinarily extended sufficiency period. However, my recommendation would have more generic applicability if the sufficiency periods for other utilities became greatly extended while the uncertainty surrounding implementation of 111(d) remained.

Q. Does this conclude your opening testimony?

A. Yes, it does.

REDACTED

CERTIFICATE OF SERVICE

I hereby certify that I caused to be served the foregoing **OPENING TESTIMONY OF KEVIN C HIGGINS** via electronic mail and, where paper service is not waived, via postage-paid first class mail upon the following parties of record with the CONFIDENTIAL version sent only to those parties who have signed Protective Order 12-461:

PACIFIC POWER
Dustin T. Till
R. Bryce Dalley
825 NE Multnomah St., Ste 1800
Portland, OR 97232-2149
dustin.till@pacificorp.com
Bryce.dalley@pacificorp.com

PUBLIC UTILITY COMMISSION OF OREGON
Brittany Andrus
P.O. Box 2148
Salem, OR 97308-2148
Brittany.andrus@state.or.us

PORTLAND GENERAL ELECTRIC
V. Denise Saunders
Jay Tinker
121 SW Salmon ST - 1WTC1301
Portland OR 97204
denise.saunders@pgn.com
Pge.opuc.filings@pgn.com

PACIFICORP, DBA PACIFIC POWER
Oregon Dockets
825 NE Multnomah St., Ste 2000
Portland, OR 97232
oregondockets@pacificorp.com

LOYD FERY
11022 Rainwater Lane SE
Aumsville OR 97325
dlchain@wvi.com

THOMAS H. NELSON
PO Box 1211
Welches OR 97067-1211
nelson@thnelson.com

OREGON DEPT OF ENERGY
Matt Krumenauer
Diane Broad
625 Marion ST NE
Salem OR 97301
matt.krumenauer@state.or.us
dian.broad@state.or.us

ANNALA, CAREY, BAKER, PC
Will K. Carey
PO Box 325
Hood River OR 97031
wcarey@hoodriverattorneys.com

ASSOCIATION OF OREGON COUNTIES
Mike McArthur
PO BOX 12729
Salem OR 97309
mmcarthur@aocweb.org

CITIZENS UTILITY BOARD OF OREGON
OPUC Dockets
Robert Jenks
Sommer Template
610 SW Broadway, STE 400
Portland OR 97205
dockets@oregoncub.org; bob@oregoncub.org
sommer@oregoncub.org

CITY OF PORTLAND-
PLANNING AND SUSTAINABILITY
David Tooze
1900 SW 4TH STE 7100
Portland OR 97201
david.tooze@portlandoregon.gov

CLEANTECH LAW PARTNERS , PC
Diane Henkels
6228 SW Hood
Portland OR 97239
dhenkels@cleantechlawpartners.com

EXELON WIND LLC
John Harvey
4601 Westown Parkway, Suite 300
West Des Moines, IA 50266
John.harvey@exeloncorp.com

DAVISON VAN CLEVE
Tyler C. Pepple
S. Bradley VanCleve
333 SW Taylor - Ste 400
Portland OR 97204
tcp@dvclaw.com;
bvc@dvclaw.com

ENERGY TRUST OF OREGON
Thad Roth
John Volkman
421 SW Oak ST #300
Portland OR 97204-1817
thad.roth@energytrust.org
john.volkman@energytrust.org

CREA
Brian Skeahan
PMB 409
18160 Cottonwood Road
Sunriver, OR 97707
Brian.skeahan@yahoo.com

IDAHO POWER COMPANY
Donovan E Walker
Julia Hilton
Regulatory Dockets
PO Box 70
Boise, ID 83707-0070
jhilton@idahopower.com
dockets@idahopower.com
dwalker@idahopower.com

RICHARDSON ADAMS PLLC
Gregory M. Adams
Peter J. Richardson
Richardson Adams
515 N. 27th Street
P.O. Box 7218
Boise ID 83702
greg@richardsonadams.com
peter@richardsonadams.com

LOVINGER KAUFMANN LLP
Kenneth Hoffman
Jeffrey S. Lovinger
825 NE Multnomah Ste 925
Portland OR 97232-2150
kaufmann@lklaw.com
lovinger@lklaw.com

MCDOWELL RACKNER & GIBSON PC
Lisa F. Rackner
419 SW 11TH AVE, Ste 400
Portland OR 97205
adam@mcd-law.com
dockets@mcd-law.com

NORTHWEST ENERGY SYSTEMS COMPANY LLC
Daren Anderson
1800 NE 8TH ST., Ste 320
Bellevue WA 98004-1600
da@thenescogroup.com

ONE ENERGY RENEWABLES
Bill Eddie
206 NE 28TH AVE
Portland OR 97232
bill@oneenergyrenewables.com

OREGON DEPARTMENT OF JUSTICE
Renee M. France
Natural Resources Section
1162 Court ST NE
Salem OR 97301-4096
renee.m.france@doj.state.or.us

OREGON SOLAR ENERGY INDUSTRIES ASSOCIATION
PO BOX 14927
Portland OR 97293
dockets@oseia.org

OREGONIANS FOR RENEWABLE ENERGY POLICY
Kathleen Newman
1553 NE Greensword DR
Hillsboro OR 97214
k.a.newman@frontier.com

OREGONIANS FOR RENEWABLE ENERGY POLICY
Mark Pete Pengilly
PO BOX 10221
Portland OR 97296
mpengilly@gmail.com

OBSIDIAN RENEWABLES LLC
David Brown
Todd Gregory
5 Centerpoint Drive, Suite 590
Lake Oswego, OR 97035
dbrown@obsidianfinance.com;
tgregory@obsidianfinance.com

STOLL BERNE
David A Lokting
209 SW Oak Street, Suite 500
Portland OR 97204
dlokting@stollberne.com

PUBLIC UTILITY COMMISSION STAFF--DEPT OF JUSTICE
Stephanie S. Andrus
Business Activities Section
1162 Court ST NE
Salem OR 97301-4096
stephanie.andrus@state.or.us

RENEWABLE ENERGY COALITION
John Lowe
12050 SW Tremont ST
Portland OR 97225-5430
jravenesanmarcos@yahoo.com

RENEWABLE NORTHWEST PROJ
RNP Dockets
Megan Walseth Decker
421 SW 6TH AVE., Ste. 1125
Portland OR 97204
dockets@rnp.org
megan@rnp.org

SMALL BUSINESS UTILITY ASSOCIATES
James Birkelund
548 Market ST Ste 11200
San Francisco CA 94104
james@utilityadvocates.org

ROUSH HYDRO INC
Toni Roush
366 E Water
Stayton OR 97383
tmroush@wvi.com

Dated in Portland, Oregon, this 22nd day of May 2015.

/s/ Richard G. Lorenz

Richard G. Lorenz, OSB No. 003086
Cable Huston LLP
1001 SW Fifth Ave., Suite 2000
Portland, OR 97204-1136
E-Mail: rlorenz@cablehuston.com

Of Attorneys for the
Obsidian Renewables, LLC

4849-6620-9044, v. 1