Sophie Hayes (12546)
Meghan Dutton (14440)
Utah Clean Energy
1014 2nd Ave.
Salt Lake City, UT 84103
801-363-4046
Attorneys for Utah Clean Energy

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Rocky Mountain Power's Proposed Revisions to Electric Service Schedule No. 37, Avoided Cost Purchases from Qualifying Facilities	**DOCKET NO. 14-035-T04** **Utah Clean Energy Exhibit 1.0**

DIRECT TESTIMONY OF SARAH WRIGHT
ON BEHALF OF
UTAH CLEAN ENERGY

August 12, 2014

RESPECTFULLY SUBMITTED,
Utah Clean Energy

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Sophie Hayes
Meghan Dutton
Counsel for Utah Clean Energy

INTRODUCTION

Q: Please state your name and business address.

A: My name is Sarah Wright. My business address is 1014 2nd Ave, Salt Lake City, Utah 84103.

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

A: I am the Executive Director of Utah Clean Energy, a non-profit public interest organization whose mission is to lead and accelerate the clean energy transformation with vision and expertise. We work to stop energy waste, create clean energy and build a smart energy future.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Utah Clean Energy (UCE).

Q: Please provide your professional experience and qualifications.

A: I am the founder and Executive Director of Utah Clean Energy. Through my work with Utah Clean Energy over the last 13 years, I have been involved in a number of regulatory dockets, including integrated resource planning, rate cases, tariff filings, and other dockets relating to energy efficiency, renewable energy, and net metering. I serve on both Rocky Mountain Power's and Questar Gas Company's Demand Side Management Advisory Committees.

I have over 13 years of energy policy experience working on state, local, and national energy policy, providing expertise and policy support for renewable energy and energy efficiency. I have served on numerous energy policy working groups and taskforces, including the Energy Efficiency and Energy Development Committees supporting Governor Herbert's Energy Task Force and Ten Year Energy Plan; the

Governor's Utah Renewable Energy Zone Task Force; Governor Huntsman's Energy Advisory Council and Blue Ribbon Climate Change Advisory Council; Utah's Legislative Energy Policy Workgroup, and Salt Lake City's Climate Action Task Force. I also served on the State of Utah, Division of Air Quality PM2.5 State Implementation Plan workgroup.

Currently, I serve on two committees for Governor Herbert's Your Utah Your Future Project (the Utah Clean Air Action Team and the Energy and Emergency Preparedness Committee). Additionally, I serve on Mayor Becker's local Climate Committee that supports his membership on the White House Task Force on Climate Preparedness and Resilience. I serve on the Board of Directors for Interwest Energy Alliance and the Interstate Renewable Energy Council Regulatory Advisory Board for the US Department of Energy Sunshot Initiative.

For 15 years prior to founding Utah Clean Energy, I was an occupational health and environmental consultant, working on occupational health and ambient air quality issues for a wide variety of commercial, industrial, and governmental clients across the west. I have a BS in Geology from Bradley University in Peoria, Illinois and a Master of Science in Public Health from the University of Utah in Salt Lake City.

Q: Have you testified previously before this Commission?

A: Yes. I have testified on behalf of Utah Clean Energy in Docket Nos. 05-057-T01 (re: Questar Gas Company's conservation enabling tariff), 09-035-15 (re: Rocky Mountain Power's energy balancing account), 10-035-124, 11-035-200 and 13-035-184 (re: residential rate design), 13-035-184 (re: revenue requirement) and 12-035-100 (re: avoided costs for large renewable energy qualifying facilities).

OVERVIEW AND CONCLUSIONS

Q: What is Utah Clean Energy's interest in this docket?

A: Utah Clean Energy strives to create a more efficient, cleaner and smarter energy future. We envision and enable increased utilization of risk mitigating energy efficiency, distributed generation, and utility-scale renewable energy. Our long-range vision of the smart energy future includes a more modern, agile, diversified and secure energy system that can readily take advantage of new capabilities for saving energy and expand the use of renewable energy, distributed generation, demand response, energy storage, electric vehicles and the use of information and control technologies.

The Public Utilities Regulatory Policy Act (PURPA)[1] is an important mechanism for facilitating renewable energy development. PURPA's ability to encourage renewable energy and reduce risks associated with our heavy reliance on finite and polluting fossil fuels is critical to protecting the long-term interests of Utah and Utah ratepayers. Utah Clean Energy's interest in this docket is safeguarding Utah's proper implementation of PURPA laws and regulations.

Q: What is the purpose of your testimony in this phase of the Docket?

A: I address the following issues in order: the Company's proposed changes to the calculation of avoided cost rates in Schedule 37 including integration costs for wind and solar qualifying facilities (QFs), removal of a carbon price from avoided cost prices, and adjustments to capacity costs during the sufficiency period. I also address the Company's proposal to eliminate the pricing option comprised of a fixed capacity payment plus a flat energy rate.

[1] Public Utilities Regulatory Policy Act of 1978, 16 U.S.C. § 824a-3; 16 U.S.C. § 2601 *et seq.*

Q: Please summarize your conclusions and recommendations.

A: I make the following conclusions and recommendations:

- Schedule 37 pricing should not include integration charges;
- Avoided cost pricing should include carbon costs consistent with the Company's IRP;
- Schedule 37 pricing should include a capacity payment in the resource sufficiency period based on the costs of a simple cycle combustion turbine; and
- Schedule 37 should continue to include the capacity and energy payment option, modified to reflect the capacity value of renewable resources.

RESPONSE TO THE COMPANY'S PROPOSED SCHEDULE 37 PRICING

Integration Costs for Wind and Solar QFs

Q: What does the company propose regarding integration charges for wind and solar QFs?

A: In his direct testimony at lines 164-170, Mr. Duvall explains that the Company proposes to include integration costs for wind and solar resources in Schedule 37:

> Consistent with the Commission's order in the Renewable QF Docket, the Company proposes to publish distinct price streams for base load, wind, Fixed Solar, and Tracking Solar resources. Prices for wind and solar resources are adjusted (i.e. reduced) for integration costs consistent with the method approved in the Renewable QF Docket. In the current Schedule 37 filing, the Company used its most recent wind integration costs as filed in its 2013.Q2 Schedule 38 compliance filing.

Q: Are integration charges currently incorporated into the Schedule 37 qualifying facility pricing?

A: No, wind and solar integration costs are not currently included in Schedule 37 avoided cost pricing.

Q: Do you agree that Schedule 38 wind and solar integration charges should be included in Schedule 37 avoided cost pricing?

A: No. Mr. Duvall seems to imply that because wind and solar integration costs are included in Schedule 38, they should automatically be included in Schedule 37. However, there are at least three reasons why Schedule 38 integration costs are not applicable to Schedule 37's smaller QFs. First, including these costs without including allowance for the benefits to the transmission system provided by QF's oversimplifies and is inconsistent with the Schedule 38 method. Second, there is no evidence on the record to support charging integration charges for small wind qualifying facilities. Finally, there is no evidence on the record to support charging integration charges for small solar qualifying facilities. I discuss each of these three reasons in more detail below. I also provide a recommendation regarding integration costs for Schedule 37 pricing.

Q: How would the inclusion of wind and solar integration costs oversimplify and be inconsistent with the Schedule 38 method?

A: The Schedule 38 method not only includes wind and solar integration costs, but allows for case-by-case negotiation of payments for avoided transmission losses and avoided transmission capital costs.[2] In Schedule 38, therefore, integration costs are included, but these costs may be partially offset by transmission benefits. In contrast, in this Schedule 37 filing, the Company makes no proposal to allow smaller QFs to negotiate payments for transmission losses and avoided transmission capital costs. Even if the Company were to propose the negotiation of these payments, this would contravene

[2] *See* Docket No. 03-035-14 Order Issued May 26, 2006.

the intent of Schedule 37, which is to provide a simplified, transparent method of posting and updating pricing for smaller QF's. Therefore, simply applying Schedule 38 integration costs to Schedule 37 is not an accurate accounting of the costs and benefits that smaller QFs provide to the transmission system.

Q: Is there sufficient evidence on the record to support charging integration charges for small wind qualifying facilities?

A: No. Currently, no analysis has been performed or presented showing that the integration costs for Schedule 37 QFs result in the same integration costs as larger Schedule 38 QF projects. Therefore, there is no evidence to support applying Schedule 38 wind integration charges to Schedule 37 projects.

Q: Is there sufficient evidence on the record to support charging integration charges for small solar qualifying facilities?

A: No. There has been no analysis of solar integration costs for large QFs or small QFs. Further, the solar integration charges approved in Schedule 38 are not based on analysis, but rather are speculative costs based on Schedule 38 wind integration charges. Additionally, they are interim charges that will be updated upon completion of a solar integration study. More importantly, because a solar integration study has not yet been performed, the application of Schedule 38 charges, which are speculative even for the tariff for which they were approved, is inappropriate for Schedule 37, where impacts of small QF resources on the transmission system have never been evaluated.

Q: What is your recommendation regarding Schedule 37 integration charges?

A: Until there is evidence supporting the actual integration costs of small QFs, *and* until there is some way of offsetting these costs with benefits (as is available to large QFs under Schedule 38), the Commission should not consider changing Schedule 37 pricing to include integration charges.

Carbon Costs

Q: What is the Company's proposal for carbon costs as a component of Schedule 37 avoided cost rates?

A: The Company has proposed using its March 2014 official forward price curve (OFPC), having "adjusted it to remove the assumed carbon tax beginning in 2022."[3] In support of this adjustment, Mr. Duvall asserts three reasons and references two previous Commission dockets. First:

> In docket No. 09-035-T14 the Company inadvertently included the cost of a potential carbon tax in the estimate of non-fuel variable operation and maintenance cost of the proxy CCCT for schedule 37. The Commission affirmed that such a cost should not be included in avoided costs, and it was corrected by the Company.[4]

Further, Mr. Duvall states:

> In its September 30, 2009, order in Docket 09-035-T14 the Commission stated, 'While in our June 28, 1992, Report and Order on Standards and Guidelines in Docket No. 90-2035-01…we directed the Company to include an assessment of environmental risks in the planning process, we have not approved the inclusion of an estimate of the cost of complying with future carbon legislation in the avoided cost calculation.'[5]

And finally, Mr. Duvall says:

> [I]n the Renewable QF Docket [No. 12-035-100] the Commission rejected proposals to increase avoided costs to recognize a QF's ability to reduce potential future costs related to environmental regulation.[6]

Q: What is your response to this proposal and the Company's justification for it?

[3] Direct testimony of Gregory N. Duvall, lines 275-76.
[4] Direct testimony of Gregory N. Duvall, lines 281-85.
[5] Direct testimony of Gregory N. Duvall, lines 289-95.
[6] Direct testimony of Gregory N. Duvall, lines 296-99.

A: I disagree with Mr. Duvall's conclusion that the orders he referenced support the Company's proposed elimination of carbon costs from avoided cost analysis. I believe a more thorough review of the Commission's orders in the dockets referenced by Mr. Duvall is instructive. I will address Mr. Duvall's assertions in order, with reference to the same dockets. It is my understanding that Mr. Duvall has taken quotations out of context and thereby has misrepresented the Commission's intentions.[7] It is Utah Clean Energy's position that it is consistent with resource planning and in the best interests of ratepayers to utilize carbon costs for avoided cost calculation purposes. I believe this position is the most rational and supported conclusion.

Q: What is your response to Mr. Duvall's assertion that in Docket 09-035-T14 the Commission affirmed that carbon tax costs should not be included in avoided costs?

A: I believe a more thorough review of the Commission's two orders in Docket No. 09-035-T14 provides support for Utah Clean Energy's position. Specifically, it is Utah Clean Energy's position that, rather than forbidding inclusion of a carbon price in avoided costs, the Commission's orders in Docket 09-035-T14 indicate that avoided costs inputs should be consistent with the Company's planning assumptions, without adjustments to remove carbon costs.

[7] Neither Mr. Duvall nor I are attorneys, so I recommend that the Commission conduct its own legal analysis (or request legal briefing), giving attention to the entire content of its orders, before making a determination on the question of whether and how to include a carbon cost in calculating Schedule 37 avoided cost prices.

Below, I quote extensively (with emphases added) from the Commission's orders in Docket 09-035-T14 in order to shed more light on the Commission's rulings.[8] First, from the Commission's first Order, issued September 30, 2009:

> We note in Table 8 - "Total Cost of Displaceable Resources" the Company uses different categories of costs from the IRP to determine variable O&M costs for both the SCCT and CCCT resources used in the avoided cost calculation than in the previous two Schedule No. 37 avoided costs cases (i.e., Docket Nos. 03-035-T10 and 06-035-T06).
>
> As background to this discussion, the 2003 IRP used in Docket No. 03-035-T10, the 2004 IRP Update used in Docket No. 06-035-T06, and the 2008 IRP used in this docket each contain a supply side resource table from which capital, fixed O&M, and variable O&M costs used in the avoided cost calculation are obtained for the proxy resources. Variable costs in this table have been broken out as follows: 1) the 2003 IRP contains five variable costs columns, namely, O&M, Fuel/Other, Total, Tax Credits, and Environmental and in Docket No. 03-035-T10, the Company used only the value in the Variable Costs "O&M" column to determine the variable O&M values used in the avoided cost calculation; 2) the 2004 IRP Update contains four variable costs columns, namely, O&M, Fuel/Other, Tax Credits, and Environmental and in Docket No. 06-035-T06, the Company summed the values in the Variable Costs "O&M" column and "Fuel/Other" column to determine the variable O&M values used in the avoided cost calculation; and 3) the 2008 IRP contains four variable costs columns, namely, O&M, Gas Transportation/ Wind Integration, Tax Credits, and Environmental and in this case, the Company sums the values in the Variable Costs "O&M" column and the "Environmental" column to determine the variable O&M values used in the avoided cost calculation.
>
> The Company specifies the environmental adders are comprised mainly of a carbon tax. The Company provides no explanation for this change nor why it is in the public interest to include a potential carbon tax in avoided costs payments to qualifying facilities. Lacking supporting evidence or discussion, we find the Company's inclusion of environmental adders to the variable O&M costs used in the avoided cost calculation constitutes a deviation from the previously-approved methodology. While in our June 28, 1992, Report and Order on Standards and Guidelines in Docket No. 90-2035-01 we directed the Company to include an assessment of environmental risks in the IRP planning process, we have not approved the

[8] In the interest of a more comprehensive record, I have decided to reproduce relevant portions of prior Commission orders in my testimony.

> inclusion of an estimate of the cost of complying with future carbon legislation in the avoided cost calculation. <u>Absent explanation from the Company and comments from parties we decline to approve this change.</u>

> As indicated above it appears that through the years the definition of "variable O&M costs" used in the calculation of avoided costs may have varied from filing to filing. <u>It is now time to re-evaluate this parameter to ensure that all appropriate avoidable variable O&M costs are included in the calculation including known environmental compliance costs</u>. In order to develop the record for this determination, we direct the Company to provide information which defines what is meant by each column of the Variable Costs columns used in the 2008 IRP; identify all of the costs which are included in the value for each column; indicate which costs are appropriate to include in determining variable costs for the avoided cost calculation and why; and identify and explain changes to the Variable O&M Cost determination from the Docket No. 06-035-T06 and why these changes are appropriate and in the public interest. We are specifically interested in whether or not gas transportation costs are or should be included in variable O&M costs and the magnitude of these costs when compared with the 2004 IRP Update. <u>We direct the Company to recalculate and re-file Schedule No. 37 avoided costs based upon its recommendation. If the Company proposes to include environmental costs in the avoided cost calculation, it shall provide the supporting tables both with and without environmental adders so that a comparison can be made.</u> If the Company declines to include gas transportation costs in its avoided cost calculation it shall provide the supporting tables both with and without gas transportation included as a Variable O&M cost.[9]

In the second Order in Docket No. 09-035-T14 ("Report and Order approving rates with modifications"), the Commission included the following discussion (again with emphases added):

> In our September Order, we directed the Company to refile Schedule No. 37 rates with several corrections, additional data and further explanation or clarification. We limit our discussion, findings, and conclusions herein to the items requiring additional action in our September Order. These items are: 1) Additional data regarding the Company's load and resource balance; 2) Corrections to, or additional explanation regarding, non-fuel variable operation and maintenance costs; 3) Corrections to, or additional explanation regarding, the conversion of fixed costs to variable costs; and

[9] Docket No. 09-035-T14, *Order* (issued September 30, 2009) ("Synopsis: The Commission does not approve the rates as filed. PacifiCorp is directed to refile Schedule No. 37 rates and tariff sheets with the adjustments and explanations noted herein.") (footnotes omitted).

4) Additional data to support the natural gas and wholesale power price assumptions.

…

Much time has passed since we approved the current method for computing avoided costs for Schedule No. 37 rates in Docket No. 94-2035-03 and since we approved adjustments to this method in Docket No. 03-035-T10. It is now worthwhile to restate the general method to avoid future confusion. The method adopted in Docket No. 94-2035-03 is a hybrid method of a differential revenue requirements method and a proxy plant method. During periods of resource sufficiency, avoided costs are determined using the differential revenue requirements method. This is done by evaluating system energy costs with and without the addition of a 10 megawatt, zero-cost resource. In Docket No. 03-035-T10, we approved inclusion of capacity payments based on the fixed costs of a simple cycle combustion turbine ("SCCT") proxy resource for months during the resource sufficiency period in which the Company is capacity deficit and the Company plans to purchase this capacity.

During the period of resource deficiency, avoided capacity and energy costs are based on the proxy plant method. Avoided capacity and energy costs are developed from the expected costs of resource(s) the Company plans to build or buy and which are avoidable or deferrable.

The Company's load and resource plan developed in conjunction with the Company's IRP, and updated for known changes, is the basis for determining the periods of resource sufficiency and deficiency. Accordingly, the Company must include in its filing the load and resource plan it uses to develop its proposed avoided costs. The load and resource balance plan must be presented in sufficient detail to demonstrate the proposed periods for resource sufficiency and deficiency are consistent with the Company's most recent IRP or IRP update. In the past, the Company's Table 1 showing load and resource balance for energy, and both summer and winter peaks, and a description of revisions made to loads and resources since the Company's most recent IRP or IRP update, has generally been adequate for this purpose.

In addition to including winter peak data in its updated Table 1 in its Revised Filing, the Company also provides a completely new load and resource analysis for energy and summer peaks (and presumably winter peaks) for use in determining the periods of resource sufficiency and deficiency. The Company states this new load and resource balance extends the energy balance surplus to 2019 and therefore the Company proposes the period of resource sufficiency be extended through 2018 rather than 2013 as in its initial filing, and this forms the basis for the revised rates the Company filed in this case. This load and resource balance continues to show summer peak deficit in 2010.

The Company explains it updated this load and resource analysis to be "consistent with the Commission's order to exclude the environmental adders." However, the Commission did not order the Company to exclude the environmental adders**.** The Company provides no further discussion to explain how the exclusion of environmental adders causes the period of resource deficiency to be delayed by five years nor how the new load and resource balance is consistent with the Company's most recent IRP. Indeed, this revision is inconsistent with our September Order in which we accepted the Company's proposed load and resource balance for determining the periods of resource sufficiency and deficiency.

The Division does not mention the new load and resource balance and does not comment on whether and how it is consistent with the Company's IRP or with our September Order. The Division simply asserts that it has reviewed the Company's filing and found that the Company has appropriately included the winter peaks and the planning reserve margins in its Table 1.

Since we have no meaningful support or discussion regarding the Company's revised load and resource balance, we reject its use in developing the rates in this case, and uphold our acceptance of the load and resource balance initially filed in this case. And finally, contrary to both the Company and Division's assertions, nowhere in the revised filing does the Company annotate the load and resource balance with the planning reserve margin assumption. We direct the Company to label Table 1 with the applicable planning reserve margin assumption, (e.g., 12 or 15 percent) in all subsequent filings of Schedule No. 37 rates.

Non-Fuel Variable Operation and Maintenance Costs

In our September Order we observed the Company included, for the first time, costs associated with a potential carbon tax in its estimate of the non-fuel variable operation and maintenance costs of a CCCT. The Company cites its 2008 IRP supply side resource tables for estimates of certain types of non-fuel operation and maintenance values. We observed the Company had changed the columnar heading of one of these types of costs from "Fuel/Other" to "Gas Transportation/Wind Integration" in its IRP and excluded this amount from the avoided cost initial filing, though amounts in this or its previously entitled column had been included in avoided cost filings in the past. Therefore we directed the Company to: define or identify the costs included in the "Variable Costs" columns of the supply-side resource tables in the 2008 IRP; indicate which costs are appropriate to be included in determining non-fuel variable costs for the avoided cost calculation and why; and identify and explain changes to its assumptions of these costs used in the previous Docket No. 06-035-T06 and why the changes are appropriate and in the public interest**.**

The Company explains the definition of variable operation and maintenance costs has not changed in the IRP. The previous name of "Fuel/Other" has been changed to "Gas Transportation/Wind Integration" to be more explicit regarding the costs listed in that column. The Company states these variable costs incorporate the incremental costs incurred to deliver gas to the burner-tips of the gas plants and the non-fuel costs related to operating and maintaining the plants. The Company agrees its prior filing in Docket No. 06-035-T06 did not include carbon adders and also agrees that it is not appropriate to include them in the current filing. The Company also indicates it inadvertently excluded the gas transportation cost based on an assumption that such cost was still part of the fuel costs in the price curve. The Company states Appendix 1 of the Revised Filing incorporates the updated Tables 1 through 8, which includes gas transportation cost and excludes the environmental adders.

The Division states the Company, as shown in Table 8 of the Revised Filing, has included the variable gas transportation cost, which was inadvertently excluded from the previous filing. The Division believes the Company's changes in its Revised Filing adequately address the Commission's requirements of variable operation and maintenance costs.

We accept the Company's explanation regarding this issue and approve use of the proposed non-fuel variable operation and maintenance costs in this case. However, we note the Company did not fully explain what each cost included in the IRP represents nor which amounts are appropriate to include in avoided cost analysis and why.

For example, in its initial filing, the Company included an environmental cost and stated it was primarily for a carbon tax. In its Revised Filing, the Company excluded all environmental cost and did not address whether any of the costs in the "Environmental" column of the IRP supply side tables include existing environmental cost (such as costs associated with emission of sulfur dioxide, oxides of nitrogen or any other pollutant) which, for compliance purposes, the Company is currently incurring and which might appropriately be included as non- fuel variable operation and maintenance costs in the avoided cost calculation. We also note gas transportation costs have increased substantially, (from between $2.46 and $3.78 per megawatt hour in Docket No. 06-035-T06 to between $5.96 and $9.78 per megawatt hour in the current docket). Since this gas transportation cost appears to be increasing, and the Company proposes classifying this cost as capacity-related rather than energy-related, we request additional discussion regarding whether this is appropriate going

> forward. We direct the Company to address these issues in its next annual update of Schedule No. 37 rates.[10]

Q: What conclusions do you draw from your review of prior Commission orders in Docket No. 09-035-T14?

A: It appears to me that rather than forbidding inclusion of environmental compliance costs or a carbon price in avoided cost pricing, the Commission simply requested justification for including a carbon price as an appropriate component of avoided cost pricing, specifically as a component of supply-side resource non-variable operations and maintenance costs. Indeed, the Commission directed the Company to address this issue in its subsequent Schedule 37 filing.

Q: Subsequent to the second order in 09-035-T14, did the Company file comments or testimony responsive to the Commission's direction to "address these issues in its next annual update of Schedule No. 37 rates"?

A: Utah Clean Energy has reviewed the Schedule 37 dockets since 09-035-T14 and, to the best of my knowledge, the Company has not addressed this issue in a Schedule 37 docket until the current proceeding.

Q: Mr. Duvall also cites, as justification for removing a carbon price from the OFPC, the Commission order in Docket No. 12-035-00. Specifically, at lines 288-290 he states, "in the Renewable QF Docket the Commission rejected proposals to increase avoided costs to recognize a QF's ability to reduce potential future costs related to environmental regulation." What is your response to this justification for removing a carbon price from the OFPC?

[10] Docket No. 09-035-T14, Report and Order approving rates with modifications (issued December 14, 2009) (footnotes omitted).

A: As with Docket No. 09-035-T14, I believe a more thorough review of the Commission's order in Docket No. 12-035-100 is enlightening. The Order provides as follows:

> We do not dispute the conclusion…that avoided costs based on an actual determination of the expected costs of upgrades to the distribution or transmission system would be consistent with PURPA. We have a difficult time, however, drawing a correlation between avoided distribution and transmission costs that may be projected and tested with a reasonable degree of certainty (e.g., through transmission studies) and environmental risk factors (e.g. costs associated with adapting to changing climate) based upon divergent and speculative projections.
>
> Rather, to the extent potential costs associated with environmental risks and hedging can be projected and factored into Company decision making, they should be accounted for in PacifiCorp's IRP modeling and resource portfolio evaluation process where cost, risk and uncertainty are evaluated to identify a least-cost, risk-adjusted, long-term resource plan.
>
> Preparation and review of PacifiCorp's IRP action plan is governed by UCA § 57-17-301, UAC R746-430 and the Commission's order issued in Docket No. 90-2035-01 approving the standards and guidelines for integrated resource planning for PacifiCorp ("IRP Guidelines"). The IRP process outlined in the IRP Guidelines provides a reasonable opportunity to evaluate cost, risk and uncertainty in order to identify a least-cost, risk-adjusted, long-term capacity expansion plan. The IRP process requires the consideration of the environmental risks and fuel price volatility identified by parties in this proceeding. Moreover, the IRP Guidelines at Section 7 of Attachment A state, "Avoided Cost should be determined in a manner consistent with the Company's Integrated Resource Plan."
>
> Finally, as pointed out by FERC in the CPUC decision cited above, "a state may separately provide additional compensation for environmental externalities, outside the confines of, and, in addition to the PURPA avoided cost rate, through the creation of renewable energy credits." We believe our policy with respect to REC ownership encourages renewable development without running afoul of the avoided cost principles outlined in PURPA. Thus, for the foregoing reasons, we approve no specific adjustments to value fuel price hedging, fuel price volatility or environmental risk.[11]

[11] Docket No 12-035-100, Order on Phase II Issues (issued August 16, 2012), pages 41-42 (emphasis added).

Q: What is your conclusion based on this review of the Commission's order in Docket No. 12-035-100?

A: The Commission order very specifically states that *no specific adjustments* should be made to value fuel price hedging, fuel price volatility or environmental risk. In the current case, the Company has very clearly made a "specific adjustment," in a manner that reduces the value of mitigated environmental regulatory risks as modeled in the Company's Integrated Resource Plan (IRP). Although in the above-cited Order in Docket No. 12-035-100 the Commission disallowed specific adjustments that *increased* the value of mitigated environmental risk, it is similarly inappropriate (in light of the Commission's guidance to set avoided costs in a manner consistent with the IRP) for the Company to make specific adjustments to *reduce* the value of avoided environmental regulatory risk. The Commission's guiding principle should be to set avoided cost prices in a manner that is consistent with the Company's planning assumptions in order to benefit from the IRP's consideration of long term cost, risk and uncertainty.

Q: Why is including an IRP carbon price in avoided costs appropriate?

A: It is our goal to ensure that avoided cost pricing fairly values renewable electricity generation, at least in principle. It is the position of Utah Clean Energy that avoided costs should be a reflection of actual avoidable costs, including costs the Company would otherwise incur in the absence of QF generation, based on its resource procurement decisions. Currently, the IRP presents the Company's best public analysis of the costs and risks associated with the environmental implications of its resource decisions. Therefore, to the extent that environmental regulation costs are used in the IRP, these costs should be carried through to avoided cost pricing.

It is not the position of Utah Clean Energy that the IRP accurately reflects the full range of environmental costs and risks associated with the Company's resource decisions,[12] but it does represent the most comprehensive, publicly available information that the Company discloses about its forecast of the long term costs and risks associated with resource its decision-making.

Q. What are the cost and risk benefits of clean energy resources, such as renewable qualifying facilities?

A. Renewable QFs offer many risk mitigating benefits to ratepayers. Utilities purchase electricity from renewable QFs, typically through long-term power purchase contracts. Because energy resources such as wind, solar and geothermal have no fuel costs and do not emit pollution or greenhouse gasses, renewable QFs provide valuable long-term risk mitigation against rising fuel costs, fuel price volatility, environmental compliance costs, potential carbon regulation costs and the actual costs of a changing climate.

Q: Are you proposing to include costs associated with climate change adaptation in the calculated QF rate?

A: No. While these costs will be significant for Utah families and businesses and dwarf any costs associated with carbon regulation, I am not proposing that these costs be included in avoided cost pricing in this docket.

[12] Climate science predicts that climate change impacts will be extremely costly to Utah and Utah ratepayers due to increased drought, increased wildfires and reduced spring snowpack. I'm not proposing that these costs be included in avoided cost pricing at this time. I do think it is shortsighted not to consider these impacts in our utility planning, but I am not advocating that any such costs be included in this proceeding. I solely address carbon regulatory costs, as modeled in the Company's IRP.

Q: Can you elaborate on fuel and environmental regulatory risk that should be accounted for in avoided cost pricing?

A: Risks associated with rising fuel costs and fuel price volatility have actual costs associated with them—costs that are avoidable by displacing or deferring fossil-fueled generation through purchases from renewable QFs. Similarly, environmental and carbon regulations impose real but avoidable costs on ratepayers. And while I don't know exactly what these costs will be, the Integrated Resource Plan is currently the Company's best public analysis of costs and risks associated with fuel and environmental regulatory risk.

Q: In your opinion, does the Company's proposal to remove carbon costs from its avoided cost calculations result in fair pricing for renewable QFs and ratepayers?

A: No. As discussed in my testimony in multiple dockets, ratepayers will be on the hook for carbon regulatory costs and stranded assets. The company does include carbon costs in its IRP analysis and in fuel costs projections. Future carbon regulation is even more certain now with proposed EPA rules for new and existing power plants. Any adjustments removing the value of estimated carbon regulatory costs from Schedule 37 pricing will discount important and growing benefits of renewable resources and reduce the probability of these risk mitigating projects being built. It is my opinion that this is not in the public interest.

Q**: What is your recommendation regarding the carbon cost component of avoided cost pricing?**

A: Avoided cost pricing should be consistent with integrated resource planning. The Company should not be authorized to make adjustments removing this important assumption solely for avoided cost purposes. Although the Company argues that the IRP contains several different official forward price curves,[13] IRP base case assumptions have included a carbon price in the past and seem to reflect the Company's assessment of "most likely" future costs. While Utah Clean Energy has a different view of "most likely" future costs, it is our position in this docket, based on our analysis of prior Commission rulings on avoided costs and integrated resource planning, that the Company's IRP base case environmental compliance cost assumptions are reasonable for use in avoided cost pricing, and that they are certainly an improvement over excluding environmental compliance costs from avoided cost pricing entirely.

In order to be consistent with resource planning, the Company should revert all avoided costs input assumptions for which environmental compliance costs have been removed back to consistency with IRP base case assumptions. Any GRID files that have been adjusted to remove carbon (or other environmental compliance) costs should have those costs added back in (energy costs, fuel prices, electricity prices, other costs, etc.).

Q: Under what scenario might it be appropriate to make adjustments removing carbon regulatory costs from the official forward price curve or avoided costs?

A: If Company shareholders are willing to assume the risks associated with carbon costs and potential associated stranded assets, it would be appropriate to remove these

[13] Direct Testimony of Gregory N. Duvall, lines 288-89.

costs from avoided costs. Until ratepayers are protected from such risk, however, these costs must be accounted for in avoided cost pricing.

Capacity Costs during the Sufficiency Period

Q: What has the Company proposed for Schedule 37 capacity payments in the sufficiency period?

A: The Company has proposed eliminating any capacity payment (related to the deferral of a simple cycle combustion turbine or "SCCT") for small QFs during the resource sufficiency period. The Company argues that accounting for avoided capacity costs based on an SCCT during the sufficiency period should be eliminated to be consistent with the Commission's order in Docket No. 12-035-100 for renewable QFs larger than 3 MW.

The Company argues that this proposal is necessary to make Schedule 37 avoided costs consistent with the IRP and IRP update: "[p]rior to the start of the deficiency period in 2027, the Company will not procure additional thermal capacity resources; rather, it will utilize FOTs, or wholesale market purchases, to meet its needs."[14]

Q: What is your response to this proposal?

A: Schedules 37 and 38 have different calculation methods and have for many years.[15] Currently, the Schedule 37 method includes a calculation of avoided capacity

[14] Direct Testimony of Gregory N. Duvall, lines 257-259.

[15] Docket No. 11-035-T06, Order (issued October 31, 2011), page 11 ("a valuation for summer capacity purchases, when appropriate, has been part of the method since it was approved in Docket No. 94-2035-03"); *see also* Docket No. 03-035-T10, Order (issued June 1, 2004), page 5: "The Company's filing of January 30th provides a calculation of avoided costs consistent with the method approved in Docket No. 94-2035-03. This method differentiates between periods of resource sufficiency and deficiency. Resource deficiency is marked by resource deficit in annual energy, summer and winter peak. The Company represents that this occurs in July 2007. From 2004 to 2007, the system has *sufficient energy and winter capacity but is deficit in summer*. Thus, avoided cost from 2004 through June 2007 is calculated as the cost

costs during the sufficiency period only for the portion (number of months) of each year that the GRID model indicates available resources are less than peak load. In Docket No. 03-035-T10, the Commission recognized that the Schedule 37 method for calculating published rates for small QFs provides a clear and comprehensible price signal that summer capacity costs more than at other times of the year.[16]

The Company's assertion, that it will not procure additional thermal resources but rather utilize FOTs to meet its summertime capacity shortfall, is precisely the reason the Commission approved inclusion of a capacity payment during the resource sufficiency period: "In Docket No. 03-035-T10, we approved inclusion of capacity payments based on the fixed costs of a simple cycle combustion turbine ('SCCT') proxy resource for the months *during the resource sufficiency period* in which the Company is capacity deficit and the Company *plans to purchase this capacity*." The fact that the Company will not procure thermal resources until 2027, according to the latest IRP update, is irrelevant to the Schedule 37 calculation of capacity costs in the resource sufficiency period. Schedule 38 pricing does not provide a clear corollary, and, on this particular issue, the Company has not provided a clear reason why Schedule 37 pricing should be changed to the Schedule 38 method.

Capacity Contribution

Q: How does the Company propose to account for the capacity value of renewable resources in Schedule 37 pricing?

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avoided by a 10 MW zero cost resource *plus avoided summer capacity cost*. *The avoided summer capacity cost is based on the fixed cost plus variable operating and maintenance cost of a Simple Cycle Combustion Turbine ('SCCT')*" (emphasis added).

[16] *See* Docket No. 03-035-T10, Order (issued June 1, 2004), page 8.

A: The Company has proposed adjusting the capacity value of small QFs consistent with the results of its capacity factor approximation method analysis, currently being conducted for the 2015 IRP, as directed by the Commission in docket 12-035-100. Mr. Duvall explained at lines 220-22 that, "[w]ithout an adjustment for capacity contribution, intermittent wind and solar QFs would be compensated similar to a base load generator and payments to these QFs would not accurately reflect the Company's avoided costs."

Q: What is your response to this?

A: It is my opinion that it is reasonable to adjust avoided cost pricing to accurately reflect the capacity values (reliability benefits) of variable renewable energy resources. Assuming the results of the Company's capacity valuation analysis are reasonable, it is reasonable to adjust the capacity payment for renewable QFs consistent with their capacity value. Given this adjustment, however, it is not necessary to eliminate the capacity and energy payment option, as the Company proposes. I discuss this in the next section of my testimony.

Elimination of Option to Pay Rates as a Fixed Capacity Payment plus a Flat Energy Rate

Q: What does the Company propose with respect to the elimination of the energy and capacity payment option for Schedule 37 QFs during the deficiency period?

A: The Company proposes:

> to continue to offer payments under Schedule 37 based on the energy produced by the QF (i.e. the volumetric winter and summer prices for on-peak and off-peak hours) and to eliminate the option for the QF to receive separate payments for capacity and energy. Under the current Schedule 37 the two pricing options offered do not produce the same total payments to

> an individual QF. Furthermore, the separate capacity and energy payment structure may result in payments to low-capacity factor resources, such as wind and solar QFs that are inconsistent with the Company's ability to avoid capacity costs.[17]

Q: Do you support the Company's Proposal to eliminate the energy and capacity payment option for Schedule 37 QFs during the deficiency period?

A: No. In my opinion, this proposal is unnecessary and discriminates against renewable qualifying facilities by denying them their capacity value. The capacity payment offered to renewable QFs should be adjusted consistent with the capacity value of the renewable resource, but should not be eliminated as a payment option.

A 12-hour block summer and winter energy payment likely underestimates the capacity value of the energy produced by Schedule 37 QFs, especially solar resources. In order to promote the development of small QFs, it is critical to ensure that small QFs are fairly compensated for the capacity that they bring to the system. Therefore, I recommend retaining the capacity and energy payment option, but modifying it consistent with the capacity value of variable renewable resources.

Q: How is the capacity payment calculated in the current Schedule 37 tariff?

A: Mr. Duvall explains that capacity payments are stated as a fixed dollars-per-KW-month amount, and are paid based on the QF's maximum 15 minute generation during peak hours.

Q: Do you agree with Mr. Duvall that there may be issues with this option?

A: Yes, but while Mr. Duvall makes the recommendation to eliminate the energy and capacity payment option, I recommend that we improve it to better reflect the capacity

[17] Direct Testimony of Gregory N. Duvall, lines 302-309.

value of the renewable QF in order to reflect the reliably benefits QFs provide to the utility.

Q: Has the Company proposed elimination of the capacity and energy payment option before?

A: Yes. In Docket No. 03-035-T10, the Company proposed, as it has here, elimination of the capacity and energy payment option. Initially, the Commission concurred with this recommendation, finding that "the capacity and energy pricing option systematically overpays low capacity resources and should be eliminated as an option for wind resources going forward."[18] On reconsideration, however, the Commission reinstated the capacity and energy payment option and included the following discussion:

> The issue of appropriate pricing options for intermittent resources, such as wind projects with lower expected annual capacity factors, was initially raised by the Company in its April 2004 comments responsive to Petitioners' requests to increase the size of generators eligible for Schedule No. 37 rates. Its concern was overpayment of capacity costs to such QFs when applying the capacity and energy pricing option. Petitioners acknowledge the overpayment issue and propose that wind resources be paid less than the full capacity payment as a remedy, rather than total elimination of the capacity and energy pricing option. Petitioners recommend no less than 20 percent capacity credit, which they state is the value being used for larger wind resources in PacifiCorp's Integrated Resource Plan currently under development. Indeed, the Company indicates that the seasonal and time differentiated pricing option provides partial capacity payment and estimates this payment to be about 35 percent of full capacity cost, when operating at a 30% capacity factor (i.e., 30/.85=.353). Therefore, in order to remove a stated impediment to wind resource development and to address concerns of discrimination, we grant the request for reconsideration and modify our initial decision by allowing both pricing options be made available for wind resources. To remedy the overpayment issue, we set the capacity payment for wind resources electing the capacity and energy pricing option to 20 percent of the Schedule No. 37 approved capacity rates.[19]

[18] Docket No. 03-035-T10, Order (issued June 1, 2004), page 22.
[19] Docket No. 03-035-T10, Order on Reconsideration (issued July 20, 2004), pages 2-3.

Q: Is this Commission ruling applicable here?

A: Yes, although I would like to make some technical distinctions. The Commission's Order on Reconsideration in Docket No. 03-035-T10 is applicable to this case and the Commission should continue to authorize the capacity and energy payment option for renewable QFs under Schedule 37. In the current case, however, we can benefit from additional information regarding the capacity value (reliability benefits) of renewable resources than was available in 2004.

Energy resources can be characterized by both a capacity factor and a capacity value. The capacity factor is used to estimate the amount of energy produced by a resource, while the capacity value (or credit) is a reliability-based calculation that assigns a value to a resource based on its ability to reduce the probability of a loss of load event (LOLE) and maintain system reliability. For example, a solar resource's effective capacity value is significant, and considerably higher than its capacity factor.

In order to appropriately value the reliability benefits of renewable resources, the Commission recently ordered the Company to perform and file a study calculating the capacity value of wind and solar using either the Effective Load Carrying Capability (ELCC) or Capacity Factor Approximation Method (CF) considering Loss of Load Probability (LOLP).[20] The Company is conducting this evaluation as part of its 2015 IRP.

Q: What is your recommendation regarding the capacity payment option?

A: Rather than eliminating the capacity and energy payment option (as the Company proposes), and rather than calculating the capacity payment based on a QF's maximum output during the peak period (as is the current method, which may overestimate a QF's

[20] Docket No. 12-035-100, Order on Phase II Issues (issued August 16, 2013), page 30.

capacity value), the Commission should continue to authorize the capacity payment option, but modify the capacity payment to reflect a QF's value in reliably meeting load. In other words, the capacity payment offered to renewable QFs should be adjusted consistent with the capacity value of the renewable resource, but should not be eliminated as a payment option.

CONCLUSION

Q: Please review your recommendations for Schedule 37 pricing for small QFs?

A: For the foregoing reasons, and in an effort to encourage renewable energy development in Utah, I recommend the following:

- Schedule 37 pricing should not include integration charges;
- Avoided cost pricing should include carbon costs consistent with the Company's base case IRP assumptions
- Schedule 37 pricing should include a capacity payment in the resource sufficiency period based on the costs of a simple cycle combustion turbine; and
- Schedule 37 should continue to include the capacity and energy payment option, modified to reflect the capacity value of renewable resources.

Q: Does that conclude your testimony?

A: Yes.