- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

In the Matter of the Review of Electric Service Schedule No. 38, Qualifying Facilities Procedures, and Other Related Procedural Issues	DOCKET NO. 14-035-140 ORDER APPROVING CAPACITY CONTRIBUTION STUDY AND CF METHOD VALUES

ISSUED: June 26, 2015

SHORT TITLE

Rocky Mountain Power
Electric Service Schedule No. 38 Capacity Contribution Study Decision

SYNOPSIS

The Commission finds PacifiCorp's proposed capacity contribution values for wind and solar qualifying facilities are developed in compliance with the Commission's August 16, 2013, Order on Phase II Issues in Docket No. 12-035-100. The Commission approves new capacity contribution values for wind and solar qualifying facilities for the purpose of calculating Schedule 38 capacity payments.

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I. PROCEDURAL HISTORY AND BACKGROUND

This matter is before the Public Service Commission of Utah ("Commission") regarding the capacity contribution study for wind and solar resources ("Capacity Contribution Study") filed by PacifiCorp, dba Rocky Mountain Power ("PacifiCorp" or "Company"), on October 9, 2014. PacifiCorp filed its Capacity Contribution Study in compliance with the Commission's August 16, 2013 Order on Phase II Issues in Docket No. 12-035-100[1] ("Phase II Avoided Cost Order"). PacifiCorp requested the Commission adopt the capacity contribution values derived from the Capacity Contribution Study for the purposes of calculating capacity payments for wind and solar qualifying facilities ("QF") under the Proxy/Partial Displacement Differential Revenue Requirement ("Proxy/PDDRR") method approved in the Phase II Avoided Cost Order.

On October 14, 2014, the Utah Division of Public Utilities ("Division") filed a memorandum recommending the Commission open a new docket combining review of the Capacity Contribution Study in Docket No. 12-035-100 with the issues raised by parties regarding the quarterly compliance filing for Electric Service Schedule No. 38 "Qualifying Facility Procedures" ("Schedule 38") avoided cost input changes for the second quarter of 2014 ("Quarterly Compliance Filing") in Docket No. 14-035-40.[2] In response to the Division's request, on October 27, 2014, the Commission issued a Notice of Status and Scheduling Conference ("October Notice") opening Docket No. 14-035-140, captioned above, to review the issues identified by parties in the two dockets.

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[1] *See In the Matter of the Application of Rocky Mountain Power for Approval of Changes to Renewable Avoided Cost Methodology for Qualifying Facilities Projects Larger than Three Megawatts,* Docket No. 12-035-100, (Order on Phase II Issues; August 16, 2013).

[2] *See In the Matter of Rocky Mountain Power's 2014 Avoided Cost Input Changes Quarterly Compliance Filing,* Docket No. 14-035-40.

On November 7, 2014, the Commission issued a Scheduling Order and Notices of Technical Conferences and Status and Scheduling Conference ("Scheduling Order"). Pursuant to the Scheduling Order, on December 2, 2014, the Commission convened technical conferences to allow PacifiCorp to present its Capacity Contribution Study and to discuss its queue management policies for QFs and power purchase agreement milestones.

On January 9, 2015, PacifiCorp filed a Motion for Expedited Approval of Capacity Contribution Study and CF Method Values ("Motion") in Docket Nos. 14-035-140 and 12-035-100. On January 12, 2015, the Commission issued a First Order Amending Scheduling Order noticing a Status and Scheduling Conference on January 21, 2015, allowing parties to address PacifiCorp's Motion. In resolution of PacifiCorp's Motion, all parties at the status and scheduling conference agreed to an expedited schedule for final resolution of all issues raised in PacifiCorp's Motion and all other issues to be addressed in this docket. On January 23, 2015, the Commission issued a Scheduling Order and Notices of Technical Conference and Hearing ("January Scheduling Order") consistent with the procedural schedule agreed to by the parties at the scheduling conference. On April 28, 2015, the Division and Utah Clean Energy ("UCE") filed direct testimony on the Capacity Contribution Study.

On May 5, 2015, PacifiCorp filed a settlement agreement ("Settlement") signed by PacifiCorp, the Division, the Utah Office of Consumer Services ("Office"), SunEdison, LLC, UCE, and Scatec Solar North America, Inc. PacifiCorp recommended the Commission vacate the testimony deadlines for all issues in this docket except those related to the Capacity Contribution Study. On May 8, 2015, the Commission issued its Second Order Amending Scheduling Order ("May Scheduling Order") modifying the remaining dates of the schedule in

this docket. Pursuant to the May Scheduling Order, on May 26, 2015, the Commission convened a hearing to examine the Settlement, and on June 9, 2015, issued an order approving the Settlement for all issues in this docket except those related to the Capacity Contribution Study.

On May 28, 2015, and June 11, 2015, PacifiCorp, the Division, the Office, and UCE filed rebuttal and surrebuttal testimony, respectively, on the Capacity Contribution Study. On June 15, 2015, PacifiCorp filed an Offer of All Filed Evidence, requesting the Commission admit the pre-filed written testimony and exhibits of PacifiCorp, the Division, the Office, and UCE addressing PacifiCorp's Capacity Contribution Study as record evidence in this docket and cancel the hearing to address the Capacity Contribution Study scheduled for June 18 and 19, 2015. On June 16, 2015, the Commission approved the Offer of All Filed Evidence. On June 18, 2015, UCE filed an Offer of Utah Clean Energy Exhibit 3.2, requesting the Commission admit the late-filed exhibit in the proceeding record. The Commission grants this request and admits the late-filed exhibit into this record.

II. PARTIES' POSITIONS ON ISSUES

A. Capacity Factor Method

PacifiCorp represents it completed the Capacity Contribution Study using the CF Method based on estimates specific to the PacifiCorp system, pursuant to Commission direction in the Phase II Avoided Cost Order. PacifiCorp states its CF Method considers loss of load probability ("LOLP"). PacifiCorp describes LOLP as a reliability metric defined as the probability that load exceeds available resources over a given period of time. Based on the results of the Capacity Contribution Study, PacifiCorp recommends capacity contribution values for QF resources

located in Utah of 14.5 percent for wind QFs, 39.1 percent for tracking solar QFs, and 34.1 percent for fixed solar QFs.

According to PacifiCorp, capacity contribution values determine the percentage of a generator's nameplate capacity PacifiCorp can reliably use to meet demand, including the contribution a generating resource makes toward achieving a target planning reserve margin. PacifiCorp explains the capacity contribution of a wind or solar resource influences the timing and amount of additional generating capacity needed to maintain reliability over time.

PacifiCorp determines hourly LOLP metrics by performing a 500-iteration hourly simulation of PacifiCorp's system using the Planning and Risk ("PaR") model for all hours in the sample calendar year of 2017. PacifiCorp states each hourly iteration is subject to a Monte Carlo random sampling process[3] using stochastic variables including load, hydro generation, and thermal unit outages, to simulate potential impacts on system reliability.

Under the CF Method, PacifiCorp weights the LOLP data by dividing the LOLP for each hour by the total LOLP among all hours in the year. PacifiCorp then multiplies these hourly weighting factors by contemporaneous hourly capacity factors derived from wind and solar resource generation data.[4] PacifiCorp then derives the capacity contribution for each technology by summing the hourly capacity factors that are weighted by LOLP.

[3] Monte Carlo methods are a class of computational algorithms that rely on repeated random sampling to compute results.

[4] PacifiCorp represents it used actual generation data for wind resources in PacifiCorp's east balancing authority area and hourly solar generation profiles, differentiated between single axis tracking and fixed tilt projects, from a feasibility study developed by Black and Veatch. Regarding this study, PacifiCorp states it used representative hourly solar generation profiles for projects located in Milford County, Utah and Lakeview County, Oregon and notes the hourly profiles for Milford County, Utah are most applicable to single axis tracking and fixed tilt QF projects located in Utah.

This stochastic simulation of PacifiCorp's system resulted in 527 hours having a LOLP greater than zero, which is approximately six percent of 8,760 hours in the year. PacifiCorp states the 527 hours in which load exceeds available resources occur throughout the year, but are highest in the summer and winter, when loads are high, and in the early spring, when maintenance is often planned. Within these periods, LOLP is highest during on-peak hours and during morning and evening ramp periods, when units are transitioning between off-peak and on-peak operation.

PacifiCorp explains the proposed capacity contribution value for wind resources is different from the interim value adopted by the Commission in the Phase II Avoided Cost Order because the methods used to derive the values are different. For example, the interim value was derived without identifying LOLP hours. Similarly, PacifiCorp explains the interim solar values adopted by the Commission were not based on LOLP statistics for PacifiCorp's system. PacifiCorp recommends updating capacity contribution values for wind and solar resources over time as the values are likely to change as the penetration levels of these resources change.

As part of its evaluation of the Capacity Contribution Study, the Division requested the National Renewable Energy Laboratory ("NREL") to review PacifiCorp's application of the CF Method employed in the development of the Capacity Contribution Study, to ensure its consistency with NREL's report "Comparison of Capacity Value Methods for Photovoltaics in the Western United States"[5] ("NREL Report"). NREL informed the Division that PacifiCorp exactly followed the equations, method, and assumptions in the NREL Report. NREL indicated

[5] *See* Direct Testimony of Rick T. Link, October 9, 2014, Exhibit RMP_(RTL-2).

that it did not verify PacifiCorp's data or resulting capacity contribution values. The Division testifies it also verified that PacifiCorp accurately converts its data to capacity contribution values using the CF Method. The Division contends the LOLPs produced by the PaR model appear reasonable, but that the Division was unable to audit the underlying calculations of the model.

All of the parties filing testimony in this docket agree PacifiCorp reasonably applied the CF Method in the Capacity Contribution Study in accordance with the guidelines in the NREL Report.

B. Wind Capacity Contribution Value

The Division and the Office conclude PacifiCorp reasonably applied the CF Method to calculate capacity contribution values for wind resources. All parties support PacifiCorp's proposed 14.5 percent capacity contribution value for wind resources as reasonable and recommend this value replace the interim value set in the Phase II Avoided Cost Order.

C. Solar Capacity Contribution

PacifiCorp, the Division and the Office testify the proposed capacity contribution values for solar resources are reasonable, were calculated accurately, and are based on the best estimates available. They recommend the Commission replace the interim solar capacity contribution values set in the Phase II Avoided Cost Order with PacifiCorp's proposed capacity contribution values for fixed and tracking solar resources, 34.1 percent and 39.1 percent, respectively.

UCE argues the solar capacity contribution values derived in the Capacity Contribution Study are unreasonable. UCE is concerned with modeling inputs, assumptions, and results, and questions the validity of the PaR model. UCE contends the Commission should not accept or

approve PacifiCorp's proposed solar capacity contribution values until these concerns are addressed. In the meantime, UCE recommends the Commission adopt interim capacity contribution values for solar resources midway between those currently approved by the Commission in the Phase II Avoided Cost Order and those proposed by PacifiCorp in the Capacity Contribution Study, i.e., approximately 51 percent for fixed solar resources and approximately 61.6 percent for tracking solar resources. A summary of UCE's criticisms and parties' responses is provided below.

1. PaR Model Validity

UCE argues the PaR model may yield erroneous results. Citing a data request response from PacifiCorp, UCE claims the estimated number of loss of load events in northeast and southwest Wyoming alone exceed the entire system-wide loss of load events PacifiCorp includes in its CF Method analysis. Moreover, UCE claims these loss of load events are greater in winter and during April, even though loads are higher in the summer. According to UCE, the estimated winter month loss of load events indicates PacifiCorp is short of wintertime peaking capacity or has difficulties providing power to northeast and southwest Wyoming. This is an unusual outcome since, according to UCE, Wyoming contains many times as much generation as peak load, and a significant portion of Wyoming's generation would need to be out of service for such an outcome to occur.

UCE argues those results are unexpected and may be anomalous. Because of this, UCE questions whether the PaR model produces results accurately reflecting the timing of PacifiCorp's capacity needs. UCE recommends the Commission reject PacifiCorp's proposed solar capacity contribution values until the PaR model is more fully validated.

Both PacifiCorp and the Division dispute UCE's findings and contend no party has substantially demonstrated errors in the PaR model. PacifiCorp rejects UCE's assertion that Wyoming wintertime loss of load events may indicate PaR modeling errors, arguing it is the combined interaction of load and generating unit availability that drive loss of load events. PacifiCorp represents it captures this interaction in the modeling that produces the LOLP data used to calculate the capacity contribution values for wind and solar resources.

According to PacifiCorp, UCE's claim that the modeling may have been performed in error is unsupported. PacifiCorp argues its modeling is accurate and the resulting capacity contribution values are valid.

2. Modeling Inputs and Assumptions

a. Planned Maintenance Scheduling

UCE argues PacifiCorp's planned maintenance schedule used in the model is overly aggressive for the month when modeled planned maintenance commences, resulting in a disproportionate number of calculated loss of load events in that month. UCE claims this effectively places too much emphasis on renewable resource performance in that month, making potential loss of load excessive for that time period, and reduces renewable resource capacity contribution values. UCE argues the CF Method is sensitive to planned maintenance scheduling and questions the reasonableness of scheduling assumptions for modeled planned maintenance outage dates.

UCE also contends PacifiCorp's modeled planned maintenance schedule changes every year and only represents outcomes for the year 2017. Consequently, according to UCE, PacifiCorp's modeled planned maintenance schedule is not optimized for subsequent years, such

as those during the resource deficiency period, or when additional renewable resources are added.

In addition, UCE questions the validity of modeling the assumption that a significant amount of planned maintenance would commence on the first day of the planned maintenance period, and argues that staggering shorter maintenance to a period right before the proposed start date could sharply reduce loss of load events in this period. UCE demonstrates the effect of removing all LOLPs in one of the months in which there is significant planned maintenance scheduled as an example of the effect of spreading maintenance out. According to UCE, this increases the capacity contribution for fixed solar resources from 34.1 percent to 37.0 percent, and tracking solar resources from 39.1 percent to 40.2 percent.

PacifiCorp, the Division, and the Office disagree with UCE that PacifiCorp's planned maintenance schedule must be changed to produce reasonable results. The Division argues there is no reason to believe adjustments to the planned maintenance schedule would eliminate loss of load events in the month at issue, and even if it did, the change to solar capacity contribution values is arguably small. According to PacifiCorp, UCE's proposal to move a portion of planned maintenance is arbitrary and ignores risks of higher loads and higher market prices. PacifiCorp similarly claims that spreading planned maintenance to other months would not necessarily reduce the number of loss of load events. In addition, PacifiCorp, the Division and the Office argue that moving planned maintenance outages to the periods recommended by UCE will increase net power costs. The Division argues the appropriate venue to debate the schedules for planned maintenance is in rate proceedings, not this docket.

PacifiCorp claims it considers projected load and availability of other resources when developing its planned maintenance schedules. PacifiCorp states it also considers specific maintenance tasks, outage duration, permit obligations, weather, location, availability of labor and/or contractors and materials, projected load and operating reserve needs, generating capability, availability of other generation facilities across the fleet, costs of replacement power, and availability of purchased power in developing its planned maintenance schedules. The Office argues UCE did not evaluate any of these factors in its recommendation to alter the planned maintenance schedule.

While the risk of loss of load events increases during planned maintenance outages, according to PacifiCorp, the likelihood of a loss of load event occurring during scheduled maintenance remains relatively low. Further, PacifiCorp claims that UCE notes energy shortages are not expected to occur in the period PacifiCorp scheduled its outages. PacifiCorp contends this is precisely why this period is appropriate for planned maintenance.

b. 2017 Study Period

UCE suggests that a time period in which PacifiCorp is resource deficient would be more appropriate for a capacity contribution study. PacifiCorp argues such an approach would distort capacity contribution values for wind and solar resources by producing LOLP data that would be misaligned with reliability targets used in PacifiCorp's planning process. PacifiCorp, the Division and the Office argue that since PacifiCorp will not require a substantial thermal resource until 2028, inputs and assumptions based on a study period that far into the future would not be sensible.

3. Modeling Outputs

a. Transmission Constraints

UCE argues the excessive loss of load events occurring in Wyoming during the winter and April could be due to transmission constraints limiting generation available in other parts of PacifiCorp's system from reaching northeast and southwest Wyoming. According to UCE, if these loss of load events are due to a lack of transfer capabilities to serve those load areas, such events should be excluded from the capacity value calculations since the CF Method implicitly assumes little or no transmission congestion. UCE contends those outcomes should receive further scrutiny before concluding PacifiCorp's results are reasonable.

PacifiCorp and the Office disagree with UCE's claim that any wintertime loss of load events caused by transmission constraints should be removed from or discounted in the calculation of capacity contribution values. Both PacifiCorp and the Office argue Wyoming load has a seasonal pattern and peaks during winter months. According to PacifiCorp, it owns or purchases output from over 1,250 megawatts of wind generating capacity in Wyoming and contends LOLP increases when this output is lower than expected. PacifiCorp claims LOLP increases further when these conditions are paired with an unplanned outage at one or more thermal generating units in the region.

PacifiCorp argues it is not unreasonable to assume transmission constraints can contribute to potential loss of load events in Wyoming. PacifiCorp explains that transmission path capabilities limit the amount of energy that can flow across a path. PacifiCorp notes a Wyoming loss of load event can occur when load exceeds both the available energy from local resources and the maximum import capability of the transmission paths into that load area.

PacifiCorp contends UCE does not explain why it believes exclusion of Wyoming loss of load events coinciding with transmission constraints should only be applied during the wintertime. PacifiCorp claims eliminating all loss of load events that are influenced by transmission limits could eliminate most, if not all, loss of load events across most, if not all, hours. PacifiCorp claims such a scenario is inconsistent with resource planning principals and ignores the reliability benefits of the Company's transmission system. PacifiCorp states adoption of this scenario would suggest wind and solar resources only contribute to the reliability of the local load area in which they are sited. In addition, PacifiCorp contends the NREL Report does not identify limitations of the CF Method when applied to a system with transmission constraints.

The Office argues it is not reasonable to discount loss of load events when transmission constraints occur. According to the Office, loss of load events occur in both summer and winter in Wyoming. By UCE's logic, according to the Office, PacifiCorp would have to discount loss of load events during the summer as well as when congestion occurs. The Office argues this is exactly when solar resources provide their greatest value, and discounting summertime loss of load events could possibly result in even lower solar capacity contribution values than those determined by PacifiCorp.

b. Replication of Outputs

UCE argues it could not reproduce PacifiCorp's count of loss of load events. The Office asserts it was able to match PacifiCorp's loss of load event estimates by removing loss of load events from areas with no retail load. By removing these loads and properly sequencing the summation of loss of load events, the Office claims it was able to replicate PacifiCorp's estimate.

c. Range of Reasonable Solar Capacity Contribution Values

The Division provides comparative solar capacity contribution studies based on references from NREL which, according to the Division, show PacifiCorp's proposed solar capacity contribution values fall within a reasonable range. The Division references a study performed for Portland General Electric estimating a capacity contribution value of 30 percent for fixed solar resources, a value the Division claims is similar to the 32.2 percent value PacifiCorp estimated for its Oregon location in its 2015 Integrated Resource Plan ("IRP").

NREL also provided the Division with a number of solar capacity contribution studies showing a range of solar capacity contribution values in relationship to the level of solar PV penetration a utility experiences. According to the Division, the average capacity contribution value for solar resources from these studies is about 30 percent for utilities with about 5 percent of its total generation capacity from solar resources. Since PacifiCorp may have about 5 percent of its generation capacity from solar resources within the next two years, according to the Division, PacifiCorp's proposed capacity contribution estimates for solar appear to be reasonable.

UCE takes issue with the studies the Division cites, arguing PacifiCorp's proposed solar capacity values do not actually fall into the Division's reasonable range. UCE contends these studies rely on geographic regions such as Oregon, Washington, and Canada that have far lower levels of solar radiation than Utah. In addition, UCE claims one of the Division's cited studies prepared for Arizona Public Service ("APS Report") is outdated and the Division fails to include subsequently updated results showing significantly higher solar capacity contribution values for the southwestern Arizona region.

UCE argues by removing the lower quality solar resource studies and by including the updated APS Report results, PacifiCorp's proposed solar capacity values fall out of the Division's reasonable range. Further, UCE references another chart in the Division's cited studies showing solar capacity contribution values for studies using LOLP-based methods. When those studies are isolated, UCE argues PacifiCorp's proposed 34.1 percent capacity contribution value for fixed solar resources falls at the low end of the range the Division classifies as reasonable. Finally, UCE contends the Capacity Contribution Study assumes 579 megawatts of solar, which UCE claims would produce less than 2 percent of PacifiCorp's energy load, rather than the 5 percent solar penetration rate indicated by the Division in the 2017 time period, making reasonable solar capacity contribution values even higher.

The Division argues UCE did not fully discuss actual results from the updated studies it references above. The Division claims these updated solar capacity contribution values range from 34.1 percent to 41.9 percent for 2015 with rapidly declining values in subsequent years. Moreover, the Division contends these values are specific to Southwestern Arizona, an area containing solar radiation values superior to any Utah location. According to the Division, PacifiCorp's proposed solar capacity contribution values are comparable to these updated Arizona estimates.

III. DISCUSSION, FINDINGS, AND CONCLUSIONS

In our Phase II Avoided Cost Order, we determined that the CF Method, accounting for LOLP, was a reasonable approach for calculating capacity contribution for wind and solar resources. We note all parties agree PacifiCorp applied the CF Method to calculate capacity contribution values for wind and solar resources consistent with the NREL Report. In addition,

no party opposes PacifiCorp's use of its eastern balancing authority area wind data to identify capacity values for Utah wind resources, nor does any party oppose PacifiCorp's use of the Black and Veatch solar data set to estimate capacity contribution values for solar resources in Utah. We find PacifiCorp's Capacity Contribution Study meets the requirements of our Phase II Avoided Cost Order.

All of the parties support PacifiCorp's proposed 14.5 percent capacity contribution value for wind. The evidence before us shows this value to be a reasonable estimate for the capacity value of wind QF resources, and we approve it for use in determining capacity payments under the Proxy/PDDRR method. We expect PacifiCorp's utility system and penetration of wind resources will continue to change and therefore direct PacifiCorp to update the wind capacity contribution value at least as often as its biennial IRP cycle and more frequently if needed.

We note both the Division's and UCE's arguments highlighting the complexity of the PaR model as well as the associated difficulties in properly validating its calculations. UCE testifies it cannot precisely determine the cause of the anomalous outcomes it asserts regarding wintertime loss of load events in Wyoming. On the other hand, PacifiCorp and the Office testify that given the combined interaction of Wyoming loads, transmission capability, and generating unit availability, loss of load events are not an unexpected modeling outcome during winter periods. We find the weight of the evidence supports the validity of the results produced by the PaR model and presented in this case.

The PaR model is also used in other planning contexts, most notably in developing PacifiCorp's biennial IRP. During every IRP process, parties are provided ample opportunity to

identify issues with the PaR model, its inputs and its modeling results. We invite parties to continue evaluating PaR model validity in the IRP process currently underway.

PacifiCorp identified numerous factors it considers when developing its planned maintenance schedules and we find the Office's argument compelling that these factors need to be evaluated in developing a maintenance schedule. While UCE questions the feasibility and potential impacts of loss of load events associated with PacifiCorp's planned maintenance schedule, UCE does not show how it considered these factors in its proposed recommendations. UCE also does not provide an estimate of the affect of maintenance schedule adjustments on system power costs. Moreover, PacifiCorp's testimony effectively refutes UCE's criticisms and demonstrates the reasonableness of the planned maintenance schedule assumptions PacifiCorp applied in developing the capacity contribution values it advocates.

Currently, PacifiCorp anticipates it will not require a substantial thermal generating plant until 2028. We are persuaded by PacifiCorp's, the Division's and the Office's arguments stating inputs and assumptions based on a study period that far into the future would not be sensible today. We note PacifiCorp completed its Capacity Contribution Study in its 2015 IRP and applies these values to its existing and potential solar and wind resources throughout the IRP study period. Given that context, a 2017 study year appears to be a reasonable sample year. We therefore find the 2017 study period to be reasonable at this time.

Both PacifiCorp and the Office testify Wyoming transmission congestion is not an anomalous modeling outcome and may occur in both summer and winter. As PacifiCorp testifies, a loss of load event can occur if load in the area exceeds both available local energy and the maximum energy that can be imported through transmission facilities into the area. No party

refutes this explanation. Both PacifiCorp and the Office argue those events can happen during the winter, which is when Wyoming load peaks, as well as during summer months.

We agree with PacifiCorp and the Office that considering the impact of Wyoming wintertime loss of load events coincident with transmission constraints on solar capacity values without considering loss of load events system-wide in all periods, or without accounting for the reliability benefits of PacifiCorp's transmission system, results in an inconsistent and incomplete analysis. The evidence before us suggests it is more reasonable to include Wyoming loss of load events in the calculation of solar capacity contribution values.

Regarding UCE's concerns with the Division's cited studies showing the range of reasonable estimates for solar capacity contribution values, we observe that at the 2 percent solar penetration rate exhibited in Figure 1 of the Division's direct testimony, PacifiCorp's proposed solar capacity contribution values still fall within the range of estimated values contained in that table. We conclude PacifiCorp's solar capacity contribution values are not unreasonable.

The evidence before us suggests the results from the Capacity Contribution Study more accurately represent capacity values than the interim values adopted in the Phase II Avoided Cost Order. The combined weight of the evidence presented by PacifiCorp, the Division, and the Office establishes the reasonableness of PacifiCorp's proposed solar capacity contribution values as presented in the Capacity Contribution Study. Moreover, the record before us does not contain sufficient evidence to rebut the accuracy or reasonableness of PacifiCorp's PaR model. We therefore reject UCE's recommendation to adopt interim solar capacity contribution values midway between those currently in place and these now proposed by PacifiCorp. Based on the foregoing, we approve 34.1 percent and 39.1 percent capacity contribution values for use in

determining capacity payments under the Proxy/PDDRR method for fixed solar and tracking solar QFs, respectively.

Both PacifiCorp and the Division testify wind and solar resource capacity contribution values will need to be updated as more intermittent resources are added to the system. We agree and direct PacifiCorp to update the values as necessary and at least as often as the biennial IRP.

IV. ORDER

1. PacifiCorp's Capacity Contribution Study complies with our August 16, 2013 Order on Phase II Issues in Docket No. 12-035-100.
2. The current interim capacity contribution values for wind and solar QF resources pursuant to our August 16, 2013 Order on Phase II Issues in Docket No. 12-035-100 are discontinued.
3. When PacifiCorp's IRP planned resources do not include a cost-effective wind resource, PacifiCorp shall apply a 14.5 percent capacity contribution for wind QFs for the purpose of determining Schedule 38 capacity payments.
4. When PacifiCorp's IRP planned resources do not include a cost-effective solar resource, PacifiCorp shall apply a 34.1 percent capacity contribution for fixed solar QFs and a 39.1 percent capacity contribution for tracking solar QFs for the purpose of determining Schedule 38 capacity payments.
5. PacifiCorp shall update wind and solar capacity contribution values as necessary, consistent with our Phase II Avoided Cost Order, and at least as often as it files its biennial IRP. Those values shall be calculated into Schedule 38 capacity payments following review and approval.

DATED at Salt Lake City, Utah, this 26th day of June, 2015.

/s/ Thad LeVar, Chair

/s/ David R. Clark, Commissioner

/s/ Jordan A. White, Commissioner

Attest:

/s/ Gary L. Widerburg
Commission Secretary
DW#267155

Notice of Opportunity for Agency Review or Rehearing

Pursuant to §§ 63G-4-301 and 54-7-15 of the Utah Code, an aggrieved party may request agency review or rehearing of this written Order by filing a written request with the Commission within 30 days after the issuance of this Order. Responses to a request for agency review or rehearing must be filed within 15 days of the filing of the request for review or rehearing. If the Commission does not grant a request for review or rehearing within 20 days after the filing of the request, it is deemed denied. Judicial review of the Commission's final agency action may be obtained by filing a petition for review with the Utah Supreme Court within 30 days after final agency action. Any petition for review must comply with the requirements of §§ 63G-4-401 and 63G-4-403 of the Utah Code and Utah Rules of Appellate Procedure.

CERTIFICATE OF SERVICE

I CERTIFY that on the 26th day of June, 2015, a true and correct copy of the foregoing was delivered upon the following as indicated below:

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