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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC's Request for Agency Action to Adjudicate Rights and Obligations under PURPA, Schedule 38 and Power Purchase Agreements with Rocky Mountain Power	Docket No. 17-035-36

REDACTED PREFILED SURREBUTTAL TESTIMONY OF KEEGAN MOYER

Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC hereby submit the Redacted Prefiled Surrebuttal Testimony of Keegan Moyer in this docket.

DATED this 2nd day of October 2017.

HATCH, JAMES & DODGE

/s/ *Phillip J. Russell*
Gary A. Dodge
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Attorneys for Glen Canyon Solar A, LLC & Glen Canyon Solar B, LLC

CERTIFICATE OF SERVICE
Docket No. 17-035-36

I hereby certify that a true and correct copy of the foregoing was served by email this 2nd day of October 2017 on the following:

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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC's Request for Agency Action to Adjudicate Rights and Obligations under PURPA, Schedule 38 and Power Purchase Agreements with Rocky Mountain Power	Docket No. 17-035-36

Redacted Surrebuttal Testimony of Keegan Moyer

On Behalf of Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC

October 2, 2017

INTRODUCTION AND SUMMARY

Q. Please state your name for the record.

A. My name is Keegan Moyer.

Q. Have you previously filed testimony in this docket?

A. Yes. On behalf of Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC (collectively, "Glen Canyon Solar"), I filed direct testimony in this docket on June 29, 2017 and rebuttal testimony on September 25, 2017.

Q. What is the purpose of your surrebuttal testimony?

A. I will respond to rebuttal testimony submitted by PacifiCorp witnesses Rick A. Vail and Daniel J. MacNeil.

Q. Please summarize your surrebuttal testimony.

A. In my response to Mr. Vail's rebuttal testimony I correct Mr. Vail's characterization of the issue at hand in this proceeding. He wrongly contends that the core of the debate surrounds cost allocation of interconnection facilities, and I clarify that the issue is not who will pay, but rather whether deliverability-driven network upgrades that may be identified in the interconnection study should be avoided in the first place. Glen Canyon Solar will and should pay for facilities required to interconnect its generation resources, and Rocky Mountain Power (**"RMP"**) is responsible for delivering the interconnected resources to load and in doing so, it should ask PacifiCorp Transmission (**"PacTrans"**) to avoid the identification of any unnecessary deliverability-driven interconnection facilities, to the extent possible.

I also address each of the three "adverse consequences" that Mr. Vail claims would result if PacifiCorp were to consider redispatch in the interconnection studies as requested by Glen Canyon Solar. My comments show that the alleged consequences identified by Mr. Vail are not supported by evidence. They also explain that the relief requested by Glen Canyon Solar is necessary to avoid discrimination. Additionally, I discuss data recently provided by RMP related to the APS agreements that confirm it is possible for PacifiCorp to use existing transmission rights to facilitate the delivery of the Glen Canyon Solar output to loads.

My response to Mr. MacNeil's rebuttal testimony clarifies what appear to be misunderstandings between PacifiCorp and the Division on the topic of redispatch. I agree with Mr. MacNeil's position that the avoided-cost pricing does not and should not include incremental interconnection and transmission costs. While the avoided-cost model does not directly add costs for QF interconnection or transmission, it does reflect all cost impacts of modeled transmission constraints and thus the model accurately determined avoided cost prices for Glen Canyon Solar by modeling RMP's transmission rights from Glen Canyon to PACE. PacifiCorp and Glen Canyon Solar have not disputed the accuracy or validity of the pricing or the avoided cost model transmission assumptions in this proceeding.

Response to Rebuttal Testimony of PacifiCorp Witness Rick A. Vail

Q. PacifiCorp witness Rick A. Vail states on lines 14-16 of his rebuttal testimony that the "core of this dispute" is whether a QF or PacifiCorp's other customers should be required to pay for deliverability-driven network upgrade costs identified in an NR interconnection study. Do you agree?

A. No, I strongly disagree with that characterization of the issue in this docket. Mr. Vail and other PacifiCorp witnesses consistently attempt to mischaracterize the dispute so as to pit QF developers and utility customers against each other. That is simply not the case here. Rather, the core of this dispute is whether PacifiCorp's PURPA and Schedule 38 obligations, and its obligation to act fairly, reasonably and non-discriminatorily to both customers and QF developers, require PacifiCorp to take available steps to avoid any risk that either QFs or PacifiCorp customers will face costs for unneeded and uneconomic deliverability-driven network upgrades in the first place.

What Glen Canyon Solar is requesting is for the interconnection studies to be performed by PacifiCorp's transmission function in a manner that will allow for the elimination of deliverability-driven network upgrades that would be rendered unnecessary if PacifiCorp simply uses existing transmission rights to deliver the output of the Glen Canyon QF projects. As my previous testimony in this docket shows, RMP has sufficient existing transmission rights to allow it to deliver the Glen Canyon Solar generation without the need for deliverability-driven network upgrades and in a manner consistent with the pricing assumptions

in the avoided cost model.

I agree with Mr. Vail's statement that the QF developer is responsible for interconnection costs. Schedule 38 makes that obligation clear and Glen Canyon Solar has always intended to pay interconnection costs. Where I strongly disagree with Mr. Vail, however, is in his notion that "interconnection" costs to be paid for by a QF should include unnecessary "deliverability network upgrades."[1] Glen Canyon Solar has repeatedly asked—in its Request for Agency Action, in its Motion for Preliminary Injunction, and its prior testimony submitted in this case—for a Commission order requiring that PacifiCorp Transmission consider the use of Rocky Mountain Power's available transmission rights when it conducts interconnection studies. Such an order should result in interconnection studies that avoid deliverability-driven network upgrades that are unnecessary and uneconomic.

PacifiCorp Transmission has not yet completed its interconnection studies related to the Glen Canyon Solar QF projects. This Commission will not be in a position to assess whether that study was properly performed or whether it properly identified interconnection costs to be paid by Glen Canyon Solar unless the relief requested by Glen Canyon Solar is granted. It is undisputed that this Commission has jurisdiction over interconnection studies and the allocation of interconnection costs for QF projects. However, the Commission will not be in a position to determine appropriate interconnection costs to be assigned to Glen

[1] *See* Rebuttal Testimony of Rick A. Vail at 1:9-16.

Canyon Solar unless the interconnection studies clearly distinguish between ***interconnection-driven*** facilities and network upgrades required for interconnection itself and ***deliverability-driven*** facilities and network upgrades that will not be necessary if PacifiCorp uses its existing and available transmission rights for the Glen Canyon Solar QF resources. Thus, the issue here is whether deliverability-driven network upgrades are necessary in the first instance, which can only be determined if PacifiCorp Transmission properly performs interconnection studies that contemplate the use of existing transmission rights. Since RMP is responsible for arranging delivery of the project's output, avoiding these upgrades through the using of existing transmission rights allows RMP to discharge this responsibility prudently and in conformance with PURPA, and to act in its customers' best interest.

Q. The Division concluded that the request of Glen Canyon Solar for PacifiCorp's transmission function to study these QFs assuming the use of existing transmission and dispatch rights is reasonable and innocuous. Mr. Vail disagrees. How do you respond?

A. I agree with the Division and disagree with Mr. Vail. The request for reasonable and meaningful interconnection studies designed to identify the extent to which deliverability-driven network upgrades can be avoided and to eliminate the risk that *anyone* will be required to pay for unnecessary and uneconomic upgrades is certainly reasonable and innocuous. It is PacifiCorp's refusal to ensure that the studies are performed in this manner that is unreasonable.

Q. How do you respond to Mr. Vail's contention that Glen Canyon Solar's innocuous and reasonable request will produce "adverse consequences"?

A. The "consequences" suggested by Mr. Vail are neither accurate nor adverse.

Q. The first "adverse consequence" suggested by Mr. Vail is that the "redispatch tool" would be expanded beyond the "scope and terms" of the NOA. Do you agree with this characterization?

A. No. As I explained in my Rebuttal Testimony, the concept and principle of resource redispatch is not new or unique to the NOA Amendment. My prior testimony cited extensively the FERC Application for approval of the NOA Amendment because it did such a good job—in PacifiCorp's own words—of explaining why the use of redispatch is so reasonable and necessary to avoid the risk of unnecessary network upgrades in a QF context. That is the very same argument Glen Canyon Solar is making in this docket. However, the concept of resource dispatch is not new or restricted to the NOA Amendment. The concept of redispatching generation resources to accommodate QF resources has been used for many years in determining avoided costs.

Moreover, in the context of transmission service, PacifiCorp's FERC filing confirmed that resource redispatch as contemplated in the NOA Amendment is just a "form" of the planning redispatch concepts already in the OATT.[2] All the NOA Amendment did was confirm the existence, reasonableness

[2] FERC NOA Filing, attached as Exhibit 1 to my direct testimony, at 8.

and necessity of redispatching other generation resources when possible to avoid costly and unnecessary network upgrades for QF resources whenever possible. Glen Canyon Solar is not attempting to expand PacifiCorp's use of the NOA Amendment beyond the context of network transmission service. Rather, it is asking that PacifiCorp be required, first and foremost, to assume in preparing interconnection studies that RMP will use all available transmission rights, including re-dispatching other resources when necessary, in moving the Glen Canyon Solar QF resources to load. Note that moving the power from the point of interconnection to load is indeed the responsibility of RMP under PURPA.

In any event, Mr. Vail wholly misses the point by focusing narrowly on only the "transmission-service redispatch tool" discussed in the NOA Amendment. The real point is that RMP has available transmission rights that it can use to move Glen Canyon Solar resources to load. In utilizing those existing rights, on occasions when it may be necessary for PacifiCorp to redispatch other resources, the NOA Amendment confirms its ability to do so when analyzing the deliverability component for these QF resources, including on those rare occasions when redispatch might be necessary to accommodate the APS agreements.

Q. How can you be sure that RMP has sufficient transmission rights to fully utilize the Glen Canyon Solar resources?

A. My direct and rebuttal testimony provide several bases for this conclusion. For example, as explained in my direct testimony, RMP holds 95 MW of firm

transmission rights on the relevant transmission path that precisely match the maximum output of the Glen Canyon Solar QF facilities. In addition, my direct and rebuttal testimony demonstrate that there is substantial unused available transfer capability available in almost all hours of the year for the Glen Canyon Solar QF resources.[3] Moreover, those same rights can be used in connection with the APS agreements.

Q. Have you received information from PacifiCorp since you filed your rebuttal testimony that confirms that RMP's transmission rights are sufficient for delivery of Glen Canyon Solar resources?

A. Yes. On Wednesday, September 27, 2017, two days after filing my rebuttal testimony, I received CDs containing PacifiCorp's supplemental responses to some Glen Canyon Solar data requests.[4] Those data requests asked about the power exchanges between Arizona Public Service Company (**"APS"**)

[3] Lines 570 – 620 of my rebuttal testimony explains that significant unused capacity is available on the Glen Canyon – PACE path in almost all hours of the year. That observation remains correct, but I need to correct an error in that testimony, Lines 570 – 575 referred to average firm and non-firm ATC on this path since 2014. I have since learned that the data provided to me as referenced therein was incomplete. Lines 570-575 of my rebuttal testimony should thus be revised read as follows:

> "In addition to the flow data above, I have reviewed documents produced by PacifiCorp showing hourly non-firm ATC for the PACE - GLENCANYON2 transmission contract path since June of 2014 and since that time over three years ago, the path has had on average 243 MW of non-firm ATC that has been available for use in the operating horizon."

This correction does not affect my testimony or opinions, in that it continues to demonstrate significant availability of transmission rights in all hours to deliver Glen Canyon Solar QF output to RMP's load.

[4] Specifically, on September 27, 2017 I received one CD containing a supplemental response to Glen Canyon Solar Data Request No. 1.13 and another CD containing a supplemental response to Glen Canyon Solar Data Request No. 5.2.

and Rocky Mountain Power pursuant to the transmission contracts between those companies. Glen Canyon Solar Data Request No. 5.2 sought the last five years of APS's firm and non-firm hourly transmission schedules on the Glen Canyon to PACE transmission path.

My rebuttal testimony demonstrated that the Glen Canyon to PACE transmission path—into which the Glen Canyon Solar QF projects seek to interconnect and which would be used to transmit their output to Rocky Mountain Power's load—has historically been extremely underutilized.[5] It further demonstrated that, while Rocky Mountain Power holds 95 MW of firm transmission rights in the northbound direction on this transmission path, northbound power is almost never scheduled on this path.[6] I noted in my rebuttal testimony that I had not yet received the requested data from RMP to verify the exact number of MWh scheduled in the northbound direction under the Power Exchange and Restated Transmission Agreements between APS and PacifiCorp specifically. I was, however, able to summarize the *total* MWh scheduled in the northbound direction on the Glen Canyon to PACE transmission path in my rebuttal testimony.

Data provided by Rocky Mountain Power in its Supplemental Response includes the specific number of hours over the last five years in which APS has actually utilized its "call option" under the Restated Transmission Agreement to schedule northbound power for delivery to Idaho on the Glen Canyon to PACE

[5] *See Rebuttal Testimony* at 26:539-28:537.
[6] *See id*. at 28:588-30:620.

transmission path. The data shows that, in the last five years, APS has scheduled power northbound along the Glen Canyon to PACE transmission path [redacted], for a grand total of only [redacted] This means that, over the last five years, APS utilized its call option to deliver power to the Glen Canyon substation for delivery northwards to PACE in only [redacted] of the available hours, and that this call option went unused along the Glen Canyon to PACE path in [redacted] of all hours. It is also notable that on that [redacted], a maximum of only [redacted] of the total transfer capability of the Glen Canyon to PACE transmission path was utilized to transmit APS power pursuant to the Restated Transmission Agreement.

The data included in my rebuttal testimony confirmed that, when considering *all* northbound flows and schedules on the Glen Canyon to PACE transmission path, the path is significantly underutilized and sufficient capacity exists to accommodate the Glen Canyon Solar QF projects. That testimony demonstrated that the 285 MW of total transfer capability south-to-north on the Glen Canyon to PACE transmission path has been physically used in the past five years only 10% of the hours on average and, in those rare instances in which there are south-to-north flows, they rarely exceed 50 MW.[8] South-to-north schedules on the path average between 64 and 91 MWs over the last five years, depending

[7] *See* 1st Supplemental Response to Glen Canyon Solar Data Request No. 5.2, attached as Confidential Exhibit 1.
[8] *See* Rebuttal Testimony of Keegan Moyer at 26:541-27:555 & Table 1.

on the season.[9] The new data recently provided by Rocky Mountain Power further demonstrates that, on those very rare instances in which power actually flows south-to-north on the Glen Canyon to PACE path, [redacted] of that power is scheduled under the Restated Transmission Agreement between APS and PacifiCorp. Indeed, that has happened [redacted] in the past five years. The data thus confirms that transmission paths are available to deliver [redacted] of the output of the Glen Canyon Solar QF projects south-to-north on the Glen Canyon to PACE transmission path in all operating hours.

Indeed, even in the unlikely event that the sum of Glen Canyon Solar output and APS nominations on the Glen Canyon to PACE path in any given hour exceeded 95 MW, Rocky Mountain Power could use the remaining non-firm available transfer capability on that same path, averaging over 240 MW over the past five years, or its significant rights from Four Corners to PACE, or other available options, to use the Glen Canyon Solar QF output and deliver the APS energy to Idaho.

Q. Mr. Vail also claims in the first "adverse consequence" that use of the "redispatch tool" would "shift costs to PacifiCorp's retail and third-party transmission customers." To your knowledge, has PacifiCorp provided any evidence to support this purported cost shift?

A. No. I have not seen any evidence that supports the suggestion that assuming in an interconnection study that RMP will use redispatch when

[9] *See id*. at 29:604-30:613.

necessary and appropriate to utilize the Glen Canyon Solar QF output would result in costs for other customers that have not been properly accounted for in the avoided cost prices.

Q. The second "adverse consequence" claimed by Mr. Vail is that the "highly regulated nature" of interactions between PacifiCorp's merchant and transmission functions is being ignored. How do you respond to that claim?

A. This claim makes no sense to me. Mr. Vail does not reference any aspect of the Code of Conduct that would supposedly be violated by the relief requested in this docket, and I am aware of none. My understanding is that FERC adopted codes of conduct for integrated utilities in an effort to diminish a utility's ability to discriminate in favor of its merchant function and against others. That concern is certainly not implicated here. Indeed, the opposite appears true. Unless Glen Canyon Solar is granted the relief it has requested, PacifiCorp will likely refuse to study the Glen Canyon Solar QF interconnections in a fair and non-discriminatory manner in comparison to how it deals with its own resources.

PacifiCorp appears to be trying to use the FERC-mandated wall between its merchant and transmission functions notwithstanding consent to the contrary and in an effort to avoid reasonable communications designed to ensure compliance with PURPA and a reasonable, non-discriminatory outcome. However, I have reviewed a waiver signed by Glen Canyon Solar expressly authorizing contact between PacifiCorp's merchant and transmission functions with respect to these projects. Moreover, this Commission can certainly issue an

order directing PacifiCorp Transmission to consider RMP's use of existing transmission rights and redispatch options in its interconnection studies. Such an order would not require RMP to engage in any inappropriate or unauthorized communication with PacifiCorp Transmission.

Q. Why do you believe the relief requested by Glen Canyon Solar is necessary to avoid discriminatory treatment of the Glen Canyon Solar QFs?

A. Based on my review of testimony filed by PacifiCorp employees in another docket, as well as information available online regarding the PacifiCorp Transmission interconnection queue, it appears that PacifiCorp plans to deal with wind resources that it hopes to construct in Wyoming in a very different manner than it is dealing with the Glen Canyon Solar QFs.

Q. Please explain.

A. At its core, the request of Glen Canyon Solar in this docket is for the PacifiCorp Merchant and Transmission functions to communicate and coordinate in such a manner that the interconnection studies for the Glen Canyon Solar QF resources will identify as necessary only those deliverability-driven network upgrades, if any, that are legitimately needed after RMP has first utilized all other available transmission rights and options, including the use of RMP's existing transmission rights and redispatch of other resources, minimizing the cost to deliver the QF resource to RMP load. Despite requests to this effect, and the filing of this docket, that has still not occurred.

Contrast how the Glen Canyon Solar QFs are being treated with

PacifiCorp's plans for new transmission and wind resources that it hopes to build in Wyoming. In prefiled testimony in Docket 17-035-40, PacifiCorp witnesses have explained that PacifiCorp intends to redispatch its Jim Bridger units, and perhaps others, to allow it to maximize the use of transmission rights and add as much new wind resources as possible. Mr. Vail, for example, explained that the planned modifications to the facilities included:

> • Modification to the Jim Bridger remedial action scheme will be needed due to the ***re-dispatch of Jim Bridger generation necessary to accommodate new wind*** generation in eastern Wyoming, while maintaining the 2,400 MW rating on the Bridger West transmission path….[10]

Later, Mr. Vail explained:

> When the Transmission Projects are complete, the Company estimates that it can interconnect up to approximately 1,270 MW of additional wind facilities east of the Bridger/Anticline substation. The assumed level of new wind resources is higher than the assumed incremental transfer capability of the transmission facilities because wind resources do not generate at their full capability in all hours of the year. ***At times when wind resources in southeastern Wyoming are operating near full output, other resources in the area can be re-dispatched to accommodate PTC-producing wind generation***. Installing more variable resources in an area relative to total transmission capacity allows for more efficient use of the transmission system and the ability to use the most cost-effective resources to meet customer demand.[11]

PacifiCorp witness Rick Link made the same point in the following exchange:

> Q. Why did PacifiCorp assume new wind resource capacity in excess of the assumed incremental transfer capability of the Aeolus-to-Bridger/Anticline Line in this initial sensitivity?
>
> A. The Aeolus-to-Bridger/Anticline Line can enable new resource

[10] Docket 17-035-40, Redacted testimony of Rick A. Vail, page 10, lines 237-241, June 2017 (emphasis added).
[11] *Id*., page 15, lines 332-341 (emphasis added).

> interconnections in excess of the transfer capability of the line. PacifiCorp's preliminary sensitivity in the 2017 IRP assumed the Aeolus-to-Bridger/Anticline Line would support at least 900 MW of new resource interconnections. The assumed level of new wind resources is higher than the assumed incremental transfer capability of the transmission line because wind resources do not generate at their full capability in all hours of the year. At times when wind resources in southeastern Wyoming are operating near full output, other resources in the area can be re-dispatched to accommodate PTC-producing wind generation.[12]

PacifiCorp thus plans to redispatch its Jim Bridger units, and perhaps other resources, to maximize use of the transmission system and minimize new transmission upgrades that will be needed.

Before PacifiCorp announced its intention to build these new wind and transmission resources, QF developers asking to interconnect with PacifiCorp's Wyoming transmission facilities in this area were told that they could do so only if the Gateway West and Gateway South transmission segments were built—at a reported cost of billions of dollars.[13] In contrast, non-QF developers who requested Energy Resource (**"ER"**) interconnection service in southern Wyoming were not required to build the full Energy Gateway segments.[14] Recent

[12] Docket 17-035-40, Redacted testimony of Rick T. Link, page 7, lines 137-148, June 2017.

[13] *See, e.g.*, Large Generator Interconnection Facilities Study Report Final Completed for ("Interconnection Customer") Q0409, May 23, 2016, page 2, available here: http://www.oasis.oati.com/PPW/PPWdocs/Q409FS.pdf. ("The Energy Gateway West (2024) and Energy Gateway South (2024) projects are assumed to be in service; the Dave Johnston to Amasa (future) to Heward to Aeolus 230 kV line is assumed to be rebuilt as part of the Gateway projects. Note that these dates are inconsistent with the Q0409 Project's planned in-service date.").

[14] *See, e.g.*, Large Generator Interconnection Facilities Study Report Final Completed for ("Interconnection Customer") Q0707, March 6, 2017, page 2, available here: http://www.oasis.oati.com/PPW/PPWdocs/Q707FS.pdf.

interconnection requests in this area, which I believe may include some of PacifiCorp's planned Wyoming wind benchmark bids, have asked to be studied as both ER and Network Resource (**"NR"**) interconnections.[15] This will allow separate identification of interconnection-related facilities and upgrades that must be constructed to accommodate interconnection of the new wind resources and deliverability-related facilities and upgrades that can be avoided through the use of existing transmission rights and redispatch of other resources, while still permitting the new wind resources to be added as Designated Network Resources (**"DNR"**)—the precise result being requested by Glen Canyon Solar in this docket.

It is clear that PacifiCorp intends to avoid spending billions of dollars to construct the entire Gateway South and Gateway West transmission segments in order to interconnect and secure DNR status for its new Wyoming wind projects. Rather, it intends to redispatch other resources as needed to avoid the cost of additional transmission upgrades. In some manner or another it clearly has or will communicate that intention to its transmission function to ensure that the interconnection studies will not require construction of all of the Gateway segments to provide interconnection service and DNR designation. That communication may be implicit in requests for interconnection studies for the benchmark projects, in that they have or will be asked to be studied as ER

[15] *See, e.g.*, Interconnection Queue numbers 947, 948 and 949, shown on PacifiCorp Transmission's OASIS, available here: http://www.oasis.oati.com/PPW/PPWdocs/pacificorplgiaq.htm.

interconnections or NR/ER interconnections. In that manner, PacifiCorp Transmission will identify the interconnection costs, and the interconnection-related network upgrades, necessary for interconnection itself, and separately the deliverability-related network upgrades that would be required for network interconnection service, but that can be avoided through PacifiCorp's redispatch of other generation resources and existing transmission rights.

PacifiCorp's 2017R RFP does not require bidders or benchmarks to have an NR Interconnection, but they must be capable of being designated as Network Resources.[16] Thus, ER interconnections—which will not require deliverability-related network upgrades—are acceptable, but the resources will still be designated as DNRs through redispatching of other resources. This effect is exactly what Glen Canyon Solar is seeking here, i.e. interconnection studies and agreements that contemplate a redispatch of other resources in order to accommodate a new renewable resource while avoiding unnecessary deliverability-driven network upgrades. Failure to achieve this result will, in my opinion, result in discrimination in the manner in which interconnection studies are conducted and interconnection costs are allocated in comparison to

[16] *See* PacifiCorp Renewable Request for Proposals (2017R RFP) Issued Wednesday, September 27, 2017, pages 18-19. For example, page 19 of the RFP states: "All proposals will require firm transmission to PacifiCorp's network transmission system and proposed resources must be able to be designated by PacifiCorp's Energy Supply Management (ESM) function as a Network Resource under the network service contract between PacifiCorp Transmission (www.oasis.pacificorp.com) and PacifiCorp ESM.

The 2017R RFP is available here:
http://www.pacificorp.com/content/dam/pacificorp/doc/Suppliers/RFPs/2017R_RFP/2017R_RFP_docs/Main_Document/RFP_2017R_RFP_MAIN_DOCUMENT.pdf

PacifiCorp's own resources. My reading of PURPA regulations is that this type of discrimination is not allowed.

Q. Mr. Vail's third claim is that the requested relief would result in interconnection and transmission services being "blended into one intermingled request and study process." Do you agree?

A. No, that claim is clearly incorrect. No one in this case is confusing the nature of the services required for a generation resource to interconnect with a transmission system with the separate services required for the purchaser to deliver that output to its load. However, as explained in prior testimony, given the manner in which PacifiCorp studies a NR interconnection request, such a study necessarily involves components of both *interconnection* and *deliverability*. It is proper, and indeed necessary, for an interconnection study to reflect accurate assumptions about how the resource will in fact be delivered to load. Failure to do so can result in improper results surrounding the need for deliverability-related upgrades, when in fact those deliverability-related upgrades are avoidable given existing and available transmission rights that can be used by the buyer to deliver a resource to load. The avoidance of such improper study results about unnecessary deliverability-related upgrades is the core purpose of Glen Canyon Solar's request in this docket.

Response to Rebuttal Testimony of PacifiCorp Witness Daniel J. MacNeil

Q. PacifiCorp witness Daniel J. MacNeil disagrees with the Division's conclusion that PacifiCorp should evaluate interconnection costs based on the assumption that other resources can be redispatched, as is also assumed in the avoided cost model. What is your response?

A. First, Mr. MacNeil mischaracterizes the Division's testimony by claiming that Mr. Peterson said that PacifiCorp's avoided cost pricing model assumes that PacifiCorp will use the NOA's "transmission-service redispatch tool." That was not Mr. Peterson's testimony. Rather, Mr. Peterson said: "What Glen Canyon wants the Company's merchant function to do−that is, to ask the Company's transmission function to evaluate the interconnection costs assuming that the Company can re-dispatch its own or controlled generation plants−seems to the Division to be reasonable and innocuous. Reasonable and innocuous because that is what the Company's model does in determining the avoided costs for the Glen Canyon projects."[17]

Mr. Peterson is correct. PacifiCorp's avoided cost model does model the cost impacts of dispatching other generation resources in a different manner in light of transmission rights and constraints in order to utilize QF power at any given location. Mr. Peterson is also correct that it is "reasonable and innocuous" to require PacifiCorp to make similar assumptions about the use and dispatch of its resources in determining the existence of any deliverability-related network

[17] Docket 17-035-36, Direct Testimony of Charles E. Peterson, page 6, lines 134-139, August 31, 2017.

upgrades that should be included in interconnection costs.

In addition, as discussed above, Mr. MacNeil, like Mr. Vail, misses the point by focusing narrowly on the "transmission-service redispatch tool" reflected in the NOA Amendment as opposed to the general concept or principle of re-dispatching resources as need to accommodate QF resources as used in the avoided cost model.

Q. Mr. MacNeil also states on lines 26 through 31 of his rebuttal testimony that the Commission-approved avoided-cost pricing methodology does not include any costs related to transmission service or interconnection service. Do you agree?

A. I agree that the Commission-approved QF avoided-cost pricing methodology does not directly include costs of interconnecting a QF facility or delivering QF output to load. However, I disagree to the extent Mr. MacNeil's testimony might be read as suggesting that the QF pricing model does not reflect pricing implications of transmission constraints or limitations that affect delivery of QF output.

Q. Please explain.

A. Mr. MacNeil's rebuttal testimony is offered in response to direct testimony submitted by Division witness Charles Peterson to the effect that PacifiCorp had "darkly" suggested or implied that the avoided-cost prices for the Glen Canyon Solar QF projects may not reflect all costs associated with

interconnection or delivery of the Glen Canyon Solar projects.[18] I believe Mr. Peterson misunderstood PacifiCorp. To my understanding, neither Mr. MacNeil nor any other PacifiCorp witness has claimed or suggested that there are other energy or transmission costs associated with the Glen Canyon Solar projects that are not—but that should be—included in the avoided cost pricing model. Rather, Mr. MacNeil suggests that, while avoided energy and capacity costs are properly determined in the avoided cost pricing model, interconnection and transmission costs are dealt with elsewhere.

I agree with this characterization. In other words, there is no issue as to whether the avoided cost models properly calculated avoided energy and capacity costs for these projects. The 95 MW transmission link between the Glen Canyon area and RMP load was the appropriate assumption. Rather, the dispute is over whether PacifiCorp can properly include the cost of unnecessary and avoidable delivery-related network upgrades as interconnection costs to be assigned to Glen Canyon Solar. A second dispute—not directly at issue here—is, to the extent PacifiCorp attempts to include avoidable and unnecessary deliverability-related network upgrades as part of interconnection costs, would those costs ultimately be assigned back to PacifiCorp and its transmission customers under relevant federal regulations and precedent? This issue is not before the Commission and that risk can be wholly avoided if PacifiCorp is simply directed to conduct its interconnection studies based on proper deliverability-based assumptions.

[18] *Id*., page 46, lines 92-96.

Q. How do the QF pricing models reflect cost implications of transmission constraints?

The Commission-approved QF avoided-cost pricing methodology includes price components for avoided generation capacity and for avoided energy production costs. Avoided capacity costs are based on the capital cost of a deferrable resource as identified in the Company's IRP. Avoided energy costs are determined by production cost studies using PacifiCorp's GRID model. Neither avoided capacity nor avoided energy prices directly reflect costs related to interconnection or transmission of a QF facility. However, the GRID model *does* take into account the pricing impacts of all known transmission constraints that may affect delivery of QF output to load. As such, the avoided-cost pricing given to QFs does reflect the cost impacts of transmission constraints and limitations.

The history of the Glen Canyon Solar QF projects provides a good example of how transmission assumptions in the QF pricing model work. As noted in my direct testimony, Glen Canyon Solar initially considered a 240 MW non-QF project. That project was later withdrawn and interconnection and QF pricing requests were submitted for a 136 MW project. Rocky Mountain Power's avoided-cost pricing for the 136 MW project showed that Rocky Mountain Power held only 95 MW of firm transmission rights on the Glen Canyon to PACE transmission path, and that output above 95 MW would be curtailed on a regular basis. Glen Canyon Solar thus downsized its project to 95 MW to match Rocky Mountain Power's 95 MW of firm transmission rights represented in the model.

Thus, while the avoided-cost model does not—and should not—directly add costs associated with QF interconnection or transmission, it does reflect all cost or pricing implications of transmission constraints.

The implicit assumption in the GRID model that 95 MW of Glen Canyon Solar QF resources can be accommodated in all hours is clearly reasonable and verifiable given flexibility in the APS agreements to schedule APS power on either the Glen Canyon to PACE or Four Corners to PACE paths, and particularly in light of the extremely limited south-to-north use of the Glen Canyon to PACE path generally [redacted]. The GRID model thus accurately determined avoided cost prices and accurately reflects all impacts of available transmission rights and limitations.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.