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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

PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

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

DATED this 25th day of September 2017.

HATCH, JAMES & DODGE

/s/ *Phillip J. Russell*
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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 25th day of September 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

Rebuttal Testimony of Keegan Moyer

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

September 25, 2017

I. 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.

Q. What is the purpose of your rebuttal testimony?

A. I will respond to direct testimony submitted by PacifiCorp witnesses Rick A. Vail, Kelcey A. Brown, and Daniel J. MacNeil.

Q. Please summarize your rebuttal testimony.

A. In this rebuttal testimony, I address the following matters:

First, I discuss the guidance and direction that Glen Canyon Solar is seeking from the Public Service Commission of Utah (**"Commission"**) in this docket. In its testimony, PacifiCorp's witnesses inaccurately characterize Glen Canyon Solar's request for relief and my testimony seeks to provide an accurate statement of the relief sought.

Second, I discuss the redispatch tools available to Rocky Mountain Power (**"RMP"**) and note that the technical principles underlying the redispatch tool discussed in the Amendment to the Network Operating Agreement can and should be applied to interconnection studies for *certain* transmission-constrained QFs, including the QFs at issue in this docket. Adding this flexibility into QF

interconnection studies will ensure that the PURPA transmission deliverability obligation remains with RMP and its ability to arrange transmission for the Glen Canyon QF projects is not compromised as a result. This approach seeks to make the most out of the transfer capability of existing transmission assets and it would help to avoid unnecessary and uneconomic transmission investments.

Third, PacifiCorp's witnesses note in their testimony that RMP holds 95 MW of point-to-point transmission service on the Glen Canyon to Sigurd transmission line to honor an existing contract with Arizona Public Service ("**APS**") that will expire shortly after the scheduled commercial operation date of the Glen Canyon Solar projects. I have reviewed this contract and have determined that should the Commission determine that QF interconnections are eligible for redispatch considerations when studying deliverability, the APS agreement should not prevent this outcome for the following reasons.

- The contract requires PacifiCorp to honor an APS call option from either the Glen Canyon **or** Four Corners substations and PacifiCorp has flexibility to decide how the power is scheduled through their system;
- Given that the call option is rarely invoked and that PacifiCorp holds sufficient transmission on the Four Corners to PACE path to meet the contractual need, the PacifiCorp rights on the Glen Canyon to PACE path are excessive and generally unused for this purpose; and
- The contract terminates once Cholla 4 is retired, which will happen at the end of 2020 according to PacifiCorp's 2017 IRP filed with this

Commission. This timing makes this contract relevant for only the first year of the Glen Canyon Solar QF PPAs. After Cholla 4 is retired, the 95 MW will (or should) be available for Glen Canyon Solar's interconnection and transmission service year-round. The interconnection that Glen Canyon Solar QFs are required to obtain should not be so inflexible as to require hundreds of millions of dollars of transmission upgrades on account of a single year (or potentially months) of overlapping contractual commitments that, as stated above, are not expected to be used.

I address these topics in the order they are outlined above.

II. GLEN CANYON SOLAR'S REQUEST IN THIS DOCKET

Q. Do you agree with the characterization by PacifiCorp's witnesses regarding the relief sought by Glen Canyon Solar in this docket, and why?

A. No. PacifiCorp's witnesses do not accurately convey what Glen Canyon Solar is seeking in this docket. For instance, contrary to the testimony of PacifiCorp's witness Rick Vail, Glen Canyon Solar does not seek to make PacifiCorp's Network Operating Agreement ("**NOA**") redispatch a "mandatory interconnection study assumption" and I do not interpret its request for relief in this docket as an attempt to protect QFs from valid and non-discriminatory interconnection costs at the expense of PacifiCorp's customers.

Q. Please describe your interpretation of the relief that Glen Canyon Solar is requesting in this docket?

A. The narrow relief that Glen Canyon Solar seeks in this docket is set forth

in its Request for Agency Action. As the Request makes clear, Glen Canyon contends that major upgrades to the transmission system are not necessary for PacifiCorp to transmit the power from the Glen Canyon Solar QF projects and Glen Canyon Solar requests assistance from the Commission because PacifiCorp refuses to consider its own transmission rights and certain redispatch options that, because PacifiCorp refuses to take them into account, will likely result in an interconnection study that incorrectly asserts that such upgrades are required to interconnect the project. PacifiCorp further asserts that the Glen Canyon Solar QFs will be responsible for the costs of these upgrades. Glen Canyon Solar is, then, requesting that the Commission order PacifiCorp to consider in interconnection studies RMP's transmission rights as well as the same redispatch techniques afforded to RMP in its transmission service studies. Redispatch, or changing the output of the existing generation resources to accommodate a new generation resource, is fundamental to QF resources and is consistent with PURPA and PacifiCorp's own avoided-cost pricing models, as well as the requirement that QF interconnection costs are assessed on a non-discriminatory basis.

Q. Does this Commission have jurisdiction over the QF interconnection process?

A. PacifiCorp and Glen Canyon Solar agree that this Commission has jurisdiction over the QF interconnection process related to the Glen Canyon Solar QF projects.

Q. Does PacifiCorp claim that QFs must obtain a particular type of interconnection service?

A. Yes. PacifiCorp witness Rick Vail asserts in his testimony in this docket that QFs must obtain Network Resource ("NR") interconnection service. To my knowledge, this Commission has not issued an order requiring QFs to obtain a certain type of interconnection service and has not considered, in detail, how QF interconnections should be handled in transmission constrained areas in which PacifiCorp maintains transmission capacity. I understand PacifiCorp's Business Practice #70 ("Generation Interconnection Procedures for Qualifying Facility Projects"), to be the guiding procedural document on QF interconnections and importantly, I do not interpret the process outlined in this business practice as preventing PacifiCorp from conducting the study that Glen Canyon seeks. I'll explain this in more detail later in my testimony, but for now, it is worth noting that based on PacifiCorp's testimony it is clear that they are asserting this Business Practice to mean that they will study QFs as NR interconnections.

Q. Explain why Glen Canyon Solar's request for relief on this docket does not seek to protect QFs from paying interconnection costs?

A. My understanding is that Glen Canyon Solar is committed to paying for costs that are required to interconnect its projects to the PacifiCorp transmission system, transferring the power to RMP at the point of interconnection. RMP would then would arrange for the delivery of the power to its loads. Glen Canyon Solar's transmission scope and cost commitment is best demonstrated using the

terminology adopted by FERC in several dockets, including *Tennessee Power Company*, 90 FERC ¶ 61,238 (FERC 2000), in which FERC describes transmission service as containing two "components": interconnection and delivery. *Id*. ¶¶ 61,761-62. According to FERC, the interconnection component encompasses the system upgrades needed to "accept power into the grid at the interconnection receipt point." *Id*. ¶ 61,762 n.5. Glen Canyon Solar should be responsible for the costs to facilitate this interconnection component. The delivery component of transmission service identifies any "additional system upgrades [that] are needed to deliver [the generator's] output to a particular delivery point." *Id*. For a network customer such as RMP, the "particular delivery point" is its system load,[1] and RMP is responsible for the costs to facilitate this delivery component.

Glen Canyon Solar argues that in order for PacifiCorp to discharge its PURPA responsibilities, RMP should be responsible for making these delivery arrangements and bearing the costs of delivery to load, recognizing that PacifiCorp's NOA allows RMP to redispatch its generation to avoid these delivery-driven upgrades when it seeks to designate the Glen Canyon Solar project as a network resource by obtaining Network Integration Transmission Service.

[1] *See OATT* § 28.1 (stating that the purpose of Network Integration Transmission Service is for the Network Customer to "efficiently and economically utilize their Network Resources . . . . to serve their Network Load located in the Transmission Provider's Control Area . . . .").

In this manner, Glen Canyon Solar believes that uneconomic and unnecessary deliverability-driven transmission upgrades can be avoided, and that the ratepayer indifference standard of PURPA can be maintained.

Q. Explain how Glen Canyon Solar's request for relief in this docket aligns with the requirements of PURPA?

PURPA requires RMP to take possession of power generated by a QF at the point of interconnection and to secure transmission service for that power from the point of interconnection to RMP's load.[2] Using FERC's terminology from above, this means RMP is responsible for arranging the transmission *delivery* component of the QF project's transmission service, and Glen Canyon Solar is responsible for ensuring the transmission *interconnection* component for the same. Glen Canyon Solar argues that when arranging for transmission delivery services for the QF, RMP should consider its existing transmission rights and the redispatch of its existing resources or purchases. These tools, when properly used, can reduce or eliminate network upgrades identified in both the transmission service study and the transmission interconnection study.

III. REBUTTAL OF PACIFICORP WITNESS RICK A. VAIL

Q. Do you have a response to the testimony of PacifiCorp witness Rick A. Vail?

A. Yes. I disagree with many aspects of the testimony offered by Mr. Vail

[2] *See Pioneer Wind Park I, LLC*, 145 FERC ¶ 61,215 at P 38 (FERC 2013) ("The Commission has specifically held that: (1) the QF's obligation to the purchasing utility is limited to delivering energy to the point of interconnection by the QF with that purchasing utility; [and] (2) the QF is not required to obtain transmission service, either for itself or on behalf of the purchasing utility, in order to deliver its energy from the point of interconnection with the purchasing utility to the purchasing utility's load . . . .").

and respond to that testimony below. My responses address what I consider to be the most relevant matters. If I do not respond to a specific statement offered in Mr. Vail's testimony, that should not be read as an endorsement of his testimony.

Q. Do you agree with Mr. Vail's assertion that the redispatch discussed in the NOA Amendment cannot be considered in interconnection studies?

A. No. While the specific application of the NOA Amendment is limited to transmission service, there is no reason that the technical *principles* of redispatch discussed in that NOA Amendment cannot also be used in interconnection studies.

Q. Please explain further.

A. In its filing with FERC seeking to amend the NOA, PacifiCorp explicitly sought permission to consider redispatch of generation resources when determining whether a new QF generation source can be designated as a network resource. Designation of a generation source as a network resource occurs as part of the provision of the delivery component of transmission service.[3] As such, Mr. Vail and other PacifiCorp witnesses repeatedly assert that the NOA Amendment can only be used during transmission service studies. However, NR interconnection studies also consider aspects of the delivery component of transmission service. Since the technical principles of generation redispatch were not created by PacifiCorp out of whole cloth for the NOA Amendment, its uses

[3] *See Standardization of Generator Interconnection Agreements and Procedures* (Order on Rehearing), 106 FERC ¶ 61,220 at P 535 (FERC 2004) (hereinafter "FERC Order 2003-A") ("A QF need not obtain network resource interconnection service in order be designated as a network resource or to obtain network integration transmission service.")

are not limited only to transmission service studies and the designation of generation resources as network resources. Those same study techniques can and should be used in interconnection studies for transmission constrained QFs when doing so could eliminate study results that call for unnecessary network upgrades that are driven by the *deliverability component of the interconnection study*. This is only true because RMP is responsible for arranging the delivery of the QF power from the point of interconnection to their load.

Q. Explain why you believe generation redispatch tools should be used in the interconnection studies for the Glen Canyon Solar QF projects?

A. First and foremost, PacifiCorp should have an obligation to seek the best and most efficient transmission and interconnection products on behalf of *both* its ratepayers and interconnection customers. Refusal to consider options such as redispatch are unduly discriminatory to QFs and ultimately may raise the cost of service to its customers.

My direct testimony discusses this topic at length, focusing particularly on the overarching ineffectiveness of the existing process, which makes different assumptions about transmission use and redispatch, depending on the model, while allowing only certain parties (PacifiCorp) access to the tools (redispatch) that could allow for the re-alignment of these assumptions while also avoiding unnecessary transmission upgrades. In this rebuttal testimony, I approach the topic of redispatch in interconnection studies from two angles: (1) there is no reason why interconnection redispatch cannot be done; and (2) in this instance,

where RMP already has existing transmission rights, redispatch is a necessary step in order to effectively divide the interconnection and delivery components of transmission service given that a division is consistent with each entity's respective PURPA obligations.

Q. Please expand on these two issues. First, what evidence do you have that supports the claim that there is no justification for *not* considering redispatch in QF interconnection studies?

A. Earlier in my testimony I mention PacifiCorp Business Practice #70, which is titled "Generation Interconnection Procedures for Qualifying Facility Projects" and which, as the name suggests, describes PacifiCorp Transmission's interconnection procedures for QFs. Business Practice #70 includes a short statement about the service product and the interconnection study itself:

> *PacifiCorp will study all proposed QF generation interconnection projects assuming that the full output of the project will be used by PacifiCorp to serve its network load. PacifiCorp Transmission will attempt to identify alternatives to* ***alleviate any transmission capacity issues****. Potential alternatives could include, but are not limited to, the construction of new transmission infrastructure or the implementation of a remedial action scheme ("RAS").*[4]

Another portion of Business Practice #70 states that "conversion to QF status may require PacifiCorp Transmission to study a more flexible and comprehensive level of interconnection, akin to FERC's Network Resource Interconnection Service."[5]

I offer two notable observations on these excerpts from the business practice:

[4] PacifiCorp Business Practice #70 at 2-3 (attached hereto as Exhibit 1).
[5] *Id*. at 2

(1) it does not specifically describe the product as being Network Integration Transmission Service, although it does say that the service *could* be *akin to* NR interconnection service, and (2) it *encourages* the use of "potential alternatives" that can alleviate transmission capacity issues. The product and study approach for QF interconnections, according to the Business Practice, is nothing if not flexible and redispatch should be considered a "potential alternative" in the definition of the QF interconnection product.

Q. Does the flexible approach identified in PacifiCorp's Business Practice #70 contradict the testimony of Mr. Vail?

A. Yes. Mr. Vail testifies that in the wake of FERC's ruling in *Pioneer Wind I, LLC*, in which FERC ruled that a transmission customer cannot curtail a QF's output except under very limited circumstances, PacifiCorp is obligated to use "firm *network* transmission service" to deliver QF power and that this "aligns only with the comprehensive, higher-priority *network* resource (or NR) interconnection service."[6] This contradicts the statements in Business Practice #70, which states that PacifiCorp Transmission *may* study interconnection service "akin" to NR interconnection service, and does not state anywhere that the level of transmission service required is Network Integration Transmission Service.

Moreover, Mr. Vail's statement in this regard—that a particular transmission service product requires a particular interconnection service product—contradicts PacifiCorp's claims in this docket that transmission service and interconnection service are separate and distinct. Mr. Vail's statement

[6] *See* Direct Testimony of Rick A. Vail ("Vail Test.") at 13:269-278.

supports Glen Canyon Solar's core point: that studies performed regarding NR interconnection service are intended to, and do, support the purchasing utility's ability to deliver the QF's power to its network loads. As such, interconnection studies for NR interconnection service identify network upgrades that relate to the utility's delivery obligation, and transmission rights and redispatch tools available in transmission service studies should be utilized to address those deliverability-driven upgrades that can be identified in NR interconnection service studies for certain QFs.

Q. What other evidence supports your position that generation redispatch tools should be used in the interconnection studies for the Glen Canyon Solar QF projects?

A. As I mentioned previously, FERC distinguishes between two components of transmission service: interconnection and delivery.[7] Interconnection service, once secured, permits the generator (or QF) to inject the generating facility's output onto the transmission system.[8] It is RMP's current practice to require QFs

[7] *See Tennessee Power Co.*, 90 FERC ¶ 61,238 at ¶ 61,761 (FERC 2000) (discussing "the interconnection and delivery components of a transmission service request); *id*. (noting that customers may "request the interconnection component of transmission service separately from the delivery component").

[8] *See id*. at ¶ 61,761-62 ("Interconnection by itself conveys no right to delivery service. However, once secured, the interconnection component of transmission service does convey a right to the network capacity at the receipt point . . . ."). *See also Standardization of Generator Interconnection Agreements and Procedures, Order No. 2003-A*, 106 FERC ¶ 61,220 at P. 516 (FERC 2004) ("FERC Order 2003-A") ("Energy Resource Interconnection Service and Network Resource Interconnection Service both provide the Interconnection Customer with the technical capability to inject the output of the Generating Facility onto the Transmission System at the Point of Interconnection, and the Network Resource Interconnection Service makes it possible for the Generating

to obtain NR interconnection service, which is intended to allow the network customer—RMP—to designate the QF's generating facility as a network resource. NR interconnection studies consider aspects of deliverability. PacifiCorp witness Rick Vail states that, for NR interconnection service, "the interconnection service study includes a deliverability analysis that assumes the new interconnecting generator, along with all other generators in the local area, must be capable of delivery to load."[9] Mr. Vail goes on to state that "[i]f there is not enough room (or firm ATC) on the system to ensure this level of interconnection will be available, then the NR interconnection study will identify the facilities or upgrades necessary to create that additional room."[10]

Because interconnection studies for NR interconnection service study whether the interconnecting generator is capable of delivery to the aggregate of load—delivery that is the obligation of RMP for QFs under PURPA—it is reasonable to require PacifiCorp Transmission to determine whether redispatch will ease existing transmission constraints, thereby eliminating the identification of unnecessary network upgrades. This outcome can only be accomplished if redispatch assumptions from the transmission service study are incorporated into the deliverability component of the interconnection service study.

Q. Mr. Vail's testimony also implies that the only way to obtain firm network transmission service for a QF is to require NR interconnection service. Do

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Facility to be designated as a Network Resource.").
[9] Direct Testimony of Rick A. Vail ("Vail Test.") at 8:163-169.
[10] *Id.*

you agree?

A. No. While requiring NR interconnection service is *one way* to obtain firm network transmission service designation for a QF, it is not the only way and it may not be the most cost-effective or appropriate approach when the interconnection customer and network customer are different parties and each are responsible for different components of transmission service. FERC originally designed transmission and interconnection transmission service products to be more flexible such that the entity responsible for transmission interconnection can get the product they want and need, and the entity responsible for transmission delivery can get the product they want and need. Network Integration Transmission Service is not dependent on an NR interconnection.

Q. What is the basis for your statement that Network Integration Transmission Service is not dependent on the generation resource obtaining Network Resource interconnection service?

FERC rulings have made clear that Network Integration Transmission Service is not dependent on the generation resource obtaining Network Resource interconnection service. I am not a lawyer and do not offer legal opinions of FERC rulings, but I have reached certain conclusions based on my review of those rulings.

In 2003, FERC issued a ruling ("FERC Order 2003")[11] seeking to standardize interconnection agreements and procedures—a break from prior

[11] *See Standardization of Generator Interconnection Agreements and Procedures*, 104 FERC ¶ 61,103 (FERC 2003) (hereinafter "FERC Order 2003").

practice that addressed interconnections on a case-by-case basis. The purpose of FERC Order 2003 was to "ensure[] that generators independent of Transmission Providers and generators affiliated with Transmission Providers are offered Interconnection Service on comparable terms."[12] FERC subsequently issued rulings to clarify FERC Order 2003, including a clarifying ruling in March of 2004 ("FERC Order 2003-A") in which FERC responded to numerous stakeholder concerns.[13] In FERC Order 2003-A, FERC responded to a stakeholder comment regarding a perceived reduction in flexibility as a result of FERC Order 2003. In response to that concern, FERC stated as follows:

> *A Network Customer that does not need all of the features of Network Resource Interconnection Service may determine that the most economical and practical approach to interconnecting a new Network Resource is to request Energy Resource Interconnection Service and at the same time request Network Integration Transmission Service under the Transmission Provider's OATT. This process would be completely analogous to the approach that a Network Customer now uses when it constructs a new Network Resource to serve its Network Load. The fact that Energy Resource Interconnection Service, by itself, allows access to the existing capacity of the Transmission System only on an "as available" basis should be of no concern to the Network Customer.* ***The Network Customer can simultaneously obtain firm deliverability to its Network Loads by requesting the Transmission Provider to construct, under the terms of the Network Integration Transmission Service provisions of the OATT, any additional upgrades that may be necessary to ensure deliverability of the Network Resource to serve Network Load.[14]***

This statement from FERC demonstrates that Mr. Vail's testimony is misguided in its characterization of what is required for a network customer (in

[12] *See Standardization of Generator Interconnection Agreements and Procedures* (Order on Rehearing), 106 FERC ¶ 61,220 at P 3 (FERC 2004) (hereinafter "FERC Order 2003-A") (noting that this was the "core" purpose of FERC Order 2003).
[13] *See id*.
[14] *Id*. at P 535.

this case, RMP) to arrange firm network resource integration transmission service for a QF in locations where RMP already holds transmission rights or there is ATC.[15]

Q. Why is this finding important in maintaining fair and unbiased treatment of QFs?

Currently, redispatch that facilitates transmission delivery for new resources can only be used by PacifiCorp when arranging transmission service for QFs and its own resources. Under the status quo, contemplate how PacifiCorp and RMP might handle their own hypothetical 95 MW solar resource interconnecting at Glen Canyon. RMP could seek Energy Resource interconnection status from PacifiCorp Transmission (**"PacTrans"**) (as this service does not require deliverability), and then seek Network Integration Transmission Service status for the new resource by leveraging their existing transmission capacity, putting aside the APS contracts for a moment). Contrast this scenario to the current situation for Glen Canyon Solar, which may be required to build hundreds of millions of dollars as a part of the NR interconnection requirement that is allegedly required in order for RMP to obtain Network Integration Transmission Service.

A QF interconnection product that allows for the consideration of redispatch keeps utility-owned resources and QFs on an even playing field by not

[15] *See also Large Generator Interconnection Agreement (LGIA),* § 4.1.2.2 (stating that an interconnection customer with ER interconnection service may obtain Network Integration Transmission Service).

giving one competitive advantage over the other due to inconsistent handling of their transmission delivery requirements.

Q. Do you agree with Mr. Vail's assertion that the use of generation redispatch in interconnection studies for Glen Canyon Solar's QF projects would require PacifiCorp to consider it in all QF interconnection studies?

A. No. I disagree with Mr. Vail's testimony that the use of generation redispatch in interconnection studies for Glen Canyon Solar's QF projects would result in a "mandatory QF interconnection study assumption."[16] Glen Canyon Solar's request for relief in this matter only applies to Glen Canyon Solar and would only be extended to QFs that meet each of the following criteria:

- The QF project is studied under NR interconnection service.
- The QF project is located in an area where RMP has existing network transmission rights from the resource to RMP's network load.
- The QF project size is equal to or less than RMP's existing network transmission rights.
- There is insufficient ATC on the system to accommodate a portion or all of the project's deliverability as part of the interconnection.

Q. Explain why you believe the interconnection studies for the Glen Canyon Solar QF projects should consider RMP's existing transmission rights on the transmission path?

A. As discussed above, NR interconnection service is designed to allow

[16] Vail Test. at 24:512-521.

RMP—as the network customer—to designate the Glen Canyon Solar QF projects as a network resource. PURPA requires RMP to provide firm transmission service to deliver the power from the Glen Canyon Solar QF projects point of interconnection to RMP's load. RMP claims that the requirement that it ensure firm delivery of QF power to its load requires it to designate QF generating facilities as network resources, and therefore requires QFs to obtain network resource interconnection service. But the obligation to provide firm delivery service belongs to RMP as the network customer, not to Glen Canyon Solar as the QF interconnection customer. As such, if a QF is required to obtain Network Resource interconnection service to enable RMP to designate the QF project as a network resource, the QF should not be required to create additional transmission rights when the network customer has existing rights on the transmission path.

Q. Should the use of the network customer's transmission rights in interconnection studies have the same limitations as the use of redispatch discussed above?

A. Yes. The criteria still apply.

Q. How would you boil down the debate surrounding obligations for arranging delivery of QF power, redispatch, and QF interconnection studies?

A. The issue comes down to a decision as to which entity the Commission determines has the responsibility for arranging the delivery component of transmission service, and what actions that party should take to make sure that costs are minimized or wholly avoided in doing so. Absent any change, the Glen

Canyon Solar projects will be studied as a NR Interconnection, which includes the transmission delivery component described earlier, and Glen Canyon Solar will be required to pay for the costs for transmission upgrades identified in this deliverability study to ensure the project can deliver its output to RMP load. Also, under the status quo, RMP's existing transmission rights in transmission constrained areas will not be used by QFs under any circumstances to facilitate QF output delivery to network load.

If the Commission determines that the transmission delivery component is the responsibility of RMP, then the Glen Canyon Solar QFs can still be studied as a NR Interconnection, but RMP and PacifiCorp will need to work together to reflect RMP's existing transmission capacity and to consider redispatch options in the study. This may allow for unnecessary delivery-driven transmission upgrades to be avoided while still achieving the interconnection and delivery components of the projects transmission service, and RMP would discharge its PURPA responsibilities by facilitating delivery of the QF output and maintaining ratepayer indifference.

IV. REBUTTAL OF PACIFICORP WITNESS KELCEY A. BROWN

Q. Do you have a response to the testimony of PacifiCorp witness Kelcey A. Brown?

A. Yes. I disagree with many aspects of the testimony offered by Ms. Brown and respond to that testimony below. My responses below address what I consider to be the most relevant matters. If I do not respond to a specific

statement offered in Ms. Brown's testimony, that should not be read as an endorsement of that testimony.

Q. Do you agree with the testimony of Ms. Brown that PacTrans cannot consider redispatch in connection with the Glen Canyon Solar QF projects because of certain agreements between PacifiCorp and Arizona Public Service Company?

A. No. I do not agree that the legacy power exchange and transmission agreement between PacifiCorp and Arizona Public Service Company ("APS") prevents PacifiCorp Transmission from considering redispatch in the interconnection studies for the Glen Canyon Solar QF projects. I disagree for a number of reasons. First, PacifiCorp can fulfill its obligations under the agreements with APS by utilizing the Four Corners substation and the Four Corners to PACE transmission path, rather than utilizing the Glen Canyon substation and the Glen Canyon to PACE transmission path. Second, the Glen Canyon to PACE transmission path is substantially underutilized in the south to north direction. Third, PacifiCorp's agreement with APS will terminate when Cholla 4 is retired, which PacifiCorp has asserted in its 2017 IRP filing will be at the end of 2020. Fourth, redispatch in this context would consider whether the APS agreements could be fulfilled by using a transmission path other than the Glen Canyon to PACE path, and it would be appropriate for PacifiCorp Transmission to study this matter.

Q. Do the Glen Canyon Solar QF projects affect PacifiCorp's ability to

sell and transmit power to APS under the power exchange and transmission agreements?

A. No. When the Glen Canyon Solar QF projects are built and interconnected to the Glen Canyon to Sigurd transmission line, the power generated by Glen Canyon Solar can be used by PacifiCorp to fulfill any north to south, PacifiCorp-to-APS exchanges under the agreements. As such, PacifiCorp's ability to sell and transmit power to APS under the power exchange and transmission agreements is not affected by the Glen Canyon Solar QF projects.

Q. Do the Glen Canyon Solar QF projects prevent PacifiCorp from transmitting APS' power across the PacifiCorp Transmission system as contemplated in the agreements?

A. No. The Glen Canyon Solar QF projects do not preclude PacifiCorp from fulfilling the south to north, APS-to-PacifiCorp aspects of the power exchange and transmission agreements attached as exhibits to Ms. Brown's direct testimony. I am not a lawyer and do not offer legal opinions, but I have read the Power Exchange Agreement and Restated Transmission Agreement. The Restated Transmission Agreement between PacifiCorp and APS is intended to fulfill a power exchange agreement, a component of which allows APS to sell power to northwest utilities by delivering power south to north across the PacifiCorp Transmission system to substations in Idaho. This effectively grants APS a "call option," in which APS can call on PacifiCorp Transmission to receive up to 100 MW of APS power and transfer it across the PacifiCorp Transmission system.

The Power Exchange Agreement gives PacifiCorp a similar "call option" to sell power via the APS transmission system. The Restated Transmission Agreement addresses transmission issues to facilitate the power exchanges identified in the Power Exchange Agreement.

Section 5.01 of the Restated Transmission Agreement states as follows:

> 5.01 During the term of this Agreement, APS shall have 100 MW of net bidirectional firm transfer rights through PacifiCorp's system between the Glen Canyon/Four Corners Substations and the Borah/Brady Substations in Idaho; however, the sum of North-bound transfers and South-bound transfers shall not exceed 300 MW in any hour.

My understanding of the language in Section 5.01 is that APS is granted 100 MW of firm transfer rights south-to-north across the PacifiCorp Transmission system, and that PacifiCorp must take receipt of APS power to be delivered under the Restated Transmission Agreement at either the Four Corners substation, or the Glen Canyon substation, or some combination of the two. PacifiCorp must then deliver that power either to the Borah substation, or the Brady substation, or some combination of the two.

In her direct testimony, Ms. Brown states that PacifiCorp meets what it interprets as a year-round contractual requirement to provide APS with 100 MW of south-to-north firm transmission rights in two different ways, depending on the season. During the summer, PacifiCorp has procured point-to-point transmission rights from south-to-north on the Glen Canyon-Sigurd transmission line. In the summer months, PacifiCorp is a seller under the Power Exchange Agreement and power flows from PacifiCorp's transmission system southward to the APS system

in the north-to-south direction. This north-to-south flow during the summer does not require Network Integration Transmission Service for PacifiCorp to meet its obligations to transmit APS power from south-to-north and, as such, PacifiCorp has procured only point-to-point transmission rights in the south-to-north direction to honor the APS call option during this season.

Conversely, during the winter, PacifiCorp has procured network integration transmission rights from south-to-north on the Glen Canyon-PACE transmission path. In the winter months, PacifiCorp is a recipient of power under the Power Exchange Agreement and power flows from APS in the south to PacifiCorp in the north and then northward across the PacifiCorp Transmission system to Idaho. Power that PacifiCorp receives from APS in the winter months is designated as a Network Resource and PacifiCorp has procured Network Integration Transmission Service rights from south-to-north across the Glen Canyon to Sigurd path to facilitate delivery of that power.

Below, I discuss the fact that PacifiCorp can meet the APS call option at either the Four Corners or Glen Canyon substations and that it has secured the same point-to-point (summer months) and network integration transmission rights (winter months) along the Four Corners to PACE transmission path that would allow PacifiCorp to satisfy its obligations to APS without utilizing the Glen Canyon to Sigurd path.

Q. Can PacifiCorp transmit 100 MW of APS power without utilizing the Glen Canyon to Sigurd transmission line?

A. Yes. As stated above, PacifiCorp can transmit APS power under the exchange and transmission agreements at either the Four Corners or Glen Canyon substations. If APS were to exercise its right to require PacifiCorp to accept 100 MW of power, PacifiCorp could take delivery of all 100 MW at the Four Corners substation and transmit that power across the PacifiCorp Transmission system along the Four Corners to PACE transmission path, and ultimately on to the Borah or Brady substations in Idaho.[17]

Q. Does PacifiCorp have sufficient transmission rights to deliver 100 MW of APS power across the PacifiCorp Transmission system from the Four Corners substation?

A. Yes. PacifiCorp has 100 MW of firm point-to-point transmission rights from Four Corners to PACE.[18] PacifiCorp has an additional 465 MW of firm network transmission rights from Four Corners to PACE.[19] Absent a direct response from PacifiCorp on their ability to use these rights to meet the APS call option contract, it appears that the 100 MW of point-to-point transmission service is being held for this purpose. This must be the case as Network Integration

[17] In PacifiCorp's response to Glen Canyon Solar Data Request No. 4.3, the Company states [that] "in accordance with Section 8 of the Restated Transmission Agreement, APS chooses the specific substation(s) and direction(s) when it preschedules its transfer requirements under the Restated Transmission Agreement…" *See* PacifiCorp response to Glen Canyon Solar Data Request No. 4.3 (attached hereto as Exhibit 2) However, in my review of the Restated Transmission Agreement, I have found no language that would distinguish which entity is responsible for prescheduling power transfers to or from specific substations pursuant to the agreement.
[18] *See* PacifiCorp response to Glen Canyon Solar Data Request No. 3.7 (attached hereto as Exhibit 3).
[19] *Id*.

Transmission Service must be used to serve network loads, which is not the purpose of the APS call option. The call option allows APS to deliver power to markets in Idaho, essentially an off-system delivery facilitated by PacifiCorp. This means that, based on my interpretation of the contract, this 100 MW of point-to-point transmission capacity is sufficient for PacifiCorp to discharge its responsibilities to APS. It appears that PacifiCorp has set aside 100 MW of capacity from Four Corners and 95 MW of capacity at Glen Canyon to meet a 100 MW call option for APS to deliver power from one of those two locations to markets in Idaho. At the very least, this capacity mismatch between the transmission rights and the contract obligation should be explained.

Q. Do the Glen Canyon Solar QF projects prevent PacifiCorp from delivering APS power across the PacifiCorp Transmission system starting at the Glen Canyon substation?

A. No. The Glen Canyon Solar QF projects will sell 95 MW of power to RMP at the point of interconnection on the Glen Canyon to Sigurd transmission line, which RMP will use to meet its load requirements. RMP's load is north of the point of interconnection, so the Glen Canyon Solar QF power will be scheduled from south-to-north along the Glen Canyon to PACE transmission path. The Glen Canyon Solar QF projects have a combined nameplate capacity of 95 MW, which match RMP's 95 MW of transmission rights on the Glen Canyon to Sigurd line. The Glen Canyon Solar QF projects are an intermittent resource, so when they are generating at full capacity, they will utilize all 95 MW of RMP's

transmission rights on that line. When the Glen Canyon Solar QF projects are not generating at full power, which will frequently be the case, RMP can utilize its transmission rights to transmit APS power across the PacifiCorp Transmission system from the Glen Canyon substation, utilizing the Glen Canyon to PACE transmission path.

Q. Please state why you believe the Glen Canyon to PACE transmission path is substantially underutilized in the south to north direction?

A. I have reviewed documents showing the last five years of PacifiCorp's transmissions along the Glen Canyon to PACE path. These documents show that power flows on this path are almost always north-to-south. Table 1, below, contains a summary of the number of hours in which flows on the path are either south-to-north, north-to-south, or zero, over the last five years:[20]

Table 1

Summary of hourly flows on Glen Canyon to PACE transmission path

Percentage of year during which hourly power flows were in the…	2012	2013	2014	2015	2016	5-year Average
North-to-South direction	93%	77%	92%	90%	86%	88%
South-to-North direction	7%	13%	8%	10%	13%	10%
Zero (no flow)	0%	9%	0%	0%	1%	2%

As shown, flows are in the north-to-south direction during 88% of the hours in the year, on average. Flows are in the south-to-north direction in only 10% of the hours in the year, on average. As shown in Table 2, below, even in

[20] *See* PacifiCorp response to Glen Canyon Solar Data request No. 1.14 (attached hereto as Exhibit 4).

the rare instances when power flows *are* going south-to-north, they are not flowing at anywhere near the total transfer capability of the transmission line. Table 2, below, summarizes the magnitude of the flows for the 10% of the year in which flows are south-to-north:[21]

Table 2

Summary of volume of south-to-north flows on Glen Canyon to PACE path

Percentage of South-to-North flows that were greater than…	2012	2013	2014	2015	2016	5-year Average
>0 MW	100%	100%	100%	100%	100%	100%
>50 MW	18%	26%	7%	19%	18%	17%
>100 MW	1%	9%	1%	5%	3%	4%
>150 MW	0%	2%	0%	0%	0%	1%

What this data means is that over the last five years northbound flows were rare, and when northbound flow did happen the flows were almost always between zero and 50 MW, reaching higher than 50 MW only 17% of the time, and above 150 MW only 1% of the time. These flows account for the aggregate of schedules and resulting flows on the transmission path, including the schedules of other owners of the path's capacity.

While there is no long-term firm available transfer capability (ATC) on this Glen Canyon to PACE transmission path, **there is significant operational ATC on the path**. Since schedules on the path almost always "net" in the southbound direction, flows follow suit. These flows consistently create "counter-flows" that create operational ATC in the northbound direction.

[21] *See id.*

In addition to the flow data above, I have reviewed documents produced by PacifiCorp showing hourly firm and 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 79 MW of firm ATC and 213 MW of non-firm ATC, combined resulting in almost 300 MW of transfer capability that has been available for use in the operating horizon.[22]

Based on this historical usage, if the Glen Canyon Solar QF projects were to interconnect today, at almost all times there would be sufficient operational ATC on an hour-ahead basis to support deliverability. Since operational ATC is not long-term firm ATC, it alone is not sufficient to guarantee delivery of the project and cannot be used to grant long-term transmission service. Such data does not fit into our planning paradigms and it, alone, is certainly not sufficient to justify the addition of generation capacity at a given location. However, the data does suggest that if the project's delivery components of transmission service was ultimately based on the application of redispatch under the most *stressed* system conditions, these conditions would not be the norm. The norm, as represented by this data, suggests that the system has ample *operational* capacity to deliver the projects from Glen Canyon to PACE.

Q. To what do you attribute this underutilization of the Glen Canyon to PACE transmission path in the northbound direction?

A. This underutilization of the path is largely driven by the fact that RMP

[22] *See* RMP Response to Glen Canyon Data Request 1.28 (attached hereto as Exhibit 5).

holds 95 MW of firm transmission rights in the northbound direction along the path, which PacifiCorp witnesses have stated shift between network service in the winter and point-to-point service in the summer. In the summer, PacifiCorp holds the 95 MW of point-to-point rights in the northbound direction as a result of the power exchange and transmission agreements with APS discussed above, in which APS essentially has a call option to send power north to Idaho. However, PacifiCorp rarely transmits power along this path in the summer.

At the time of this testimony filing I did not have the needed data to analyze the exact number of MW scheduled by RMP in the northbound direction on the path pursuant to the Power Exchange and Restated Transmission Agreements with APS. However, an analysis of the last five years of firm and non-firm total hourly transmission schedules on the PACE-GLENCANYON2 transmission path indicates that, during summer months (April – August), total south-to-north firm schedules from all entities average 64 MW, which is a small portion of the path's total 285 MW of capacity (of which RMP has rights to 95 MW). From this analysis, we can infer that RMP is not frequently scheduling major south-to-north flows on the path during the summer months.[23]

Moreover, the same trend holds true in the winter, when RMP rarely schedules power flow from south-to-north along this path. Using the same firm and non-firm hourly transmission schedules on the PACE-GLENCANYON2 transmission path cited above, during winter months (February – November), total

[23] *See* RMP Response to Glen Canyon Data Request 1.15 (using data attached hereto as Exhibit 6).

firm schedules from all parties average 91 MW, which are also much lower than the total capacity rights (285 MW) on the paths.

As a result, the transmission rights that RMP would use to transmit the Glen Canyon Solar QF power appear to have been historically unused and, without the Glen Canyon Solar QF projects, would continue to be underutilized. Moreover, the Glen Canyon Solar QFs are intermittent solar resources and there will be ample periods, especially at night, when the Glen Canyon to PACE path will continue to support APS power exchanges as it did before the Glen Canyon projects were deployed.

Q. Do PacifiCorp's power exchange and transmission agreements with APS run throughout the course of the agreements between RMP and Glen Canyon Solar?

A. No. In addition to the fact that the Glen Canyon Solar QF projects do not prevent PacifiCorp from transmitting 100 MW of APS power across the PacifiCorp Transmission system, the agreement with APS will expire at the end of 2020—approximately one year after the Glen Canyon Solar QF projects are scheduled to begin commercial operation. The Glen Canyon Solar QF projects are scheduled to begin commercial operation in September and October of 2019.[24] The power exchange and transmission agreements between PacifiCorp and APS

[24] *See* Applications for Approval of PPA and Redacted PPAs, on file in Docket No. 17-035-26, *In the Matter of the Application of Rocky Mountain Power for Approval of Power Purchase Agreement between Rocky Mountain Power and Glen Canyon Solar A, LLC* & Docket No. 17-035-28, *In the Matter of the Application of Rocky Mountain Power for Approval of Power Purchase Agreement between Rocky Mountain Power and Glen Canyon Solar B, LLC.*

cited by PacifiCorp's witnesses are scheduled to terminate upon the retirement of Cholla 4. PacifiCorp's 2017 IRP filing with this Commission asserts that Cholla 4 will be retired at the end of 2020. As such, even if the APS agreements prevented PacifiCorp from using the combination of redispatch and RMPs existing firm transmission rights to transmit the power from the Glen Canyon Solar QF projects—which I argue they do not for multiple reasons—that limitation would exist only for approximately the first year of the Glen Canyon Solar PPAs. After the termination of the power exchange and transmission agreements with APS, RMP will not need to hold winter network transmission rights or summer point-to-point northbound transmission rights on the Glen Canyon to Sigurd transmission line. As such, after 2020, there should be sufficient ATC to deliver the power from the Glen Canyon Solar QF projects to RMP network load. Moreover, that delivery post-2020 will not require any redispatch of PacifiCorp generation or contracts.

Q. Are there any other reasons that the power and exchange agreements between PacifiCorp and APS do not prevent PacifiCorp Transmission from considering redispatch in the interconnection studies for the Glen Canyon Solar QF projects?

A. In addition to the foregoing, redispatch is never studied without limitations on its use. When redispatch studies consider backing down generation resources, they do not assume that a generation facility can be backed beyond the operational and reliability limits of that generation facility. Similarly, when

PacifiCorp Transmission studies redispatch in the context of the interconnection of the Glen Canyon Solar QF projects, it will not assume that redispatch can be utilized in circumstances that would be prevented by contractual limitations. As such, PacifiCorp Transmission should not be prevented from considering redispatch in the interconnection studies for the Glen Canyon Solar QF projects.

IV. REBUTTAL OF PACIFICORP WITNESS DANIEL J. MACNEIL

Q. Do you have a response to the testimony of PacifiCorp witness Daniel J. MacNeil?

A. Yes. I disagree with a number of aspects of Mr. MacNeil's testimony, although I respond to only one element related to the nature of the relief. In this response, I address what I consider to be the most critical and relevant matters. Not responding to testimony offered by Mr. MacNeil should not be read as an endorsement of that testimony.

Q. Mr. McNeil asserts that Glen Canyon's position, when taken to a "logical extreme," would allow a QF to skip the interconnection process when they receive a non-zero PPA price from their avoided cost study. Can you please respond to Mr. McNeil's position?

A. My earlier testimony in response to Mr. Vail's characterization of Glen Canyon Solar's request for relief addresses this topic and it appears that, like Mr. Vail, Mr. McNeil does not fully understand Glen Canyon Solar's position. Glen Canyon Solar does not wish to "skip the interconnection process" based on results from avoided cost model studies, nor does it wish to render the OATT study

process obsolete. Glen Canyon Solar recognizes their project will have interconnection costs and they are willing to fund them. Avoided cost model studies, interconnection studies, and transmission studies all have their place in the QF process as they are required analyses to secure avoided-cost pricing, the interconnection component of transmission service, and the delivery component of transmission service. PURPA has requirements surrounding the pricing approach and transmission and interconnections service obligations, and Glen Canyon Solar seeks to have PacifiCorp conduct OATT and avoided-cost studies in a way that allows both parties to discharge their duties consistent with PURPA. Based on this, Mr. McNeil's representation of Glen Canyon Solar's relief is not consistent with how I understand its request.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

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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

EXHIBIT 1 TO THE PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

Business Practice # 70: Generation Interconnection Procedures
for Qualifying Facility Projects

Business Practice # 70: Generation Interconnection Procedures for Qualifying Facility Projects

Posted: February 2, 2016
Effective: February 1, 2016
Revision No.: 0.0

Purpose

The purpose of this business practice is to clarify the procedures which PacifiCorp will use for generation interconnection projects that are designated as qualifying facilities ("QFs") by the Interconnection Customer.

This business practice applies to all Interconnection Customers who designate their projects as QFs under The Public Utility Regulatory Policies Act of 1978 ("PURPA") and for which PacifiCorp will take 100% of the output. QFs that may sell output to another entity other than PacifiCorp will be processed as any other generator under PacifiCorp's Open Access Transmission Tariff ("OATT").

Given that QF interconnections are state-jurisdictional, specific state schedules or rules may apply.

QF Designation Notification

Interconnection Customers desiring to designate a project as a QF with PacifiCorp as the sole power purchaser shall submit a PacifiCorp-provided attestation document formally declaring QF status. A copy of the attestation document can be found at the following link:

QF Attestation

Following the provision of the attestation document, PacifiCorp will request that the Interconnection Customer sign a voluntary consent form allowing PacifiCorp Transmission employees to discuss the Interconnection Customer's project with representatives of PacifiCorp's Merchant function. PacifiCorp's voluntary consent form can be found at the following link:

Voluntary Consent Form

Timing of QF Designation

Application

Interconnection Customers desiring to designate a project as a QF at the beginning of the interconnection process shall submit the appropriate application based on project size and jurisdiction along with PacifiCorp's official attestation document. Interconnection Customers unsure as to which application is appropriate should consult with PacifiCorp prior to submitting an application to prevent possible delays or restudies.

Study Phase
If an Interconnection Customer decides to designate a project as a QF at any point after PacifiCorp has initiated a System Impact Study but prior to signing an interconnection agreement, PacifiCorp will determine, in its sole discretion, if any restudies are necessary. Interconnection Customer shall be required to pay the costs of any necessary restudies.

Restudies may be necessary if, for example, the Interconnection Customer initially requested to only be studied as an Energy Resource ("ER") under PacifiCorp's Open Access Transmission Tariff ("OATT"). This is because conversion to QF status may trigger the need for PacifiCorp Transmission to study a more flexible and comprehensive level of interconnection, akin to FERC's Network Resource Interconnection Service.

The designation of a project as a QF during the study phase could result in the project losing its queue position in PacifiCorp's generation interconnection queue, depending on whether the modification is determined to be material in accordance with the OATT Material Modification policies applied to non-QF interconnection customers.

Post Generation Interconnection Agreement Execution
If an Interconnection Customer proposes to designate a project as a QF after a non-QF generation interconnection agreement has been executed, PacifiCorp will determine, in its sole discretion, if the Interconnection Customer's proposed designation of its project as a QF is possible based on the progress of the project. If PacifiCorp determines that the Interconnection Customer's proposed designation of its project as a QF is a material modification under PacifiCorp's OATT, the request may require the Interconnection Customer to submit a new application. If PacifiCorp determines that the proposed designation as a QF is possible, the existing generation interconnection agreement will be terminated and replaced by the appropriate form of QF generation interconnection agreement, and PacifiCorp will determine, in its sole discretion, if any restudies are necessary to effectuate the change in status. Interconnection Customer shall be required to pay the costs of any required restudies.

QF Undesignation
Interconnection Customers with a QF project wishing to un-designate their project as a QF will be required to follow the same basic framework as described above except that no formal attestation is required. PacifiCorp will accept a signed letter from the Interconnection Customer as formal notification of a change from a QF to non-QF project. If a QF form of interconnection agreement already exists for the Interconnection Customer's project, the agreement will be terminated and replaced by a non-QF form of interconnection agreement in accordance with the OATT. PacifiCorp will determine, in its sole discretion, if any restudies are necessary in accordance with the OATT. Interconnection Customer shall be required to pay the costs of any necessary restudies in accordance with the OATT.

QF Generation Interconnection Service
PacifiCorp will study all proposed QF generation interconnection projects assuming that the full output of the project will be used by PacifiCorp to serve its network load.

PacifiCorp Transmission will attempt to identify alternatives to alleviate any transmission capacity issues. Potential alternatives could include, but are not limited to, the construction of new transmission infrastructure or the implementation of a remedial action scheme ("RAS").

Contact for Assistance: BusinessPractices@PacifiCorp.com

Revision History

Version	Posted Date	Change Summary
0.0	2/2/16	Final version posted.
DRAFT 0.0	11/24/2015	Initial draft posted for public comment

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EXHIBIT 2 TO THE PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

Response to Glen Canyon Solar Data Request No. 4.3

Glen Canyon Solar Data Request 4.3

Paragraph 5.01 of the Restated Transmission Agreement states as follows: "5.01 During the term of this Agreement, APS shall have 100 MW of net bidirectional firm transfer rights through PacifiCorp's system between the Glen Canyon/Four Corners Substations and the Borah/Brady Substations in Idaho; however, the sum of North-bound transfers and South-bound transfers shall not exceed 300 MW in any hour".

With respect to this provision, please explain which party has the right to determine the specific substation (Glen Canyon or Four Corners) at which PacifiCorp must accept North-bound transfers of power and energy and how much power and energy must be accepted at either substation, and identify the specific portion of any agreement or instrument that documents such right and produce any documents that support your contention. Please provide similar explanations and documentation for APS' acceptance of South-bound transfers of power and energy.

Response to Glen Canyon Solar Data Request 4.3

The Company objects to this request as vague and ambiguous. Without waiving this objection, the Company responds as follows:

In accordance with Section 8 of the Restated Transmission Agreement, APS chooses the specific substation(s) and direction(s) when it preschedules its transfer requirements under the Restated Transmission Agreement, and PacifiCorp chooses the specific substation(s) and direction(s) when it preschedules its transfer requirements under the Restated Transmission Agreement.

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EXHIBIT 3 TO THE PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

Response to Glen Canyon Solar Data Request No. 3.7

Glen Canyon Solar Data Request 3.7

Please explain in detail PacifiCorp ESM's transmission rights on the FOURCORNE345-PACE transmission contract path in both directions.

Response to Glen Canyon Solar Data Request 3.7

Long term, PacifiCorp merchant (energy supply management or ESM) has 530 megawatts (MW) firm point-to-point (PTP) transmission rights from PacifiCorp East (PACE) to FOURCORNE345 under Open Access Same-Time Information System (OASIS) AREF 78363274. ESM also has 100 MW firm PTP transmission rights from FOURCORNE345 to PACE under OASIS AREF 77695118.ESM has 465 MW firm network transmission rights from FOURCORNE345 to PACE under OASIS AREF 195423 and OASIS AREF 367199.

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EXHIBIT 4 TO THE PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

Response to Glen Canyon Solar Data Request No. 1.14

Glen Canyon Solar Data Request 1.14

Please produce documents sufficient to show the last five (5) years of hourly power flows on the Sigurd-Glen Canyon transmission path (WECC Path TOT 2B1).

Response to Glen Canyon Solar Data Request 1.14

Please refer to Attachment Glen Canyon Solar 1.14, which provides five-year hourly power flows for the TOT 2B1 path.

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EXHIBIT 5 TO THE PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

Response to Glen Canyon Solar Data Request No. 1.28

Glen Canyon Solar Data Request 1.28

Please produce documents sufficient to show the last give (5) years of hourly firm and non-firm available transfer capability (ATC) for the PACE-GLENCANYON2 transmission contract path.

Response to Glen Canyon Solar Data Request 1.28

The Company assumes that "last give (5) years" is intended to represent "last five (5) years." Based on the foregoing assumption, the Company responds as follows:

Please refer to Attachment Glen Canyon Solar 1.28, as well as the Company's response to Glen Canyon Solar Data Request 1.27, specifically Attachment Glen Canyon Solar 1.27-1, which contains workbooks representing firm available transfer capability (ATC) for the PacifiCorp East (PACE)–Glen Canyon 2 transmission path. Please also refer to the Company's responses to Glen Canyon Solar Data Request 1.15.

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EXHIBIT 6 TO THE PREFILED REBUTTAL TESTIMONY OF KEEGAN MOYER

Response to Glen Canyon Solar Data Request No. 1.15

Glen Canyon Solar Data Request 1.15

Please produce documents sufficient to show the last five (5) years of firm and non-firm hourly transmission schedules on the PACE-GLENCANYON2 transmission contract path.

Response to Glen Canyon Solar Data Request 1.15

Please refer to Attachment Glen Canyon Solar 1.15, which contains a workbook representing firm and non-firm (NF) hourly schedules on the Glen Canyon to PacifiCorp East (PACE) path segment from January 1, 2012, through August 7, 2017.