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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 DIRECT TESTIMONY OF HANS ISERN

Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC hereby submit the Prefiled Direct Testimony of Hans Isern in this docket.

DATED this 29th day of June 2017.

HATCH, JAMES & DODGE

/s/ Gary A. Dodge
Gary A. Dodge
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 29th day of June 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

Direct Testimony of Hans Isern

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

June 29, 2017

I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is Hans Isern. My business address is 201 Mission Street, Suite 540, San Francisco, California, 94105.

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

A. I am a Senior Vice President with Sustainable Power Group (**"sPower"**), where I have been employed for 4 years. I have approximately 15 years of experience in the electric energy industry and am currently responsible for sPower's origination and utility power marketing efforts. Over the years, I have led teams in diverse roles including utility engineering, power trading, regulatory affairs and generation development and finance. In these roles, I have negotiated and signed power purchase agreements for more than 1,000 MW of renewable energy generation, have obtained more than three (3) GW of capacity on the grid, and have seen more than 60 utility-scale projects from development to operation.

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

A. My testimony is offered on behalf of Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC (collectively, **"Glen Canyon Solar"**), which are subsidiaries of sPower. I have oversight responsibility with respect to the Glen Canyon Solar projects at issue in this docket and in Docket Nos. 17-035-26 and -28, which seek Commission approval of the power purchase agreements between Glen Canyon Solar and Rocky Mountain Power (**"RMP"**).

Q. Please summarize your work and educational experience prior to joining sPower.

A. Prior to joining sPower, I was the Chief Operating Officer at Silverado Power, a utility-scale solar development company. I have also held positions with Recurrent Energy, as its lead developer for California investor owned utilities; with 3 Phases, as its head of sales; and with PacifiCorp, as a utility engineer.

I have a Bachelor of Science degree in electrical engineering from the University of Washington and an MBA from UCLA.

Q. Have you previously testified before the Utah Public Service Commission ("Commission")?

A. Yes, I testified on behalf of sPower and the Rocky Mountain Coalition for Renewable Energy in Docket 15-035-53

Q. Have you testified previously before any other state utility regulatory commissions?

A. Yes, I have also testified before public service commissions (or similar agencies) in Wyoming, California and Colorado.

Q. What is the purpose of your testimony?

A. My testimony supports the Request for Agency Action filed by Glen Canyon Solar in the matter before the Commission in Docket No. 17-035-36, titled *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. I have led, and been actively involved in, all aspects of the development of the QF resources at issue in this docket.

Q. Please summarize your testimony.

A. Glen Canyon Solar has signed two Power Purchase Agreements (**"GC PPAs"**) with RMP regarding a combined 95 MW solar project in southern Utah. Glen Canyon Solar seeks to interconnect this project into PacifiCorp Transmission's (**"PacTrans"**) Sigurd-to-Glen Canyon 230 kV transmission line (**"Sigurd-GC Line"**). In providing avoided-cost pricing for GC PPAs, RMP contemplated that it would redispatch certain resources so that the energy RMP will purchase from Glen Canyon Solar will be able to flow along the Sigurd-GC Line to RMP's load. Now, however, RMP will not confirm that it has submitted an appropriate transmission service request (**"TSR"**) to PacTrans that indicates that RMP is requesting studies of, and that it will use, its available rights, including the option to redispatch other resources, in connection with these projects. Such an omission could potentially lead to significant errors in assumptions about transmission facilities and costs that would make the Glen Canyon Solar QF projects appear uneconomical, when in fact no significant transmission costs should be required.

RMP has repeatedly asserted to Glen Canyon Solar privately, and has asserted to the Commission in another docket, that RMP is not obligated to inform PacTrans that it will redispatch its non-QF resources (**"Redispatch"**) in a manner that will accommodate the energy it will purchase from Glen Canyon Solar

pursuant to the PPAs without the need for significant network upgrades. Based on a transmission study performed for a much larger, non-QF project previously proposed by sPower, absent the Redispatch of other resources as assumed in determining avoided cost pricing for these projects, RMP's refusal to request Redispatch studies or to redispatch non-QF resources will likely result in studies from PacTrans that incorrectly conclude that many millions of dollars are required to build a new transmission line in order to accommodate the energy that RMP will purchase from Glen Canyon Solar. In reality, such network upgrades should not be necessary for the Glen Canyon Solar QF projects. RMP's Redispatch of resources as priced in its avoided-cost pricing and as available under its agreement with PacTrans will allow RMP to transmit the energy generated by the Glen Canyon Solar projects to load.

It is my understanding that RMP owns 95 MW of firm transmission rights on the lines to which the Glen Canyon Solar projects will connect that can be utilized for these projects. Indeed, the Glen Canyon Solar projects were specifically downsized based on conversations with PacifiCorp so as to fit within RMP's existing rights and minimize transmission costs. There is simply no need for any significant transmission upgrades to accommodate the Glen Canyon projects, so long as RMP and PacTrans properly coordinate their efforts to provide prudent and reasonable services.

To avoid expending many millions of dollars in unnecessary and uneconomic network upgrades, RMP must quickly inform PacTrans that it will

redispatch other resources in order to deliver Glen Canyon Solar energy from the point of interconnection to RMP's load, and must request studies based on those assumptions.

II. HISTORY AND STATUS OF THE GLEN CANYON SOLAR PROJECTS

Q. Can you provide a history of the two Glen Canyon Solar projects at issue in this docket?

A. Yes. In early 2015, sPower—the parent company to Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC—began development efforts for a 380 MW solar facility in Kane County, Utah, in the Four Corners area, including initiation of discussions with RMP regarding the purchase of energy from the project and with PacTrans regarding interconnection of the project into the Sigurd-GC Line.

During these discussions, PacTrans informed sPower in an Interconnection Request scoping meeting that the Sigurd-GC Line has a total line capacity of less than 380 MW. After that meeting, sPower downsized its project to 240 MW and asked PacTrans to prepare an interconnection system impact study (**"SIS"**). sPower further informed PacTrans that, according to PacTrans policies, it would like PacTrans to perform the SIS study based on the assumption that the 240 MW project would not be a qualifying facility ("**QF"**), but that sPower reserved the right to later convert the project to a QF project.

Q. Did PacTrans prepare the SIS for the 240 MW project?

A. Yes. PacTrans prepared a draft SIS, dated July 27, 2016, for the 240 MW non-QF project proposed by sPower at that time. The SIS estimated that the cost

of the facilities required to interconnect the project (**"Interconnection Costs"**) to the Sigurd-GC Line were approximately $15 million. In addition, the SIS estimated that the cost to upgrade transmission facilities (**"Network Upgrades"**) necessary to support firm transmission service of the energy produced by that large of a project were nearly $400 million. A copy of the SIS provided to sPower was attached to RMP's request for declaratory relief in Docket 17-035-25.

Q. Did sPower continue with its proposed project after receiving the SIS?

A. No. In response to the July 27, 2016 SIS, sPower withdrew its 240 MW request and its subsidiary, Glen Canyon Solar, submitted new interconnection and QF pricing requests.

Q. Please describe the Glen Canyon Solar projects.

A. Initially, Glen Canyon Solar submitted interconnection and QF pricing requests for a project with a combined total capacity of 136 MW, but later revised its plans and has proceeded with two projects totaling 95 MW to avoid transmission upgrades.

Q. Please explain why Glen Canyon Solar revised its project down to a combined 95 MW project?

A. Glen Canyon Solar revised its project from the initial combined 136 MW proposal to the current combined 95 MW project in light of avoided cost pricing information from RMP which confirmed that RMP owns 95 MW of firm network transmission rights on the Sigurd-GC Line (**"Existing RMP Transmission Rights"**) that can be used to transmit and utilize energy generated by Glen

Canyon Solar without curtailment. Specifically, in response to Glen Canyon Solar's avoided cost pricing request for its initial 136 MW proposal, RMP provided avoided cost pricing indicating that transmission constraints would require curtailment for deliveries exceeding 95 MW as a result of RMP's limited transmission rights on the Sigurd-GC Line. As a result, Glen Canyon Solar revised its project to mirror RMP's 95 MW of firm transmission capacity.

The Glen Canyon projects were specifically sized to avoid curtailment and to avoid Network Upgrades—both to avoid the need for anyone to pay unnecessary upgrade costs, and because RMP's Commission-approved in-house generation dispatch model used for calculating avoided costs for larger QF projects (**"QF Model"**) would have reflected limited incremental avoided cost value for energy in excess of the Existing RMP Transmission Rights. With a reduced QF resource, RMP needed only to follow existing rules and procedures for interconnecting a large QF by submitting to PacTrans appropriate requests for studies that include Redispatch options for the Glen Canyon projects to become designated network resources (**"DNR"**). By managing RMP's other DNRs in the manner assumed in setting avoided cost prices for the GC PPAs, the entire output of the Glen Canyon projects can be transmitted by RMP to its load without triggering the need for unnecessary and uneconomic Network Upgrades.

Q. What is the status of Glen Canyon Solar's project?

A. On or before May 1, 2017, each of Glen Canyon Solar A, LLC and Glen Canyon Solar B, LLC signed the GC PPAs with RMP. Those PPAs are the

subject of two dockets before this Commission, Docket No. 17-035-26 and -28, which seek Commission approval of those PPAs.

Q. Now that Glen Canyon Solar and RMP have executed the PPAs, what is supposed to happen next?

A. Having signed the GC PPAs, pursuant to Schedule 38—the RMP tariff that governs processes related to QFs such as those at issue here—RMP was required to submit to PacTrans a TSR for the 95 MW to be produced by the Glen Canyon Solar projects (**"GC Resources"**) within seven days of the date the PPAs were executed or otherwise as early as practicable based on applicable procedures in the PacTrans Open Access Transmission Tariff ("**OATT**"). (*See* Schedule 38, § II.B., at Sheet 38.10.)

Q. Has RMP submitted the TSR to PacTrans?

A. We have been told that RMP has submitted a TSR to PacTrans with respect to the GC PPAs, although RMP has declined to provide us a copy of the TSR, or to confirm specifically whether alternative Redispatch studies have been requested, or to indicate precisely what information has been transmitted to PacTrans. However, based on limited communications with RMP, we understand that the TSR does not request that PacTrans study RMP's existing transmission rights and Redispatch options, the absence of which may lead to inaccurate study results.

Q. Has Glen Canyon Solar requested a new interconnection SIS from PacTrans?

A. Yes. Glen Canyon Solar submitted a request to PacTrans for a SIS for the 95 MW QF GC Resources last February. We anticipate receiving the SIS by about September of this year.

Q. Has Glen Canyon Solar communicated with PacTrans regarding the SIS?

A. Yes. Among other things, Glen Canyon Solar has asked PacTrans to confirm that the interconnection SIS for the GC Resources will reflect the assumption that RMP will use Existing RMP Transmission Rights, presumably allowing avoidance of most or all of the Network Upgrades reflected in the interconnection SIS for the larger, non-QF project. PacTrans has indicated that it can do so, but that it will do so only if RMP provides written confirmation that it will use Existing RMP Transmission Rights for the GC Resources and that Redispatch options should be studied and used.

Q. Has Glen Canyon Solar communicated with RMP regarding the written confirmation PacTrans requires?

A. Yes. Glen Canyon Solar has asked RMP on several occasions to provide the written confirmations requested by PacTrans, but RMP has refused to do so, claiming that it has no obligation to use Existing RMP Transmission Rights or to request studies using Redispatch for the GC Resources. As stated above, it is not clear what information or requests have been communicated by RMP to PacTrans in connection with the TSR. To my knowledge, however, RMP has not backed

away from its refusal to use Existing RMP Transmission Rights or to request studies of available Redispatch options, even if DNR status for the GC Resources cannot otherwise be obtained without triggering the need for unnecessary and uneconomic Network Upgrades. As such, even if RMP has now submitted a TSR to PacTrans, it seems unlikely that an appropriate TSR that requests a study of Redispatch options has been submitted. Absent such proper request and TSR, the resulting studies are likely to continue to improperly suggest the need for hundreds of millions of dollars in network upgrades that might be needed for a non-QF resource, but not for the Glen Canyon Solar QF projects. By not submitting an appropriate TSR and request for studies, RMP appears to be intentionally sabotaging the ability of Glen Canyon Solar to perform under the QF PPAs that RMP has signed.

III. FIRM TRANSMISSION OF GC RESOURCES DOES NOT REQUIRE NETWORK UPGRADES

Q. Do you believe significant Network Upgrades will be required in order for RMP to provide firm transmission of the GC Resources?

A. No. Beyond the interconnection facility and related costs required to interconnect the GC Resources to the grid—which Glen Canyon Solar intends to pay—I do not expect significant Network Upgrades will be needed to accommodate the Glen Canyon Solar projects. In light of the 95 MW of Existing RMP Transmission Rights identified in RMP's avoided cost model runs for the GC Resources, we do not expect significant Network Upgrades to be required for

RMP to receive and transmit the GC Resources to load—assuming proper studies are performed. The fact that the GC Resources exactly match the size of the Existing RMP Transmission Rights is not coincidental. Glen Canyon Solar downsized the GC Recourses in order to match those rights.

Q. Do you believe it is in the public interest of Utah companies and ratepayers to avoid unnecessary and uneconomic Network Upgrades when possible for QFs located in transmission constrained areas?

A. Yes. Difficult legal and policy issues may need to be faced if and when developers choose to develop QF projects in areas where the purchasing utility lacks sufficient transmission rights to purchase and utilize QF energy on a firm basis. My understanding is that those difficult legal and policy issues may be explored in another Utah docket. The Glen Canyon Solar projects, however, do not present or require resolution of these difficult issues. Indeed, Glen Canyon Solar deliberately avoided the need for resolution of those issues by scaling its projects back to match the Existing RMP Transmission Rights.

Network Upgrades in transmission constrained areas should be avoided if the network transmission customer—RMP—has sufficient transmission rights to transmit QF energy to load on a firm basis. If the transmission customer has insufficient rights to provide transmission for QF energy, the transmission customer should explore Redispatch options, both in the QF Model runs, and also in requesting studies in connection with a TSR.

In our case, while there is no posted available transfer capacity for the GC Resources, RMP's QF Model identified and utilized Redispatch options that allow it to provide firm transmission for 95 MW of QF resources on the affected transmission path, and provided avoided-cost pricing accordingly. RMP must now use, and PacTrans must study, those same Redispatch options to accurately reflect RMP's ability to transmit GC Resources to load.

Q. Do you believe a utility should be permitted to refuse to utilize Redispatch options or to ask for studies of available Redispatch options as contemplated in the QF Model runs?

A. No. A transmission customer should be required to utilize its available resources, including transmission rights, to transmit QF energy to load to provide the lowest cost to ratepayers. The transmission customer should also be required to ask the network operator to study available Redispatch options in an effort to avoid unnecessary network upgrades, pursuant to its obligations under PURPA. Only after these options are explored and exhausted should potentially expensive upgrades be considered.

In this case specifically, I believe RMP should be required to utilize Existing RMP Transmission Rights, including Redispatch options, in purchasing and transmitting GC Resources, and should thus be directed to submit appropriate requests to PacTrans for studies that assume the use of all available transmission and Redispatch options. Indeed, PacifiCorp represented to FERC that the very purpose of the NOA Amendment was to avoid uneconomic Network Upgrades

for QFs in areas with limited ATC; that purpose would be thwarted by any failure of RMP to do so here. RMP must utilize the rights and procedures contemplated by Schedule 38, Section 32.3 of the OATT, the Amended NOA and PURPA.

Because uneconomic Network Upgrades associated with the GC PPAs can be avoided through the use of Existing RMP Transmission Rights, including Redispatch, RMP should be required to notify PacTrans of its intent to use those rights and to request studies that assume the same. Otherwise, RMP will deliberately trigger inaccurate PacTrans reports that will likely suggest a need for expensive but avoidable Network Upgrades, with the apparent hope that those costs can be assigned to the GC Resources as Interconnection Costs and in an effort to thwart the Glen Canyon projects and skirt its PURPA obligations.

Q. Does this conclude your direct testimony?

A. Yes, it does.