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August 10, 2016

VIA ELECTRONIC

PUC Filing Center
Public Utility Commission of Oregon
PO Box 1088
Salem, OR 97308-1088

Lendy Mc Indoo

Re: UM _____ - Idaho Power Company's Application for Approval of Solar Integration

Charge

Attention Filing Center:

Attached in the above-referenced docket is an electronic copy of Idaho Power Company's Application for Approval of Solar Integration Charge.

A copy of this filing has been served electronically on all parties in Docket UM 1610 – Phase 2A, as indicated on the attached certificate of service. Please contact me with any questions.

Very truly yours,

Wendy McIndoo Office Manager

Attachment

cc: UM 1610 Service List

CERTIFICATE OF SERVICE

I hereby certify that I served a true and correct copy of Idaho Power Company's APPLICATION FOR APPROVAL OF SOLAR INTEGRATION CHARGE on the service list in Phase 2A of Docket UM 1610 on the following named person(s) on the date indicated below by email addressed to said person(s) at his or her last-known address(es) indicated below.

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DATED: August 10, 2016

Wendy Malndoo
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BEFORE THE PUBLIC UTILITY COMMISSION 1 OF OREGON 2 UM ___ 3 4 APPLICATION FOR APPROVAL OF 5 In the Matter of **SOLAR INTEGRATION CHARGE IDAHO POWER COMPANY** 6 7 Application for Approval of Solar Integration Charge. 8 9 I. INTRODUCTION 10 Pursuant to OAR 860-001-0400(2) and ORS 758.535(2), and Order No. 15-292,1 11 Idaho Power Company ("Idaho Power" or "the Company") respectfully requests that the 12 Public Utility Commission of Oregon ("Commission") authorize Idaho Power to account for 13 the costs of solar integration in both standard and negotiated Public Utility Regulatory 14 Policies Act of 1978 ("PURPA") Qualifying Facility ("QF") contracts in accordance with 15 Idaho Power's completed 2016 Solar Integration Study ("2016 Study").² 16 Over the past several years, Idaho Power has experienced significant interest in 17 solar QF development in both Idaho and Oregon. During 2013 and 2014, the Company signed contracts for 461 megawatts ("MW") of new QF solar generation, 3 60 MW of which 18 19 were in Oregon. Today, Idaho Power has 289.5 MW, 49.5 MW of which is in Oregon, of 20 -21 ¹ Re Investigation into Qualifying Facilities Contracting and Pricing, Docket No. UM 1610, Order No. 15-292 at 2 (Sept. 23, 2015). 22 ² The 2016 Study is Idaho Power's second completed solar integration study. The 2014 Solar Integration Study ("2014 Study"), completed in June of 2014, was the first. 23 ³ On April 6, 2015, 4 of these QF solar contracts (141 MW total) were terminated for the projects' 24 failure to post required Delay Security, which is a material breach of the agreements. Additional projects terminated at their request in 2016, and six Oregon projects adjusted their nameplate 25 capacity down to various amounts less than 10 MW each. This leaves Idaho Power today with 289.5 MW of QF solar projects currently under contract to come online in 2016, 49.5 of which are in 26 Oregon.

solar currently under contract to come online in 2016, and solar QF projects requesting contracts for an additional 88.75 MW, 8.75 MW of which are in Oregon.⁴

Given the volume of solar development that the Company has under contract, under construction, and expects both in Oregon and Idaho, it is critical that the prices solar QFs pay reflect the true costs avoided by the utility. Moreover, the Idaho Public Utilities Commission ("IPUC") has already adopted solar integration charges for the QF's located in Idaho. Without a comparable solar integration charge in Oregon, and given the current disparity in the avoided cost prices and implementation of PURPA in Idaho and Oregon, the Company is concerned that the rapid QF development that has occurred in Idaho will move to Oregon to take advantage of the higher prices. In fact, 60 MW of QF solar projects in Oregon have already executed fixed price, 20-year, standard contracts without accounting for the costs of integrating intermittent solar generation onto the system. Adopting a consistent solar integration charge across Idaho Power's integrated system will result in more comparable allocation of incurred costs between the states and reduce the incentive for QFs to "game the system" to take advantage of more advantageous contracting and pricing in Oregon.

This Commission has recognized the importance of accounting for the cost to customers to integrate this generation onto utility systems, and has specifically ordered Idaho Power to file for authority to implement solar integration charges when its most recent study is completed.⁶ Moreover, the Commission has already authorized Idaho Power to implement wind integration charges consistent with those included in Idaho

⁴ Four, 20 MW contract requests in Idaho, and three contract request in Oregon for 3 MW, 3 MW, and 2.75 MW.

⁵ IPUC Case No. IPC-E-14-18, Order No. 33227.

^{26 &}lt;sup>6</sup> Order No. 15-292.

1 Power's Integrated Resource Plan ("IRP").⁷ Idaho Power asks for the same determination

2 regarding solar integration charges. The Company asks that solar integration charges,

consistent with those identified in the 2016 Study, be implemented immediately, and that

4 the Company be directed to, in the future, utilize solar integration charges that are

5 included in the Company's most recently acknowledged IRP or IRP update.8

The Company's 2016 Study was developed consistent with well-established principles for the integration of variable generation resources and with the advice and involvement of a Technical Review Committee ("TRC"), which, like the TRC for the Company's wind studies, provided input, review, and guidance for the Study.

In support of this Application requesting the Commission to implement solar integration charges, Idaho Power presents its 2016 Solar Integration Study Report as Idaho Power/101, filed contemporaneously with this Application. Also filed with this Application is the Direct Testimony of Michael J. Youngblood which sets forth the Company's request and proposal to implement solar integration rates and charges based upon the costs identified in the 2016 Study.⁹ Idaho Power/201 sets forth the Company's requested solar integration charges, which are derived from the 2016 Report.

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⁷ Re Investigation into Qualifying Facilities Contracting and Pricing, Docket No. UM 1610, Order No. 14-058 at 14 (Feb. 24, 2014).

⁸ Idaho Power's most recently acknowledged IRP, the 2015 IRP, contains solar integration charges as determined by the 2014 Study, however, the Company seeks initially to implement solar integration charges from the more up to date 2016 Study, which are substantially lower.

⁹ The 2014 Study was filed with the Commission as Idaho Power/101 in Docket No. UM 1725, along with an accompanying Application and supporting testimony requesting implementation of solar integration charges based upon the 2014 Study. After consulting with the parties to UM 1725, the Company withdrew its Application requesting solar integration charges based upon the 2014 Study with the understanding that the Company would re-initiate such filing upon completion of the 2016 Study.

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2 A. Status of Solar QF Development on Idaho Power's System.

3 Until recently, Idaho Power's large amount of QF activity was due primarily to wind development. Between approximately 2006 and 2012, the Company added more than 4 575 MW of QF wind to its portfolio, and today has 678 MW of wind operating on its 5 system,10 with an additional 50 MW of wind under contract in its Oregon jurisdiction. 6 7 However, since the end of 2013, and throughout 2014, the Company signed contracts with 8 461 MW of solar QF generation. Today, the Company has 289 MW of solar that remains under contract and scheduled to come online during 2016, with an additional 88.75 MW of 9 10 solar QF projects currently seeking contracts. If all of this solar generation is built, the 11 Company will have approximately 375 MW of QF solar projects on its system, and a grand total of over 1,132 MW of PURPA generation from all sources. 11 12

B. Status of Solar Integration Charges on Idaho Power's System.

In February 2015 the IPUC approved a settlement stipulation ("Settlement Stipulation") that implemented solar integration rates and charges for Idaho Power in its Idaho jurisdiction based upon the Company's 2014 solar integration study ("2014 Study"), its first solar integration study. The solar integration rates and charges were set forth in a new tariff Schedule 87, Variable Generation Integration Charges, at the incremental cost of solar integration for each 100 MW of solar nameplate penetration. The Settlement Stipulation acknowledged that there were disagreements with respect to the methodology used in the 2014 Study, and that Idaho Power would initiate a second solar integration

^{23 &}lt;sup>10</sup> This is comprised of approximately 577 MW of QF wind, and 101 MW of non-PURPA wind.

 ¹¹ Re Idaho Power Company, Application to Lower Standard Contract Eligibility Cap and to Reduce the Standard Contract Term, for Approval of Solar Integration Charge, and for Change in Resource Sufficiency Determination, Docket No. UM 1725, Idaho Power/101, Allphin/1; Idaho Power/105, Allphin/1-9, Idaho Power/106, Allphin/1-2.

¹² IPUC Case No. IPC-E-14-18, Order No. 33227.

study, to be completed as expeditiously as possible with the goal of not exceeding 12 months.¹³ The Settlement Stipulation provides guidance regarding the conduct of the second solar integration study and sets forth a list of issues for consideration in that study.¹⁴ The Settlement Stipulation states that the second solar integration study should utilize a TRC, and anticipated the participation of Staff from both the IPUC and the Commission, the appropriate personnel from Idaho Power, and a technical expert designated by each of the parties to the Settlement Stipulation.¹⁵

Idaho Power initiated the first communications to parties for the 2016 Study in January 2015, following the execution of the Settlement Stipulation by the parties. The process for the 2016 Study started with formation of the TRC. Subsequent to the IPUC's February 11, 2015, approval of the Settlement Stipulation, the TRC was selected and a kick-off phone conference was held on March 6, 2015. The intervening parties from the Settlement Stipulation (Idaho Conservation League, Sierra Club, and Snake River Alliance) requested the participation of Cameron Yourkowski, Renewable Northwest, and Michael Milligan, National Renewable Energy Laboratory ("NREL"), on the TRC. Idaho Power requested the participation of Brian Johnson, University of Idaho; Clint Kalich, Avista Utilities; and Kurt Myers, Idaho National Laboratory. Rick Sterling from the IPUC and Brittany Andrus and John Crider from the Commission participated throughout the process of the 2016 Study and the TRC activities. A TRC Study Plan ("Study Plan") was developed and finalized by May 28, 2015, and the study was subsequently conducted

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¹³ IPUC Case No. IPC-E-14-18, Settlement Stipulation, p. 3.

^{23 14} Id. at 3-4.

^{24 15} Id. at 3.

During the 2016 Study, Barbara O'Neill became the NREL representative on the TRC. However, NREL funding did not permit its active TRC participation through the entire process, although Idaho Power continued to include NREL on electronic correspondence through study completion

during the remainder of 2015 according to that Study Plan. The Study Plan is found in the

2 Appendix to the 2016 Solar Integration Study Report ("2016 Study Report") at page 44.

3 The TRC was involved from the outset and throughout the entire process of developing

the Study Report. Prior to finalizing the Study Report, the TRC was provided with a draft

5 report for its review and comment.

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In April of 2015, Idaho Power filed an Application with this Commission seeking authority to implement solar integration based upon the initial 2014 Study, to coincide with the solar integration charge that went into effect in the Company's Idaho jurisdiction. That application was docketed as UM 1725, along with two additional requests made by the Company to revise its QF contracting processes. In its initial order in that docket, the Commission granted the Company interim relief, recognizing the "extreme expansion of QF growth" on the Company's system.¹⁷ In particular, given the rapid increase in solar activity, the Commission found that it was time to examine solar integration charges, and ordered "the parties to address in UM 1610 the level of solar integration charges to incorporate into avoided cost rates." Accordingly, the Commission opened Phase IIA of UM 1610 to accomplish this coal.

Following the issuance of the Commission's order, the parties to UM 1610 met to consider how they might implement the Commission's instructions. Ultimately, the parties concluded that they would be unable to meaningfully examine solar integration charges in that docket, as contemplated by the Commission. In particular, the parties noted that Idaho Power was nearing completion of its second solar integration study, while neither PacifiCorp or Portland General Electric were close to completion of their first. For these

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 ¹⁷ Re Idaho Power Company, Application to Lower Standard Contract Eligibility Cap and to Reduce the Standard Contract Term, for Approval of Solar Integration Charge, and for Change in Resource Sufficiency Determination, Docket No. UM 1725, Order No. 15-199 at 7 (June 23, 2015).

^{26 &}lt;sub>18</sub> *Id.*

- 1 reasons, the Commission decided to close Phase IIA, and instead ordered Idaho Power to
- 2 file its updated solar integration study in a new docket when it was complete. 19
- 3 Idaho Power filed the 2016 Study Report with the IPUC on May 6, 2016, seeking to
- 4 update the current solar integration rates with those identified the 2016 Study Report. The
- 5 matter was fully submitted for the IPUC's determination on August 3, 2016, and the IPUC
- 6 issued an order approving the solar integration rates included in the 2016 Study on August
- 7 9, 2016.20

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8 III. DISCUSSION

A. The 2016 Solar Integration Study and Report

Idaho Power's solar integration studies are designed to determine the economic impact on the Company's system resulting from the integration of intermittent solar generation. Due to the variable and intermittent nature of solar generation—as with wind generation—Idaho Power must modify its system operations to successfully integrate solar power without impacting system reliability. Specifically, Idaho Power, or any electrical system operator, must provide operating reserves from resources that are capable of increasing or decreasing dispatchable generation on short notice to offset changes in non-dispatchable solar generation. As a result, these resources cannot be economically dispatched to their fullest capability, resulting in higher power supply costs. Integration studies quantify these higher power supply costs and determine an appropriate integration charge on a dollar per MWh basis.

In his Direct Testimony, Mr. DeVol, discusses the 2016 Study and development of the Study Report. The 2016 Study was initiated in January 2015 and the Study Report was completed in April 2016. The 2016 Study was conducted in a manner comparable to

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^{25 &}lt;sup>19</sup> Order No. 15-292 at 2.

²⁰ IPUC Case No. IPC-E-16-11, Order No. 33563.

1	the Company's wind integration studies and is consistent with industry standards. The
2	conduct of the study was guided by Principles for Technical Review (TRC) Involvement in
3	Studies of Variable Generation Integration into Electrical Power Systems, produced by
4	NREL and the Utility Variable-generation Integration Group.
5	The costs associated with solar integration are specific and unique for each
6	individual electrical system based on the amount of solar generation being integrated and
7	the other types of resources that are used to provide the necessary operating reserves. In
8	general terms, the average cost of integrating solar generation increases as the amount of
9	nameplate solar generation on the electrical system increases. The 2014 Study
10	determined solar integration costs for four solar build-out scenarios at installed capacities
11	of 100 MW, 300 MW, 500 MW, and 700 MW. As stated in Mr. DeVol's testimony, the
12	2016 Study determines solar integration costs for build-out scenarios of 400 MW, 800
13	MW, 1,200 MW, and 1,600 MW. The 2016 Study utilizes geographically dispersed build-
14	out scenarios with solar generation located across the Company's service territory at
15	Parma, Murphy Flats, Boise, Grand View, Orchard, Bliss, Twin Falls, and Aberdeen. For
16	each penetration level the Company conducted two simulations: a test case that required
17	dispatchable generators to carry extra capacity in reserve to allow them to respond to
18	unplanned solar variations, and a base case with no extra capacity in reserve requirement.
19	The cost difference between these two cases forms the basis of the integration charge.
20	The 2016 Study Report shows the solar integration costs as indicated in the following
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Average Integration Cost Per MWh (2016 dollars)

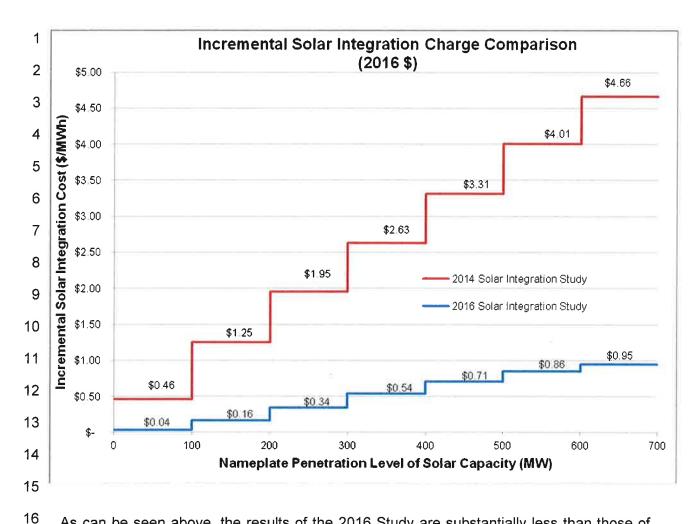
3	Build-out Scenarios	0-400 MW	0-800 MW	0-1,200 MW	0-1,600 MVV
4	Integration Cost	\$0.27	\$0.57	\$0.69	\$0.85

Incremental Integration Cost Per MWh (2016 dollars)

Penetration Level	0-400 MW	400-800 MVV	800-1,200 MW	1,200-1,600 MW
Integration Cost	\$0.27	\$0.88	\$0.92	\$1.31

B. Implementation of Solar Integration Charges

The Direct Testimony of Mr. Youngblood sets forth the Company's request and proposal to implement solar integration rates and charges based upon the costs identified in the 2016 Solar Study. Idaho Power presents incremental integration costs at each 100 MW of solar generation penetration extending out to 1,600 MW. The updated solar integration charges from the 2016 Study, along with the corresponding solar integration charges currently in effect in Idaho and included in the 2015 IRP from the 2014 solar integration study, are illustrated in the following graph:



As can be seen above, the results of the 2016 Study are substantially less than those of the 2014 solar integration study. A change in the methodology accounting for the combining effects of load netted with wind and solar is thought to be a key driver of the comparatively lower solar integration costs in the 2016 Study.²¹ The 100 MW incremental cost of solar integration out to the highest penetration contained in the 2016 Study (1,600 MW) is depicted on the following chart:

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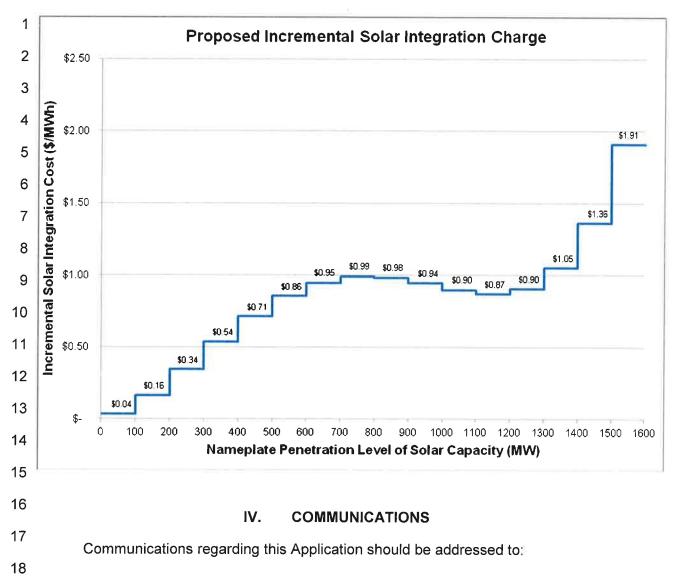
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²¹ Idaho Power/100, DeVol/9

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1	v. CONCLUSION				
2	2 For all of the reasons stated above, Ida	no Power requests that the Commission			
3	approve the Company's proposed solar integration costs for QF contracts based upon the				
4	2016 Solar Integration Study, and direct that future solar integration costs be updated to				
5	those included in the Company's most recently acknowledged IRP or IRP update.				
6	Respectfully submitted this 10 th day of August, 2015.				
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8	McDe	OWELL RACKNER & GIBSON PC			
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