



June 30, 2016

### **VIA ELECTRONIC FILING**

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Re: UM 1716 - In the Matter of PUBLIC UTILITY COMMISSION OF OREGON, Investigation to Determine the Resource Value of Solar

Attached for filing in the above-referenced docket is Idaho Power Company's Response Testimony of Michael J. Youngblood.

Please contact this office with any questions.

Very truly yours,

Sharon Cooper Legal Assistant

Attachment

Idaho Power/100 Witness: Michael J. Youngblood

## BEFORE THE PUBLIC UTILITY COMMISSION OF OREGON

## **UM 1716**

In the Matter of

PUBLIC UTILITY COMMISSION OF )
OREGON,
Investigation to Determine the Resource
Value of Solar.

IDAHO POWER COMPANY
RESPONSE TESTIMONY
OF
MICHAEL J. YOUNGBLOOD

June 30, 2016

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I. INTRODUCTION

#### Please state your name and business address. Q.

- My name is Michael J. Youngblood and my business address is 1221 West Idaho A. Street, Boise, Idaho 83702.
- By whom are you employed and in what capacity? Q.
- I am employed by Idaho Power Company (Idaho Power or Company) as the Manager Α. of Regulatory Projects in the Regulatory Affairs Department.
- Please describe your educational background. Q.
- In May of 1977, I received a Bachelor of Science Degree in Mathematics and A. Computer Science from the University of Idaho. From 1994 through 1996, I was a graduate student in the Executive MBA program of Colorado State University. Over the years, I have attended numerous industry conferences and training sessions, including Edison Electric Institute's "Electric Rates Advanced Course."
- Please describe your work experience with Idaho Power. Q.
  - I began my employment with Idaho Power in 1977. During my career, I have worked in several departments of the Company and subsidiaries of IDACORP, including Systems Development, Demand Planning, Strategic Planning, and IDACORP Solutions. I am currently the Manager of Regulatory Projects for Idaho Power-a position I have held since 2012. In this position, I provide the regulatory support for many of the large individual projects and issues facing the Company. I provided regulatory support for the inclusion of the Langley Gulch power plant investment in rate base, and I have supported the Company's efforts to address numerous issues involving Qualifying Facilities defined under the Public Utility Regulatory Policies Act of 1978 (PURPA), including the Company's efforts in UM 1610 and UM 1725.

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#### What is the purpose of your testimony in this matter? Q.

My testimony responds to Staff's recommendations for a methodology to determine A. the resource value of solar generation (RVOS).

#### How is your testimony organized? Q.

I begin by providing a brief summary of Idaho Power's response to Staff's testimony. I A. will then provide some background and context for this docket. Toward this end, I discuss ORS 757 365, which requires that utilities and the Commission determine the RVOS in conjunction with the implementation of the solar photovoltaic pilot programs (Solar PV Programs) established by the statute. I next summarize the procedural posture of this docket. And finally, I provide a response to the testimony and recommendations of the Staff witnesses Cindy Dolezel and Arne Olson.

#### Please summarize your response to Staff's testimony. Q.

First, Idaho Power agrees with Staff that the RVOS adopted in this docket should be of limited application and in particular should not be used to calculate avoided costs for purposes of PURPA or utility scale projects. However, the Company does have concerns regarding Staff's proposal that the methodology determined here be applied to all distributed generation, and in particular believes that the RVOS methodology is not well-suited for application to the Company's net metering. Instead, as it pertains to Idaho Power, the Company believes that the methodology adopted in this docket should be limited to its Solar PV Program.

Second, Idaho Power generally agrees that the elements proposed by Staff for inclusion in its model are appropriate and consistent with the Commission's direction to include only those elements that directly affect cost of service.

Third, the Company believes that the RVOS methodology offered by Mr. Olson provides a good starting point for the actual calculations that will need to be made by the individual utilities. The Company agrees that marginal cost is the correct basis on

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which to value the generation produced through the Solar PV Programs and that timeand location-specific modelling is appropriate. That said, in order for the model to be
useful, it will need to be adapted to the specific circumstances of—and the data
available from—each of the three electric utilities. In Idaho Power's case, the model
contemplates certain data that is not available, as well as approaches that are not
applicable to the Company. For that reason, Idaho Power suggests certain
adjustments that will need to be considered in the second phase of this investigation
as the parties work toward calculating the RVOS for Idaho Power based on Companyspecific inputs.

#### II. BACKGROUND AND CONTEXT

## Q. Please describe the statute that gave rise to this proceeding?

A. In May 2010, the 2009 Legislature adopted ORS 757.365,¹ which required the Commission establish pilot solar generation programs for Idaho Power, Portland General Electric Company and PacifiCorp, under which they would offer productionbased rates and incentives (volumetric incentive rates, or VIR) for electricity delivered from solar photovoltaic energy.

## Q Did the statute specifically require the Company to calculate the RVOS?

- A. Yes. The statute mentions—and assumes the calculation of—RVOS in three contexts:
  - First, the statute specifies that for the first 15 years of an eligible system's participation in the Solar PV Program, the utility is required to purchase electricity at the incentive rates established at the time of enrollment. After 15

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<sup>&</sup>lt;sup>1</sup> See ORS 757.365(1), providing that "[t]he Public Utility Commission shall establish a pilot program for each electric company to demonstrate the use and effectiveness of volumetric incentive rates and payments for electricity delivered from solar photovoltaic energy systems that are permanently installed in this state by retail electricity consumers and that first become operational after the program begins."

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short-term and long-term.6 However, the rule provides no further detail as to the method that should be used to calculate the RVOS.

#### Please explain the events leading to the opening of this docket. Q.

In 2013, the Legislature enacted HB 2893 which added reporting and study requirements to ORS 757.365. In compliance with the new Section (4) of ORS 757,365, the Commission prepared and submitted to the Legislature a comprehensive "Investigation into the Effectiveness of Solar Programs in Oregon" on July 1, 2014 (2014 Report) addressing a number of substantive issues relating to solar energy in Oregon.<sup>7</sup> In addition, the Commission committed to opening a formal proceeding to determine (1) the resource value of solar; (2) the extent of cost-shifting, if any, resulting from net metering; and (3) the reliability and operational impacts of increasing levels of solar generation on utility systems.8

The Commission opened this docket, UM 1716, on January 27, 2015, to address those issues. The initial filing consisted of the 2014 Report and the following year's report.

#### How did the investigation initially proceed? Q.

A. Staff began the investigation by holding workshops to discuss the attributes of solar generation that should be considered in the determination of RVOS. Based on these discussions Staff compiled a list of 26 elements that might be included. The list included elements related to (1) the benefits or costs of solar generation that accrue

<sup>&</sup>lt;sup>6</sup> OAR 860-084-0370.

<sup>&</sup>lt;sup>7</sup> Specifically, the Commission was directed to: (a) investigate the resource value of solar energy; (b) investigate the costs and benefits of the existing solar incentive programs; (c) forecast future costs for solar energy systems: (d) identify barriers to the development of solar energy systems: and (e) recommend new programs or program modifications that encourage solar development in a way that is cost-effective and protects ratepayers. HB 2893 at § 4.

<sup>8 2014</sup> Report at iv (Jul. 1, 2014).

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to utility customers—the utility's avoided cost of energy; (2) the benefits or costs of solar generation that accrue to the generator; and (3) general societal benefits. All parties filed comments on the list of elements, making recommendations to the Commission as to those that should be included in the RVOS. Staff's expectation was that the Commission would adopt a list of elements, which would then be included in a methodology proposed by a consultant hired by Staff.

# Q. Did the Commission decide which specific elements to include in the methodology?

No. In Order No. 15-296, the Commission did not make a final determination as to the specific elements that would be included in the methodology. However, the Commission was clear that it would consider only those elements that could directly impact the cost of service to utility customers—therefore foreclosing consideration of general societal impacts, or benefits to generators, that do not directly affect customer costs. In addition, the Commission adopted a two-phase contested case process to complete its investigation of RVOS. The first phase addresses elements and methodologies for RVOS, and the second phase will examine the values for each utility using those adopted methodologies. 11

## Q. How has the docket proceeded from that point?

A. The Administrative Law Judge (ALJ) divided the docket into three discrete investigations, to be addressed consecutively. Investigation #1—in which we are currently engaged—will determine the resource value of solar. Investigation #2 will examine fixed costs and the extent of cost-shifting from net metering, if any. The ALJ

<sup>&</sup>lt;sup>9</sup> Staff's Comments at 5-10 (Jul. 15, 2015).

<sup>25 | &</sup>quot;

<sup>&</sup>lt;sup>10</sup> Order No. 15-296 (Sep. 28, 2015).

<sup>&</sup>lt;sup>11</sup> Id. at 2-3.

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also identified an Investigation #3 that would evaluate the reliability impacts of solar on the grid. 12 However, the Commission later closed Investigation #3 and ordered that, to the extent there is a mitigation cost to address the reliability impacts of solar, that cost should be quantified in Investigation #1.13

## III. RESPONSE TO STAFF TESTIMONY

- Please briefly summarize the portions of Ms. Dolezel's testimony to which you Q. will be responding.
  - First, Ms. Dolezel clarifies the intended application of the RVOS methodology adopted in this docket. Ms. Dolezel confirms Staff's view that the methodology will be used to determine the value of distributed solar generation, emphasizing that it will not replace the current avoided cost methodologies for PURPA implementation or be used to determine the value of utility scale solar.14 Ms. Dolezel also presents the elements developed by Mr. Olson for inclusion in the RVOS methodology,15 consistent with the Commission's instructions to include only those "that could directly impact the cost of service to utility customers."16
- What is Idaho Power's response to Ms. Dolezel's clarification as to the Q. application of the RVOS adopted in this docket?
- Idaho Power appreciates Staff's clarification that the RVOS adopted in this docket will Α. not replace other methodologies previously adopted by the Commission and is

<sup>&</sup>lt;sup>12</sup> Prehearing Conference Memorandum (Nov. 9, 2015).

<sup>&</sup>lt;sup>13</sup> Order No. 16-074 (Feb. 29, 2016).

<sup>14</sup> Staff/100, Dolezel/8.

<sup>15</sup> Staff/100, Dolezel/4-5.

<sup>16</sup> Order No. 15-296 at 2.

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intended for non-PURPA distributed generation. 17 However, the Company continues to believe that the methodology's application should be further limited.

#### Q. Please explain.

- Idaho Power has two types of non-PURPA distributed generation on its system: that Α. produced by the Solar PV Program, and net metering. As will be discussed below, the Company believes that the methodology proposed by Staff is not, as a practical matter, well-suited for net metering purposes. Moreover, as described in Idaho Power's comments filed earlier in this docket, the Company believes that the definition and application of RVOS was intended by the Legislature to be limited to Solar PV Programs. 18
- What is Idaho Power's response to the proposed elements to be included in the Q. RVOS methodology adopted in this docket?
- As discussed in more detail below, the Company agrees that the proposed elements Α. are generally appropriate.
- Please provide a brief summary of Mr. Olson's testimony. Q.
- Mr. Olson presents his recommended methodology for calculating the RVOS, which Α. employs a time- and area-specific marginal cost approach to estimate the impact to the electric system of additional electric load or generation. The methodology translates hourly data on individual avoided cost elements into an hourly avoided cost profile for each year of the economic lifetime of a solar photovoltaic system, which is assumed to be 25 years. Mr. Olson notes that in order for the model to produce hourly outputs, a utility must have access to and provide the necessary hourly inputs. However, the model can also accommodate less granular data if hourly data is not

<sup>&</sup>lt;sup>17</sup> Note, however, that the Commission, in Order No. 15-296 at 2, specifically stated, "We also find that there could be many potential policy and ratemaking uses for the resource value of solar, and in this order we are not prejudging potential future uses."

<sup>18</sup> Idaho Power's Comments at 11-13 (Jul. 20, 2015).

available. In addition, Mr. Olson discusses each of the elements recommended for inclusion in the model.

### Q. What is your response to Mr. Olson's proposed methodology?

Fundamentally, Idaho Power believes that the RVOS methodology proposed by Mr. Olson seems reasonable. The Company agrees that a marginal cost approach that takes into account both the time- and area-specific marginal cost of the solar generation is appropriate and consistent with the definitions and directions for calculating RVOS contained in ORS 757.360, and the Commission's rules. We appreciate the flexibility of the model, which allows for granular information where it is available, but also adapts to more general information where necessary. However, there are several assumptions made in the construction of the model that may not be necessarily appropriate or applicable for Idaho Power. In addition, the model assumes the input of certain hourly data that may not be currently available to Idaho Power, nor easily collected and provided. For these reasons, Idaho Power suggests certain adjustments that will need to be considered in the second phase of this investigation as the parties work toward calculating the RVOS for Idaho Power based on Company-specific inputs.

#### Q. What are the elements proposed by Mr. Olson for use in the RVOS model?

- A. Mr. Olson and Staff followed the direction provided in Order No. 15-296 to take the entire list of 26 elements originally submitted in this docket and reduce it down to ten elements that directly impact the cost of service to utility customers. The list of inputs to the model includes:
  - Energy
  - Generation Capacity
  - Line Losses
  - Transmission and Distribution Capacity

- Renewable Portfolio Standard (RPS) Compliance
- Integration and Ancillary Services
- Administration
- Market Price Response
- Hedge Value
- Environmental Compliance

## Q. Does the Company agree that these elements are appropriate to be included in the RVOS model?

- A. Yes. The Company agrees that the elements proposed for inclusion in the model are consistent with the Commission's direction to only include elements that directly affect cost of service, and we agree that they are generally appropriate for inclusion in the model. However, the Company also believes that not all of these elements are appropriate for all utilities, or at the very least, some elements may have a value of zero. It will therefore be important in determining the appropriate RVOS for each utility to allow for flexibility in determining the input values.
- Q. Please describe the Company's proposal for each of the ten elements included in Staff's proposed RVOS model.
- A. Certainly. Idaho Power proposes the following considerations for each of the elements to the proposed RVOS model:
  - the value of energy as determined by its incremental cost integrated resource planning methodology (ICIRP). This is the methodology approved by both this Commission and the Idaho Public Utilities Commission (IPUC) for determining the value of energy used to calculate avoided cost rates for qualifying facilities that exceed the standard rate eligibility cap. The ICIRP methodology has been in place for Idaho Power since it was approved for use through a contested case

proceeding before the IPUC in December 2012<sup>19</sup> and was recently affirmed and reauthorized for the Company's use in Oregon in Order No. 16-174.<sup>20</sup> The methodology compares the hourly generation profile of a solar resource to the utility's resource stack being used to serve load in each hour, and assigns the cost of the utility's highest cost displaceable resource operating during the hours that the solar resource provides generation. The Company proposes to use the ICIRP methodology because it will provide a consistent determination of the value of a solar resource on an hourly basis for all such resources on the Company's system.

- Generation Capacity: Idaho Power proposes to use the same methodology it uses for estimating capacity contribution for integrated resource planning, and to estimate the contribution to peak of distributed solar generation as recently addressed in UM 1719. Idaho Power agrees with Mr. Olson's proposal that in the near-term years when the utility is not in a period of resource deficiency, a value of zero should be used because there are no deferrable capacity investments.
- Line Losses: Idaho Power agrees that line losses are appropriately included in a
  distributed generation valuation model, such as the RVOS model. However, the
  model may need to provide additional flexibility in order to properly determine the
  RVOS on the Company's system. Specifically, the system loss input in the model
  may need to be modified to increase the number of seasons and time periods to
  adequately represent a utility's seasonal loss variability over a year.
- Transmission and Distribution Capacity: Transmission and Distribution (T&D)
   investments caused by load growth are appropriately included in a deferral

 <sup>&</sup>lt;sup>19</sup> In the Matter of the Commission's Review of PURPA QF Contract Provisions Including the Surrogate Avoided Resource (SAR) and Integrated Resource Planning (IRP) Methodologies for Calculating Avoided Cost Rates, Case No. GNR-E-11-03, Order No. 32697 (Dec. 18, 2012).
 <sup>20</sup> In the Matter, of the Public Utility Commission of Oregon, Investigation into Qualifying Facility Contracting and Pricing, UM 1610, Order No. 16-174 (May 13, 2106).

evaluation for valuing a distributed resource; however, the specific mechanism for determining the benefit associated with deferred T&D investment is currently being developed by the Company. It is possible that the investment deferral determined by Idaho Power's methodology will differ from the value that would result from the calculation methodology identified by Mr. Olson. It would, however, better reflect the actual T&D investment being deferred on the Idaho Power system. It should be noted that the value of deferrable T&D capacity will be different for different utilities, and in fact, may vary across an individual utility's service territory. Investments caused by high growth in one part of the Company's system may not be reflective of potential investments deferred in other low-growth areas. Overall, Idaho Power's system is quite rural, and adding solar generation in many areas may not result in any significant deferral of T&D investment. In addition, a utility may not have a growth-related T&D deferral for several years into the future. To accurately reflect this delay, it may be appropriate to include a "T&D deficiency year" to identify the year to start an investment value accruing to solar output in a similar fashion as a resource deficiency year is used for generation capacity. The Company does not believe that a singular methodology for the determination of T&D capacity would be appropriate for all utilities.

 Renewable Portfolio Standard Compliance: The State of Idaho does not have an RPS requirement and, while Idaho Power is subject to the Oregon RPS, its obligations under that statute are not applicable until 2025.<sup>21</sup> Therefore, Idaho Power would value an RPS component to distributed generation at zero.

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<sup>&</sup>lt;sup>21</sup> The Company's obligations under the Oregon RPS do not apply until 2025, at which time the Company—which is designated as a small utility under the RPS guidelines—must demonstrate that 5- or 10-percent of the electricity sold to Oregon retail customers is "qualifying" under the statute. ORS 469A.055. The Company will not need to add qualifying resources to comply with this obligation.

- Integration and Ancillary Services: Idaho Power has recently completed a study
  of integration charges for utility-scale solar facilities, and has filed a petition with
  the IPUC to update utility-scale solar integration charges in accordance with the
  study results. Inasmuch as a combined distributed generation program impacts
  system operations like a utility-scale facility, an integration charge is appropriate.
  Idaho Power does not consider solar resources to provide ancillary services, and
  views these components as strictly a cost.
- Administration: The Company has not determined this value as it pertains to solar installations, but agrees that this element is appropriately included in the RVOS model.
- Market Price Response: Market Price Response, and in particular, a Mid-C Market Price impact of new solar generation, is not something Idaho Power currently evaluates. It is unclear as to how the magnitude and quantification of a Mid-C market price response to new solar generation would be determined, at least regarding smaller distributed solar generation as identified in this docket. The Company assumes that this will be a topic of discussion in the utility-specific determination of the inputs to this methodology.
- Hedge Value: Idaho Power's hedging strategy is a prescribed process contained within the Risk Management Policy Manual, and was approved by the IPUC in 2002.<sup>22</sup> The Risk Management Policy Manual includes Idaho Power's risk management objectives as well as the policies, guidelines, controls and internal procedures established to protect against adverse movements in power supply costs and to ensure that the power cost adjustment balance does not move beyond

<sup>&</sup>lt;sup>22</sup> In the Matter of Idaho Power Company's Interim and Prospective Hedging, Resource Planning, Transaction Pricing, and IDACORP Energy Solutions (IES) Agreement, Case No. IPC-E-01-16 (Phase II), Order No. 29102 (Aug. 28, 2002).

a tolerance level acceptable to customers. The Company's hedging strategy does not vary based upon the addition of distributed generation solar resources, and hedge value is not an item Idaho Power evaluates for new resources. The Company therefore assumes this value to be zero.

- compliance costs associated with carbon emissions. Moreover, any potential future compliance costs that are not yet being incurred and cannot be fully determined do not constitute costs that are avoided by a new solar resource. Therefore, the value of this element for Idaho Power should be zero. If, in the future, environmental compliance costs are actually determined, it may then be appropriate to determine the impact of the reduction of those costs provided by the new solar resource. The Company believes this determination will be different for each utility.
- Q. You mentioned above that you do not believe that the RVOS methodology should be used within the context of net metering. Can you explain your concern?
- A. Yes. As discussed above, the purpose of Investigation #2 is to determine the level of cost shifting, if any, resulting from solar installations under each utility's net metering service. Based on discussions with Staff, I understand that the RVOS model will be used as a component of the cost shifting quantification. In particular, I understand that the RVOS will be compared to the revenues and costs associated with net metering customers to determine the cost shifting resulting from this service, if any.
- Q. Why is Idaho Power concerned about the application of the RVOS model in the quantification of a net metering cost shift?
- A. Idaho Power believes the adequacy of a model's design and its applicability are directly related to the context in which it will be applied. While the Company agrees

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that the approach taken by Staff and Mr. Olson is theoretically reasonable from the perspective of calculating a levelized RVOS, the Company has concerns regarding the model's applicability to net metering service, which necessarily requires an approach that specifically considers the unique aspects of this service. Idaho Power is concerned that the model as structured will result in an inconsistent comparison between the model results and the embedded costs and revenues related to the Company's current net metering service. This concern arises from the use of multiple modeling components that may be appropriate from a long-term levelized cost perspective, but not from an embedded ratemaking perspective. For example, the RVOS model includes future avoided costs related to T&D, and emphasizes marginal rather than embedded costs. Because these costs are not considered in the ratemaking process, and because current rates are not reflective of estimated future costs (or the potential avoidance thereof), the Company feels that these inputs would not be appropriate when calculating a current cost shift associated with net metering service.

- Q. Is Idaho Power proposing to modify the RVOS model to address these concerns in the first phase of Investigation #1?
- A. No. Because Idaho Power's concerns are driven by the application of the model rather than the structure of the model itself, the Company is not proposing any specific changes to the model at this time; the Company believes it is not possible to develop specific recommendations for model improvement until a detailed specific purpose is identified.
- Q. Does this conclude your testimony?
- A. Yes, it does.

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