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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF IDAHO POWER)
COMPANY'S APPLICATION TO)
ESTABLISH NEW SCHEDULES FOR)
RESIDENTIAL AND SMALL GENERAL)
SERVICE CUSTOMERS WITH ON-SITE)
GENERATION.)
)

CASE NO. IPC-E-17-13

Sierra Club

Rebuttal Testimony of R. Thomas Beach

January 26, 2018

Executive Summary

Idaho Power Company (Idaho Power or IPC) has asked the Commission to take important initial steps toward changing the compensation for customers who install renewable distributed generation (DG) under net energy metering (NEM). This includes placing residential and small commercial customers who install renewable DG into customer classes distinct from standard customers. The Sierra Club is concerned that Idaho Power seeks approval of this ratemaking step without actually establishing that there is a significant economic problem with net metering that needs to be addressed at this time.

This rebuttal testimony responds to the opening testimony of the Commission staff (Staff). Staff proposes to modify IPC's Schedule 84 so that NEM customers are compensated for the excess energy that they export to the utility, every hour, at an avoided cost-based rate, while NEM customers would continue to pay for the hourly energy that they import from the Company based on their current rate schedule. I support Staff's position that there is no need to establish separate customer classes for NEM customers. I am not opposed to Staff's proposal for distinct hourly rates for exported power from NEM customers; however, this structure should be adopted only after a comprehensive benefit-cost study shows that the costs of NEM exceed the benefits, such that there is a need to change the present NEM program. My direct testimony described at length the three key attributes of a benefit-cost study of NEM:

1. Analyze the benefits and costs from the **multiple perspectives** of all of the key stakeholders,
2. Consider **a comprehensive list of costs and benefits**, and
3. Use **a long-term analysis** consistent with the economic life of DG facilities.

This rebuttal also discusses my concerns with the Staff's proposal to determine a NEM customer's imports and exports of electricity on an hourly basis. Today, IPC's residential and small commercial customers do not have the hourly data that they (or their solar installer) would need to be able to evaluate the economics of an investment in a NEM system under the Staff's hourly netting proposal. Without ready access to this data, the Staff's proposal would create a significant and unfair barrier to new NEM installations. Ultimately, I would expect Idaho Power to be able to make hourly data available to all of its customers, as it joins many other utilities in the U.S. in encouraging demand reduction and the more efficient use of energy through cost-based, time-of-use (TOU) rates. However, until that time arrives, and all residential and small commercial customers have access to at least one year of hourly usage data, NEM should continue to use the monthly netting of imports and exports, as is the practice today.

Finally, I support the Staff's proposal that the Commission should initiate a docket in which all interested parties can work together to determine the appropriate avoided cost methodology to value the benefits of net metered DG. This study should also examine the costs of NEM. After this study is complete, if the Commission determines that the costs of NEM exceed the benefits, this avoided cost methodology can be the basis for compensating net metering customers for their exports. In this cooperative effort, all parties should have the chance to provide input into the benefit-cost methodology and study, and the opportunity to critique the study after it is completed.

Table of Contents

EXECUTIVE SUMMARY	i
I. INTRODUCTION	1
II. RESPONSE TO STAFF	1

1 I. INTRODUCTION

2 **Q: Please state your name, address, and business affiliation.**

3 A: My name is R. Thomas Beach. I am principal consultant of the consulting firm
4 Crossborder Energy. My business address is 2560 Ninth Street, Suite 213A, Berkeley,
5 California 94710.
6

7 **Q: Have you previously submitted testimony in this proceeding?**

8 A: Yes. On December 22, 2018, I submitted testimony in this docket on behalf of the Sierra
9 Club. The interests of the Sierra Club in this case are presented in my opening direct
10 testimony, and my experience and qualifications are summarized in that testimony.
11

12 **Q: What is the purpose of this rebuttal testimony?**

13 A: This rebuttal responds briefly to the direct testimony that the Commission staff (Staff)
14 filed in this case.
15

16 II. RESPONSE TO STAFF
17

18 **Q: Please summarize the Staff's direct testimony.**

19 A: The Staff has recommended that the Commission should reject Idaho Power Company's
20 (Idaho Power or IPC) request to establish two new customer classes applicable to
21 Residential and Small General Service customers with on-site generation who request to
22 interconnect to IPC's system on or after January 1, 2018. Instead, Staff proposes to
23 modify IPC's Schedule 84, Customer Energy Production Net Metering Service, so that
24 net energy metering (NEM) customers are compensated for the hourly excess energy that
25 they export to the utility at an avoided cost-based rate, while continuing to pay for the
26 hourly energy that they import from the Company according to the rate in their current
27 rate schedule. Staff asks the Commission to initiate a docket in which all interested
28 parties can work together to determine the appropriate avoided cost methodology used to
29 compensate net metering customers for their exports.¹

¹ Staff Direct Testimony (Morrison), at pp. 2-3.

1 **Q: Is the staff's proposal a reasonable way to resolve this case and to move forward on**
2 **net metering issues on the IPC system?**

3 A: Yes, it is, but with several caveats that I explain in this rebuttal. The Staff correctly
4 recognizes that the differences in the electric service that NEM and non-NEM customers
5 receive from Idaho Power are not significant enough to justify placing NEM customers
6 into separate rate classes.² Staff also properly recognizes that what distinguishes NEM
7 customers is the fact that they export a portion of their electric production to the grid. As
8 discussed in my opening testimony, citizens have certain rights under well-established
9 federal law³ that should be respected in any resolution to this proceeding: (1) to make
10 private investments to install certain types of renewable distributed generation (DG) on
11 their premises, (2) to interconnect with the utility provided that this connection is done
12 safely and in accordance with adopted industry standards, (3) to use a portion of their DG
13 output to serve their own electric needs behind the meter, and (4) to export the excess to
14 the grid. Ultimately, the issue for this Commission is how to compensate NEM
15 customers fairly for those exports.
16

17 **Q: What are your reservations about the staff's proposal?**

18 A: The Staff proposal is a reasonable approach, but only after the Commission has
19 determined that the overall costs of the current net metering program exceed the benefits,
20 such that compensating NEM exports at the retail rate is unfair for other ratepayers and
21 the system as a whole. Thus, the first step must be to do a comprehensive benefit-cost
22 analysis to see if this is true. For example, if the benefits of net metering exceed the costs
23 (as my analysis in IPC-E-12-27 indicated to be the case five years ago), then non-
24 participating ratepayers are realizing benefits from NEM. In that case, the Commission
25 should either (1) do nothing, and maintain the current program, or (2) increase the
26 compensation for exports to the point where benefits and costs are equal, in order to bring
27 more clean, renewable generation onto IPC's system at no cost to other ratepayers.

² *Ibid.*, at p. 3, and the analyses that Mr. Morrison presents on pp. 10-19.

³ The Public Utilities Regulatory Policies Act of 1978 (PURPA).

1 Without doing such a study, it is simply premature for the Staff to conclude that NEM
2 customers are being overcompensated today.⁴
3

4 **Q: Do you have any concerns with the analysis of the net metering “cost shift” that the**
5 **Staff’s witness Mr. Morrison presents on pages 11 and 12 of his testimony?**

6 A: Yes. My first concern is that the Staff’s cost analysis uses 2016 DSM avoided cost rates
7 to value NEM exports.⁵ As set forth in my direct testimony, the benefits of NEM should
8 be assessed using a comprehensive set of benefits and costs, and a long-term analysis.
9 The location, diversity, and technologies of DG resources will require the analysis of a
10 broader set of benefits and costs than, for example, traditional QF facilities installed
11 under PURPA. Comprehensive lists of the benefits and costs that should be considered
12 can be found in Table 1 of my direct testimony, in the Idaho Conservation League’s
13 Exhibit ICL-404, and in the Oregon commission’s Resource Value of Solar process.⁶
14

15 Second, Mr. Morrison suggests, but does not analyze, that IPC’s revenues from serving
16 NEM customers’ loads (i.e. revenues from NEM customers’ imported power) may
17 actually cover more of IPC’s cost of service than do regular residential customers.⁷ Ms.
18 Kobor’s direct testimony for Vote Solar shows that this is indeed the case. IPC’s cost of
19 service, as analyzed by Ms. Kobor, shows that a NEM customer contributes \$145 to \$175
20 per customer per year more toward their cost of service than a standard residential
21 customer. NEM customers more than cover their cost of service (by \$49 to \$79 per year),
22 while non-NEM customers fail to cover their cost of service (by \$96 per year).⁸ This
23 more than offsets the \$100 per customer per year cost shift that the Staff’s analysis
24 calculates.
25

26 As a result, the staff’s analysis should be considered to be illustrative rather than
27 definitive, and I appreciate and support the Staff’s recognition that “the exact

⁴ Staff Direct Testimony (Morrison), at p. 9.

⁵ *Ibid.*, at p. 11.

⁶ See Oregon Public Utilities Commission Orders No. 17-085 and 17-357.

⁷ *Ibid.*, at p. 12.

⁸ See Vote Solar Direct Testimony (Kobor), at Table 3 and 4, pp. 71-72.

1 methodology for calculating net metering avoided cost rates should be determined in a
2 separate docket.”⁹

3
4 **Q: Do you have concerns with the Staff’s proposal to determine a NEM customer’s**
5 **imports and exports of electricity on an hourly basis?**

6 A: Yes, I do. The Staff is recommending the following:

7 Staff proposes that Section 1 of Schedule 84 be changed to take advantage of the
8 Company’s AMI meters by netting consumption/generation hourly rather than
9 monthly. Under Staff’s proposal, the net metering customer’s billed consumption
10 would be determined by summing the consumption from each hour in which there
11 is net consumption, and the result applied to applicable Schedule 1 or Schedule 7
12 rates. The net metering customer’s excess energy credit would be determined by
13 summing the production from each hour in which there is net production and
14 applying the result to an avoided cost rate. The net metering customer’s bill would
15 then be calculated by subtracting the excess energy credit from the customer’s
16 billed consumption.¹⁰

17 There are significant practical and fairness issues related to moving to the Staff’s
18 proposed “hourly netting” of imported and exported power, from the current system of
19 monthly netting. Although Idaho Power’s current meters are able to record hourly usage
20 (in either direction), hourly data are not currently recorded or provided to customers; the
21 meters are programmed to record only monthly net usage.¹¹ The utility admits that it
22 would have to re-program its meters and revise its billing system in order to make such
23 data available.¹² As a result, today customers do not have the hourly data that they (or
24 their solar installer) would need to be able to evaluate the economics of an investment in
25 a NEM system under the Staff’s hourly netting proposal. It would erect a significant and
26 unfair barrier to new NEM installations for customers to be required to use hourly netting
27 without having access to the hourly data on their usage that is necessary to evaluate the
28 economics of NEM under hourly netting.

29

⁹ Staff Direct Testimony (Morrison), at p. 11.

¹⁰ *Ibid.*, at p. 8.

¹¹ The only exception to this appears to be residential customers who elect service under IPC’s optional time-of-use (TOU) rate. However, only a fraction of one percent of IPC customers have elected the TOU rate. See IPC Response to Sierra Club Data Request No. 4, attached as Exhibit 601.

¹² *Ibid.*

1 Ultimately, I would expect and encourage Idaho Power to make hourly data available to
2 all of its residential and small commercial customers, as part of an effort to encourage the
3 more efficient use of energy through the expansion of TOU pricing. Many utilities in the
4 West and in the U.S. recognize that significant capacity and energy savings can be
5 achieved through time-dependent rates that are more accurate and more cost-based.¹³
6 The ability to offer time-sensitive rates to all customers is an important reason and
7 justification for an advanced metering infrastructure (AMI). As part of promoting the use
8 of time-sensitive rates, utilities with AMI often allow customers to view their hourly
9 usage on the utility's website and implement a "Green Button" feature that allows
10 customers to download historical hourly usage data in a format that customers and DER
11 providers can readily use.¹⁴
12

13 My recommendation is that the use of hourly netting for NEM customers should not be
14 implemented until Idaho Power's residential customers have had online or Green Button
15 access to their hourly data for at least one year. This will assure that residential
16 customers have access to adequate hourly data on their usage to assess the economics of
17 NEM under hourly netting. Until then, net metering should continue to use monthly
18 netting, as is in place now, even if the Commission decides in a subsequent proceeding to
19 change the structure of NEM to provide for distinct import and export rates, as Staff
20 proposes.
21

22 **Q: Have other states that have moved to separate pricing of NEM imports and exports**
23 **also retained monthly netting?**

24 **A:** Yes. As discussed in my opening testimony, both Nevada and New Hampshire have
25 adopted revised NEM programs that include modest differences between import and
26 export rates, but have retained monthly netting of imports and exports. New Hampshire,

¹³ For example, more than 50% of the residential customers of Arizona Public Service are on TOU rates, as a result of that utility's efforts over many years to promote their use. The California investor-owned utilities are planning in 2019 to move to TOU rates as the "default" rate option for residential customers.

¹⁴ The Green Button initiative is an industry-led effort under the auspices of the Department of Energy designed to provide utility customers with easy and secure access to their energy usage information in a consumer-friendly and computer-friendly format. To date, a total over 50 utilities and electricity suppliers have signed on to the initiative, not yet including Idaho Power. See <https://energy.gov/data/green-button>.

1 like Idaho, does not yet have an adequate metering and billing data infrastructure for all
2 utilities that would allow small customers to access their hourly usage data.¹⁵ Nevada
3 retained monthly netting in its recent order re-implementing NEM in that state.¹⁶ Arizona
4 and California are examples of states that have both (1) implemented different import and
5 export rates and (2) moved to the use of hourly or sub-hourly netting. The utilities in
6 these states have AMI with full functionality and well-developed programs to encourage
7 the use of time-dependent rates, including making hourly usage data available to
8 residential and small commercial customers. They also have far higher penetrations of
9 solar DG than Idaho.

10
11 **Q: The Staff has proposed that the Commission should initiate a docket in which all**
12 **interested parties can work together to determine the appropriate avoided cost**
13 **methodology used to compensate net metering customers for their exports. Do you**
14 **support such a cooperative effort?**

15 A: Yes. As part of such a cooperative effort, I recommend that the Commission retain a
16 third-party consultant who would either (1) perform a benefit-cost study of net metering
17 in IPC's service territory, with all parties able to provide input into the study and with an
18 opportunity to critique the study after it is completed, or (2) would develop a benefit-cost
19 methodology, producing a straightforward model that any party can use to present their
20 recommended benefits and costs of net metering. The first approach is the one that was
21 used by the Nevada commission, as discussed in my direct testimony. The Oregon
22 commission has used the second approach recently to develop a model for the Resource
23 Value of Solar that parties are now using in that state.¹⁷

¹⁵ In the New Hampshire PUC's Order No. 26,029 (June 23, 2017), at pages 52-53, rejecting a move from monthly to instantaneous netting, the New Hampshire PUC stated "We are persuaded by the record evidence that a near-term transition from monthly netting to instantaneous netting is likely to result in significant customer confusion, project marketing and development complications, and potentially inefficient customer price signals. For example, instantaneous netting may be confusing to customers who lack real-time data about their electricity usage."

¹⁶ See PUCN, *Order Granting in Part and Denying in Part Joint Application by NV Energy on Assembly Bill 405* in PUCN Docket No. 17-07026, at pp. 17-19.

¹⁷ See Oregon Public Utilities Commission Docket UM 11716, especially Orders No. 17-085 and 17-357.

1 **Q:** **Does this conclude your rebuttal testimony?**

2 **A:** Yes, it does.

SIERRA CLUB EXHIBIT 601

Beach, Tom

DI-REB

REQUEST FOR PRODUCTION NO. 4: Please provide the following information

concerning the implementation of time-differentiated rates on the Idaho Power system:

a. Please describe the time-of-use (TOU) or time-differentiated rates that the Company offers to its residential and small commercial customers. Please provide the number of residential and small commercial customers on TOU rates today, in absolute numbers and as a percentage of the total number of customers in these classes.

b. Does Idaho Power have a customer information and billing system capable of implementing time-differentiated rates for all of its customers? If it does not, please describe the billing and customer service constraints Idaho Power faces in moving to time-differentiated rates for all of its customers.

c. Does Idaho Power have an advanced metering infrastructure (AMI) capable of implementing time-differentiated rates for all of its customers? If it does not, please describe the metering constraints Idaho Power faces in moving to time-differentiated rates for all of its customers.

d. Does Idaho Power have a customer information and billing system capable of applying time-differentiated rates for net metering service? Please describe in further detail the complexity of the calculations to implement time differentiated rates for net metering customers.

e. Does Idaho Power have 2-channel meters capable of recording separately (1) the power that Idaho Power supplies to a customer with on-site generation and (2) the power that such a customer exports to Idaho Power? If not, why not?

f. Does Idaho Power plan in the future to move to the use of 2-channel meters for customers with on-site generation? If not, why not?

RESPONSE TO REQUEST FOR PRODUCTION NO. 4:

a. Idaho Power's Time-of-Day ("TOD") program is offered on an optional, voluntary basis to residential customers only. The only requirement is that an AMI meter exists at the customer's residence.

The TOD program includes seasonal pricing with Peak and Off-Peak rates. The summer season begins on June 1 of each year and ends on August 31 of each year.

The current rates approved for Schedule 5, Residential Service Time-of-Day Pilot (Optional), are listed below:

Service Charge, per month	\$5.00
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Energy Charge, per kilowatt-hour ("kWh")	
--	--

Summer	
--------	--

Peak	12.9481¢
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Off-Peak	7.4226¢
----------	---------

Non-Summer	
------------	--

Peak	9.5581¢
------	---------

Off-Peak	7.4226¢
----------	---------

During the summer season, June 1 through August 31, Peak hours are 1:00 p.m. to 9:00 p.m. on weekdays and all other hours are Off-Peak. During the non-summer season, September 1 through May 31, Peak hours are 7:00 a.m. to 9:00 p.m. on weekdays, and all other hours are Off-Peak. Holidays, as defined in the tariff, are Off-Peak.

Of the 439,333 residential customers that Idaho Power serves, there are currently 1,206 residential customers enrolled in the TOD program. This represents 0.27 percent of residential customers.

b. No. Idaho Power's Customer Relationship and Billing ("CR&B") system is not currently capable of billing time-differentiated rates for all of Idaho Power's customers as it is configured today. The current limitations to offering time-differentiated rates to all customers are due to differences between the way the metering and CR&B systems are designed and configured. These differences affect the existing integrations between the two systems and the way metering data is passed to CR&B including data aggregation, date/time stamp issues, and timing of meter reads. In addition, new validation and estimation processes would need to be identified and implemented if the Company were to deploy TOD billing on a large scale today, based upon existing integrations between the billing and metering systems. Further analysis is needed to determine the metering and CR&B system modifications needed to accommodate time-variant pricing on a large-scale, all-customer basis.

c. Idaho Power has deployed the Aclara Two-Way Automated Communications System ("TWACS") for 99 percent of its retail customers. The metering infrastructure in place is capable of providing data necessary for the implementation of time-differentiated rates for those customers. In order to implement time-differentiated rates for customers not served by TWACS, Idaho Power would need to install meters that are capable of recording hourly load profiles that would be read manually.

d. No. Idaho Power's CR&B system is not capable of billing time-differentiated rates for customers taking net metering service as it is currently configured. Modifications to both the metering system and to CR&B would be needed to accommodate time-variant pricing for customers with on-site generation.

e. Yes; however, the meters currently installed on residential and small commercial customer accounts with on-site generation (referred to as "net meters") do not have that capability. The net meters provide one kWh register read and one hourly energy channel read, and the meters are configured to record net monthly kWh and net hourly kWh.

f. Not at this time; however, Idaho Power would explore the implementation of 2-channel meters if a change in the billing structure required it.

The response to this Request is sponsored by Connie Aschenbrenner, Rate Design Manager, Idaho Power Company.

CERTIFICATE OF SERVICE

I hereby certify that on this 26th day of January, 2018, true and correct copies of the above THE DIRECT TESTIMONY OF R. THOMAS BEACH were sent to the following persons via the methods noted:

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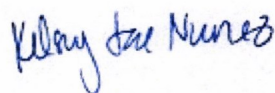
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