

Diane Holt

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To: Beverly Barker; Diane Holt; Matthew Evans
Subject: Case Comment Form: Lisa Hecht

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Name of Utility Company: Idaho Power

Comment: First, I thank the Idaho PUC Commissioners and staff for this opportunity to provide input on Idaho Power filing IPC-E-17-13.

I am a decades-long Idaho Power shareholder, residential net-metering customer, semi-retired Hewlett-Packard electrical engineer and program manager, and mother of two 20-somethings, who wants to leave them a habitable planet; I write from all of these perspectives. In its filing, Idaho Power refers to my Letter to the Editor to the Idaho Statesman. I, therefore, wanted you to be aware of this context with respect to my comments.

First (Idaho Power's Requests), I will briefly respond to each of Idaho Power's requests.

Secondly (Refuting Flaws in Idaho Power's Arguments), I will specifically refute what I believe are flaws in Idaho Power's arguments, and support those with which I agree.

Thirdly (A Better and Fairer Approach), I will provide, based on my research, a better, fairer approach for Idaho Power's customers, shareholders, and citizens of Idaho.

Idaho Power's Requests

(1) closure of Schedule 84, Customer Energy Production Net Metering, to new service for residential and small general service ("R&SGS") customers with on-site generation after December 31, 2017,

(2) establishment of two new customer classifications applicable to R&SGS customers with on-site generation that request to interconnect to Idaho Power's system on or after January 1, 2018, with no pricing changes at this time,

(3) acknowledgement that smart inverters provide functionality that is necessary to support the ongoing stability and reliability of the distribution system by ordering the Company to amend its applicable tariff schedules to require the installation and operation of smart inverters for all new customer-owned generator interconnections within 60 days following the adoption of an industry standard definition of smart inverters as defined by the Institute of Electrical and Electronic Engineers, and

(4) commencement of a generic docket at the conclusion of this case to establish a compensation structure for customer-owned distributed energy resources ("DER") that reflects both the benefits and costs that DER interconnection brings to the electric system.

In requesting items (1) and (2) before item (4), Idaho Power is putting the cart before the horse, and cherry-picking. It is unethical and backward for Idaho Power to ask to modify existing customer classes *before* it has established net-metering in the context of ALL customer rates, and included both impacts AND BENEFITS of net-metering customers. This they can do by applying data available to them from the smart meters the PUC approved years ago to identify overall opportunities for cost reduction and rates fair to all customers. Most Idaho Power net-metering customers utilize solar PV, and a number of studies have been conducted on the value of solar, including meta-studies and studies in 23 states (1) as well as by the NREL (2) nationally. The Idaho PUC should include these in any analysis of costs and benefits; especially since Idaho Power referred to “costs and benefits of net-metering”, but failed to include the BENEFITS. It would be best if an independent contractor were to suggest categories for the resource values of distributed resources, which could be openly debated and agreed upon; next step would be to assign values to each of these categories.

Furthermore, net-metering customers are not only a tiny percentage (0.2%) of current customers but also a very small percentage of total generation and load. As I shall later establish, even if the number of net-metering customers grows 10-fold, the impact of that on retail electricity rates, per a study by Lawrence Berkeley National Labs (3), may actually be to *lower* rates, and in any case, is likely to be an *order of magnitude* lower than the impact on rates of capital expenditures such as the proposed Boardman-to-Hemingway ("B2H") transmission line! The very busy PUC staff need to prioritize items with the greatest impact on Idaho Power's customers, as is their mandate. This is not one of them. Requests (1) and (2) should be immediately dismissed.

As for item (3), I wholeheartedly agree that net-metering customers should use smart inverters to support the grid's voltage- and frequency-regulation; in fact, I suggested this in a phone call to Scott Gates at Idaho Power. However, Idaho Power needs to do this in such a way as not to prohibit net-metering; this means that smart inverters meeting IEEE standards must be easily available in Idaho, not prohibitively expensive, with the sale not restricted by Idaho Power. I would furthermore suggest that, at the same time, Idaho Power be required to provide smart-metering that allows simultaneous net-value calculations of both net-metering generation and usage. It is currently extremely difficult to determine and validate the value of the net-value I have provided Idaho Power as a net-metering customer; and research shows that the closer to instantaneous that net-value calculation is done, the fairer and more accurate it is. Therefore, if item (3) is granted, it should include not only the customer protections for smart inverter procurement but also requirements for Idaho Power to enable smart meters (current or future models) to enable and provide instantaneous net-valuing of energy value provided by customers. Currently, Idaho Power net-metering customers “bank” and then “withdraw” kWh, a measure of energy, but not the *value* of that energy when generated or used. I will say more about this in later sections!

Refuting Flaws in Idaho Power's Argument IPC-E-17-13, section I. Background includes the following items:

Item 1 establishes that Idaho Power maintains a “power grid”.

Item 2 explains the nature of net-metering and quantifies the number of net-metering customers as of the filing of IPC-E-17-13 (this was later updated to correct the year 2021 to 2022).

"The Company had 1,468 active and pending net metering systems in its Idaho service area as of June 30, 2017. The Company projects that the count of residential customers with on-site generation could be as high as 7,032 customers or as low as 6,171 customers by 2022, with the median growth rate resulting in 6,816 residential customers with on-site generation."

- Note that even the updated customer numbers constitute a tiny fraction, about 0.2%, of Idaho Power's residential customers, and they are small users, especially as compared to Commercial and Industrial customers.
- Per a study done by Lawrence Berkeley National Labs, “Putting the Potential Rate Impacts of Distributed Solar into Context”, current Idaho solar PV penetration is about 0.2%, and even if it were to grow 10-fold by 2030, penetration will still only be 2%, much less than the 5-15% generally considered to be the point at which any significant impact is seen by utilities. Most importantly, the projected impact on retail electric rates is $\pm 0.2\text{¢/kWh}$, versus $+1.3$ to $+3.6\text{¢/kWh}$ for capital expenditure (“CapEx”) projects such as the proposed Boardman-to-Hemingway transmission line. Thus,

distributed solar PV may actually LOWER retail electricity costs, and in any case, its impacts on rates are an order of magnitude lower than CapEx projects. Thus, the PUC can safely ignore this for now, and learn from other locations and utilities in other states. The PUC can begin to study value-of-distributed-generation results from 23 other states and by NREL, and incorporate this into future rate design questions. In addition, it remains to be seen how B2H's integration of wind and solar projects may impact grid design and electric rates.

Item 3 claims that "Idaho Power's current net-metering pricing structure for R&SGS customers with on-site generation does not reflect the cost of serving those customers, nor does it appropriately reflect the benefits and costs of interconnecting customer-owned on-site generation to Idaho Power's system."

A number of assumptions underlie this argument. Below are assumptions I see and the issues with them.

- First, item 3 refers to "benefits and costs", but nowhere in their filing did I find either an enumeration of or accounting for, the benefits of net-metering. A claim such as is made in item 3 must include benefits, not merely costs; otherwise, how can Idaho Power or the PUC claim that it reflects the benefits and costs? A study of net-metering distributed generation value, especially of solar, must be included in order to establish the facts.
- Item 3 also makes the implicit assumption of sunk costs for which we must continue to pay. But the larger concern should be potential future expenditures into a 19th- or 20-century grid that become *stranded costs* in a 21st-century energy grid reality. Solar and wind costs have dropped 100-fold since the 1970's, and that trajectory continues. Idaho Power has the opportunity to invest in a smart grid that maximizes benefits and returns to its shareholders, customers, and itself. To miss that opportunity would be a very expensive mistake. Avista, a neighboring utility, has reported that, by investing in smart-grid technology, it has avoided millions of hours of outages. The same smart-grid that avoids outages is also key to integrating distributed energy resources (DERs), and saves both the utility and its customers significant money and downtime.

Item 4 asserts that "...customers with on-site generation *may* pay less than their respective share for...grid-related services...."

- Among other problems, the benefits of avoided transmission loss and locational and time benefits of energy generated are not accounted for, so this is little more than a supposition.
- Using the IPUC-approved Time-of-Day values to show the relative time-value of the energy I generated versus used, I calculated that the net time-value I would have provided to Idaho Power in a net-zero annual kWh situation would be about \$130. This amounts to a little over \$10 in addition to the \$5/month flat fee I now pay and does not include the whole stack of value DERs can provide, as identified in aforementioned studies. I will gladly make my spreadsheets, assumptions, and calculations available to the IPUC.

Item 5 asserts that "the company believes that...future cost-shifting...will increase."

- This statement assumes it has been proven that cost-shifting is occurring; that has not been proven, and cannot be proven until DER value is established in an open, inclusive process. Idaho Power then uses a graph to attempt to show that since net-metering customers have different usage curves from other residential customers, they should be put in a different class.
- The variation within residential customers itself is large, including 3rd-shift and rural vs. urban customers, so should we create a class for all of these? Adding new customer classes adds administrative cost and should not be done arbitrarily.
- Also, it is the *impact* on electric rates that matters, not the existence of different usage patterns. The LBNL report to which I referred earlier argues that distributed solar may actually lower overall electric rates, and that its impact, in any case, is an order of magnitude below CapEx projects such as the B2H project proposed by Idaho Power.

A Better and Fairer Approach

- First, this filing is completely out-of-order; also, the impact of this 0.2% of the customer base is de minimus and will not likely be relevant for a decade or more. The value stack of DER generation, which is missing from the filing, should be established as a first step, not as the last step.
- IPUC commissioners need to prioritize the cases they address. The Lawrence-Berkeley National Lab (LBNL) has published a study, "Putting the Potential Rate Impacts of Distributed Solar into Context". It found that, for Idaho, the probable range of impact to retail electricity rates by 2030 (assuming a 10-fold capacity increase in Idaho's net-metering) would be ± 0.2 cents/kWh, versus +1.3 - 3.6 cents/kWh for *capital expenditures*, such as the proposed Boardman-to-Hemingway transmission line or scrubbers on their coal plants to minimize air pollutants to allow continued operation. This demonstrates that this issue should be a very low priority to commissioners, and can safely be deferred.
- At such time as net-metering comprises 5% or more of the customer base, a third-party should propose a resource value stack of DER assessments, in an open, transparent way to be debated by all before the IPUC. Idaho Power should simultaneously begin collecting real-time, two-way usage and generation data (not netted); ideally, several years of data should inform this study. That data and an agreed-upon resource value stack can be used in a general rate case to assess fair valuation and costs for both utility and ALL customers.
- Idaho Power currently requires net-metering customers to leave the AC Cool-Credit and Time-of-Day programs, both of which I participated in prior to net-metering. There is no reason these should not still be of benefit to lowering Idaho Power's costs. For example, I could run my AC summers in the early afternoon, and turn it off later afternoon or allow it to be cycled off by Idaho Power. This would lower costs for all customers, by shifting usage from more expensive summer peak to cheaper off-peak hours. This should be included in any net-metering rate-case studies.
- Thirdly, the IPUC and Idaho lawmakers should identify laws and rate-making rules by which Idaho Power and its customers are incented to invest and compete in a 21st-century clean-energy economy, including distributed generation, smart grids, AMI, customer home and auto battery storage, and enhanced energy efficiency and conservation. For example, well-sited, distributed renewable energy could reduce the need for, and cost of, some T&D, which comprises over half IPC's costs. This will lower customer costs, provide continuing revenue to fairly compensate Idaho Power for grid services, and reward both net-metering customers and Idaho for clean, 21st-century energy generation. Performance-based regulation is one pathway to take us there.
- Lastly, I remind the IPUC that Idaho Power is granted a monopoly under the condition that it serves the public. It must, therefore, be held to high standards of proof in making assertions by providing open, verifiable numbers that show its actions would benefit, and not harm, its customers!

References

1. Solar Cost-Benefit Studies, SEIA, <https://www.seia.org/initiatives/solar-cost-benefit-studies>
2. Value of Solar: Program Design and Implementation, NREL, <https://www.nrel.gov/docs/fy15osti/62361.pdf>
3. Putting the Potential Rate Impacts of Distributed Solar Into Context, LBNL, <https://emp.lbl.gov/publications/putting-potential-rate-impacts>
4. On grid modernization, gap widens between leading states, laggards, Utility Dive <https://www.utilitydive.com/news/on-grid-modernization-gap-widens-between-leading-states-laggards/413028/>

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