SIERRA CLUB

September 1, 2016

Idaho Public Utilities Commission
472 W Washington St
Boise, ID 83702

Re: Comments on Idaho Power's Proposed Community Solar Pilot-- IPC-E-16-14

Dear Commissioners,

Thank you for the opportunity to provide comments on Idaho Power Company's proposed community solar pilot.

Sierra Club is America's oldest and largest conservation organization, with more than 2.4 million members and supporters nationwide, including more than 2,300 members in Idaho—most of whom live in Idaho Power's service territory.

We very much appreciate Idaho Power's willingness to consider opportunities to provide additional energy choices to customers.

During Idaho Power's 2015 Integrated Resource Plan, we requested the Company explore opportunities to expand customer access to renewable energy by including a community solar pilot project. We believe that a well-designed program can prove a win for the Company, customers, and our local economy and environment.

Increasingly, electric utilities are offering community solar programs to customers. According to a recent survey conducted by SEPA, 89% of electric utilities currently offer community solar or are actively considering/planning for product offerings. From 2014-2015, the number of community solar program has increased by 80%, and this year, another 79 programs are scheduled to come online.[1]

Community solar is taking off as electric utilities seek to address changing customer preferences, gain experience with operating solar, take advantage of optimizing location and benefits of distributed generation resources within their service territory, improve distribution system resilience and reliability within the load zone, hedge against fuel price volatility, reduce carbon emissions and environmental impacts, and invest more energy dollars into local economies.

[1] Smart Electric Power Alliance (SEPA), 2015 Utility Solar Market Snapshot; last accessed August 31, 2016, report available at: https://s3.amazonaws.com/fonteva-customer-media/00Do0000000Yi66EAC/SEPA%20USM%20Snapshot%202016b_web.pdf

While we very much appreciate the Company's willingness to consider new clean energy product offerings, we believe that in order for a pilot to succeed, there must be improvements to (1) how distributed solar generation is valued; and (2) inclusion of more flexible subscription options to expand access to a broader set of customers.

How distributed solar generation is valued

Accurately valuing the benefits that a community solar program produces is essential for both fairly rewarding program participants as well as minimizing any cross-subsidization by non-participants. Currently, Sierra Club believes the proposed valuation does not correctly capture the benefits of the distributed resource in two ways.

The first fundamental concern we have is the Company's decision to value the output from the community solar project with an inappropriate historic annual average energy value. The 2015 Integrated Resource Planning process discussed at length that while solar generation shows both seasonal and diurnal variations in output, in general, solar output matches well with Idaho Power load. PV generates at times when the market value of that generation is above average. Therefore, the currently proposed valuation methodology does not provide an accurate value representation of the energy being generation or savings from the energy it is replacing.

Instead, we propose the DSM value methodology. An analysis using the National Renewable Energy Lab's PV watts product, combined with the marginal cost of power from Idaho Power's 2015 DSM model produces energy values that range from approximately $.043/kWh in 2017 to $.078/kWh in 2034.

Second, there needs to be a value for the locational benefits of the pilot program, something that the current valuation completely ignores. The distributed nature of the community solar project provides additional benefits by deferring expenditures for transmission capacity to meet peak loads. Similar potential benefits are inherent in all distributed energy resources and all future analyses of distributed resource benefits should include a review of location benefits.

The Boise bench community solar array connects directly to the Boise / east Treasure Valley distribution system. It never uses the bulk energy Transmission system. Since Community Solar doesn't use the Transmission System (see Response to ICL Production Request No.14), in addition to a credit for having an energy value, community solar should be given credit for reducing peak transmission capacity requirements.

When a location value (described below) is added, fair value for the output of the Community Solar project ranges from >$.05/kWh in its first year of operation to >$0.85/kWh in the mid-2030s. In contrast, the Company has proposed that such energy be valued at up to $.03/kWh during the program duration. With the Company's proposed valuation, we believe there would be a substantial, on-going subsidy flowing from participants to non-participants throughout the life of the program.

We describe a possible value for this credit below:

Using the NWPCC value for deferred transmission value (per the 7th plan, Technical Appendix G) of $26/kW-year in 2012 dollars we have converted the 2012 dollar value to an estimated 2017 value using the US GDP deflator. [2] Panel capacity value of 320Wac has been converted to a capacity value using the 51% factor for single axis panels from IPC 2015 IRP. That .163kW capacity value per panel implies a deferred transmission value of $4.53 per panel each year. Dividing the annual deferred transmission value per panel by 636 kWh/year average panel output implies a deferred transmission value of 7.1 mils per kWh.

Value of deferred transmission (2012$s)	$26/kW-year
Conversion to 2017 $s	$26 * 1.069 = $27.80/kW-year
Convert panel Wac to peak capacity	320 * .51 =.163kW capacity value / panel
Deferred transmission value per panel	$27.80/kW-yr * .163kW/panel = $4.53/panel-yr
Annual kWh output per panel	53kWh/month * 12 = 636kWh/year
Deferred transmission value / kWh	$4.53 / 636kWh = $.0071/kWh

Fair value of output can eliminate cost to non-participant risk

One of the justifications for requiring full up-front payments derived from an argument that under-subscription in out years would result in a cross-subsidy being imposed on non-participants (see response to ICL Production Request No. 7). We believe that a fair valuing of project output greatly diminishes that perceived risk and allows shorter-term participation to be offered.

If the value the Community Solar project produces is assumed to be lower than the cost to build and operate the Community Solar facility, one can envision a cost being passed on to non-participants if the project in not fully subscribed for its entire estimated 25 year life. For example, when output is valued at $.03/kWh as the Company proposed, the value generated never allows participants to recoup the initial $740/panel output (see Request and Response to First Staff Production Request No. 18).

If, however, the output from the Community Solar project is valued for all 25 years at even the $.05/kWh estimate for 2017 provided above, the 25 year return on a $740/panel investment becomes positive. Further, if the energy value from Community Solar rises over time (as the 2015 IRP DSM table implies) then the project very quickly moves into a situation where the value it produces each year is greater than 1/25th of the original per panel cost.

As time passes, rising marginal energy values will make the annual benefits produced by the Community Solar exceed its annual costs. Under those conditions, any under-subscription in

[2] Northwest Power and Conservation Council's 7th Power Plan, appendix G, available at: https://www.nwcouncil.org/energy/powerplan/7/plan/

future years would transfer net benefits to non-participants. We believe there is room for the Program to be re-designed to allow much shorter than 25-year participation terms while still protecting non-participants from incurring any costs.

Additionally, there are numerous other mechanisms that electric utilities have used to address the risk of under subscription (and therefore the upfront capital cost hurdle) including sign up fees, exit penalties, and partnerships with large institutions that may serve as an "anchor-tenant" or "back-stop" participant willing to take on additional solar shares in the event a program is not fully subscribed.

More flexible subscription options needed

Idaho Power's community solar pilot as proposed requires a participant to upfront the entire capital cost for 25 years of solar benefits. We believe that unless this barrier is addressed the program will fail from lack of participation.

According to analysis conducted by GTM, of the approximately 120 million households in the U.S., only 20% can realistically consider direct installation of PV.[3] Idaho Power acknowledges these significant barriers in their service territory, stating:

> *"For many customers, direct ownership and operation of solar resources is not desirable or feasible. Customer ownership and operation requires upfront capital costs, as well as long-term expenses and liabilities associated with system operation and maintenance. Beyond cost considerations, rooftop or ground-mounted solar installations are feasible only for certain property owners. Customers who reside in rental properties, multi-unit dwellings, or townhomes are necessarily limited in their options, as well as customers that have aging rooftops, shading, or unsuitable rooftop orientation. The Company's proposed Community Solar Pilot Program is designed as an alternative to customers who fall into the various categories mentioned above."*

Idaho Power's community solar pilot meaningfully addressees all of the aforementioned barriers except hurdle of high upfront capital costs.

Community solar programs throughout the country are experimenting with different program designs to increase access by allowing customers to participate without paying the entire capital cost up-front. While there are numerous ways that community solar programs can be designed, we would like to highlight a few programs offered by investor owned utilities that we believe address the upfront capital cost barrier.

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[3] Solar Energy Industry Association ("SEIA") and Greentech Media ("GTM") Research; last accessed August 31, 2016, chart available at: http://www.seia.org/research-resources/solar-industry-data

Entergy Mississippi, Inc

In *Docket 2016-UN-32*, Entergy provides a community solar report to the Commission in which the Company states that it "believes it could develop a community solar project as a feasible option for EMI's customers, including specifically low-income customers".[4]

After exploring numerous program designs and conducting in-depth market research on customer preferences, obstacles, etc, EMI recommended that an "on ongoing (or "pay-as-you-go") program would likely appeal to more of EMI's customers than a program that requires a large upfront payment from participants. "Requiring a significant upfront investment would preclude many EMI customers from participating in a community solar garden program."

It is also worth noting that EMI shares Idaho Power's guiding principal that "costs of the Program are borne by customers who choose to participate in this optional pilot, while holding non-participating customers harmless" (Application IPC-E-16-14 p 9).[5] EMI believes that program design can be structured so that "the community solar program would collectively provide a net benefit to all of EMI's customers on a net present value basis.

Consumer's Energy (Michigan)

In 2015, Consumer's Energy obtained permission to implement a 3-year community solar pilot program for up to 10 MW of solar PV. The program allows participants to subscribe to "SolarBlocks" of 0.5 kW of solar PV capacity.[6]

A subscribed customer will receive a Solar Energy Credit for the subscription's percentage of the solar energy generated.

The cost to participate depends upon the number of SolarBlocks chosen by the participant, and the payment plan option selected. Customers currently select from four possible "sliding-scale" payment plan options:

- A lump-sum, upfront payment of $1,289/SolarBlock

[4] Mississippi Public Service Commission Case No 2016-UN-32; Submittal of Report on Feasibility of Community Solar, report available http://www.psc.state.ms.us/InsiteConnect/InSiteView.aspx?model=INSITE_CONNECT&queue=CTS_ARCHIVEQ&docid=372842

[5] Idaho Public Utilities Commission, IPC-16-14 original application available at: http://www.puc.idaho.gov/fileroom/cases/elec/IPC/IPCE1614/20160623APPLICATION.PDF

[6] Michigan Public Service Commission Case No. U-17752; Consumer Energy's initial application seeking approval of a community solar pilot was filed within the docket in January 2015; conditional approval was issued in May 2015, and the Michigan PSC granted updated, final approval in August 2015 of the updated tariff and bill credit calculation methodology applicable to participating customers.

- $40 per month per SolarBlock for three years = $1440/SolarBlock
- $20 per month per SolarBlock for seven years = $1680/SolarBlock
- $10 per month per SolarBlock for 25 years = $3000/SolarBlock

This program is not designed to reduce participants' electric bills per se, but rather to provide an opportunity to voluntarily participate in a program that generates clean, renewable energy. The subscription charges will add to participants' monthly electric bills and the solar energy credits will reduce the participant's monthly electric bills.

Tucson Electric Power

Launched in 2011, the Bright Tucson Community solar program (5 MW) was developed to provide options for customers who want to participate in solar without a major capital outlay.

Program participants can purchase 150-kWh per month blocks for an additional $3/block premium over standard electric rates. The pricing assumes that most people will spend a few extra dollars to support solar, and that this premium is justified given that the customer does not upfront the entire cost of the system. The current retail rate is about $0.10/kWh, and participants pay an extra 20%, or $0.12/kWh for local clean energy

Gulf Power (Florida)

In March of 2016, Gulf Power received approval to start an "Energy Share" community solar program. This program is available to all customer classes and has two components: (1) an annual subscription fee that reflects the projected annualized revenue requirement of the program; (2) a monthly bill credit participants receive for their share of the energy produced by the solar PV facility.

Each subscription is 750 kWh per year, and customers that do not commit to at least a 5-year term pay $99 per year for each subscription, and those who commit to a 5-year term pay $89 per year for each subscription.

Customers will receive a monthly bill credit that corresponds to the amount of their subscription. Monthly bill credits will be determined each calendar year and will be based upon a "solar-weighted average annual avoided energy credit".

Gulf Power's program is an opportunity for customers to pay a small premium for the foreseeable future to participate. The program is also designed program designed such that all costs are borne solely by the program participants.

Several additional utility community solar programs are outlined in a Navigant report prepared in conjunction with the Community Solar Value Project, one of fifteen projects funded in 2015 by the U.S. Department of Energy's SunShot Initiative.[7]

Although no two service territories are the same, the programs referenced above are a few examples of utilities across the nation that are thinking creatively about how to address up front capital cost barriers, and thus greatly expand access to a broader set of customers.

Conclusion

Sierra Club appreciates Idaho Power's willingness to consider new clean energy product offerings, and we hope to continue to work with the Company and stakeholders to refine the pilot proposal to ensure that is likely to succeed.

Lastly, we do not believe there is a need adhere to the current timeline given extension of the Investment Tax credit and ability to issue another RFP. We can take more time to find solutions to underlying hurdles, and we should because pilot project is historic and precedent setting.

Sincerely,

Zack Waterman

Zack Waterman, Director
Idaho Chapter of the Sierra Club

[7] Community Solar Utility Programs, Andrea Romano – CSVP Team Consultant, Navigant Consulting, November 2015; last accessed August 31, 2016, report available at:
http://www.communitysolarvalueproject.com/uploads/2/7/0/3/27034867/20151201_css_case_studies.pdf

CERTIFICATE OF SERVICE

I, Jean Webb certify that on this ~~31st day of August~~ 1st day of September, 2016, I delivered true and correct copies of the foregoing COMMENTS to the following:

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