

STATE OF IOWA
DEPARTMENT OF COMMERCE
BEFORE THE IOWA UTILITIES BOARD

IN RE: INTERSTATE POWER AND LIGHT COMPANY	DOCKET NO. RPU-2019-0001
--	---------------------------------

DIRECT TESTIMONY
OF
WARREN MCKENNA

1 **Q. What is your name and business address?**

2 A. My name is Warren McKenna. My business address is 1991 Angle Rd. SW,
3 Kalona IA 52247.

4 **Q. Please describe your background and experience in the field of gas and**
5 **electric utility regulation.**

6 A. After graduating from Northwest Iowa Community College I started my career as
7 a utility lineman over forty years ago and worked my way up through the
8 engineering department at one of the largest rural electric cooperatives in Iowa. I
9 finished the second half of my career as General Manager/CEO of Farmers
10 Electric Cooperative (“*FEC*”) in Kalona Iowa until my retirement this spring. For
11 the past twenty-five years I have also served on the Executive Board of the Resale
12 Power Group of Iowa (“*RPGI*”), which is one of the largest municipal wholesale
13 electric buying groups in Iowa. In that capacity we moved that organization
14 through the process of adapting to the current deregulated generation and
15 transmission market model. Within this new market model, RPGI created its own

1 capacity compensation process that has incentivized over 130 MW of distributed
2 generation. I am also one of the founding Board Members of the Iowa Solar
3 Energy Trade Association (“*ISETA*”) and helped grow that organization to
4 around sixty solar-related businesses that employ over eight hundred people.
5 ISETA takes credit for assisting in creating legislation that has been responsible
6 for Iowa’s solar tax credits that have fostered the rapid growth of solar in Iowa.
7 For my accomplishments growing solar I was awarded Utility CEO of the year in
8 2014 by Smart Energy Power Alliance and in that year and a following year FEC
9 received two national awards for connected solar watts per customer. For several
10 years FEC has been honored by the National Renewable Energy Laboratories
11 (“*NREL*”) as a Top 10 Utility for its Green Power Program. Over the past 10
12 years I have been a partner in the 25x’25 Alliance and have traveled the United
13 States and Germany viewing successful renewable energy projects and learning
14 from the best of the best.

15 **Q. Have you previously testified before this or other public service**
16 **commissions?**

17 A. I have testified before of the Iowa Utilities Board (“*Board*”) for ISETA on future
18 rate design in Docket NOI-2014-001 in April 2016.

19 **Q. What is the purpose of your Direct Testimony?**

20 A. My testimony will address IPL’s proposed Community Solar Program. I will
21 close with some comments about the Value of Solar and offer some
22 recommendations to the Board.

IPL’s COMMUNITY SOLAR PROGRAM

1 **Q. Do you have experience with any community solar program?**

2 A. Yes, I implemented several phases and variations of the community solar program
3 at FEC (the “*FEC Community Solar Program*”), starting in 2008 with a 10 kW
4 array and culminating in a 1.8 MW installation before I retired in the spring of
5 2019.¹

6 In addition to overseeing the FEC Community Solar Program, I have consulted on
7 community solar projects in Traer, Iowa, Cedar Falls, Iowa, and Sussex County,
8 New Jersey. I also played a role in other solar projects in Iowa including State
9 Center, Bloomfield, Fairfield, Donnellson, Grand Junction, and Cedar Rapids.

10 **Q. How was the FEC Community Solar Program structured?**

11 A. The FEC Community Solar Garden program at FEC was structured as a solar
12 module purchase program where a member-customer can purchase from 1 to 10
13 modules. The buyback rate is set to net the retail rate (currently 12.5 cents per
14 kWh). The buyback rate is fixed for 10 years from the date of final build-out.
15 Module ownership can be transferred to other metered accounts or sold back to
16 FEC on a 20-year depreciation schedule. Larger arrays were also built as part of
17 the FEC Solar Farm and tagged to large power customer-member businesses.
18 They were financed utilizing combinations of third party ownership, leasing, and
19 purchase power agreements with FEC.

20 **Q. Did the FEC Community Solar Program benefit both participating and non-**
21 **participating customers?**

¹ <http://www.feckalona.net/customer-generation.html>

1 A. All distributed energy investments at FEC have been designed to be revenue
2 neutral. Approximately 20% of FEC's member-customers own solar (not
3 including the FEC Community Solar Program participants). The current rate study
4 FEC operates under was done in 2009 and rates have not been increased since
5 then. This was achieved through a combination of contributions to a voluntary
6 green power program, load tagging, and avoided cost savings from previous
7 distributed generation investments. All member-customers benefit from customer-
8 owned distributed generation and the FEC Community Solar Program through the
9 avoided cost savings in the wholesale power contract and increased system
10 performance. Community solar is a part of the larger overall high-performance,
11 inside-out distributed generation model practiced at FEC.

12 **Q. How did you determine a fair price for subscribers and a fair compensation**
13 **for energy produced by their subscriptions?**

14 A. The simple buy-back rate was established to ensure participating member-
15 customers could achieve a pay back of 10 year or less.

16 **Q. Did you determine the fair price for distributed generation by the same**
17 **method?**

18 A. Yes the same logic was used to set prices for both community solar participants
19 and customers with their own distributed generation.

20 **Q. Are you familiar with other community solar programs around the country,**
21 **for example, in Minnesota?**

22 A. Since FEC was one of the first community solar projects nationwide, we have had
23 numerous calls and meetings on community solar and the various purchase and

1 pricing models; this includes many conversations with stakeholders and policy
2 makers in Minnesota. In my experience, community solar programs generally rely
3 on detailed “value of solar” (“VOS”) studies, which clearly define the various
4 values provided by distributed solar generation to the utility, grid, and society.

5 **Q. Has any VOS study been done in Iowa?**

6 A. No.

7 **Q. Are you recommending that the Board conduct a VOS study?**

8 A. Yes.

9 **Q. Why is that your recommendation?**

10 A. VOS study will result in a rate structure that may be combined with community
11 solar programs to offer major opportunities to expand and grow solar across Iowa.

12 **Q. Please explain the typical VOS study for community solar.**

13 A. The VOS concept originated in part from stakeholder policy work in Minnesota
14 and its purpose was to establish a rate formula to fully value solar generation. The
15 preliminary components in determining a VOS involved the stacking of the
16 following avoided costs: fuel costs, plant fixed and variable O&M, capacity costs
17 for generation and transmission, avoided distribution capacity, and environmental
18 costs. VOS approaches require separate metering and transactions to fully track
19 and account for all components in the value stack. VOS studies should also
20 establish a long-term fixed price based on full production. A community solar
21 VOS study will also encompass metering, billing and tracking, and pricing
22 structures. All stakeholders should be involved in the study of VOS policy as it
23 relates to community solar to assure a fair and open market process.

1 **Q. Do you have any recent examples of VOS studies that you can point to as**
2 **particularly good?**

3 A. Yes. One of the more recent and comprehensive VOS studies was conducted by
4 the consulting firm ICF International, and its results were published earlier this
5 year.² The study took an in-depth look at 15 VOS (also called cost-benefit)
6 studies conducted across the country. These studies were usually commissioned
7 by a public body and conducted by a third party independent of utilities. The
8 VOS studies provided the foundation for community solar programs as well as net
9 metering and related tariffs.

10 **Q. How have others used a VOS rate structure to incentivize solar**
11 **development?**

12 A. A simple approach is the Austin Energy (“*AE*”) value of solar structure that
13 stacks the following components: energy, generation capacity, environment,
14 transmission and distribution (“*T&D*”), deferral, and loss savings³.

15 **Q. How does the FEC VOS structure compare to that of AE?**

16 A. The FEC VOS structure is very similar to the AE VOS structure. It stacks the
17 following components: avoided costs in the wholesale power contract, distribution
18 loss savings, retained earnings, green power program contributions, and energy
19 conservation. Using this structure, FEC calculates the Value of Solar as follows:

² <https://www.icf.com/blog/energy/value-solar-studies>

³ <https://austinenenergy.com/ae/rates/residential-rates/value-of-solar-rate>

1	Wholesale Power Contract Avoided Costs (WPC)	\$.09860
2	Distribution Loss Savings (DL)	\$.00104
3	Retained Earnings (RE)	\$.01180
4	Green Power Program Contributions (GPP)	\$.00131
5	<u>Energy Conservation Savings (EC)</u>	<u>\$.00720</u>
6	FEC Value of Solar Rate	\$.11995/kWh

7
8 **Q. How does IPL value solar in its community solar program?**

9
10 A. Only the production components (both energy and demand) are included in the
11 valuation formula used to compensate IPL's program participants. There are
12 questions on the IPL worksheets as to the lack of consideration of coincidental
13 demand benefits that could be attributed to the blend of wind and solar generation
14 and load diversity across the IPL footprint. The energy charge seems artificially
15 low and may not be reflective of the true cost of new generation or reflective of
16 MISO energy pricing during load and solar peaks. Additionally, other values that
17 community solar may provide were not taken into account.

18 **Q. Do you agree with the manner in which IPL is valuing solar for purposes of**
19 **its community solar program? If not, why not?**

20 A. I do not agree with IPL's methodology for valuing solar for its program. IPL
21 should, at a minimum, include avoided transmission expenses and full market
22 energy pricing should be included.⁴

23 If sited properly, solar will only serve local needs but also offset capacity
24 requirements. In the aforementioned ICF nationwide analysis of 15 VOS studies,
25 avoided energy, avoided generation, and avoided transmission were the three

⁴ In fact, IPL Nielsen Direct Exhibits 1 and 2 both calculate transmission costs in Column H under the Tab, "Production Credit Calc".

1 components included in every single study as the foundation of a valid and fair
2 value for distributed solar.

3 The value of the renewable energy credits should also be accounted for and
4 reflected in the renewable energy credit (“**REC**”) calculations, and
5 customers/participants given the option of retaining the RECs, or getting a bill
6 credit for the RECs (in which case the utility would own and market them).

7 Additional values from the ICF list of possible values should be carefully studied
8 by IUB and OCA staff to identify those of greatest applicability to Iowa and IPL
9 for possible inclusion in an IPL pilot community solar program. All possible
10 values should be included in a broader VOS study that ought to be ordered by the
11 Board, as I suggest below.

12 **Q. Without revealing the confidential nature of the proposed location for the**
13 **IPL community solar field, do you think it likely that any energy will be**
14 **transmitted over transmission lines?**

15 A. No, all the energy, even from a 3 MW project will serve local needs. The metro
16 area adjacent to the proposed field has a demand many times the capacity of the
17 proposed project. Energy produced at the proposed community solar site will
18 export energy only to the local distribution grid.

19 **Q. Is it necessary for IPL to account for avoided transmission costs in**
20 **determining the value of solar to participants?**

21 A. Yes, if they want to be fair. If they don’t account for those avoided costs,
22 participants will be subsidizing non-participants.

1 **Q. Do you have suggestions regarding the buy-in, or subscription cost and**
2 **process as proposed by IPL?**

3 A. The buy-in or subscription cost of community solar should reflect the actual cost
4 to build the project, and that cost should not be rate based by the company and the
5 company should not earn any ROE on the capital cost.

6 **Q. Does IPL include provisions for low- and moderate-income (“LMI”) or**
7 **otherwise disadvantaged customer participation in its proposed community**
8 **solar program?**

9 A. Not adequately, no. In late 2018, NREL issued an excellent report entitled *Design*
10 *and Implementation of Community Solar Programs for Low- and Moderate-*
11 *Income Customers.*⁵ In addition, the *Low-Income Solar Policy Guide*⁶ provides
12 additional resources and compilations of best practices. Of best practices
13 identified, including carve-outs, incentives, and special programs, none are
14 effectively included in the IPL proposal.

15 Given the high and rising energy burden on IPL’s residential customers, the high
16 percentage of those customers in LMI categories, and the growing body of
17 innovative examples of community solar programs serving LMI households, this
18 aspect of the program needs improvement. IPL should consult closely with OCA,
19 the Iowa Community Action Association, AARP, the NAACP, and others to
20 design effective practices for achieving participation from lower-income and
21 otherwise disadvantaged customers.

⁵ <https://www.nrel.gov/docs/fy19osti/71652.pdf>

⁶ <https://www.lowincomesolar.org/best-practices/community-solar/>

1 **Q. What are your recommendations regarding IPL's proposed community solar**
2 **program?**

3 A. I recommend the Board approve the community solar program only as a short-
4 term pilot, subject to the following terms and conditions:

5 • That adjustments be ordered to the solar valuation as described above, to
6 include at a minimum; full value for avoided transmission costs, renewable
7 energy credits (at customer choice), and other values as applicable to IPL at
8 the current time;

9 • That the buy-in or subscription cost be clearly defined as the actual cost of
10 construction, with no adder, or rate-basing or ROE to IPL;

11 • That a stakeholder advisory group be convened immediately to design
12 effective approaches and practices to enable and maximize participation
13 among lower-income and otherwise disadvantaged customers; and,

14 • That the Board order a full value of solar study to be conducted by a neutral
15 third party to better develop a robust valuation for all distributed generation.

16 **OVERALL RECOMMENDATIONS FOR IPL's OTHER SOLAR PROGRAMS**

17 **Q. Do you have recommendations regarding the Renewable Energy Partners**
18 **Program or the Customer-Hosted Renewables Pilot Program?**

19 A. Yes. Both the proposed Renewable Energy Partners program and the Customer-
20 Hosted Renewables Pilot program lack fair accounting of the value they provide
21 to the grid at-large. A VOS study should be conducted that would be applicable to
22 these programs as well, and ensure participants receive fair compensation for their
23 participation.

1 **Q. Are participants in IPL's proposed customer-oriented solar/renewables**
2 **programs fairly compensated for avoided transmission costs?**

3 A. No. As I have demonstrated previously in my Direct Testimony, distributed
4 generation can reduce the need for the utility to incur transmission expense. All
5 customers, whether distributed generation owners, or participants in IPL's
6 proposed programs, should receive compensation for their contributions that
7 allow IPL to avoid transmission costs. Alliant should not be allowed to exempt
8 transmission costs from its net-metering tariff.

9 **Q. What is your final conclusion and recommendation regarding IPL's**
10 **proposed programs?**

11 A. The Board should approve the proposed programs only on a pilot basis, with the
12 improvements suggested. This gives greater flexibility to the Board to include
13 stakeholders and provides an opportunity to make improvements later on. I also
14 suggest the Board order a VOS study, to be paid for by the utility and conducted
15 by an independent consultant. The study commissioning should be overseen by
16 the Board, OCA, or another entity independent of the utilities. The process and
17 study should include stakeholder involvement and review. Ideally, the study and
18 VOS should be applicable to both of Iowa's investor-owned utilities, IPL and
19 MidAmerican Energy Company.

20 **Q. Does this conclude your Direct Testimony?**

21 A. Yes.

AFFIDAVIT OF WARREN B. MCKENNA

STATE OF SOUTH DAKOTA :
: **SS:**
COUNTY OF LAWRENCE :

I, Warren B. McKenna, being first duly sworn on oath, depose and state that I am the same Warren B. McKenna identified in the foregoing Direct Testimony, that I have caused the Testimony to be prepared and am familiar with the contents thereof, and that the Direct Testimony is true and correct to the best of my knowledge, information and belief as of the date of this Affidavit.

/s/ Warren B. McKenna
Warren B. McKenna

Subscribed and sworn to before me, a Notary Public in and for said County and State this 31st day of July, 2019.

/s/ Helen Janish
Notary Public

[Seal]

My commission expires on July 7, 2023.