

## Comments to the FPB regarding the draft Community Solar Agreement

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My name is Andy McDonald. I live at 7134 Owenton Rd., Frankfort, KY 40601. I am the Director of Apogee-Climate & Energy Transitions, a public service program of Earth Tools Inc. I serve on the board of directors of the Kentucky Solar Energy Society (KYES) and serve as the KYES representative to the Joint Intervenors, a coalition of public interest organizations that have intervened in multiple electric utility cases before the Kentucky Public Service Commission. I also am the coordinator for the Solarize Frankfort program for KYES.

The FPB's proposed Community Solar Program offers a valuable opportunity for FPB customers to share in the use of solar energy. However, at current retail rates the proposed subscription pricing is so high as to prevent customers from ever achieving savings on their utility bills. A Community Solar Program will be most attractive to customers if participants can share in the cost savings offered by low-cost solar power and realize a reduction in their utility bills. This goal was suggested by the FPB in the RFP used to solicit bids for building the community solar array (page 3):

### **1.2. Purpose of RFP**

*FPB's interest in pursuing solar PV projects reflects the following prioritized goals:*

- 1. Offer Frankfort Plant Board customers an alternative to rooftop solar installation.*
- 2. Reduce costs and barriers to entry for solar ownership.*
- 3. Offer renewable energy options for low and moderate income customers.*
- 4. Make progress towards the community and Board's renewable energy goals.*
- 5. Support local solar businesses, jobs, and workforce development.*

With the explicit goals of reducing costs and barriers to entry for solar ownership and offering renewable energy options for low and moderate income customers, the program should aim to minimize the cost of participation and provide utility bill savings to participants.

The Community Solar Agreement has two key features – (1) the subscription cost and (2) the solar production credit. FPB proposes for the solar production credits to be equal to the retail energy rate adjusted by the Power Cost Adjustment. This is a fair and reasonable method for assigning credits.

The proposed subscription cost, however, is unreasonably high and would likely prevent participants from ever realizing utility bill savings. FPB's rates would need to rise nearly 50%, to \$0.13/kWh, before the One-time subscription would begin to provide actual savings to the customer. Table 1 shows how the proposed subscription costs compare to rates based on the project's installation costs. Compared to the cost of installing the system, the subscription costs

are very high (\$4.20/watt and \$4.75/watt vs. \$2.28/watt). They are also much higher than the price customers would pay to install solar on their own home or property.

**Table 1 – Subscription Costs Expressed in \$ per watt**

<b>Option A – “One-Time Capacity Charge” for 25 year agreement for one Solar Unit (250 watt)</b>	\$1049.70
<b>Price per watt</b>	<b>\$4.20/watt</b>
<b>Option B - Monthly Capacity Charge for one Solar Unit (250 watt)</b>	\$3.96/month
Total Monthly Charge if extended for 25 years	\$1188.00
<b>Price per watt (extended over 25 years for comparison)</b>	<b>\$4.75/watt</b>
Solar Installation Cost for FPB 186.84 KW array <sup>1</sup>	\$426,356
<b>Alternative Based on Installation Cost - Price per watt</b>	<b>\$2.28/watt</b>

I performed an analysis of the costs and credits a customer would realize under each subscription option. This shows that under current retail rates, participating customers would never achieve any savings, and in fact would pay a substantial premium to participate in the program. Table 2 illustrates this for the “One-time subscription” for a customer with one Solar Unit (250 watts) or 25 Solar Units (6250 watts or 6.25 KW). The analysis compares the proposed Capacity Charge to two alternatives, each based on the capital cost for installing the system.<sup>2</sup> The difference between Alternatives I and II is that Alternative II includes the 30% direct-pay “tax credit” that the FPB may be eligible for as provided in the Inflation Reduction Act (IRA) of 2022.<sup>3</sup>

As Table 2 shows, a customer subscribing to 25 Solar Units via the One-time charge would **pay an additional \$6502 on their utility bills** over the next 25 years. In contrast, if the subscription cost were based on the actual cost of installing the solar array, the customer would **save \$5477 to \$9756** over the next 25 years.

Table 3 provides the analysis for the Monthly Capacity charge. Under the FPB’s proposal, a participating customer would **pay an extra \$15 per year for one Solar Unit (250 watts) and \$398 per year for 25 Solar Units (6250 watts)**. In contrast, under Alternatives I and II, customers would **save \$5.80 to \$13.53 per year for one Solar Unit and \$144 to \$338 per year for 25 Solar Units**.

<sup>1</sup> The capital cost for the community solar installation (\$426,356) was provided upon request from FPB.

<sup>2</sup> Ibid.

<sup>3</sup> According to the IRA, non-profit organizations and municipal utilities are now eligible to claim the 30% Investment Tax Credit as a direct payment. Previously non-profit organizations could not claim the ITC because they had no tax liability. However, the Treasury Department has not issued guidance yet to explain exactly how these direct payments are to be claimed, so it’s availability remains uncertain.

As the FPB stated in its RFP for the Community Solar installation, this program should make solar more affordable and accessible for FPB's customers, especially those with lower incomes. If the cost to participate were based on the FPB's costs to build the solar array, then the program truly would provide an affordable, accessible option and would help customers lower their bills.

For people who install solar on their homes or business, solar represents a solid long-term investment in their property. Although these systems can require a substantial up-front expense, that expense is an investment which results in long-term cost-savings. The FPB's proposed subscription rates do not represent an investment for customers, just an additional cost which will never be recovered. In effect, customers are being asked to pay a premium for the right to participate in the Community Solar project. This is not only at odds with the expressed purpose of the project but is likely to limit participation and success of the project.

If the subscription costs of the program can be adjusted to make the program affordable and provide bill savings to customers, the Kentucky Solar Energy Society would be excited to help the FPB promote the program and encourage people to participate. Through our Solarize Frankfort program we meet people who want to use solar but don't have a good site, are renters, or cannot afford the up-front investment. The Community Solar program could be a great alternative for people in these situations.

I will provide the spreadsheet used in this analysis so FPB can see the basis for the calculations I have presented.

<b>Table 2 - One-Time Capacity Charge for 25 year agreement - Three Scenarios</b>			
	<b>FPB Proposal</b>	<b>Alternative I - cost-based</b>	<b>Alternative II - w/ IRA</b>
<b>One time payment per 250W solar unit</b>	<b>\$ 1,049.70</b>	<b>\$570.48</b>	<b>\$399.34</b>
One-time price per watt (\$/watt)	\$ 4.20	\$ 2.28	\$ 1.60
<b>Example - Residential, One Solar Unit (250 W), One-Time Capacity Charge</b>			
One Time Capacity Charge	\$ 1,049.70	\$ 570.48	\$ 399.34
Annual Energy Generation (kWh)	336	336	336
Annual Bill Credits @ \$0.094/kWh	\$ 31.58	\$ 31.58	\$ 31.58
Total Bill Credits after 25 years	\$ 789.60	\$ 789.60	\$ 789.60
<b>Net LIFETIME value to customer for One Solar Unit</b>	<b>\$ (260.10)</b>	<b>\$ 219.12</b>	<b>\$ 390.26</b>
<b>Example - 25 Solar Units (6250 watts or 6.25 KW), One-Time Capacity Charge</b>			
One Time Capacity Charge	\$ 26,242.50	\$ 14,262.07	\$ 9,983.45
Annual Energy Generation (kWh)	8,400	8,400	8,400
Annual Bill Credits @ \$0.094/kWh	\$ 789.60	\$ 789.60	\$ 789.60
Total Bill Credits after 25 years	\$ 19,740.00	\$ 19,740.00	\$ 19,740.00
<b>Net LIFETIME value to customer for 25 Solar Units</b>	<b>\$ (6,502.50)</b>	<b>\$ 5,477.93</b>	<b>\$ 9,756.55</b>

Note: For the sake of simplicity, the 25 year calculations do not account for the decline in PV module performance over time, assume retail rates remain unchanged and assume no power cost adjustment.

<b>Table 3 - Monthly Capacity Charge Agreement - Three Scenarios</b>			
<b>Example - One Solar Unit (250 W), Monthly Payments</b>	<b>FPB Proposal</b>	<b>Alternative I - cost-based</b>	<b>Alternative II - w/ IRA</b>
Monthly Capacity Charge	\$ 3.96	\$2.15	\$1.50
Annual Capacity Charge	\$ 47.52	\$ 25.79	\$ 18.05
Annual Energy Generation (kWh)	336	336	336
Annual Bill Credits @ \$0.094/kWh	\$ 31.58	\$ 31.58	\$ 31.58
<b>Net ANNUAL value to customer for one Solar Unit</b>	<b>\$ (15.94)</b>	<b>\$ 5.80</b>	<b>\$ 13.53</b>
<b>Example - 25 Solar Units (6250 Watts or 6.25 KW), Monthly Payments</b>			
Monthly Capacity Charge	\$ 99.00	\$ 53.72	\$ 37.60
Annual Capacity Charge	\$ 1,188.00	\$ 644.65	\$ 451.25
Annual Energy Generation (kWh)	8,400	8,400	8,400
Annual Bill Credits @ \$0.094/kWh	\$ 789.60	\$ 789.60	\$ 789.60
<b>Net ANNUAL value to customer for 25 Solar Units (\$/yr)</b>	<b>\$ (398.40)</b>	<b>\$ 144.95</b>	<b>\$ 338.35</b>