

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC TARIFF FILING OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. TO)	
IMPLEMENT A RESIDENTIAL ELECTRIC)	CASE NO.
VEHICLE OFF-PEAK CHARGING PILOT)	2022-00439
PROGRAM)	

RESPONSES TO STAFF'S FIRST INFORMATION REQUEST
TO EAST KENTUCKY POWER COOPERATIVE, INC.
DATED FEBRUARY 9, 2023

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC TARIFF FILING OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. TO)	
IMPLEMENT A RESIDENTIAL ELECTRIC)	CASE NO.
VEHICLE OFF-PEAK CHARGING PILOT)	2022-00439
PROGRAM)	

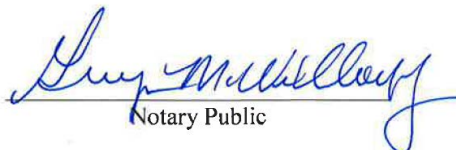
CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

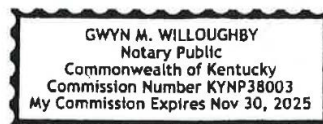
Scott Drake, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Staff's First Information Request in the above-referenced case dated February 9, 2023, and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 28th day of February, 2023.



Notary Public



EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 1

RESPONSIBLE PARTY: Scott Drake

Request 1. Refer to EKPC's Cover Letter, pages 1-2.

Request 1a. Explain the cost-differential from EKPC installing a second meter and hiring a third-party vehicle data provider.

Response 1a. The estimated installation cost of the second meter would be between \$500-\$750. The total cost for installation of 500 second meters for this pilot could range from \$250,000 to \$375,000. Comparatively, the cost of the third party EV data vendor for 500 EVs is \$120,000 over three years.

Request 1b. Provide examples of similar Electric Vehicle (EV) off-peak charging tariffs (within Kentucky or other jurisdictions) that operate similarly to this proposed pilot.

Response 1b. East Kentucky Power Cooperative (EKPC) is not aware of any off-peak EV charging tariffs within the state of Kentucky. However, Duke Energy Florida (“DEF”) and Duke Energy Indiana (“DEI”) both have similar EV off-peak charging incentives that are based on EV telematics connections with the retail member’s EV. The main difference between those programs and the program proposed by EKPC is that they offer a flat rate incentive for participating in off-peak charging. EKPC’s proposed pilot is a per kWh incentive.

DEF has received approval for an Off-Peak Electric Vehicle charging credit. The program provides a \$10 monthly bill credit for residential home charging participants who charge during DEF’s off peak hours. Participants are allowed two opt outs per month before losing the credit. The following link <https://desitecore10prod-cd.azureedge.net/-/media/pdfs/for-your-home/rates/rates-fl/pe-rates-rs-1.pdf?rev=3a82c884b99e4c78b556a0ee29706af7> is for the Florida Public Service Commission approved residential rate.

DEI has received approval for a two year Off-Peak Electric Vehicle charging pilot program providing a quarterly credit for residential members charging during off-peak hours. The following link https://www.in.gov/iurc/files/ord_45616_060122.pdf is for the Indiana Utility Regulatory Commission order approving the pilot. The details on the DEI program can be found at this site <https://www.duke-energy.com/home/products/ev-complete/off-peak-credit>.

Request 1c. Provide the Request for Proposal (RFP) for a third-party data provider as well as the five companies who submitted proposals in response to EKPC’s RFP.

Response 1c. The RFP for the Residential Electric Vehicle Off-Peak Charging Program is attached to this response. The names of the five vendors that provided bids for the RFP are WeaveGrid, EnergyHub, ev.energy, Rolling Energy Resources, and ZEF Energy.

Request 1d. State whether any of the five companies who submitted proposals currently provide this type of service to other utilities. If so, highlight these providers. Describe the type of research meters EKPC plans to install to verify the accuracy of the third-party data collection. Include how and where this equipment will be installed at the participants' residence.

Response 1d. Four of the five submitting bidders for the EV Pilot provide EV telematics data to utilities. ZEF Energy employs a utility owned charger model but does not connect with EV telematics to provide data.

WeaveGrid provided examples of utility programs whom they have partnered with. The list includes Baltimore Gas and Electric (MD), Portland General Electric (OR), Xcel Energy (CO, NM, MN), and Exelon Corp (MD).

EnergyHub provided examples of utility programs whom they have partnered with. The list includes National Grid and Eversource Energy (MA).

Ev.energy provided examples of utility programs whom they have partnered with. The list includes National Grid (MA), Southern Company (AL), Avangrid (CT), Madison Gas and Electric (WI), and Ameren (MO).

Rolling Energy Resources provided examples of utility programs whom they have partnered with. The list includes ComEd (IL), Duke Energy (FL and SC), and Portland General Electric (OR).

EKPC plans to employ two methods of quality assurance in order to verify the accuracy of the data provided by our third party vendor. Method 1 will be the use of hourly AMI data available from 5 of our owner-member cooperatives. Method 2 will employ the use of the Sense Flex home energy monitor. The Sense home monitor will be installed in the homeowner's breaker box and will utilize two current transformers to directly monitor the dedicated 240 volt EV charging circuit in the participant's home.

Request 1e. Describe how EKPC will select the 10 percent–12 percent of participants to install the research meters.

Response 1e. To select the homes that will be used for measurement and verification monitoring, EKPC will randomly select 12% of the total group of participants. Once selected, participants will receive a recruitment email. If EKPC is unable to secure at least 10% to participate, then a second group of participants will be randomly selected and contacted for recruitment to fulfill the 10% sample quota.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 2

RESPONSIBLE PARTY: Scott Drake

Request 2. Refer to the application in which EKPC states that it created an ad-hoc group to research and develop the proposed program. State whether this group consider any alternatives to this pilot program. If so, describe the alternatives considered and the reasoning why those options were not the best option.

Response 2. The ad-hoc group discussed creating a demand management program having the utility provide a level 2 charger and manage the EV charge during peak demand events similar to the utility managing direct load control switches or thermostats during peak demand events. The group expressed concern for program acceptance once EV penetration progresses beyond the early adopter stage. Additionally, concern developed that some EV owners already have a level 2 home charger provided by the EV manufacturer and may not be interested in exchanging their existing charger with a charger that the utility can communicate with and manage.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 3

RESPONSIBLE PARTY: Scott Drake

Request 3. Refer to the Charge Kentucky Presentation, page 3.

Request 3a. Provide the estimated per unit cost for a Utility-controlled charger.

Response 3a. EKPC investigated the possibility of a utility owned charger model. ZEF Energy provided a bid for that style of program. ZEF Energy's cost alone was \$796,000 for the three year pilot for 500 participants. Please note that is only the cost of the chargers and ZEF Energy's software. The above figure does not include the cost of installing the chargers.

Request 3b. The presentation states that Utility-controlled chargers are not popular with EV owners. Describe the foundation of this statement and provide any supporting documentation for this assertion.

Response 3b. No scientific supporting documentation exists that resulted in the statement that utility-controlled chargers are not popular. The information is anecdotal resulting from

personal conversations with electric cooperatives in other states that have implemented a utility-controlled charger program. An electric cooperative in South Carolina recently implemented their utility-controlled charging program using ZEF Energy and only 10% of the EV owners signed up after inquiring about the program. EKPC and its owner-member cooperatives designed this pilot program with a participation expectation higher than 10%.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 4

RESPONSIBLE PARTY: Scott Drake

Request 4. Refer to the Charge Kentucky Presentation, page 5, stating that the pilot “avoids a 2nd meter—no one wants a second meter.”

Request 4a. Describe the foundation of this statement and provide any supporting documentation for this assertion.

Response 4a. The pilot proposes to utilize telematics data to measure and quantify the off-peak kwh that qualify for the \$0.02 demand response incentive. The telematics eliminates the need for a second meter to measure the off-peak kwh. The utilization of a second meter would require the EV owner to hire an electrician to install a second meter base. Then the utility bares the cost to dispatch a technician to install the second meter. After the second meter is installed, the EV owner is required to pay the utility's fee each month for a meter per the utility's Commission approved tariff. These are significant costs for the EV owner and a detriment to program participation. Due to these costs, the statement is that “no one wants a second meter”.

Request 4b. Describe the difference, if any, between installing a second meter versus installing a utility-controlled charger.

Response 4b. The second meter is required to implement a special EV TOU rate. The utility controlled charger facilitates a demand response program similar to direct load control.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 5

RESPONSIBLE PARTY: Scott Drake

Request 5. Refer to the Charge Kentucky Presentation, page 6.

Request 5a. EKPC is proposing this as a Pilot Program with a limited participation of 500 EV's. Explain how EKPC established this limit and provide all documentation demonstrating that owner-members can achieve this number of participants.

Response 5a. See Response 5b.

Request 5b. State whether the pilot program will provide the information needed to assess its success if EKPC does not achieve 500 participants. Explain each basis for EKPC's response.

Response 5b. A participation level of at least 50 EVs provide statistically significant data to determine the per hour average load (energy and demand) for EVs on our utility system. Higher participation levels increases the accuracy of the measured energy and demand. EKPC believes

the owner-members currently serve closer to 500 EVs. The 500-participant limit was chosen to offer participation to the EVs already on the system while controlling the cost of the pilot. EKPC is confident that at least 50 will participate and provide the pilot with the data needed.

Request 5c. Explain which owner-members would have the highest participation count and would benefit the most from this program.

Response 5c. The bulk of the known EVs served by the owner-member cooperatives currently reside near population centers of Lexington, Louisville, and Covington. Therefore, we expect Blue Grass Energy, Shelby Energy, Nolin RECC, and Owen Electric to have the most pilot participants. Please note that an EV charging during peak energy-consumption hours, regardless of location in Kentucky, negatively impacts the utility's cost to serve that individual EV. The design of this pilot is to balance the utility's benefits and costs to serve each individual EV. Therefore, utilities with EVs are not benefiting more than utilities without EVs. The utilities without EVs are not incurring negative costs due to an EV.

Request 5d. Explain how EKPC calculated a \$0.02 incentive per kWh charged off peak. Provide all justification that supports this incentive calculation.

Response 5d. EKPC analyzed a 2 cent and 3 cent incentive. The design of this program is an incentive only program – no penalty for charging during peak hours. Assuming a \$0.10

average kwh fee per owner-member cooperative, 2 cents results in a 20% discount. EKPC believes a 20% discount without any penalties is a reasonable demand response incentive. Additionally, the 2 cent incentive did a better job balancing participant and non-participant benefits. Via the participant survey(s), we expect this pilot will provide more information about the appropriate incentive level.

Request 5e. Provide the approximate billing impact that the \$0.02 per kWh incentive would have on an EKPC EV customer who participates in this program.

Response 5e. EKPC’s analysis showed the average participant would shift 4,423kWh per year amounting to an \$88.00 incentive. The average retail member should see an estimated 4% savings on their annual electricity costs, and an estimated 9% savings on their annual electricity cost to charge their EV.

Request 5f. Provide the projected program costs

Response 5f.

EV Telematics Data Cost (Cost to stand-up the programs and for the first 500 EVs)	\$120,000
EK Admin	\$25,000
EK Incentive Cost assuming 500 EVs	\$66,345
Owner-member Incentive Cost assuming 500 EVs	\$66,345
M&V Cost (one-time cost)	\$80,940
DSM Software Upgrades (one-time cost)	\$48,000
Total (Maximum over 3 years)	\$406,630

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 6

RESPONSIBLE PARTY: Scott Drake

Request 6. Refer to Charge Kentucky Presentation, page 8. The presentation states that EKPC will “gauge impact of incentive levels, etc. (survey participants).” Explain EKPC’s plan for surveying participants and how it will use this information to assess the pilot’s success.

Response 6. EKPC plans to send two surveys in email format to participants to evaluate the pilot program. The first survey will be emailed mid-program. The second email survey will be sent approximately six months prior to the end of the pilot program. EKPC will utilize both of these surveys along with the EV data collected during the pilot to analyze if the program should be made permanent or to evaluate if adjustments need to be made to the program in order to make it a success.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 7

RESPONSIBLE PARTY: **Scott Drake**

Request 7. Refer to Charge Kentucky Presentation, page 9. Explain the advertising plan proposed to communicate this program to EV owners.

Response 7. EKPC proposes to communicate the availability of the pilot through the cooperative social media channels, Kentucky Living, owner-member websites and www.togetherwesaveky.com. Handouts and banners will also be provided to the owner-members for use at annual meetings, in their lobbies and drive-thru facilities. EKPC will also provide handouts to electric vehicle enthusiast clubs that are willing to share materials with their participants.

EAST KENTUCKY POWER COOPERATIVE, INC.
CASE NO. 2022-00439
FIRST REQUEST FOR INFORMATION RESPONSE

STAFF'S'S REQUEST DATED FEBRUARY 9, 2023

REQUEST 8

RESPONSIBLE PARTY: Scott Drake

Request 8. Refer to the Cost-Benefit Analysis.

Request 8a. Provide all worksheets in Excel spreadsheet format with all formulas, columns, and rows unprotected and fully accessible.

Response 8a. Please see Excel spreadsheet *Exhibit for 8a (DSMore_EV DR_2022_tariff filing) CONFIDENTIAL.xlsx*, which is being filed subject to a motion for confidential treatment. EKPC is providing the inputs used to model the pilot program's benefit and cost. However, the "engine" that calculates the results from the inputs is proprietary to DSMore and cannot be provided to the Commission. The "Assumptions" tab is a summary of the inputs from the other tabs. The "Summary" tab reflects the result from the DSMore analysis.

Request 8b. Provide justification on how EKPC derived an \$811 administrative cost for the Total Resource Cost when it stated a \$100 administrative cost.

Response 8b. The \$811 value represents the present value of the \$100 per year cost over 10 years.

Request 8c. Provide the avoided energy and capacity values used to determine the cost-effectiveness of the program.

Response 8c. The avoided cost values are provided in the Excel spreadsheet *Exhibit for 8c CONFIDENTIAL.xlsx*, which is being filed subject to a motion for confidential treatment.

Request 8d. Explain why EKPC assumed a ten-year analysis for the cost benefit analysis considering this pilot program is only proposed for three years.

Response 8d. EKPC used the expected life of the measure savings (10 years) as the period for this analysis. This was done to account for all of the benefits of the measure. EKPC expects the EV will participate in a permanent EV program for the life of the EV, which is assumed to be 10 years. EKPC chose 3 years for the pilot because 3 years provides enough time for EKPC to analyze the effectiveness of the pilot and to then make changes.