

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

ELECTRONIC TARIFF FILING OF EAST)	
KENTUCKY POWER COOPERATIVE, INC. TO)	CASE NO.
IMPLEMENT A NEW GREEN ENERGY OPTION)	2019-00378
FOR NON-RESIDENTIAL RETAIL CUSTOMERS)	

**RESPONSES TO COMMISSION STAFF'S INITIAL REQUEST FOR
INFORMATION TO EAST KENTUCKY POWER COOPERATIVE, INC.
DATED NOVEMBER 18, 2019**

EAST KENTUCKY POWER COOPERATIVE, INC.
PSC CASE NO. 2019-00378
RESPONSE TO INFORMATION REQUEST

COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 1

RESPONSIBLE PARTY: Michelle K. Carpenter, David Crews, Scott Drake and
Isaac S. Scott

Request 1. Refer to the Cover Letter, page 2.

Request 1a. Explain whether any of the retail customers that have expressed a desire for this tariff offering have communicated a preference for having EKPC construct the green energy generation facility over the market purchase of the green energy.

Response 1a. No retail customer to date has expressed a desire that EKPC construct the green energy generation facility. However, EKPC is willing to develop green energy generation facilities if requested or required by a potential retail customer.

Request 1b. If the renewable resource is available from the market, explain in detail why EKPC would choose to construct a renewable resource for a specific retail customer.

Response 1b. Some retail customers' Green Energy preferences are driven by their corporate sustainability goals. If a retail customer's strategy requires local renewable resources, EKPC could construct those resources and provide the Green Energy to the retail customer via this tariff and an associated agreement. The resource type, price, and negotiated agreement, must be agreeable to the retail member prior to EKPC seeking Commission approval for the Green Energy agreement and the construction of related resources. Even when a retail customer requires local resources not already owned by EKPC, EKPC's Power Supply division, or the National Renewables Cooperative ("NRCO"), will issue a Request for Proposals ("RFP") for the type of resources requested by the retail customer, along with the amount of renewable energy to be delivered. EKPC's Engineering and Construction division could provide a response to the RFP for a facility that could be constructed or acquired by EKPC. The EKPC Engineering and Construction division's response to the RFP would be evaluated with other responses for local renewable resources.

Request 1c. If EKPC constructs a renewable resource for a specific retail customer and the retail customer subsequently shuts down its operations, explain how EKPC's other members and their retail customers are insulated from the stranded costs.

Response 1c. Stranded assets resulting from a retail customer shutting down its operations is not a problem that is unique to the provision of renewable energy. Owner Member Cooperatives ("owner-members") and EKPC have similar credit exposures to transmission and

distribution facilities. These credit exposures are frequently resolved by having the retail customer pay for those facilities up front. The cost associated with paying for the entire renewable energy facility or Purchase Power Agreement (“PPA”) on the front end is beyond the means of many customers. The concern for this tariff is that a retail customer might close or shut down its operations and leave EKPC with a renewable energy contract that is higher than the current market for renewable energy. Contract terms that provided for claw back are only beneficial if the retail customer has adequate resources at some level in the corporate structure to pay the claw back terms. The solution is dependent on the credit quality of the retail customer. For some retail customers, a parent company guarantee would be adequate security and for other retail customers, a letter of credit may be required. Contracts will have early withdrawal provisions that address securitization of stranded costs regardless of whether the retail member shuts down or defaults on the terms of the contract. The stranded cost securitization will be part of the contract that is submitted to the Commission for approval.

Request 1d. Explain whether EKPC would reduce generation from its coal or gas fired generation facilities in response to renewable energy generation.

Response 1d. No. Since EKPC joined PJM, the role of balancing load and generation on a second by second basis resides with PJM. EKPC’s generation fleet is bid into the energy market every day and PJM dispatches EKPC’s plants to serve the PJM energy needs.

Request 1e. Confirm that reductions in variable environmental costs would be reflected in EKPC's monthly environmental surcharge (ES) filing. If this cannot be confirmed, explain.

Response 1e. To the extent that the Green Energy Tariff results in reductions in variable environmental costs that are recoverable through the ES, EKPC confirms that those reductions would be reflected in the applicable EKPC monthly ES filings.

Request 1f. Confirm that reductions in fuel expenses would be reflected in EKPC's monthly fuel adjustment clause (FAC) filing. If this cannot be confirmed, explain.

Response 1f. To the extent that the Green Energy Tariff results in reductions to fuel expense, EKPC confirms that such reductions would be reflected in the applicable EKPC monthly FAC filings. It should also be noted that renewable power purchases to meet the requirements of agreements entered into as a result of the Green Energy Tariff would be excluded from fuel expense in the FAC calculation. These purchases will be billed directly to the participating owner-members to avoid shifting costs to non-participating owner-members.

Request 1g. Explain how credits for fuel costs or variable environmental costs would be reflected in EKPC's monthly FAC and ES filings.

Response 1g. For the FAC filing, the credits for base fuel and the FAC applied to owner-member bills would be reflected as a component in the over- or under-recovery calculation in the next monthly FAC filing.

For the ES filings, the credit from the Green Energy Tariff for the variable environmental costs would be reflected in the over- or under-recovery calculation in the next monthly ES filing. This would be similar to the credit adjustment associated with EKPC's direct load control program. The monthly over- or under-recovery calculation is the difference from comparing the actual surcharge revenues collected for a period with the applicable authorized surcharge revenue requirement. To the extent that the credit from the Green Energy Tariff reduces the actual surcharge revenues, that reduction would then be reflected in the monthly over- or under-recovery calculation.

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REQUEST 2

RESPONSIBLE PARTY: **Scott Drake**

Request 2. Refer to the EKPC Board Minutes, page 1.

Request 2a. Provide a copy of all "applicable information" that was presented to EKPC's Board of Directors for its consideration.

Response 2a. EKPC staff provided to the Board of Directors, as a whole, a presentation that summarized the structure of proposed tariff and the financial analysis results. The presentation is attached as Attachment A. The Board of Directors approved the resolution submitted in the initial filing for this case.

Additionally, EKPC staff presented the same presentation to the Board of Directors' Strategic Initiatives Subcommittee along with the financial analysis (Green Power Tariff – Coop Solar Model.xlsx) and the proposed Wholesale Renewable Energy Program tariff changes. Those documents were provided by EKPC in the initial filing. The Strategic Initiatives Subcommittee vetted the program and recommended approval to the full Board of Directors.

Request 2b. Provide the results of the modeling and any necessary underlying assumptions.

Response 2b. The results of the modeling showed that the methodology for the proposed tariff, PSC No. 35, Option B (“Green Energy”) properly allocates all costs and appropriate credits associated with a Green Energy contract to the participant both on the wholesale and retail bills without materially affecting non-participant bills. The modeling assumptions are provided in EKPC’s response to Commission Staff’s Initial Request for Information Dated 11/18/19, Response 13.

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REQUEST 3**

RESPONSIBLE PARTY: Scott Drake

Request 3. Refer to the proposed tariff, P.S.C. No. 35, First Revised Sheet No. 36.

Request 3a. The Definitions subsection defines renewable energy. Explain whether any retail customers have communicated a desire for green energy from any specific source, such as only solar or only biodiesel.

Response 3a. During the development of this tariff, EKPC consulted with customers that have preferences for renewables from solar and wind as opposed to renewable energy from landfill gas facilities.

Request 3b. Explain the Green-e certification process.

Response 3b. The following description is taken from The Center for Resource Solutions Green-e Energy website at <https://www.green-e.org/docs/Green-e%20Energy%201-pager.pdf>:
“The Green-e Renewable Energy Standard for Canada and the United States identifies many

criteria renewable energy must meet to be certified. Electricity must come from eligible sources of supply, like wind, solar, geothermal, bio- mass, or low-impact hydropower. Only new renewable facilities can be used, ones built in the last 15 years. Electricity can't be used to fulfill a state renewable energy goal, and can't be "double counted" towards that goal. And marketing to consumers must be accurate. Green-e Energy performs a marketing compliance review twice a year to ensure that what is promised is delivered."

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REQUEST 4

RESPONSIBLE PARTY: **Scott Drake**

Request 4. Refer to the proposed tariff, P.S.C. No. 35, First Revised Sheet Nos. 36 and 37. Option B under Eligibility states that "[t]he type of renewable energy will be selected by individually participating retail customers."

Request 4a. Explain whether all types of renewable energy listed in the Definitions subsection are available to be purchased. If so, explain whether there are any availability limitations to any specific renewable energy type.

Response 4a. A wide range of generation assets are available in the PJM footprint. EKPC believes all of the renewable resources available could be made available. The actual resources utilized in an "Option B" Green Energy contract will be determined by the participating retail member and its desire for a certain type of renewable energy and its willingness to pay for that resource. EKPC will make every effort to locate requested resources and negotiate contract terms including renewable energy delivery and associated costs.

Request 4b. Explain what happens if a retail customer wants a specific type of renewable energy, and its availability does not match the time when the retail customer wants the energy delivered.

Response 4b. Most renewable energy resources by nature are intermittent and can't be controlled by a utility to match a retail customer's usage patterns. Green Energy tariffs are typically volumetric in nature and establish the total amount of renewable energy to be delivered over a period of time, usually monthly or annually. These tariffs are structured to help retail customers meet their sustainability goals, which are normally volumetric and do not require the renewable energy resources to match the business's energy needs every hour.

The underlying question is whether green energy tariffs harm the balance of a utility's customers in that the energy delivered by renewable resources cannot be controlled the way conventional resources can to serve load. A key provision of the Wholesale Renewable Energy Program is that retail customers continue to take service from a Commission-approved tariff which distributes the variable and fixed costs of providing electric service to the participating retail customers. The Wholesale Renewable Energy Program provides credits and charges to the standard tariff to assure that the participating retail customers and the balance of the retail customers are treated fairly.

The structure of this tariff is somewhat similar to the manner that EKPC engages PJM with purchases and sales of energy. As a PJM market participant, EKPC is no longer required to match energy production with energy needs minute by minute.

PJM settlements of these renewable assets and EKPC's conventional assets in the market will be a consideration in the contract structure and renewable energy purchases. Settlement considerations are also why retail members participating in the Wholesale Renewable Energy Program will be credited for the lower of the avoided fuel and variable environmental expense, or the purchased power which reflects the PJM LMP. Crediting the lower of avoided fuel and variable environmental expense or the purchased power assures that the balance of the retail members are not subsidizing participating retail members. EKPC believes that monthly granularity for the avoided fuel and variable environmental expense or purchased power is appropriate.

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**COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 5**

RESPONSIBLE PARTY: Scott Drake

Request 5. Refer to the proposed tariff, P .S.C. No. 35, First Revised Sheet Nos. 36 and 37. Option B under the Availability of Service subsection seems to say that a retail customer may offset all of its energy consumed. Option B under Eligibility states that retail customers having multiple accounts across the EKPC system may aggregate consumption and renewable energy totals into a single agreement.

Request 5a. Explain whether these statements mean that a commercial customer with various facilities across EKPC's service territory, such as Walmart, can aggregate all of its accounts and obtain green energy service. If so, explain whether the load aggregation would potentially allow the customer to change rate schedules and lower its overall bill.

Response 5a. This proposed tariff is a rider to the existing rate schedules A, B, C, E, and G. Aggregation of the renewable energy resources can occur to create a single PPA. The individual accounts will remain independent and cannot be aggregated under a single base rate schedule.

Request 5b. Explain how billing would be calculated for this customer across multiple member-cooperatives.

Response 5b. The KWH allotments to individual accounts of the bulk PPA purchase will be defined in the terms of the PPA contract. Each account will be billed no differently than a sole account under the program.

Request 5c. Under subsection Eligibility, Option B, the tariff states that the maximum annual renewable energy under the agreement cannot exceed the participating retail member's average annual consumption over the previous three years. Explain whether this conflicts with the statement under Availability of Service that all of the energy consumed may be offset.

Response 5c. A participating retail member that expresses interest to offset all energy purchase with renewable energy presents a problem in that volumes vary year over year. Entering into PPAs for the full forecasted amount energy could result in excess energy at the close of the year. This problem can be resolved through a mark-to-market settlement as described in the tariff or by entering into PPAs at somewhat below the forecasted energy and purchasing Renewable Energy Credits ("RECs") for the balance of the participating retail member's energy requirements. EKPC will perform due diligence and recommend that the participating retail member is not over committed for the green energy purchased. For a participating retail customer that desires to offset 100% of its load with renewable resources, EKPC will propose to offset a portion of the

participating retail members load with renewable PPAs based on the load history, and the balance with RECs. EKPC believes that not more than 90% of the expected energy requirements should be in renewable PPAs. There is no conflict.

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REQUEST 6

RESPONSIBLE PARTY: **Scott Drake**

Request 6. Refer to the proposed tariff, P.S.C. No. 35, First Revised Sheet Nos. 36, 37, and 38. Under subsection Billing and Minimum Charge, Option B states that EKPC will increase the owner member's monthly wholesale power bill by the negotiated and contracted renewable energy rate and delivered renewable energy for each participating agreement.

Request 6a. If not answered above, explain whether EKPC is able to purchase all types of renewable energy listed in the Definitions subsection.

Response 6a. See Commission Staff's Initial Request for Information Dated 11/18/19, Response 4A.

Request 6b. Explain how specific types of renewable energy are purchased and priced in PJM Interconnection, LLC (PJM).

Response 6b. EKPC will issue a RFP for the type of renewable resource(s) and the amount of energy requested by the potential Green Energy participant. EKPC could utilize NRCO to assist with the RFP process. To limit the impacts of congestion on settlements, EKPC will give preference to projects within the EKPC load zone. For renewable resources within the PJM footprint, EKPC will request the energy to be priced as delivered to the EKPC load zone or to a nodal point that has historically been priced similar to EKPC's load zone. EKPC will negotiate a bi-lateral contract with the resource owner for the delivered energy product subject to Commission approval.

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REQUEST 7

RESPONSIBLE PARTY: **Scott Drake**

Request 7. Refer to the proposed tariff, P.S.C. No. 35, First Revised Sheet No. 37. Explain whether the renewable energy capacity to be purchased, supplied, or secured by EKPC is limited to the PJM footprint.

Response 7. Renewable energy could be purchased, supplied, or secured from resources located outside of the PJM footprint. However, energy delivery economics tend to be more favorable if the resources are located within the PJM footprint. The final decision will be based on the evaluated price of a PPA for renewable power.

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**COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 8**

RESPONSIBLE PARTY: Scott Drake

Request 8. Refer to the proposed tariff, P.S.C. No. 35, First Revised Sheet No. 37, and the proposed Renewable Energy Purchase Agreement, subsection 2, Account Aggregation.

Request 8a. Explain whether any of the retail customers that have expressed a desire for this tariff offering have accounts or service addresses in more than one EKPC member cooperative.

Response 8a. Yes. EKPC had a discussion with one retail customer having commercial facilities served by more than one EKPC member cooperative. The retail customer has a sustainability goal of 100% renewable energy supplied to its locations. The retail customer's corporate office handles the Green Energy purchases for all its locations across America. The business expressed a desire to aggregate the Green Energy purchases under one contract for all its facilities in the EKPC service area. EKPC believes that aggregating green energy agreements under one agreement, when possible, will reduce the administrative burden on EKPC, EKPC's owner-members, and the Commission.

Request 8b. Explain whether aggregating load across various facilities for green energy would also allow a customer to take advantage of Rate D - interruptible service.

Response 8b. No. Rate D – Interruptible Service Tariff does not allow for load aggregation.

Request 8c. State whether city and county school systems, municipal facilities, or state facilities would be eligible for account aggregation. If not, explain why not.

Response 8c. Yes, those type of facilities would be eligible.

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**COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 9**

RESPONSIBLE PARTY: Scott Drake

Request 9. Refer to the proposed tariff, P.S.C. No. 35, First Revised Sheet No. 38, and the proposed Renewable Energy Purchase Agreement, page 2, Sections 8 and 9.

Request 9a. In the first paragraph on Sheet No. 38 of the proposed tariff, it indicates that customers would get capacity credits when applicable. Under the Total Credits Section on Sheet No. 38, it states, "The total credit on the owner-member's monthly wholesale power bill will be the total of the avoided costs from base fuel, the fuel adjustment clause, and the variable environmental surcharge for the delivered renewable energy. The total credit will be limited to the lesser of the total credit as described in the Fuel Adjustment Clause and Environmental Surcharge sections above of the PJM Localized Marginal Cost (LMP)." In Sections 8 and 9 of the Renewable Energy Purchase Agreement, it indicates the total credit will be the lesser of "(1) the avoided cost of: (a) base fuel and fuel adjustment clause per MWh of renewable energy delivered and capacity credits; and (b) variable environmental surcharge equal to the demand energy; or (2) the PJM Localized Marginal Cost." Explain why capacity credits are not included in the Total Credits

Section of the proposed tariff but are included in Sections 8 and 9 of the Renewable Energy Purchase Agreement.

Response 9a. This is an oversight. The Total Credits section on Sheet 38 should include “capacity credits when applicable.” EKPC will include that language on the final filed tariff.

Request 9b. In the Environmental Surcharge section of the proposed tariff, it states, "Under Option B, EKPC will provide a credit on the owner-member's monthly wholesale power bill for the avoided cost of the variable environmental surcharge equal to the delivered renewable energy monthly for each participating agreement." In Sections 8 and 9 of the Renewable Energy Purchase Agreement, the references to the environmental surcharge states, "variable environmental surcharge equal to demand energy." Indicate whether "delivered renewable energy monthly" and "demand energy" are the same thing. If not, explain which will be the basis for the variable ES credit.

Response 9b. The language “delivered renewable energy monthly” and “demand energy” is intended to be the same. For sake of clarity, EKPC will amend the Renewable Energy Purchase Agreement to use the same language as stated in the proposed tariff.

Request 9c. Explain why the PJM locational marginal price (LMP) is an appropriate measure for determining bill credits.

Response 9c. See EKPC's response to Commission Staff's Initial Request for Information Dated 11/18/19, Response 4b.

Request 9d. Explain whether and why EKPC would use the zonal or nodal LMP.

Response 9d. All of EKPC's zone is priced only at the Residual Aggregate LMP.

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**COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 10**

RESPONSIBLE PARTY: Scott Drake

Request 10. Refer to the proposed Renewable Energy Purchase Agreement, page 2, Section 6, Renewable Resources. Explain how EKPC will determine which renewable resources will be built, acquired, or contracted with.

Response 10. EKPC's Power Supply division, or NRCO, will issue an RFP for the type of resources requested by the potential participant and for the amount of renewable energy to be delivered. EKPC's Engineering and Construction division could provide a response to the RFP for a facility that has already been built by EKPC, could be built by EKPC, or acquired by EKPC. It is assumed that the potential participant will desire the least-cost responsive proposal. EKPC would develop a contract associated with the successful proposal(s) and, if required, submit the contract for Commission approval. EKPC anticipates that most, if not all, such contracts will require Commission approval under either KRS 278.010 or KRS 278.300, or both.

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COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 11

RESPONSIBLE PARTY: Scott Drake

Request 11. Refer to the proposed Renewable Energy Purchase Agreement, page 4, Section 17.

Request 11a. Explain how the Termination Payment would be calculated.

Response 11a. The termination payment will be the amount required to make EKPC whole for the remaining contract amount if the renewable resource(s) is secured through a PPA. Similarly, the termination payment will be the amount required to make EKPC whole for a renewable energy source constructed and owned by EKPC.

Request 11b. Explain why the Termination Payment is not included in the proposed tariff language.

Response 11b. Every transaction is unique and presents its own risks and benefits. EKPC will negotiate each Renewable Energy Purchase Agreement based upon the specific facts and

circumstances of each transaction. Thus, a “one size fits all” approach did not appear to be appropriate at this time. EKPC’s approach to securing itself and its owner-members in the event of an early termination are described previously.

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**COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 12**

RESPONSIBLE PARTY: Isaac S. Scott

Request 12. Refer to EKPC's monthly ES reporting formats, Form 2.0 and Form 3.0. State whether revisions would be necessary for these forms. If so, provide proposed revised forms. If not, explain why not.

Response 12. EKPC does not believe revisions would be necessary for the ES reporting formats Form 2.0 and Form 3.0. Any reductions in variable environmental costs resulting from the Green Energy Tariff would be recognized in the amounts shown on Form 2.0. Any credits from the Green Energy Tariff associated with the ES would be reflected in the environmental surcharge revenues reported on Form 3.0. The impact of any credits from the Green Energy Tariff would be recognized in the determination of the over- or under-recovery for the appropriate expense month on Form 2.0. These recognitions would occur as part of the regular preparation of these formats and would not require any special modifications to the existing formats.

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**COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION DATED 11/18/19
REQUEST 13**

RESPONSIBLE PARTY: Isaac S. Scott

Request 13. Refer to EKPC Billing Summary: Green Power Alternative Analysis. Provide an explanation of the assumptions behind and derivation of the items in the spreadsheet.

Response 13. Please see the following narratives which address each page of the spreadsheet. During the preparation of this response, EKPC discovered an error in the percentage for the fixed portion of the environmental surcharge factor. The error and its correction are discussed in the narratives below. The attached spreadsheet reflects the correction of this error. All values impacted by this correction are highlighted in medium green.

“Sample Billing Month: June” (“Summary” tab of spreadsheet)

This sheet summarizes the calculation of the standard bill, green bill, and variances for EKPC and the four representative owner-members reviewed in the analysis. The detailed calculations are presented on the sheet titled “Review of Proposal for Green Power Option”.

“Review of Proposal for Green Power Option” (“per KWH” tab of spreadsheet)

This sheet shows the detailed calculation of the standard bill and green bill for EKPC and the four representative owner-members.

EKPC Billing to Owner-Members. For purposes of the analysis, EKPC assumed that a hypothetical customer would contract for the output from 3,800 solar panels from EKPC’s Community Solar farm. At the time this analysis was prepared, each panel was assumed to produce 460 kWh annually. Using this information, the monthly energy from green power was calculated to be 145,667 kWh $[(3,800 \text{ panels} \times 460 \text{ kWh}) / 12 \text{ months}]$. Rows 15 through 31 show the calculation of the standard bill. The hypothetical customer’s demand and energy usage were priced out utilizing EKPC’s Rate E, option 2. The FAC and ES factors reflect 12-month averages for the period ending June 2018. The average factors were used in order to show what an “average” bill would look like rather than a specific monthly bill. Rows 36 through 64 show the calculation of the bill including the charges and credits associated with the Green Energy Tariff. The net present value cost of the panels is calculated by multiplying the monthly energy from green power times a rate per kWh. The \$0.073286 per kWh rate is the monthly revenue requirement per panel (shown on the “NPVRR Calculation” sheet) divided by the annual kWh per panel divided by 12 months. The adjustment for actual fuel costs multiplies the monthly energy from green power times EKPC’s base fuel cost and the average FAC factor described above. The net amount of these two calculations produces the “net actual fuel costs”. The adjustment to the environmental surcharge

multiplies the net actual fuel costs by the average ES factor described above. The net actual fuel costs is also multiplied by the estimated fixed portion of the ES factor to determine the variable portion of the surcharge amount to be credited on the bill. The estimated fixed portion of the ES factor included on the originally filed version of the spreadsheet reflected a different average ES factor than was utilized in the rest of the spreadsheet. The correction adjusted the estimated fixed portion of the ES factor to correspond with the ES factor used throughout this example. The “PJM BRA Revenue Credit” is a capacity credit based on the estimated monthly capacity from the EKPC Community Solar farm panels. The unit value is based on the average capacity of one panel [8.5 MW / 32,300 panels] times the number of panels for the customer times a 60% load factor times the average number of days in a month. The rate of \$131 reflects the average forecasted PJM capacity pricing for the years 2019 through 2027. Rows 66 through 68 compare the standard bill with the green bill.

Owner-Members’ Billing to Customer. The remainder of this sheet shows the corresponding estimated retail customer billing. The assumptions used in the EKPC calculations are carried over to the owner-member calculations. An additional factor to consider in the owner-members’ billing is the recognition of line losses. Row 14 shows an average monthly line loss percentage which is the mathematic average of five months of 12-month average line losses as reported by the owner-members in their respective FAC monthly filings that were available to EKPC. Rows 17 through 33 show the calculation of the standard bill. The customer charge, demand charge, and energy charge are from applicable tariffs approved for each owner-member. The FAC factor reflects an

average of seven months of actual owner-member FAC factors that were available to EKPC for this analysis. The ES factor is reflects the 12-month average of the owner-member's surcharge pass-through factor for the 12 months ending June 2018. Rows 36 through 64 show the calculation of the bill including the charges and credits associated with the Green Energy Tariff. The components from EKPC's Green Energy Tariff billing are directly passed on to the retail customer. Rows 66 through 68 compare the standard bill with the green bill.

"NPVRR Calculation" ("FCR" tab of spreadsheet)

This sheet presents the determination of carrying charges and revenue requirements for EKPC's Community Solar farm. The monthly revenue requirement per panel was used to calculate the \$0.073286 per kWh rate for the net present value cost of panel shown on the previous sheet. The investment in the Community Solar farm is shown on line 1, along with EKPC assumptions of service life, property tax rates, annual O&M expenses, O&M escalation rate, cost of debt, and discount rate.

"Review of Proposals for Green Power Tariff and Community Solar Participation – Background"

("Background" tab of spreadsheet)

This sheet presents information supporting factors and adjustments shown in the determination of the standard and green bills. Rows 17 through 40 reflect owner-member FAC factors and line loss

data that EKPC had available at the time it was initially developing the framework for the Green Energy Tariff. Given the months of the FAC factors, it was necessary to make an adjustment (Row 27) to reflect the change in EKPC's base fuel cost component that was approved in Case No. 2017-00002. Rows 45 through 74 provide information on the applicable EKPC and owner-member environmental surcharge factors. The split of the owner-members' surcharge pass-through factors into "fixed" and "variable" shown on Rows 57 and 58 was originally considered but eventually dropped when it was decided the adjustments for green power should be a direct pass-through of the EKPC amounts. Rows 60 through 67 include a discussion of how EKPC determined the "fixed" and "variable" components of its monthly environmental surcharge factor. The fixed or demand share of 63.77% and the variable or energy share of 36.23% comes from the calculations EKPC provided in the last two-year surcharge review, specifically the calculation of a possible roll-in amount for the surcharge. Please see Case No. 2017-00326, EKPC Response to Request 6 of the Commission Staff's First Data Request dated August 31, 2017. Rows 83 through 86 present PJM capacity pricing for the period 2019 through 2027 and the mathematic average of those annual prices.