

August 20, 2012

Mr. Jeff Derouen Executive Director Public Service Commission 211 Sower Boulevard Frankfort, Kentucky 40602 RECEIVED

AUG 2 0 2012

PUBLIC SERVICE COMMISSION

Re: PSC Case No. 2012-00149

Dear Mr. Derouen:

Please find enclosed for filing with the Commission in the above-referenced case an original and ten copies of the responses of East Kentucky Power Cooperative, Inc. ("EKPC") to the Commission Staff's Second Request for Information, dated August 3, 2012. Also enclosed are an original and ten redacted copies of the responses of EKPC to Sonia McElroy and Sierra Club's Supplemental Requests for Information, dated August 3, 2012, along with EKPC's Petition for Confidential Treatment of Information, which applies to the response to Request 23. One copy of the designated confidential portion of the response is enclosed in a sealed envelope.

Very truly yours,

on behalf of Mark David Goss

CC: Parties of Record

RECEIVED

AUG 2 0 2012

PUBLIC SERVICE COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST) CASE NO. KENTUCKY POWER COOPERATIVE, INC.) 2012-00149

RESPONSES TO COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION TO EAST KENTUCKY POWER COOPERATIVE, INC. DATED AUGUST 3, 2012

EAST KENTUCKY POWER COOPERATIVE, INC.

PSC CASE NO. 2012-00149

PUBLIC SERVICE COMMISSION'S SECOND REQUEST FOR INFORMATION DATED 08/02/12

East Kentucky Power Cooperative, Inc. ("EKPC") hereby submits responses to the information requests of Public Service Commission Staff's ("PSC") in this case dated August 3, 2012. Each response with its associated supportive reference materials is individually tabbed.

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST)	CASE NO.
KENTUCKY POWER COOPERATIVE, INC.)	2012-00149

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Darrin Adams, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information in the above-referenced case dated August 3, 2012, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Subscribed and sworn before me on this 20 44

day of August, 2012.

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST)	CASE NO.
KENTUCKY POWER COOPERATIVE, INC.)	2012-00149

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 Public Service Commission Staff's Second Request for Information in the above-referenced case dated August 3, 2012, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Subscribed and sworn before me on this 20th day of August, 2012.

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST)	CASE NO.
KENTUCKY POWER COOPERATIVE, INC.)	2012-00149

CERTIFICATE

COUNTY OF CLARK

Jamie Bryan Hall, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information in the above-referenced case dated August 3, 2012, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Subscribed and sworn before me on this 2 day of August, 2012.

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST)	CASE NO.
KENTUCKY POWER COOPERATIVE, INC.)	2012-00149

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Craig A. Johnson, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information in the above-referenced case dated August 3, 2012, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Subscribed and sworn before me on this 15 day of August, 2012.

Wotary Public

Craig a Johns

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST)	CASE NO.
KENTUCKY POWER COOPERATIVE, INC.)	2012-00149

CERTIFICATE

STATE OF KENTUCKY	
)
COUNTY OF CLARK)

Gary G. Stansberry, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information in the above-referenced case dated August 3, 2012, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Subscribed and sworn before me on this 21 day of August, 2012.

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BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2012 INTEGRATED RESOURCE PLAN OF EAST)	CASE NO.
KENTUCKY POWER COOPERATIVE, INC.)	2012-00149

CERTIFICATE

STATE OF KENTUCKY)
)
COUNTY OF CLARK)

Julia J. Tucker, being duly sworn, states that she has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff's Second Request for Information in the above-referenced case dated August 3, 2012, 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

day of August, 2012.

Motary Public

COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION DATED 08/03/12

REQUEST 1

RESPONSIBLE PERSON: Scott Drake and Jamie Bryan Hall

COMPANY: East Kentucky Power Cooperative, Inc.

Request 1. Refer to the first paragraph on page 6 of EKPC's Integrated Resource Plan ("IRP") and page 8 in Volume 1 of the Technical Appendix ("TA").

Request 1a. Describe EKPC's current evaluation, measurement, and verification procedures and what it believes is lacking in those procedures.

Response 1a. Currently, EKPC employs a variety of evaluation, measurement and verification ("EM&V") procedures to determine the energy and demand savings for its existing demand-side management ("DSM") programs. These procedures include end use metering and data logging, building simulation modeling, engineering algorithms employing field data, typical savings as a percent of consumption verified by field data and engineering calculations, simple engineering calculations, and deemed savings.

EKPC desires to move to a more formal measurement and verification process instead of relying on deemed savings; however, EKPC is concerned with the significant cost of a formal EM&V process. Therefore, EKPC is considering retaining the services of an outside firm for guidance on proper EM&V and deemed savings mixtures.

Request 1b. The footnote on page 8 of TA-Volume 1, states that "Historical energy impacts for DSM and interruptible loads are not directly metered and therefore are estimated." Explain how the DSM impacts are currently estimated

Response 1b. Historical demand-side management impacts to energy are estimated based on the number of participants and an average load shape for each program.

COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION DATED

08/03/12

REQUEST 2

RESPONSIBLE PERSON: Scott Drake

COMPANY: East Kentucky Power Cooperative, Inc.

Refer to the last sentence on page 3 of TA-Volume 2, which states that the new DSM programs will require an investment of just over \$256 million by EKPC, its member cooperatives, and participating customers in order to produce the projected savings. Explain how the \$256 million investment was determined.

Response 2. This \$256 million investment represents the present value of the costs in the Total Resource Cost test for the portfolio of new DSM programs in this IRP. In other words, it is the present value of the year by year EKPC program costs, the member cooperative program costs, and the participating customer costs summed across all new DSM programs.

COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION DATED 08/03/12

REQUEST 3

RESPONSIBLE PERSON: Scott Drake

COMPANY: East Kentucky Power Cooperative, Inc.

Refer to pages 2-3 of Exhibit DSM-4 of TA-Volume 2. The participant cost sections of the programs listed on these pages include state and federal tax credits. Explain whether these are the only programs for which state or federal tax credits are available to the participant. If not, explain why other programs that qualify for state or federal tax credits did not have the credits included as part of the participant cost.

Response 3. The programs referenced on pages 2-3 of Exhibit DSM-4 of TA-Volume 2 are the ENERGY STAR Residential Central Air Conditioning program and the Geothermal Retrofit program. The participant cost calculations factor in the applicable state and/or Federal tax credits. There are two other programs for which state or federal tax credits are available to the participant; these are the Commercial Lighting program and the Touchstone Energy New Construction Home program. The credits for the Commercial Lighting program are included as part of the participant cost calculation. The tax credit is no longer applied to the participant cost for the Touchstone Energy home because the field experience shows that builders are unable to claim the credit in most circumstances.

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COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION DATED 08/03/12

REQUEST 4

RESPONSIBLE PERSON: Darrin Adams, Scott Drake, Gary S. Stansberry

and Julie J. Tucker

COMPANY: East Kentucky Power Cooperative, Inc.

Request 4. Refer to the Response to Commission Staff's First Request for Information ("Staff's First Request"), Item 3, and pages 113-119 of the IRP.

Request 4a. Assuming its request to join PJM Interconnection ("PJM") is approved by the Commission, describe any impacts this is expected to have on EKPC's DSM programs.

<u>Response 4a</u>. EKPC is still in the process of assessing the impacts that joining PJM will have on its DSM programs. At this time, EKPC foresees the following impacts:

- The avoided energy and capacity costs used to determine the benefit of DSM programs will be defined by the PJM markets rather than the dispatch and expansion of the EKPC generation.
- The value of summer peak savings will increase relative to the value of winter peak savings.
- Certain measures within DSM programs may no longer be offered because their major value was in producing winter peak kW savings.

 Conversely, certain DSM measures which provide summer peak kW savings will likely see their cost-effectiveness improve.

Request 4b. Assuming its request to join PJM is approved by the Commission, what impact will being a transmission owner have on EKPC's 15-year transmission plan as discussed on pages 113-119 of the IRP?

Response 4b. EKPC's prospective membership in PJM is not anticipated to have a substantial impact on EKPC's 15-year transmission plan, as published on pages 113-119 of the IRP. The majority of projects identified in the IRP are projects related to the 69 kV transmission system and distribution delivery points. PJM's regional planning process will focus on the Bulk Electric System (BES) -- 100 kV and above -- so the results of PJM studies are not likely to have any impact on EKPC's needs below 100 kV.

In its Baseline RTEP Integration Report, filed with the Commission in Case No. 2012-00169 on August 15, 2012, PJM identified one project that will need to be added to EKPC's 15-year transmission plan. As indicated on page 5 of 10 of the filed report, EKPC will need to upgrade its JK Smith-Union City-Lake Reba Tap 138 kV line. EKPC will add this project to its transmission plan. As PJM includes EKPC in its regional planning process after EKPC becomes a full member, additional projects may be identified that are necessary on the EKPC system.

Request 4c. What financial impact is EKPC's being a transmission owner expected to have on its members?

Response 4c. EKPC's expected financial benefit to its members is included in the Direct Testimony of Mike McNalley (Exhibit MM-2) in Case No. 2012-00169, filed with the Commission on May 3, 2012.

Request 4d. Explain how interconnections with other utilities might be affected.

Response 4d. EKPC does not anticipate any significant impacts on interconnections with other utilities as a result of full PJM membership. EKPC's existing Interconnection Agreements with its interconnected utilities will be effectively unchanged – the only change will be that PJM will be added as a signatory to the agreements. Therefore, EKPC expects to continue its operations and planning with interconnected utilities in a similar manner to that presently occurring. Likewise, EKPC expects that the planning of future interconnections will continue as it is today.

Regarding flows on interconnections, EKPC does not anticipate a significant change. The primary change that is expected in operations after EKPC becomes a full PJM member is the ability to dispatch its units in a more economical manner to either buy from or sell into the PJM market, depending on prevailing market prices. EKPC presently can buy from or sell into the PJM market, but becoming a full member will allow PJM to manage transmission congestion to allow EKPC this ability on an ongoing basis. Therefore, flows on interconnections are not expected to be significantly different from those experienced in the past, although the frequency and duration of those flows could differ from the patterns that have been experienced historically. Please also see EKPC's Analysis of Transmission System Impacts of EKPC Dispatch Scenarios, filed with the Commission in Case No. 2012-00169 on August 15, 2012.

Request 4e. Explain whether EKPC anticipates that transmission lines will need to be built solely for import/export capabilities.

Response 4e. EKPC does not anticipate that transmission lines will need to be built solely for import/export capabilities. EKPC already designs its transmission system to be able to import power for loss of its largest generating unit (Spurlock #2), which is in excess of 500 MW. Furthermore, PJM has congestion management processes in place to allow access to market generation for its members while addressing transmission constraints that may arise. Therefore, EKPC anticipates that sufficient import capability will exist for its needs. PJM continues to perform deliverability studies to assess the ability of the EKPC and PJM transmission systems to deliver EKPC generation to the PJM market. At this point, PJM has only identified the need for a minor upgrade of an EKPC transmission line to meet these deliverability requirements.

Request 4f. How is PJM's generation economic dispatch expected to affect EKPC's transmission system?

Response 4f. As a member of PJM, EKPC expects to have more operational flexibility in the dispatch of its generating units. Depending on market prices, EKPC may be a net importer or a net exporter. The dispatch of EKPC generating units impacts the flows and voltages on the EKPC transmission system. However, EKPC expects that the various dispatch scenarios that will be in effect once EKPC becomes a full PJM member are no different than the scenarios that have been experienced historically, since EKPC has been both a net importer and exporter into the PJM market as an external market participant. EKPC does expect that the patterns of these dispatch scenarios may change, resulting in these flow and voltage patterns occurring with varying frequencies, durations, and possibly at different times of the year from those experienced historically.

Request 4g. What impact is PJM membership expected to have on EKPC's generation expansion plan as discussed on page 118 of the IRP.

Response 4g. The new combined cycle gas turbine addition modeled in 2016 is to address capacity impacts created by the MATS rule. EKPC has issued a Request for Proposals ("RFP") for up to 300 MW of power supply to compare its unit modification options to what is available from the market. PJM membership would expand the available pool of suppliers to those currently transacting within the PJM market. If EKPC is not a member, transmission availability into the EKPC system is restricted to what is available across TVA, LG&E/KU, and/or PJM and EKPC's experience has been that firm long term transmission is not readily available.

EKPC currently plans capacity for its system to meet EKPC's winter peak load plus a 12% reserve margin. If EKPC is a PJM member, then EKPC will plan capacity for its system to meet EKPC's summer peak load plus approximately a 3% reserve margin. EKPC's summer peak is approximately 20-25 percent lower than its winter peak; therefore, EKPC's capacity requirements are significantly less as a PJM member than as a stand-alone entity. Membership in PJM would most likely push the combined cycle shown in 2023 out of the IRP planning horizon.

COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION DATED

08/03/12

REQUEST 5

RESPONSIBLE PERSON:

Craig A. Johnson

COMPANY:

East Kentucky Power Cooperative, Inc.

Request 5. Explain whether joining PJM was factored in the update of the MEAGER Program, presented to the EKPC Board, as discussed on page 139.

Response 5. The MEAGER program was not affected by the decision to join PJM. The main goal of the MEAGER program is to ensure the long term reliability of EKPC's generating assets. This goal of ensuring long term reliability of our generating assets remains the same if EKPC is allowed to join PJM.

COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION DATED 08/03/12

REQUEST 6

RESPONSIBLE PERSON: Darrin Adams

COMPANY: East Kentucky Power Cooperative, Inc.

Request 6. On page 121 of the IRP, EKPC discussed working with member distribution cooperatives concerning power factor corrections.

Request 6a. Describe the process and explain who performed the study.

Response 6a. In 2009, a study was performed by EKPC Transmission Planning staff to determine the optimum design power factor for the distribution systems of EKPC's Member Systems. The primary goal of this study was to identify economically justifiable levels of reactive power correction, and to recommend an optimum design power factor to be achieved at the low-voltage side of each individual distribution substation step-down transformer. The economic benefits that were considered as a result of power factor correction were identified in three categories – distribution substation deferrals, transmission project deferrals, and transmission system MW loss savings. EKPC evaluated the benefits of correcting the power factor at each substation on its system at 5 different levels – 95%, 96%, 97%, 98%, and 99% (all lagging).

The benefits of distribution substation deferrals were evaluated by determining the year in which each substation transformer would overload for the existing power factor and for each of the 5 target levels to be evaluated. A present value

analysis was used to determine the value of deferring a distribution substation project as a result of power factor correction.

A power flow analysis using summer peak models was utilized to quantify the benefits of deferring transmission projects through power factor correction. For transmission project deferrals, power factors at distribution substations in the area of need were corrected to the 5 different levels, and the year of need for the project was identified at each level, as well as with existing power factors. A present value analysis was used to determine the value of deferring a transmission project as a result of power factor correction.

A power flow analysis was also used to quantify the reduction in transmission system MW losses as a result of power factor correction. Each substation was corrected individually to the 5 target levels and the total EKPC transmission system MW losses were recorded at each level. These losses were compared to the EKPC MW losses with each substation at its existing summer power factor. An economic value of the reduction in losses as a result of correcting each substation at each target level was determined using a present value calculation over a 20-year period.

The cost savings in these three areas were summed for each substation at each target correction level. The cost of the correction at each substation at each target correction level was also determined. The result of the study was a table listing the net economic benefit of correcting each substation at each of the 5 target correction levels. This list was sorted to provide the substations providing the largest net benefit, and the optimal power factor at which this benefit occurs. EKPC then began working with its Member Systems with substations at the top of the list to improve the power factor at those substations to the optimal level identified in the study.

Request 6b. Was a study completed for each cooperative or was the study prepared for EKPC's system as a whole?

Response 6b. As described in the response to Request 6(a) above, EKPC performed a study of its entire system, factoring in the benefits that will be garnered on the transmission system. The methodology used in the study resulted in EKPC determining the benefits of power factor correction at each individual substation within its system (with all other EKPC substation power factors maintained at the existing level). These results for each individual substation were rolled up into a comprehensive list for EKPC and sorted to identify the substations that would provide the largest net benefits if power factor was corrected, as explained in the response to Request 6(a).