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March 22, 2006

RECEIVED

MAR 23 2006

PUBLIC SERVICE
COMMISSION

Via Federal Express

Ms. Elizabeth O'Donnell
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, Kentucky 40602-0615

Re: **BIG RIVERS ELECTRIC CORPORATION**
PSC Administrative Case No. 2006-00045

Dear Ms. O'Donnell:

Enclosed are an original and seven copies of the response of Big Rivers Electric Corporation to the data requests propounded to it in the February 24, 2006, order of the Public Service Commission in the above-styled matter. I certify that a copy of this filing has been served this day on the persons shown on the attached service list.

Sincerely yours,

James M. Miller

James M. Miller
Tyson Kamuf
Counsel for Big Rivers Electric Corporation

JMM/ej
Enclosures

cc: Michael H. Core
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PSC CASE NO. 2006-00045

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COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

MAR 2 3 2006

PUBLIC SERVICE
COMMISSION

In the Matter of:

CONSIDERATION OF THE REQUIREMENTS	)	
OF THE FEDERAL ENERGY POLICY ACT OF	)	**CASE NO.**
2005 REGARDING TIME-BASED METERING,	)	**2006-00045**
DEMAND RESPONSE, AND INTERCONNECTION	)	
SERVICE	)	

BIG RIVERS ELECTRIC CORPORATION'S RESPONSE TO THE INITIAL DATA REQUESTS CONTAINED IN APPENDIX C TO THE PUBLIC SERVICE COMMISSION'S ORDER DATED FEBRUARY 24, 2006

March 23, 2006

BIG RIVERS ELECTRIC CORPORATION'S
RESPONSE TO THE INITIAL DATA REQUESTS CONTAINED IN APPENDIX C
TO THE PUBLIC SERVICE COMMISSION'S ORDER
DATED FEBRUARY 24, 2006

Big Rivers Electric Corporation ("Big Rivers") offers the following comments, observations and responses to the Public Service Commission's ("Commission") Order dated February 24, 2006 in Case No. 2006-00045, *Consideration Of The Requirements Of The Federal Energy Policy Act Of 2005 Regarding Time-Based Metering, Demand Response And Interconnection Service.*

Big Rivers is a rural electric generation and transmission cooperative ("G&T"), which owns generating assets, and purchases, transmits and sells electricity at wholesale. Its principal purpose is to provide the wholesale electricity requirements of its three distribution cooperative members ("Members"): Kenergy Corp. ("Kenergy"), Meade County Rural Electric Cooperative Corporation ("Meade County"), and Jackson Purchase Energy Corp. ("JPEC"). The Members in turn provide retail electric service to approximately 107,000 consumer/members located in 22 Western Kentucky Counties: Ballard, Breckenridge, Caldwell, Carlisle, Crittenden, Daviess, Graves, Grayson, Hancock, Hardin, Henderson, Hopkins, Livingston, Lyon, Marshall, McCracken, McLean, Meade, Muhlenberg, Ohio, Union and Webster.

Big Rivers and its Members have each filed separate responses for the Commission's consideration. However, given the policy-oriented nature of some of the data requests, Big Rivers and its Members have coordinated their responses to several of the data requests, and have often relied on the same or similar information in their responses.

Before responding directly to the information requests attached to the Commission's Order, Big Rivers and its Members want to take this opportunity to provide these additional comments and observations to the Commission in order for the Commission to fully understand the perspective of Big Rivers and its Members with regard to the issues raised in this proceeding. Big Rivers and its Members duly request that the

Commission carefully consider of these comments and observations as it makes its findings with respect to the Smart Metering and Interconnection Service standards.

As the Commission is well aware, costs for electricity in Kentucky are among the lowest in the country. Currently, in states that have recently pursued a course of deregulation, significant increases in electricity rates are expected this spring and summer. For instance, in the mid-Atlantic states of Delaware and Maryland and including the Washington, D.C. area, electric rates are projected to increase from 30 percent to over 100 percent for certain rate classes. Obviously, in these regions of the country there is a keen interest in any measures that help to control energy costs including time-of-use rates and smart metering. However, in a low cost state such as Kentucky there is not much customer interest in these options. In fact, Big Rivers and its Members have regularly surveyed their commercial and industrial customers about their interest in a rate discount for off-peak usage only to find that there is some customer interest. However, little or no interest has been demonstrated when time-of-use rates have been offered as discussed in the Members' responses to Smart Metering 1.

Not only is there little customer interest, but Big Rivers costs do not vary by time of day. Currently, Big Rivers takes most of its power under a wholesale contract with LG&E Energy Marketing ("LEM") and SEPA. The contract with LEM has a flat energy charge regardless of the time the power is taken. The contract with SEPA has a flat capacity charge regardless of the time the power is taken. Similarly, Big Rivers' wholesale contracts with its Members do not time differentiate costs. Thus, there is little incentive for Big Rivers or its Members to encourage load shifting behavior through time-of-use rates.

Another deterrent to the development of time-of-use rates is the fact that Big Rivers and its Members are member-owned cooperatives. As non-profit, member-owned enterprises, Big Rivers and its Members must have some assurance of being able to recover the costs associated with new and experimental programs. Given the lack of customer interest, the non-time-differentiated costs for power and the uncertainty of recovery of program costs, Big Rivers and its Members have not aggressively pursued time-based rate schedules and Smart Metering programs. As a consequence, Big Rivers and its Members have limited experience with the programs under consideration in this proceeding and therefore they can provide only limited information on the cost to purchase and operate the required equipment or the likely customer response to the programs.

With regard to the Smart Metering standard, Big Rivers and its Members have another concern that may not be universally shared by all of the utilities in Kentucky. As the Commission knows, a Smart Metering program requires a communications feedback loop to the customers to provide them current usage and cost information. However, the territory served by Big Rivers and its Members is a rural, sparsely populated area where the available communication systems may not be as robust as in the more urban areas of the state and not as capable of supporting these communications. Big Rivers and its Members believe this distinction should be kept in mind as the Commission proceeds with its consideration and determination regarding the Smart Metering standard.

Big Rivers wishes to make one final observation. Pursuant to Section 102 of the Public Utility Regulatory Policies Act of 1978 ("PURPA"), the Energy Policy Act of 2005 ("EPAct 2005") only covers electric utilities with retail sales exceeding 500 million kilowatt-hours in a calendar year. *See* PURPA § 102, 16 U.S.C. § 2612. Big Rivers has no retail sales, and is therefore not a utility covered by PURPA or by the EPAct

2005. Because Big Rivers is not a covered utility, the Commission exempted it from the Commission's initial proceeding implementing PURPA. *See In the Matter of: The Filing of Plans by Electric Utilities Concerning the Feasibility of Implementing Certain Rate Design Standards and* Methods, Administrative Case No. 203, Order dated February 8, 1980. For that reason, Big Rivers requests that any findings ultimately made by the Commission in this matter acknowledge Big Rivers' exempt status, and that Big Rivers be exempted from any Commission orders requiring compliance with or implementing the EPAct 2005. However, Big Rivers additionally asks to remain a party to this proceeding because two of the Big Rivers member cooperatives are covered utilities, and any Commission orders requiring them to comply with or to implement the EPAct 2005 will necessarily impact their wholesale rates or rate structure, and their relationship with Big Rivers, their wholesale power supplier and transmission source. Further, Big Rivers' continued participation in this matter will assist the Commission in its analysis and consideration of the implications of the EPAct 2005 for the all-requirements contract relationship between G&T's and the member distribution cooperatives.

In conclusion, Big Rivers and its Members believe that the information presented above and in their responses to the information requests will lead the Commission in its considerations and determinations to the conclusion that a utility-specific approach, especially with respect to implementation of these standards, is warranted. That is, any determinations that the Commission makes with regard to Smart Metering and Interconnection Service should not be universally imposed on all utilities in the state but should carefully consider the specific circumstances encountered by each utility.

Witness: C. William Blackburn and Russ Pogue

BIG RIVERS ELECTRIC CORPORATION'S
RESPONSE TO THE INITIAL DATA REQUESTS CONTAINED IN APPENDIX C
TO THE PUBLIC SERVICE COMMISSION'S ORDER
DATED FEBRUARY 24, 2006

Item 1) Provide a list of programs you offer at present or have offered at any time since the enactment of the Public Utilities and Regulatory Policies Act ("PURPA") that can be included under the definition of either time-based metering or demand response set forth in Section 1252 of EPAct 2005. Include a brief description of each program, the relevant tariffs (if applicable) and a cite to the Commission case number in which the program was approved (if applicable).

Response) Since the enactment of PURPA, Big Rivers has offered one tariff that can be included under the definition of either time-based metering or demand response as set forth in Section 1252 of EPAct 2005. The tariff was effective January 1, 1991. (See attached tariff). However, there was no interest in the tariff and it was subsequently withdrawn. The responses of the Members provide more information about programs that have been offered on the Big Rivers system.

Witness: C. William Blackburn and Russ Pogue

(T) g. Time of Dav Rate:

This rate is limited to the addition of new or expanded industrial off-peak power usage within the service area. A Time of Day Rate (TDR) is available to distribution cooperatives for incremental load at industrial delivery points as defined in 1.a.(2). Such rate will apply during the eight-hour period beginning 10:01 p.m. and ending at 6:00 a.m. Any request for consideration of the TDR must be submitted to Big Rivers in writing and will become effective only upon Big Rivers' approval. Upon approval by Big Rivers, the 30-minute kW demand during these hours will not be used to determine the Billing Demand. Energy associated with the capacity used during this time of day in excess of the Billing Demand shall be considered TDR energy and shall be billed at a rate equal to 125 percent of the rate in Section 3.b.(2). This rate will be subject to the fuel adjustment clause as defined in A.3.c.

Big Rivers reserves the right to terminate the availability of this TDR at any time.

PUBLIC SERVICE COMMISSION
OF KENTUCKY
EFFECTIVE

SEP 01 1994

PURSUANT TO 807 KAR 5:011,
SECTION 9 (1)
BY: Gordon C. Neel
FOR THE PUBLIC SERVICE COMMISSION

BIG RIVERS ELECTRIC CORPORATION'S
RESPONSE TO THE INITIAL DATA REQUESTS CONTAINED IN APPENDIX C
TO THE PUBLIC SERVICE COMMISSION'S ORDER
DATED FEBRUARY 24, 2006

Item 2) Provide a general discussion of the types of time-based metering or demand response programs that are possible using existing technologies and a specific discussion on which of these programs, if any, are feasible for current implementation in Kentucky.

Response) As discussed in the prefatory comments, Big Rivers and its Members have limited information readily available on the existing technologies and the programs that are feasible for current implementation in Kentucky. The most relevant cost information Big Rivers and its Members can presently provide for the Commission's consideration of the Smart Metering standard is the current metering system that Meade County is installing.

Meade County is presently in the process of installing Hunt Technologies TS2 Automated Metering Interface (AMI) system. Currently the system has been installed on 6 of Meade County's 16 substations. The system includes 25,668 meters. The cost estimate for total implementation is $2.8 million with an annual operating cost of approximately $46,000. To make the system compatible with time-of-use rates additional investment would be required. One of the primary benefits that Meade County will derive from the system is the ability to automate its meter reading program. At this time, Meade County is committed to the installation of this system and has indicated that it would be cost prohibitive to switch this system out to install a different or an enhanced system in order to implement a more sophisticated Smart Metering program.

Witness: C William Blackburn and Russ Pogue

Item 3) Provide, in narrative form, with all relevant calculations, workpapers and assumptions included, what you see as the potential impact of implementing the Smart Metering standard included in Section 1252 of EPAct in Kentucky. At a minimum, the response should address the costs of implementation, financial impact on the utility, who should bear the costs of implementation, and possible rate making and rate treatment issues.

Response) As discussed in the prefatory comments, Big Rivers and its Members have limited information readily available on the existing technologies and the programs that are feasible for current implementation in Kentucky. However, based on the Meade County experience discussed in the previous response, the investment cost of the metering system is approximately $109 per meter with an annual operating cost of nearly $2 per meter. As discussed in the previous response, this level of investment while significant is still not adequate to implement a time-of-use pricing scheme much less a Smart Metering program. Recently, the Ontario Energy Board released its Smart Meter Implementation Plan. In the plan at page 28, it estimates the smart metering cost for a new single-phase residential meter and communication system at approximately $250 per installed meter. The Ontario Board's Smart Meter Implementation Plan is available at its website www.oeb.gov.on.ca. Big Rivers and its Members do not have information specific to Big Rivers and its Members readily available to provide reliable estimates of how much it would cost to implement a system that would accommodate critical peak pricing or real-time pricing as suggested by the EPAct 2005. Clearly though the financial impact on Big Rivers and its Members would be substantial and as cooperatives would necessitate a regulatory mechanism for the timely recovery of these costs.

With regard to who should bear the cost of implementation of a Smart Metering program, the answer depends on the benefits that would actually accrue. For instance, if there is limited penetration of the program and as a result only a few customers realize some savings on their bills, then the cost should be borne by those customers. However, if there is a more widespread penetration and it becomes possible to identify not only some cost savings but also improved system efficiency and reliability, then it becomes more reasonable to spread the costs to implement the program among a larger group of customers, say a rate class of customers, or some subset of customers, or even across all customers.

At this time, Big Rivers and its Members cannot offer additional guidance to the Commission with regard to its consideration and determination of the Smart Metering standard other than to suggest the possibility of a pilot or trial program to develop better estimates of costs, to better understand customer responses, and to determine the extent of the benefits. If after careful consideration the Commission determines that it is appropriate to implement the Smart Metering standard in Kentucky, then Big Rivers and its Members strongly recommend that they be permitted to develop and conduct a pilot or trial program prior to implementing a more broadly based program.

Witness: C. William Blackburn and Russ Pogue

Item 4) Provide a general discussion of what you perceive to be the pros and cons of implementing a Smart Metering standard in Kentucky and the policy issues that you believe the Smart Metering standard presents for the Commission.

Response)

PROS

- A Smart Metering system will likely support an automated meter reading program resulting in some operational cost savings.
- A Smart Metering system that makes electricity cost and usage information readily available to the customer may improve the level of customer satisfaction of those who utilize the information.
- A Smart Metering system will likely reduce the potential for energy theft with an immediate benefit to the utility until its next rate case and then a benefit to customers going forward.
- If customers respond to the information and price signals communicated through a Smart Metering program, there may be a reduced need and or delay for additional generating capacity as well as generation and environmental costs.
- If customers respond to the information communicated through a Smart Metering program, there may be improved system efficiency and reliability.
- Once the meters have been installed, the accuracy of meter readings should improve with the instances of estimated bills decreasing.
- Once the meters have been installed, the utility can more easily verify if and when service is restored after an outage.
- If the installed Smart Metering system is based on a real-time two-way communication (i.e.; data is transferred to and from the meter by the utility), then more enhanced services such as customer display, integration with load control systems, interface to smart thermostats, voltage monitoring, and remote cut-off can be provided for incremental costs.

CONS

- The cost to implement an effective Smart Metering program will be substantial and if there are not concomitant cost reductions and system benefits then the utility and ultimately its customers will incur a significant financial hardship.
- If the existing metering systems have to be replaced prematurely, then there will be undepreciated book value of retired equipment that must be accounted for.
- There must be some assurance that the current and future communications infrastructure will support the Smart Metering program now and in the future.
- If there are additional changes to Daylight Savings Time in the future, it will result in unanticipated reprogramming costs for a Smart Metering program.

The regulatory challenge that the Commission has before it is to consider and make an affirmative determination that the benefits of implementing a Smart Metering program clearly outweigh the costs. Big Rivers and its Members would like to reiterate its concern that given the limited information about the cost, operation and customer response to a Smart Metering program the Commission should not determine that the statewide implementation of a Smart Metering program is required or that it should be implemented immediately by all utilities. Big Rivers and its Members believe that if the Commission determines that a Smart Metering program should be adopted, then a more reasonable approach to implementation for Big Rivers and its Members is to pursue a pilot or trial program first. This will allow for a realistic assessment of costs and benefits to be developed to determine an optimal strategy for implementation of a Smart Metering program on the Big Rivers system.

Another regulatory policy issue that confronts the Commission is the recovery of costs for implementing a Smart Metering program. An integral part of a Smart Metering program – pilot or otherwise – should be a regulatory mechanism for the equitable recovery of associated costs. A cost recovery mechanism similar to that used for demand-side management programs may be appropriate.

Witness: C. William Blackburn and Russ Pogue

BIG RIVERS ELECTRIC CORPORATION'S
RESPONSE TO THE INITIAL DATA REQUESTS CONTAINED IN APPENDIX C
TO THE PUBLIC SERVICE COMMISSION'S ORDER
DATED FEBRUARY 24, 2006

Item 1) Provide, in narrative form, with all relevant calculations, workpapers and assumptions included, what you see as the potential impact of implementing the Interconnection standard included in Section 1254 of EPAct in Kentucky. At a minimum, the response should address the costs of implementation, financial impact on the utility, who should bear the costs of implementation, and possible rate making and rate treatment issues.

Response) Big Rivers is a G&T, cooperatively owned by its three member distribution cooperatives, which are, in turn owned by their retail member customers. The member distribution cooperatives own and operate the electrical distribution systems to which their retail member customers are connected, and from which they take retail electrical service. Big Rivers owns and operates the electrical transmission system to which its member distribution cooperatives are connected and over which they receive their wholesale electricity purchases.

Electric cooperatives differ from investor-owned electric utilities in that electric cooperatives are not-for-profit, member consumer owned utilities that have no shareholders to absorb the cost of new programs. For this reason, the total costs from any implementation of the EPAct 2005 in Kentucky which would effect Big Rivers or its members should be borne by the distributed resource ("DR"), who also stands to benefit if any profits are realized. No DR project should be subsidized by non-participating members, either directly or indirectly through costs incurred by the member owned electric cooperative. To insure against subsidization, the DR should bear all costs of interconnection, including all initial implementation cost, the utility's administrative cost of billing and inspection, and the initial and ongoing cost of testing and maintaining the protection systems described in the IEEE 1547 standard.

One cost impact of the possible implementation of the EPAct 2005, and one that rural electric cooperatives are especially sensitive to given that their customers are spread out over a large area, is the cost of upgrading distribution lines. An electric distribution line that is sized sufficiently to serve a sparsely populated area would have no incremental capacity to handle a proposed DR without costly upgrades. Any regulation proposed to implement the EPAct in Kentucky should require that an engineering study be performed at the expense of the DR to determine the adequacy of the distribution line to handle the proposed generation. If there is generation net of the local load that will be absorbed into the distribution system, and the host distribution line is not sized to safely handle the generation, then all system improvements required to handle the generation should be the expense of the DR, and the cost of these system improvements should be assured before the interconnection is allowed.

Because Big Rivers' member cooperatives' wholesale electric requirements are largely supplied under all requirements wholesale contracts with Big Rivers, if the EPAct is implemented by Kentucky, all sales of generation should be between the DR and Big Rivers to maintain the integrity of those contracts. Power that enters the distribution grid should be netted out of the wholesale meter that measures the wholesale consumption of the host member cooperative, and the generation received into the distribution grid should be purchased from the DR by Big Rivers at Big Rivers' avoided cost of generation. Big Rivers' avoided cost of generation should be defined as its variable operational and maintenance cost. At such time that Big Rivers is in need of additional generation, the avoided cost would also include the cost of the new generation.

Witness: Travis D. Housley, P.E.

Item 2) Provide a general discussion of what you perceive to be the pros and cons of implementing an Interconnection standard in Kentucky and the policy issues that you believe the Interconnection standard presents for the Commission. Include discussion of the issues that must be addressed to comply with IEEE 1547.

Response) As noted above, as a member-owned and member-driven electric utility, Big Rivers weighs the impacts of the EPAct 2005 interconnection standard based upon the best interests of its member-owners and their member-owner retail consumers. Even without implementation of the EPAct 2005, Big Rivers and its Members are willing to assist any retail member consumer with the ability to utilize available resources to its betterment through electric generation. However, Big Rivers and its Members must ensure that such generation does not place a burden on the retail member's neighboring member consumers, or place the consumer or its neighbors, or the transmission and distribution systems on which they rely, in an unsafe situation. Such generation must also be cost effective and environmentally friendly, and any DR interconnection must be implemented in a way that protects the safety of the member consumer, its neighbors, and utility workers, and that protects the service quality and reliability of Big Rivers and its Members' systems.

While Big Rivers and its Members will assist DRs that meet the above criteria, Big Rivers and its Members have compared the pros and cons of implementing the EPAct 2005 interconnection standard in Kentucky and have found that the cons far outweigh the pros. More specifically, Big Rivers and its Members believe that forced implementation of the EPAct interconnection or any similar standard will be at the expense of safety and electric service quality to those in proximity to a DR.

Safety and reliability are significant concerns with the possible implementation of the EPAct 2005. The IEEE 1547 standard recognizes that electric power systems were not designed to accommodate active generation and storage at the distribution level, and it attempts to develop technical requirements for DR interconnection that address safety, performance, operation, testing, and maintenance considerations. The standard describes systems that a DR must have in place and in good working order to assure the quality of the generation, its safe and timely shut down during times of distribution line faults, and the timely disconnection of the DR from the distribution system during faults on the DR system. These systems are essential for the reliability and quality of service of the distribution grid, and for the safety of the electric utility workers during times of distribution line faults. Therefore, any implementation of the EPAct 2005 must effectively require compliance with the IEEE 1547 standard to ensure not only that the described protection and monitoring systems will be installed, but also that those systems will be routinely inspected and maintained.

However, even with the IEEE 1547 standard, safety would still be a concern. Electric utilities specialize in the generation and delivery of electricity, and devote a tremendous amount of time and expense to training their electrical workers to work safely in the generation and delivery of electricity. In spite of the utilities' best efforts, however, some electrical accidents still occur. Given that the primary function of many DRs will not be the generation and delivery of electricity, there is a concern that adequate attention will not be given to electrical safety and safety training, increasing the likelihood of electrical accidents.

Additionally, the IEEE 1547 standard is not comprehensive. It does not, for example, state the maximum capacity of DR generation that can be interconnected to any particular distribution system, it does not apply to interconnections to network systems, and it only provides general statements as to the necessary performance of DR generation and protective equipment, meaning additional tests or standards may be required to ensure safety and reliability. The IEEE 1547 standard also does not address the methods used for performing electric utility impact studies of DR or associated tariff issues, which are additional issues that must be addressed with any possible implementation of the EPAct 2005.

Moreover, electric utilities have state and federal regulatory agencies to prescribe safety and reliability standards and to ensure that proper attention is given to safety and maintenance needs. However, even with those safeguards in place, large transmission outage investigations often reveal that maintenance has been underperformed. The price that a DR would realize from its generation (i.e., the avoided cost to the interconnected utility) will be very small. This is especially true in this state since Kentucky is one of the lowest cost electric power producers in the country. With the cost pressure of a low avoided cost, DR's will be under great pressure to cut costs where possible and will be greatly tempted to under emphasize their safety and maintenance needs at the expense of safety and distribution grid reliability or quality of service.

Witness: Travis D. Housley, P.E.

BIG RIVERS ELECTRIC CORPORATION'S
RESPONSE TO THE INITIAL DATA REQUESTS CONTAINED IN APPENDIX C
TO THE PUBLIC SERVICE COMMISSION'S ORDER
DATED FEBRUARY 24, 2006

Item 3) Identify any customer with on-site generation that is currently connected to your distribution system. Provide the customer's maximum demand in 2005 and current generating capacity.

Response) Big Rivers does not own or operate any distribution lines, and therefore has no customers with on-site generation currently connected to its distribution system. Weyerhaeuser, a retail customer of Kenergy, has on-site generation capability, however, the facilities are interconnected to Big Rivers' 161 kv transmission system and not the Kenergy distribution system.

Witness: Travis D. Housley, P.E.