

SULLIVAN, MOUNTJOY, STAINBACK & MILLER PSC
ATTORNEYS AT LAW

Ronald M. Sullivan
Jesse T. Mountjoy
Frank Stainback
James M. Miller
Michael A. Fiorella
Allen W. Holbrook
R. Michael Sullivan
Bryan R. Reynolds
Tyson A. Kamuf
Mark W. Starnes
C. Ellsworth Mountjoy
Susan Montalvo-Gesser

March 28, 2009

RECEIVED

MAR 30 2009

PUBLIC SERVICE
COMMISSION

Via Federal Express

Jeff Derouen
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, Kentucky 40602-0615

Re: In the Matter of: Consideration of the New Federal
Standards of the Energy Independence and Security Act of 2007,
PSC Case No. 2008-00408

Dear Mr. Derouen:

Enclosed for filing on behalf of Big Rivers Electric Corporation, Jackson Purchase Energy Corporation, Kenergy Corp. and Meade County Rural Electric Cooperative Corporation are an original and ten copies of their responses to the Commission Staff's Initial Data Requests. A copy of this letter and a copy of the responses have been served on the attached service list.

Sincerely,



Tyson Kamuf

TAK/ej
Enclosures

cc: Mark A. Bailey
David A. Spainhoward
Kelly Nuckols
Sandy Novick
Burns Mercer
David Crockett
John Talbert
Russ Pogue
Service List

Telephone (270) 926-4000
Telecopier (270) 683-6694

100 St. Ann Building
PO Box 727
Owensboro, Kentucky
42302-0727

Service List
Administrative Case No. 2008-00408

Allen Anderson
South Kentucky R.E. C. C.
P.O. Box 910
925-929 N Main Street
Somerset. KY 42502-0910

Lonnie E. Bellar
Vice President - State Regulation
Kentucky Utilities Company
220 West Main Street
P O Box 32010
Louisville. KY 40202

Lonnie E. Bellar
Vice President - State Regulation
Louisville Gas and Electric Company
220 W Main Street
P.O. Box 32010
Louisville. KY 40202

Daniel W. Brewer
Blue Grass Energy Cooperative Corp.
P. O. Box 990
1201 Lexington Road
Nicholasville. KY 40340-0990

John B. Brown
Chief Financial Officer, Treasurer &
Delta Natural Gas Company, Inc.
3617 Lexington Road
Winchester, KY 40391

Sharon K. Carson
Finance & Accounting Manager
Jackson Energy Cooperative
115 Jackson Energy Lane
McKee, KY 40447

Judy Cooper
Manager, Regulatory Services
Columbia Gas of Kentucky, Inc.
2001 Mercer Road
P.O. Box 14241
Lexington, KY 40512-4241

Rocco D'Ascenzo
Duke Energy Kentucky, Inc.
P.O. Box 960
139 East 4th Street
Cincinnati, OH 45201

Honorable Scott H. DeBroff
Rhoads & Sinon LLP
Twelfth Floor, One South Market Square
P.O. Box 1146
Harrisburg, PA 17108-1146

Paul G. Embs
Clark Energy Cooperative, Inc.
P. O. Box 748
2640 Ironworks Road
Winchester, KY 40392-0748

Carol H. Fraley
President and CEO
Grayson R.E.C.C.
109 Bagby Park
Grayson, KY 41143

Mark David Gross
Frost, Brown, Todd, LLC
250 West Main Street
Suite 2700
Lexington, KY 40507

Ted Hampton
Cumberland Valley Electric, Inc.
Highway 25E, P.O. Box 440
Gray, KY 40734

Larry Hicks
Salt River Electric Cooperative Corp.
111 West Brashear Avenue
P.O. Box 609
Bardstown, KY 40004

Kerry K. Howard
Licking Valley R.E.C.C.
P.O. Box 605
271 Main Street
West Liberty, KY 41472

Honorable Dennis G. Howard II
Assistant Attorney General
Office of the Attorney General
Utility & Rate Intervention Division
1024 Capital Center Drive
Suite 200
Frankfort, KY 40601-8204

James L. Jacobus
Inter-County Energy Cooperative
Corporation
1009 Hustonville Road
P.O. Box 87
Danville, KY 40423-0087

Honorable Michael L. Kurtz
Attorney at Law
Boehm, Kurtz & Lowry
36 East Seventh Street
Suite 1510
Cincinnati, OH 45202

Robert Marshall
East Kentucky Power Cooperative, Inc
4775 Lexington Road
P.O. Box 707
Winchester, KY 40392-0707

Debbie Martin
Shelby Energy Cooperative, Inc.
620 Old Finchville Road
Shelbyville, KY 40065

Mark Martin
VP Rates & Regulatory Affairs
Atmos Energy Corporation
3275 Highland Pointe Drive
Owensboro, KY 42303

Burns E. Mercer
Meade County R.E.C.C.
P.O. Box 489
Brandenburg, KY 40108-0489

Michael L. Miller
President & CEO
Nolin R.E.C.C.
411 Ring Road
Elizabethtown, KY 42701-8701

Barry L. Myers
Manager
Taylor County R.E.C.C.
100 West Main Street
P.O. Box 100
Campbellsville, KY 42719

Sanford Novick
President and CEO
Kenergy Corp.
3111 Fairview Drive
P.O. Box 1389
Owensboro, KY 42302

G. Kelly Nuckols
Jackson Purchase Energy Corporation
2900 Irvin Cobb Drive
P.O. Box 4030
Paducah, KY 42002-4030

Christopher S. Perry
Fleming-Mason Energy Cooperative
P.O. Box 328
Flemingsburg, KY 41041

Bill Prather
Farmers R.E.C.C.
504 South Broadway
P.O. Box 1298
Glasgow, KY 42141-1298

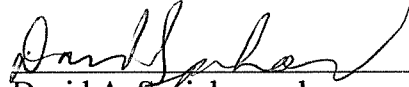
Bobby D. Sexton
President/General Manager
Big Sandy R.E.C.C.
504 11th Street
Paintsville, KY 41240-1422

Mark Stallons
Owen Electric Cooperative, Inc.
8205 Highway 127 North
P.O. Box 400
Owenton, KY 40359

Errol K. Wagner
Director of Regulatory Services
American Electric Power
101A Enterprise Drive
P.O. Box 5190
Frankfort, KY 40602

VERIFICATION

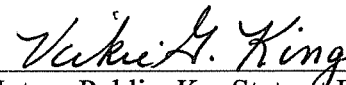
I verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and correct to the best of my knowledge and belief.



David A. Spainhoward

COMMONWEALTH OF KENTUCKY)
COUNTY OF Henderson)

SUBSCRIBED AND SWORN TO before me by David A. Spainhoward on this the 27th day of March, 2009.



Notary Public, Ky. State at Large
My Commission Expires 3-3-2010


VERIFICATION

I verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and correct to the best of my knowledge and belief.


David G. Crockett

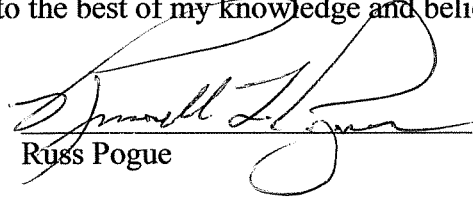
COMMONWEALTH OF KENTUCKY)
COUNTY OF Henderson)

SUBSCRIBED AND SWORN TO before me by David G. Crockett on this the 27th day of March, 2009.


Notary Public, Ky/State at Large
My Commission Expires 8-9-10

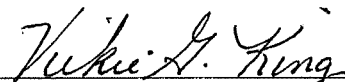
VERIFICATION

I verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and correct to the best of my knowledge and belief.


Russ Pogue

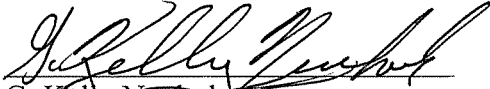
COMMONWEALTH OF KENTUCKY)
COUNTY OF Henderson)

SUBSCRIBED AND SWORN TO before me by Russ Pogue on this the 27th day of March, 2009.


Notary Public, Ky. State at Large
My Commission Expires 3-3-2010

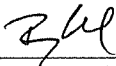
VERIFICATION

I verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and correct to the best of my knowledge and belief.


G. Kelly Nuckols

COMMONWEALTH OF KENTUCKY)
COUNTY OF Franklin)

SUBSCRIBED AND SWORN TO before me by G. Kelly Nuckols on this the 26th day of March, 2009.



Notary Public, Ky. State at Large
My Commission Expires 2/21/2010

VERIFICATION

I verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and correct to the best of my knowledge and belief.

Sanford Novick
Sanford Novick


COMMONWEALTH OF KENTUCKY)
COUNTY OF Daviess)

SUBSCRIBED AND SWORN TO before me by Sanford Novick on this the 26th day of March, 2009.

Debra J. Hayden
Notary Public, Ky. State at Large
My Commission Expires 5-24-11

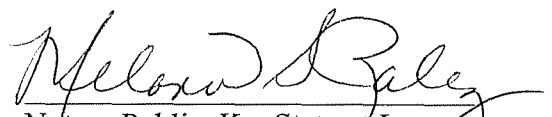
VERIFICATION

I verify, state, and affirm that the data request responses filed with this verification for which I am listed as a witness are true and correct to the best of my knowledge and belief.


Burns E. Mercer

COMMONWEALTH OF KENTUCKY)
COUNTY OF Mendell)

SUBSCRIBED AND SWORN TO before me by Burns E. Mercer on this the 25th day of March, 2009.


Notary Public, Ky. State at Large
My Commission Expires 3-18-2012

RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
AND MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
TO THE INITIAL DATA REQUEST OF COMMISSION STAFF
ADMINISTRATIVE CASE NO. 2008-00408
March 30, 2009

1 **Item 1)** State whether Big Rivers and each member believe that EISA 2007,
2 Section 532(a)(16)(B), under which electric utilities shall adopt policies establishing cost-
3 effective energy efficiency as a priority resource, is consistent with Kentucky's IRP
4 regulation, 807 KAR 5:058. Explain why or why not.

5
6 **Response)** Big Rivers Electric Corporation ("Big Rivers") and its three distribution
7 cooperative members (Jackson Purchase Energy Corporation ("JPEC"), Kenergy Corp.
8 ("Kenergy"), and Meade County Rural Electric Cooperative Corporation ("Meade
9 County RECC") (collectively, the "Members")) believe that Section 532(a)(16)(B) of the
10 Energy Independence and Security Act of 2007 ("EISA 2007") is consistent with
11 Kentucky's Integrated Resource Plan ("IRP") regulation, 807 KAR 5:058. Under that
12 regulation, a utility's triennial IRP must include:

- 13 • A discussion of "the utility's projected load growth and the resources
14 planned to meet that growth." 807 KAR 5:058 Section 5.
- 15 • A "[s]ummary of the utility's planned resource acquisitions including
16 improvements in operating efficiency of existing facilities, nonutility sources of
17 generation, new power plants, ... [and] [s]teps to be taken during the next three (3)
18 years to implement the plan." *Id.* Section 5(4)-(5).
- 19 • Comprehensive historical and projected load data. *Id.* Section 7.
- 20 • An "[i]dentification and description of existing demand-side programs and
21 an estimate of their impact on utility sales and coincident peak demands including
22 utility or government sponsored conservation and load management programs."
23 *Id.* Section 7(2)(g).
- 24 • The impact of existing and continuing demand-side programs on the
25 utility's fifteen year load forecast. *Id.* Section 7(3).
- 26 • A discussion of "existing company and government sponsored
27 conservation and load management or other demand-side programs." *Id.* Section
28 7(7)(e)(4).
- 29 • The "utility's resource assessment and acquisition plan for providing an
30 adequate and reliable supply of electricity to meet forecasted electricity
31

RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
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ADMINISTRATIVE CASE NO. 2008-00408
March 30, 2009

1 requirements a the lowest possible cost,” including an “assessment of potentially
2 cost-effective resource options available to the utility,” “[c]onservation and load
3 management or other demand-side programs not already in place;” “[r]eductions
4 or increases in peak demand from new conservation and load management or
5 other demand-side programs.” *Id.* Section 8(1), (2)(b), (4)(a)(6).

6
7 The IRP regulation requires utilities to consider energy efficiency and demand-
8 side management programs alongside other potential resources in deciding how best to
9 meet load growth and projected demand. The IRP regulation thus makes energy
10 efficiency an integral part of the utility’s resource planning process and establishes costs-
11 effective energy efficiency as a priority resource consistent with EISA 2007, Section
12 532(a)(16)(B). Moreover, the IRP regulation provides a flexible, individualized approach
13 for utilities in Kentucky to balance energy efficiency with the utilities’ mission of
14 providing an adequate and reliable supply of electricity at the lowest reasonable cost. As
15 noted in the testimony Lonnie E. Bellar that Kentucky Utilities Company and Louisville
16 Gas & Electric Company filed in this matter, the effectiveness of the current IRP
17 regulation is shown by the numerous energy efficiency and demand-side management
18 programs that the utilities in Kentucky have already implemented. *See Overland*
19 *Consulting Report, Appendix E, filed in In the Matter of: An Investigation of the Energy*
20 *and Regulatory Issues in Section 50 of Kentucky’s 2007 Energy Act, Administrative Case*
21 *No. 2007-00477.*

22 Although the Public Service Commission (“Commission”) does not formally
23 approve the IRP’s, the current IRP process results in suggestions and recommendations
24 from Commission Staff. If any issues are discovered during the IRP process, the
25 Commission has the authority to institute a formal proceeding to address those issues.
26 *See KRS 278.250; KRS 278.260.* Moreover, the IRP and a utility’s energy efficiency
27 programs should be part of the Commission’s review of the need for a new generating
28 facility when a utility comes before the Commission seeking a certificate of public
29 convenience and necessity to construct the facility. Thus, the IRP and the certificate
30
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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
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March 30, 2009

1 processes fulfill EISA 2007's goal of establishing cost-effective energy efficiency as a
2 priority resource.

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Witnesses) David A. Spainhoward
G. Kelly Nuckols
Sanford Novick
Burns E. Mercer

RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
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TO THE INITIAL DATA REQUEST OF COMMISSION STAFF
ADMINISTRATIVE CASE NO. 2008-00408
March 30, 2009

1 **Item 2)** Explain in detail how Big Rivers and each member treat energy efficiency
2 as a priority resource. Identify and describe any goals Big Rivers and each member have
3 developed in terms of kWh (or KW or MW if more appropriate) displaced or saved.
4

5 **Response)** Big Rivers investigated the maximum achievable cost effectiveness for
6 electric energy efficiency for the service territories of its Members in its 2005 Integrated
7 Resource Plan (IRP). The plan, the review of which is currently held in abeyance by the
8 Public Service Commission pending completion of the Big Rivers unwind transaction,
9 outlines the numerous potential energy efficiency and DSM programs investigated by Big
10 Rivers and its Members, and it suggests an \$8 million annual investment in various
11 energy efficiency projects and programs to achieve a \$39 million dollar net present value
12 savings. Big Rivers and its Members have not established quantitative goals for energy
13 efficiency programs to date. Big Rivers and its Members are currently engaged in a
14 process to develop a comprehensive energy efficiency plan, which will contain interim
15 quantifiable goals for energy conservation programs and projects. Big Rivers is
16 scheduled to submit a new IRP in 2010 with updated information.
17

18 **Witnesses)** Russ Pogue
19 G. Kelly Nuckols
20 Sanford Novick
21 Burns E. Mercer
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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
AND MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
TO THE INITIAL DATA REQUEST OF COMMISSION STAFF
ADMINISTRATIVE CASE NO. 2008-00408
March 30, 2009

1 **Item 3)** State whether Big Rivers and each member believe that EISA 2007,
2 Section 532(a)(16)(B), under which electric utilities shall adopt policies establishing cost-
3 effective energy efficiency as a priority resource, is consistent with Kentucky's certificate
4 statute, KRS 278.020. Explain why or why not?

5
6 **Response)** Big Rivers and its Members believe EISA 2007, Section 532(a)(16)(B) is
7 consistent with Kentucky's certificate of public convenience and necessity ("CPCN")
8 statute, KRS 278.020. In determining whether to grant a CPCN to a proposed generating
9 facility, specifically with regard to the need for a new facility, the Commission may
10 consider the adequacy of a utility's existing and planned energy efficiency and demand-
11 side management programs. The CPCN process, in conjunction with the IRP process
12 described in response to Item 1 herein, adequately require utilities in Kentucky to
13 establish cost-effective energy efficiency as a priority resource.

14
15 **Witnesses)** David A. Spainhoward
16 G. Kelly Nuckols
17 Sanford Novick
18 Burns E. Mercer
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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
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1 **Item 4)** With reference to the discussion of the 15 energy efficiency programs
2 listed on pages 6 through 9 of the Joint Direct Testimony of David A. Spainhoward, G.
3 Kelly Nuckols, Sanford Novick, and Burns E. Mercer (“Big Rivers Joint Direct”),
4 address the following:

5 a. Identify the programs offered by Jackson Purchase; those offered by
6 Kenergy; and those offered by Meade Co. RECC.

7 b. Identify the amount of kWh (or KW or MW if more appropriate) that Big
8 Rivers estimates is displaced or saved by each program offered by Jackson Purchase;
9 each program offered by Kenergy; and each program offered by Meade Co. RECC.

10

11 **Response)** a. See attached. Also, in January 2009, Kenergy, Meade County
12 RECC, and JPEC added a Commercial Energy Suite to their websites.

13

14 b. See attached.

15

16 **Witnesses)** Russ Pogue
17 G. Kelly Nuckols
18 Sanford Novick
19 Burns E. Mercer

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	JPEC			Kenergy			MCRECC			Total MWh		Summer Peak		JPEC			Kenergy			MCRECC				
	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW	Displaced	Demand Impact MW	Peak MW
Distribution cooperative websites	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Marketing and promotion	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Incentives							X			N/A	-4.7													
Home energy efficiency expo	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Distribution of DOE/EPA "Home energy Tips" booklet	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Compact fluorescent lamps	X			X			X			6,397 MWh/year	-2.9													
Commercial & Industrial News	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Energy Star Partners	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Renewable energy	X			X			X			8,760 MWh/year	-1.0													
Energy use assessments	X			X			X			Not quantified	-3.4													
Evaluation of facility lighting	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Free caulk	X			X			X			Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified
Energy saving analysis	X			X			X			Not quantified	-1.1													
High performance schools	X			X			X			429,240 MWh/year	-49.0													
CHP project	X			X			X			444,000 MWh/yr	-62.1													
Total																								

RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
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ADMINISTRATIVE CASE NO. 2008-00408
March 30, 2009

1 **Item 5)** Explain why Big Rivers and each member have not sought approval to
2 implement a demand-side management (“DSM”) surcharge per KRS 278.285 for any
3 DSM offering.

4
5 **Response)** Big Rivers and its Members have implemented a number of energy
6 efficiency and DSM programs, some of which are described in the Joint Direct
7 Testimony of David A. Spainhoward, G. Kelly Nuckols, Sanford Novick, and Burns E.
8 Mercer filed on behalf of Big Rivers and its Members in this matter. Those programs are
9 designed around encouraging energy efficiency rather than discouraging use through rate
10 design. Given the nature of Big Rivers and its Members’ programs, they have not
11 pursued a DSM surcharge.

12
13 **Witnesses)** Russ Pogue
14 G. Kelly Nuckols
15 Sanford Novick
16 Burns E. Mercer

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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
AND MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
TO THE INITIAL DATA REQUEST OF COMMISSION STAFF
ADMINISTRATIVE CASE NO. 2008-00408

March 30, 2009

1 **Item 6)** Identify and describe each of Big Rivers' and each member's current rate
2 designs that promote energy efficiency. Identify the annual amount of kWh (or KW or
3 MW if more appropriate) that Big Rivers estimates is displaced or saved by each rate
4 design for Jackson Purchase, for Kenergy, and for Meade Co. RECC.

5
6 **Response)** Neither Big Rivers nor its Members' rate structures, as approved by the
7 Commission, were specifically designed with the goal of promoting energy efficiency. A
8 potential unintended consequence of the rate setting process, where fixed costs are
9 charged on the incremental energy consumption portion of the rate, results in some rate
10 structures adding to the energy efficiency incentive for the consumer. These structures
11 benefit customers who lower electricity consumption. The consequence to the provider is
12 a throughput incentive, which rewards the utility for increased energy consumption.

13
14 **Witnesses)** Russ Pogue
15 G. Kelly Nuckols
16 Sanford Novick
17 Burns E. Mercer
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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
AND MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
TO THE INITIAL DATA REQUEST OF COMMISSION STAFF
ADMINISTRATIVE CASE NO. 2008-00408
March 30, 2009

1 **Item 7)** With reference to Jackson Purchase's tariffs, state whether Big Rivers and
2 Jackson Purchase believe that Jackson Purchase's rate Schedule R for residential service,
3 rate Schedule C-1 and rate Schedule C-3, both for small commercial service, each with a
4 customer charge and flat energy charge, support energy efficiency. Explain why or why
5 not.

6
7 **Response)** From JPEC's perspective, Schedules R, C-1 and C-3 for residential and
8 small commercial service are not supportive of energy efficiency to the extent that the
9 "throughput incentives" have not been removed as suggested by Section 111(d)(17)(B)(i)
10 of PURPA. To extent conserving, or simply lowering consumption, is consistent with
11 efficient use of electric energy, Schedules R, C-1, and C-3 are supportive from the
12 customer's perspective because the flat energy rate per kWh includes fixed customer
13 costs which results in an increased cost to the customer for consumption. The extent to
14 which conserving results in more efficient energy use depends upon the nature of the
15 conservation. Schedules R, C-1, and C-3 are limited in their support for energy
16 efficiency from a more global perspective because the prices for energy are not time
17 sensitive for energy or demand. Therefore, the price signal to the customer is the same
18 regardless of the season, or the time of day. It should be noted, however, that the
19 wholesale energy rate paid by JPEC to purchase power from Big Rivers is not time
20 differentiated, thus lending no support to JPEC for a time based energy rate. Although
21 the wholesale demand rate paid by JPEC to Big Rivers can be correlated with time, the
22 Big Rivers demand charge is a revenue generator designed to recover Big Rivers' fixed
23 cost of service. Any retail pricing strategy designed to affect customer demand must be
24 evaluated in context with the potential revenue and cost effects to Big Rivers.

25 Cooperatives, such as JPEC, are owned by their members who are their
26 customers. As such, JPEC is not motivated by profit, and management's responsibility is
27 to create value for its members by providing reliable electric service at the lowest
28 reasonable cost. The JPEC management has a responsibility to set rates to recover costs
29 from each member fairly and in accordance with the costs of service to the extent
30 practical. Designing rates that better align with cost is supportive of effective energy

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1 efficiency programs and investing in energy efficiency activities. Setting rates based on
2 cost of service is consistent with JPEC's responsibilities to its members. Practical
3 limitations to achieving cost based rates include consideration of customer impact of
4 changes in pricing and structure, metering technology and costs, and implementation
5 costs of sophisticated rate structures. As with most electric distribution utilities, JPEC's
6 rates are not fully aligned with costs. For example, Schedules R, C-1 and C-3 for
7 residential and small commercial service are designed to recover some of the fixed
8 customer costs and all of the capacity costs of service through the energy charge of the
9 rate. As a result, JPEC relies upon energy sales to recover a portion of its fixed costs of
10 distribution as well as demand related purchased power costs. When an electric
11 distribution utility relies upon energy sales to recover fixed costs and generate a margin
12 or profit, positive results from investing in energy efficiency have the potential to have
13 negative consequences for the utility's financial performance. Aligning rates with costs
14 will minimize the effects of "throughput incentives" that cause the utility to rely upon
15 energy sales to recover fixed costs. JPEC has over time been allowed by the Commission
16 to gradually shift some fixed customer cost recovery away from the energy charge and
17 into the base customer charge. In this way, JPEC is taking measured steps toward more
18 cost based rate structures while simultaneously lessening the effects a throughput
19 incentive may have on its rates. Furthermore, aligning the energy rates with costs will
20 provide an improved price signal to JPEC's consumers so that they can make a more
21 economically informed decision about electricity consumption.

22 Per the settlement agreement and by order of the Commission in Case No. 2007-
23 00116, JPEC's Schedule R for residential service consists of a \$9.00 per month customer
24 charge and a flat energy charge of \$.06211 per kWh. By comparison, the cost of service
25 study filed in case No. 2007-00116 supported a \$26.76 per month customer charge. The
26 difference between the \$9.00 approved rate and the \$26.76 cost based rate has resulted in
27 \$0.01430 per kWh additional cost recovery in the energy rate. JPEC's Schedule C-1 for
28 small commercial single phase service consists of a \$10.00 per month customer charge
29 and a flat energy charge of \$.06312 per kWh. By comparison, the cost of service study
30 filed in case No. 2007-00116 supported a \$26.51 per month customer charge. The

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1 difference between the \$10.00 approved rate and the \$26.51 cost based rate has resulted
2 in \$0.01475 per kWh additional cost recovery in the energy rate. JPEC's Schedule C-3
3 for small commercial three phase service consists of a \$18.00 per month customer charge
4 and a flat energy charge of \$.05939 per kWh. By comparison, the cost of service study
5 filed in case No. 2007-00116 supported a \$28.51 per month customer charge. The
6 difference between the \$18.00 approved rate and the \$28.51 cost based rate has resulted
7 in \$0.00963 per kWh additional cost recovery in the energy rate.

8 Big Rivers concurs with JPEC's assessment of its tariffs.
9

10 **Witnesses)** G. Kelly Nuckols

11 Jack D. Gaines
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1 **Item 8)** The following questions refer to Kenergy's tariffs:

2 a. State whether Big Rivers and Kenergy believe that Kenergy's rate
3 Schedule 1 for residential service with a customer charge and flat energy charge supports
4 energy efficiency. Explain why or why not.

5 b. State whether Big Rivers and Kenergy believe that Kenergy's rate
6 Schedule 2 for commercial, large power and public buildings and rate Schedule 3 with a
7 customer charge and declining block flat energy charge, support energy efficiency.
8 Explain why or why not.

9
10 **Response)** a. From Kenergy's perspective, Schedule 1 for residential service is
11 not supportive of energy efficiency to the extent that the "throughput incentives" have not
12 been removed as suggested by Section 111(d)(17)(B)(i) of PURPA. To extent
13 conserving, or simply lowering consumption, is consistent with efficient use of electric
14 energy, Schedule 1 is supportive from the customer's perspective because the flat energy
15 rate per kWh includes fixed customer costs which results in an increased cost to the
16 customer for consumption. The extent to which conserving results in more efficient
17 energy use depends upon the nature of the conservation. Schedule 1 is limited in its
18 support for energy efficiency from a more global perspective because the price for energy
19 is not time sensitive for energy or demand. Therefore, the price signal to the customer is
20 the same regardless of the season, or the time of day. It should be noted, however, that
21 the wholesale energy rate paid by Kenergy to purchase power from Big Rivers is not time
22 differentiated thus lending no support to Kenergy for a time based energy rate. Although
23 the wholesale demand rate paid by Kenergy to Big Rivers can be correlated with time, the
24 Big Rivers demand charge is a revenue generator designed to recover Big Rivers' fixed
25 cost of service. Any retail pricing strategy designed to affect customer demand must be
26 evaluated in context with the potential revenue and cost effects to Big Rivers.

27 Cooperatives, such as Kenergy, are owned by their members who are their
28 customers. As such, Kenergy is not motivated by profit and management's responsibility
29 is to create value for its members by providing reliable electric service at the lowest
30 reasonable cost. The Kenergy management has a responsibility to set rates to recover

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1 costs from each member fairly and in accordance with the costs of service to the extent
2 practical. Designing rates that better align with cost is supportive of effective energy
3 efficiency programs and investing in energy efficiency activities. Setting rates based on
4 cost of service is consistent with Kenergy's responsibilities to its members. Practical
5 limitations to achieving cost based rates include consideration of customer impact of
6 changes in pricing and structure, metering technology and costs, and implementation
7 costs of sophisticated rate structures. As with most electric distribution utilities,
8 Kenergy's rates are not fully aligned with costs. For example, Schedule 1 for residential
9 service is designed to recover some of the fixed customer costs and all of the capacity
10 costs of service through the energy charge of the rate. As a result, Kenergy relies upon
11 energy sales to recover a portion of its fixed costs of distribution as well as demand
12 related purchased power costs. When an electric distribution utility relies upon energy
13 sales to recover fixed costs and generate a margin or profit, positive results from
14 investing in energy efficiency have the potential to have negative consequences for the
15 utility's financial performance. Aligning rates with costs will minimize the effects of
16 "throughput incentives" that cause the utility to rely upon energy sales to recover fixed
17 costs. Kenergy has over time been allowed by the Commission to gradually shift some
18 fixed customer cost recovery away from the energy charge and into the base customer
19 charge. In this way, Kenergy is taking measured steps toward more cost based rate
20 structures while simultaneously lessening the effects a throughput incentive may have on
21 its rates. Furthermore, aligning the energy rates with costs will provide an improved
22 price signal to Kenergy's consumers so that they can make a more economically
23 informed decision about electricity consumption.

24 Per the settlement agreement and by order of the Commission in Case No. 2008-
25 00323, Kenergy's Schedule 1 for residential service consists of a \$10.50 per month
26 customer charge and a flat energy charge of \$.062327 per kWh. By comparison, the cost
27 of service study filed in case No. 2008-323 supported a \$20.64 per month customer
28 charge. The difference between the \$10.50 approved rate and the \$20.64 cost based rate
29 has resulted in \$.0072 per kWh additional cost recovery in the energy rate.

30 Big Rivers concurs with Kenergy's assessment of its tariffs.

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b. Schedule 3 - Regarding Schedule 3, see the response to 8a with the following modification. Per the settlement agreement and by order of the Commission in Case No. 2008-00323, Kenergy's Schedule 3 for non-residential single phase service consists of a \$16.00 per month customer charge and a flat energy charge of \$.06074 per kWh. By comparison, the cost of service study filed in case No. 2008-323 supported a \$20.64 per month customer charge. The difference between the \$16.00 approved rate and the \$20.64 cost based rate has resulted in \$.0042 per kWh additional cost recovery in the energy rate.

Schedule 5 - Resulting from Case No. 2008-00323, Schedule 2 is now Schedule 5. Unlike Schedules 1 and 3, Schedule 5 contains demand charges. The following is an explanation of the demand component of the Schedule 5 as illustrated equivalent rate calculations:

If usage is:	Then the rates for energy and demand are:
From 0 to 200 kWh/kW	@ \$.05320/kWh + \$4.05/kW
From 200 to 400 kWh/kW	@ \$.03800/kWh + \$7.09/kW
From above 400 kWh/kW	@ \$.03300/kWh + \$9.09/kW

It is important to note that the energy rates do not decline as a function of energy volume. Rather, the energy rates decline as a function of load factor, which creates and inclining demand charge as load factor increases. The foregoing shows how demand charges are built into the load factor based energy charges of the rate. Each line shows the effective rates per kWh and kW for the load factor ranges of each block. Because the size of each energy block in kWh is a function of demand, the demand charges are a function of the difference in the energy charges by block. For example, a customer whose load factor exceeds 54.8% (400/730) would use energy through each block. By algebraically extracting the demand component from the first two blocks, the rates for the over 54.8% load factor customer can be restated as \$.033/kWh for all kWh plus of \$9.09/kW for all kW. The effective demand charge for this example is determined as follows: $(\$0.0532 - \$0.033) \times 200 + (\$0.038 - \$0.033) \times 200 + \$4.05$. Moreover, the \$.033 end block energy charge includes \$.0115 per kWh of additional demand cost recovery

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1 because Kenergy is purchasing energy at approximately \$.0215 per kWh. This load
2 factor block type of structure is an effective way to recover costs when the retail billing
3 demand is based on individual customer NCP while costs, especially wholesale power
4 costs, are a function of the diversified demand contributions to system peak demand as is
5 the case for Kenergy. The Schedule 5 structure recognizes that diversity is inversely
6 related to load factor. As shown above, the demand charge is low at very low load
7 factors and higher at the higher load factors. In this way, the demand component
8 combined with the demand costs built into the energy rates is sufficient to recover the
9 \$7.37 wholesale demand charge (approximately \$7.75 with losses) and distribution
10 demand costs across the customer class from customers whose load factors range from
11 the very low to the very high. At low load factors, individual customer maximum
12 demands will rarely coincide with the Kenergy system peak that determines the
13 wholesale cost of demand. Therefore, wholesale demand cost divided by retail billing
14 demand will on average be less than the wholesale demand rate that is applicable to the
15 wholesale billing demand.

16 By including demand charges in the design of Schedule 5, it is more supportive of
17 efficiency than rates without demand charges or some other type of demand price signal.
18 Like Schedules 1 and 3, Schedule 5 does not charge for energy or demand on a time
19 differentiated basis so in that way it is limited in its support for energy efficient
20 utilization by the customer. Also like Schedules 1 and 3, Schedule 5 is dependent upon
21 energy sales for the recovery of some fixed costs. It is also not supportive of energy
22 efficiency from Kenergy's perspective to the extent that "throughput incentives" have not
23 been removed.

24 Big Rivers concurs with Kenergy's assessments of its tariffs.

25
26 **Witnesses)** Sanford Novick
27 Jack D. Gaines
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1 **Item 9)** The following questions refer to Meade Co. RECC's tariffs:

2 a. State whether Big Rivers and Meade Co. RECC believe that Meade Co.
3 RECC's Schedule I rate for residential service and rate Schedule 2 for commercial
4 service, each with a customer charge and flat energy charge, supports energy efficiency.
5 Explain why or why not.

6 b. State whether Big Rivers and Meade Co. RECC believe that Meade Co.
7 RECC's rate Schedule 3 for three-phase power service and Schedule 4 for large power
8 service support energy efficiency.

9
10 **Response)** a. From Meade County RECC's perspective, Schedule 1 for
11 residential service and Schedule 2 for commercial service are not supportive of energy
12 efficiency to the extent that the "throughput incentives" have not been removed as
13 suggested by Section 111(d)(17)(B)(i) of PURPA. To extent conserving, or simply
14 lowering consumption, is consistent with efficient use of electric energy, Schedules 1 and
15 2 are supportive from the customer's perspective because the flat energy rate per kWh
16 includes fixed customer costs which results in an increased cost to the customer for
17 consumption. The extent to which conserving results in more efficient energy use
18 depends upon the nature of the conservation. Schedules 1 and 2 are limited in their
19 support for energy efficiency from a more global perspective because the price for energy
20 is not time sensitive for energy or demand. Therefore, the price signal to the customer is
21 the same regardless of the season, or the time of day. It should be noted, however, that
22 the wholesale energy rate paid by Meade County RECC to purchase power from Big
23 Rivers is not time differentiated thus lending no support to Meade County RECC for a
24 time based energy rate. Although the wholesale demand rate paid by Meade County
25 RECC to Big Rivers can be correlated with time, the Big Rivers demand charge is a
26 revenue generator designed to recover Big Rivers' fixed cost of service. Any retail
27 pricing strategy designed to affect customer demand must be evaluated in context with
28 the potential revenue and cost effects to Big Rivers.

29 Cooperatives, such as Meade County RECC, are owned by their members who
30 are their customers. As such, Meade County RECC is not motivated by profit and
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1 management's responsibility is to create value for its members by providing reliable
2 electric service at the lowest reasonable cost. The Meade County RECC management has
3 a responsibility to set rates to recover costs from each member fairly and in accordance
4 with the costs of service to the extent practical. Designing rates that better align with cost
5 is supportive of effective energy efficiency programs and investing in energy efficiency
6 activities. Setting rates based on cost of service is consistent with Meade County
7 RECC's responsibilities to its members. Practical limitations to achieving cost based
8 rates include consideration of customer impact of changes in pricing and structure,
9 metering technology and costs, and implementation costs of sophisticated rate structures.
10 As with most electric distribution utilities, Meade County RECC's rates are not fully
11 aligned with costs. For example, Schedules 1 and 2 are designed to recover some of the
12 fixed customer costs and all of the capacity costs of service through the energy charge of
13 the rate. As a result, Meade County RECC relies upon energy sales to recover a portion
14 of its fixed costs of distribution as well as demand related purchased power costs. When
15 an electric distribution utility relies upon energy sales to recover fixed costs and generate
16 a margin or profit, positive results from investing in energy efficiency have the potential
17 to have negative consequences for the utility's financial performance. Aligning rates
18 with costs will minimize the effects of "throughput incentives" that cause the utility to
19 rely upon energy sales to recover fixed costs. Meade County RECC has over time been
20 allowed by the Commission to gradually shift some fixed customer cost recovery away
21 from the energy charge and into the base customer charge. In this way, Meade County
22 RECC is taking measured steps toward more cost based rate structures while
23 simultaneously lessening the effects a throughput incentive may have on its rates.
24 Furthermore, aligning the energy rates with costs will provide an improved price signal to
25 Meade County RECC's consumers so that they can make a more economically informed
26 decision about electricity consumption.

27 Big Rivers concurs with Meade County RECC's assessment of its tariffs.
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29 b. Schedules 3 and 3A – Schedule 3 is more supportive of energy
30 efficiency from Meade County RECC's perspective because more of the fixed costs are
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1 recovered through the customer charge and the demand charge. Thus, the level of a
 2 throughput incentive is reduced relative to Schedules 1 and 2. As with Schedules 1 and
 3 2, the prices in Schedule 3 are not time differentiated but the limiting factors of the Big
 4 Rivers rate are the same. By comparison, Schedule 3A goes a little further in support of
 5 energy efficiency because it does include a time of day feature for determining billing
 6 demand. Like Schedules 1 and 2, Schedules 3 and 3A are dependent upon energy sales
 7 for the recovery of some fixed costs. Schedules 3 and 3A are also not supportive of
 8 energy efficiency from Meade County RECC's perspective to the extent that "throughput
 9 incentives" have not been removed.

10 Schedule 4 - Schedule 4 also contains demand charges and includes a time of day
 11 feature for determining billing demand. The following is an explanation of the demand
 12 component of Schedule 4 as illustrated equivalent rate calculations:

13 If usage is:	Then the rates for energy and demand are:
14 From 0 to 300 kWh/kW @	\$.03389/kWh + \$7.76/kW
15 Above 600 kWh/kW @	\$.02767/kWh + \$9.626/kW

16
 17 It is important to note that the energy rates do not decline as a function of energy
 18 volume. Rather, the energy rates decline as a function of load factor, which creates and
 19 inclining demand charge as load factor increases. The foregoing shows how demand
 20 charges are built into the load factor based energy charges of the rate. Each line shows
 21 the effective rates per kWh and kW for the load factor ranges of each block. Because the
 22 size of each energy block in kWh is a function of demand, the demand charges are a
 23 function of the difference in the energy charges by block. For example, a customer
 24 whose load factor exceeds 41.1% (300/730) would use energy through each block. By
 25 algebraically extracting the demand component from the first block, the rates for the over
 26 41.1% load factor customer can be restated as \$.02767/kWh for all kWh plus of
 27 \$9.626/kW for all kW. The effective demand charge for this example is determined as
 28 follows: (\$.03389-\$.02767) x 300 + \$7.76. Moreover, the \$.02767 end block energy
 29 charge includes \$.00573 per kWh of additional demand cost recovery because Meade
 30 County RECC is purchasing energy at approximately \$.0219 per kWh. This load factor

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1 block type of structure is an effective way to recover costs when the retail billing demand
2 is based on individual customer NCP while costs, especially wholesale power costs, are a
3 function of the diversified demand contributions to system peak demand as is the case for
4 Meade County RECC. The Schedule 4 structure recognizes that diversity is inversely
5 related to load factor. As shown above, the demand charge is low at very low load
6 factors and higher at the higher load factors. In this way, the demand component
7 combined with the demand costs built into the energy rates is sufficient to recover the
8 \$7.37 wholesale demand charge (approximately \$7.75 with losses) and distribution
9 demand costs across the customer class from customers whose load factors range from
10 the very low to the very high. At low load factors, individual customer maximum
11 demands will rarely coincide with the Meade County RECC system peak that determines
12 the wholesale cost of demand. Therefore, wholesale demand cost divided by retail billing
13 demand will on average be less than the wholesale demand rate that is applicable to the
14 wholesale billing demand.

15 By including time based demand charges in the design of Schedule 4, it is more
16 supportive of efficiency than rates without. Also, like Schedules 1, 2, 3 and 3A, Schedule
17 4 is dependent upon energy sales for the recovery of some fixed costs. It is also not
18 supportive of energy efficiency from Meade County RECC's perspective to the extent
19 that "throughput incentives" have not been removed.

20 Big Rivers concurs with Meade County RECC's assessment of its tariffs.

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22 **Witnesses)** Burns E. Mercer
23 Jack D. Gaines
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1 **Item 10)** State whether Big Rivers and each member support inclining block rates.
2 Explain your answer in detail.

3
4 **Response)** Big Rivers and its Members do not support inclining block rates. This rate
5 design may, in fact, incent some customers to install more energy efficient equipment or
6 fuel switch to natural gas, in areas where gas is available, to avoid the increased costs.
7 Many rural areas in western Kentucky, which constitute a significant portion of the
8 Members' service territory, have lower household income and limited access to natural
9 gas relative to more urban areas of the state. Further, according to the U.S. Department
10 of Energy's Energy Information Administration, households with incomes of less than
11 \$40,000 per year consume 30% more electricity per square foot that those with household
12 incomes over \$100,000. According to the Economic Research Service, the average per-
13 capita income for all Kentucky residents in 2006 was \$29,729, while rural per-capita
14 income lagged at \$23,751. Estimates from 2007 indicate a poverty rate of 21.8% in rural
15 Kentucky, compared to 13.7% in urban areas of the state. (USDA-ERS, 2008). Inclining
16 block rates will, therefore, impact lower income and rural households without access to
17 natural gas more severely than those with higher incomes and/or those living in or around
18 metropolitan areas.

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20 **Witnesses)** Russ Pogue
21 G. Kelly Nuckols
22 Sanford Novick
23 Burns E. Mercer

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1 **Item 11)** With reference to the discussion about the recovery of only a portion of
2 fixed costs through the customer charge, at Big Rivers Joint Direct, page 11, lines 10
3 through 17, address the following:

4 a. When did Big Rivers and each member perform their most recent cost of
5 service study?

6 b. Describe the relationship of Big Rivers and each member's current rates
7 and charges to the level of rates and charges indicated by the results of their most recent
8 cost of service study.

9 c. Identify each specific case filed by each of Big Rivers' member
10 cooperatives that were not settled in which the Commission did not grant the residential
11 customer charge increase requested by the member cooperative. In terms of the increase
12 in the residential customer charge, describe the result (in terms of amount and percent
13 increase granted) of each case so identified.

14
15 **Response)** a. Big Rivers last performed a cost of service study in 1998. Kenergy
16 filed a cost of service study on September 2, 2008, in Case No. 2008-00323. Meade
17 County RECC filed its last cost of service study on March 13, 2007, in Case No. 2006-
18 00500. JPEC performed its last cost of service study in connection with Case No. 2007-
19 00116 covering the calendar year 2006.

20
21 b. The rates set by the Commission for Big Rivers are based on Big
22 Rivers' need for cash more so than cost of service.

23 Based on Kenergy's most recent cost of service study, the customer charge is not
24 as high as it should be. *See* the response to Item 8 herein.

25 Meade County RECC's results from Case No. 2006-00500 indicate that each rate
26 class is providing revenues that provide for the full recovery of each class's cost to serve.
27 The rate design indicates that the customer charge for the residential class does not
28 provide for the full recovery of the customer related costs. The customer charge for the
29 residential class provides for approximately 50% of the customer costs; Rate 2
30

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1 (Commercial) provides for approximately 85% of the cost to serve; and Rate 3R (General
2 Service) provides for the full recovery of the cost to serve.

3 JPEC's current customer charge rates are below that indicated by the cost of
4 service study. In Case No. 2007-00116 the customer charge was raised by a greater
5 percentage than the energy charge. The customer charge was not raised to the level
6 indicated by the cost of service study in recognition of past experiences with the Office of
7 the Attorney General and through the concept of gradual rate increases.

8
9 c. Kenergy has no such cases. For Meade County RECC, Case No.
10 2006-00500 was not settled. Meade County RECC requested an increase in the customer
11 charge from \$8.00 to \$9.90 for Schedule 1 and an increase in the customer charge to
12 \$15.00 for Schedule 2. The Commission granted an increase in the customer charge to
13 \$9.85 for Schedule 1 and to \$14.87 for Schedule 2. JPEC has settled all recent rate cases.

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15 **Witnesses)** David A. Spainhoward
16 G. Kelly Nuckols
17 Sanford Novick
18 Burns E. Mercer
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1 **Item 12)** With reference to EISA 2007, Section 532(a)(17)(B)(i), under which the
2 Commission shall consider removing the throughput incentive, address the following:

3 a. State whether or not Big Rivers and each member support decoupling.
4 Explain your answer in detail.

5 b. Current literature describes a myriad of decoupling mechanisms. If
6 applicable, describe specifically the form of decoupling that Big Rivers and each member
7 support.

8
9 **Response)** a. In Administrative Case No. 2007-00477, Big Rivers opposed
10 “revenue decoupling” as a rate structure to achieve energy efficiency. *See* Big Rivers’
11 Response to Item 6 of the Commission Staff’s First Data Request in Case No. 2007-
12 00477. However, Big Rivers and its Members do not oppose decoupling to remove
13 potential revenue shortfalls resulting from moderate weather and economic contraction
14 and to closer align rates with costs. Further analysis would be required to evaluate
15 revenue shifts, which will ultimately impact the Members’ retail customers.

16
17 b. Decoupling by definition allows a utility to generate revenues
18 which allow it to maintain financial health independent of customers’ energy
19 consumption. Big Rivers and its Members do not have a position on preferred methods
20 of decoupling.

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22 **Witnesses)** Russ Pogue
23 G. Kelly Nuckols
24 Sanford Novick
25 Burns E. Mercer
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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
JACKSON PURCHASE ENERGY CORPORATION, KENERGY CORP.,
AND MEADE COUNTY RURAL ELECTRIC COOPERATIVE CORPORATION
TO THE INITIAL DATA REQUEST OF COMMISSION STAFF
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1 **Item 13)** Explain whether or not Big Rivers and each member believe the
2 Commission should implement decoupling to support energy efficiency.

3

4 **Response)** Big Rivers and its Members support the alignment of rates with cost of
5 service, which will remove the throughput incentive without shifting costs to rural and
6 low income consumers as discussed in the response to Item 10 herein. Using a
7 decoupling mechanism to support energy efficiency is unnecessary because a mechanism
8 already exists (the DSM surcharge) to achieve this objective

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10 **Witnesses)** Russ Pogue
11 G. Kelly Nuckols
12 Sanford Novick
13 Burns E. Mercer

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1 **Item 14)** Refer to page 11 of Big Rivers Joint Direct, where reference is made to a
2 number of rate design options that can eliminate throughput incentive.

3 a. Provide a list of the options and the reasons for and against
4 implementation of each option.

5 b. Explain whether Big Rivers or each member plan to implement any of the
6 options identified.

7
8 **Response)** a. The options to eliminate throughput incentives available to Big
9 Rivers' Members fall into two main categories as follows:

10 The first category involves removing all fixed cost recovery from volumetric
11 charges such that the recovery of fixed costs is assured regardless of the consumption
12 decisions of the customers. Two types of rates could meet this objective to varying
13 degrees:

14 1. The most extreme form would be rates that recover all fixed costs
15 through flat customer charges. This type of rate would completely
16 eliminate throughput incentives. However, it is not a cost based
17 rate structure since it does not recognize that some costs are a
18 function of demand and system utilization. Furthermore,
19 excluding all fixed costs from volumetric charges reduces the
20 consumption price signal to the customer. As result, there will be
21 less of an incentive to conserve.

22 2. An alternative that better reflects cost of service involves rates that
23 include cost-based customer charges and demand charges that fully
24 recover fixed costs. Such rates would more fairly recover costs.
25 Although the throughput incentive would not be 100% eliminated
26 by using demand charges rather than energy charges for the
27 recovery of fixed demand costs, the throughput incentive would be
28 minimized and energy conservation would have less of an effect on
29 fixed costs recovery. However, it has historically been impractical
30

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1 to incorporate demand charges in residential rates due to
2 implementation costs and customer understanding.
3

4 The second option involves a more indirect approach in which the cooperative is
5 allowed to recapture net revenue erosion resulting from sales reductions resulting from
6 conservation measures through some type of surcharge. Such an approach could work in
7 theory to provide financial protection to a cooperative. However, it involves assumptions
8 and estimates to determine "costs" to be recaptured. It also begs the question, how
9 should the surcharge be applied and who should pay it? It also adds another factor to the
10 customer's bill.
11

12 b. At this time, Big Rivers' Members are not planning to pursue any
13 of the options identified in a. Rather, the Members recognize that when an electric
14 distribution utility relies upon energy sales to recover fixed costs and generate a margin
15 or profit, positive results from investing in energy efficiency have the potential to have
16 negative consequences for the utility's financial performance. The Members believe that
17 aligning rates with costs will minimize the effects of "throughput incentives" that cause
18 the utility to rely upon energy sales to recover fixed costs and that moving to more cost-
19 based rates is the best strategy.
20

21 **Witness)** Russ Pogue
22 G. Kelly Nuckols
23 Sanford Novick
24 Burns E. Mercer
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1 **Item 15)** Refer to pages 14 and 15 of Big Rivers Joint Direct. Using its experience
2 in its advanced meter infrastructure (“AMI”) pilot program, explain whether Kenergy
3 believes AMI systems can be cost-effective using current day technology.

4
5 **Response)** The cost effective benefit of AMI technology will be found in operating
6 efficiencies, when the retrieving of actual real-time metering data avoids on site
7 verification and the expense of a trip made for any one of several reasons. Real-time data
8 also provides for more precise system design and the most economical resource
9 utilization, while enhancing reliability. The AMI system has the capability of demand
10 response control and can provide real-time energy usage information to the consumer.

11
12 **Witnesses)** Sanford Novick

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1 **Item 16)** Refer to page 17 of Big Rivers Joint Direct. There are no customers
2 participating in Kenergy's real-time pricing pilot program. Explain whether potential
3 participants have been identified and if the program has been explained to them.

4
5 **Response)** Kenergy has identified one potential participant for the real-time pricing
6 pilot program. It is currently working with an industrial prospect with a 100 MW load in
7 Hancock County, Kentucky. Kenergy/Big Rivers have provided a market-based rate
8 quote and a copy of Kenergy's Schedule 41 to the prospect.

9
10 **Witnesses)** Sanford Novick

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1 **Item 17)** Describe any AMI deployed by Big Rivers and each member.

2

3 **Response)** Big Rivers has electronic meters, which measure the total station power
4 consumption, installed at all rural and industrial delivery point substations of its Members
5 or their customers. The metering data in many cases is provided to either the Member or
6 to the direct served industrial customer for their use and benefit. Big Rivers utilizes
7 cellular phone services to provide communication to the meters.

8 JPEC deployed a pilot project of Cannon AMI meters in December 2006. Based
9 on successful results, JPEC plans to implement a full system deployment over a period of
10 24 months beginning in 2009.

11 Kenergy has deployed 2 small pilots that utilize power line carrier as a means to
12 provide 2 way communications to meters. An additional objective is to evaluate metering
13 data for the purpose of future rate designs, system automation, reliability improvement
14 and more precise engineering analysis.

15 Meade County RECC has deployed the Landis + Gyr (formerly Hunt
16 Technologies) AMI Infrastructure.

17

18 **Witnesses)** David G. Crockett

19 G. Kelly Nuckols

20 Sanford Novick

21 Burns E. Mercer

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RESPONSE OF BIG RIVERS ELECTRIC CORPORATION,
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1 **Item 18)** Describe any transmission and distribution automation equipment
2 Describe any AMI deployed by Big Rivers and each member.
3

4 **Response)** Big Rivers has not deployed any transmission automation equipment other
5 than the remote control capability of substation equipment via its SCADA/EMS system
6 and remote control capability of certain line equipment via its radio control switching
7 system. However, these are operator interface systems not automated systems.

8 JPEC currently has four types of distribution automation equipment deployed.
9 The first type is a Substation Control and Data Acquisition (“SCADA”) system. This
10 system provides load and fault data to JPEC’s operations center and allows for the remote
11 control of substation devices from JPEC’s operations center. JPEC is currently
12 upgrading this system to provide more reliable information in an almost real-time setting.
13 The second type is the use of automatic overhead switches that provide service to the
14 Kentucky Oaks shopping mall in Paducah. This system consists of two switches
15 operating together that tie two circuits together to provide reliable service to the mall. If
16 the switches sense that the mall has lost power, they work independently to automatically
17 switch service to the mall from another circuit. The third type of automation deployed by
18 JPEC consists of pad-mounted switches that provide service to a banking company that
19 requires reliable service. This system operates in a similar fashion between two circuits
20 as that described for the mall. The last type utilizes two overhead switches that
21 communicate with each other to isolate faults and provide service to critical commercial
22 load near the mall. Two circuits are again utilized and the lines are divided into three
23 sections.

24 All of Kenergy’s substations are equipped with 2 way communications for circuit
25 switches and voltage control. A SCADA system constantly monitors status and value for
26 each device. Preset commands control these devices when distribution system conditions
27 indicate a need for response. Every change of state is reported via SCADA to the
28 Operations Center.
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1 Meade County RECC currently has four substations outfitted with recloser and
2 regulator controls which have the ability to be remotely controlled by its SCADA system
3 by Power Measurement.
4

5 **Witnesses)** David G. Crockett
6 G. Kelly Nuckols
7 Sanford Novick
8 Burns E. Mercer
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1 **Item 19)** Describe any digital communications or any other smart grid technology
2 deployed by Big Rivers and each member.

3
4 **Response)** Big Rivers has a digital microwave communication system, which is used
5 in the operation of its transmission system (i.e. SCADA/EMS, two-way radio, radio-
6 controlled switching, etc.) and through which it provides communication connectivity to
7 its Members and has connectivity to some of its interconnected neighboring utility
8 systems.

9 JPEC is installing an AMI system that will be fully integrated with its Outage
10 Management System (OMS). Integrating these two systems will allow JPEC to
11 communicate with meters from its operations center to determine if services are out and
12 which services were affected by events. This communication will reduce the number of
13 crew visits JPEC makes to service locations that are not without power and will provide
14 information that will improve troubleshooting to restore service faster when it has been
15 lost. JPEC is also upgrading communications from its operations center to its substations
16 using a combination of fiber optic cable and a high speed digital radio system. Using
17 these communications paths, JPEC will have the ability to download fault data and
18 reprogram devices remotely. The fault data will be used to troubleshoot fault locations to
19 restore service and eliminate problem areas faster. Reprogramming devices remotely can
20 prevent outages by allowing device parameters to be changed before predicted incidents
21 occur.

22 Meade County RECC currently has digital communication to all substations and
23 its two offices. A digital microwave has been installed between the Brandenburg office,
24 Hardinsburg office, and Big Rivers. There is also a link between the Brandenburg office
25 and one of its substations. All of the other substations have a point to point VPN using
26 Cisco Firewalls between the Brandenburg office and the substations. These substations
27 have been equipped with high speed DSL, except for one which has high speed satellite
28 communication.

29 Kenergy has not deployed any other digital communication equipment other than
30 that described in the response to Item 17 herein.

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Witnesses) David G. Crockett
G. Kelly Nuckols
Sanford Novick
Burns E. Mercer

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1 **Item 20)** Describe Big Rivers' and each member's plans with regard to the
2 installation of additional smart grid technology and components. Include budgets and
3 timelines if appropriate. If Big Rivers and each member have no specific plans for the
4 installation of additional smart grid technology and components, explain why not.

5
6 **Response)** Big Rivers has no plans to install additional smart grid technology or
7 components at this time. Big Rivers will continue to make prudent decisions in system
8 planning, which will include consideration of the appropriate factors and consideration of
9 available technologies (including smart grid technologies).

10 JPEC has investigated automated metering systems since 1999. JPEC entered a
11 pilot project of approximately 100 telephone based AMR's in 1999. JPEC was not
12 satisfied with the inherent problems with telephone based systems and launched a full
13 scale task force investigating AMR in late 2000. Based upon the task force findings,
14 JPEC determined that AMR at that time was not cost effective nor was the technology
15 mature enough to support deployment of an AMR system. JPEC continued to monitor
16 advancements in AMR technology and in December 2006 launched a 1,000 meter, sub-
17 station wide deployment of the Cannon AMR system.

18 One of these reasons for selecting the Cannon system was the nearly real time
19 information gathering capabilities and the ability to implement future anticipated industry
20 changes such as time of use billings. In fact, JPEC refers to the AMR system as an AMI
21 (Automated Meter Information) system because of its advanced features. After
22 monitoring the pilot project for over a year, JPEC made plans to fully deploy the Cannon
23 system over a twenty-four month period beginning in January 2009. JPEC estimates the
24 total cost of a full 29,000 meter system to be approximately \$5.7 million. JPEC believes
25 that this deployment is an integral part of the move to a smart grid.

26 Savings in expense and energy are expected to be made in several areas. The
27 most obvious benefit is that meter reading vehicles will not be on the road. This is a
28 factor in both monthly reading and in special trips to read the meter when service is
29 changed. Savings in energy efficiency are expected to be made as the engineering
30 department is better able to appropriately size equipment and determine areas and reasons

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1 for line loss. JPEC will be able to “ping” each meter when a line has been restored to
2 insure that all members have been restored to power before line trucks leave the trouble
3 area. Integration of AMI system information into the Outage Management System will
4 allow the crews to pinpoint the specific trouble area, reducing truck roll time. Further,
5 JPEC believes that information from the AMI system will be available to the member
6 allowing them to use energy in a more efficient manner. JPEC anticipates that at some
7 time in the future, it may be able to offer pre-paid service which is generally
8 acknowledged to reduce energy consumption as pricing becomes more apparent to the
9 retail customer.

10 JPEC is currently spending \$250,000 to upgrade the automation systems in the
11 mall area described in the response to Item 18 herein. The three switching systems
12 discussed in Item 18 will be upgraded and integrated together in this project. The end
13 result of this project will be for two substations to provide complete backup service to
14 each other. The system will operate automatically to isolate faults and provide service to
15 as many customers as possible in any incident, even the total loss of a substation. This
16 system will also provide status and fault information to JPEC’s operations center so
17 JPEC’s operations personnel will be better informed about the status of switches and
18 operations occurring in this area. This upgrade is scheduled for completion this summer.
19 JPEC is also upgrading highside protection devices at its substations. As funding is
20 available, JPEC is replacing devices that do not provide communications with digital
21 devices that provide better opportunities for logical programming on substation high side
22 devices, better information to JPEC’s operations center, and opportunities for near real-
23 time communications to high side devices in its substations.

24 While it has long been the practice of Kenergy to search for and purchase, when
25 feasible, logic-based devices that integrate into a smart application, there are no budgets
26 or timelines established for full implementation. Kenergy anticipates that the AMI Pilot
27 results will include data that can help define a viable smart grid plan.

28 As new substations are constructed, Meade County RECC installs equipment
29 controls and measurement devices that allow easy interface with SCADA and other
30 similar types for smart grid systems; however, Meade County RECC has no immediate
31

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1 plans to install any additional smart grid technology. Any future regulators or reclosers
2 ordered will have the capability for remote control. Because Meade County RECC does
3 not have an on-site 24 hour dispatch center, the implementation of a system-wide
4 SCADA or down-line system is unwarranted. Communications to down-line devices are
5 very limited in Meade County RECC's service territory. Meade County RECC's AMI
6 system is fully implemented and is to be integrated into the Cooperative's GIS system to
7 assist with system load flow studies.

8

9 **Witnesses)** David G. Crockett
10 G. Kelly Nuckols
11 Sanford Novick
12 Burns E. Mercer

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1 **Item 120)** The American Recovery and Reinvestment Act of 2009 (“Stimulus Bill”)
2 contains a number of spending and tax measures crafted to inject more aggregate demand
3 into the nation’s sagging economy. Some of those measures impact, among other things,
4 energy infrastructure. Certain provisions of EISA 2007 have been amended to reflect the
5 incentives enacted by the Stimulus Bill, particularly in the area of smart grid technology.
6 Explain whether or not your opinion on smart grid investments has changed in light of
7 these amendments.

8
9 **Response)** The opinion of Big Rivers and its Members on smart grid investments has
10 not changed. They will continue to review the measures in the Stimulus Bill to determine
11 if smart grid investments are beneficial.

12
13 **Witnesses)** David G. Crockett
14 G. Kelly Nuckols
15 Sanford Novick
16 Burns E. Mercer

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