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JUL 08 2013

PUBLIC SERVICE
COMMISSION

Via Overnight Mail

June 11, 2013

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

Re: Case No. 2013-00144

Dear Mr. Derouen:

Please find enclosed the original and ten (10) copies each of the PUBLIC VERSION of the DIRECT TESTIMONY AND EXHIBITS OF LANE KOLLEN and the DIRECT TESTIMONY AND EXHIBITS OF PAUL COOMES and ALAN TAYLOR on behalf of KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC. for filing in the above-referenced docket. I also enclose a copy of the CONFIDENTIAL pages to be filed under seal.

By copy of this letter, all parties listed on the Certificate of Service have been served. Please place this document of file.

Very Truly Yours,



Michael L. Kurtz, Esq.

Kurt J. Boehm, Esq.

Jody Kyler Cohn, Esq.

BOEHM, KURTZ & LOWRY

MLKkew
Attachment

cc: Certificate of Service
Quang Nyugen, Esq.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was served by mailing a true and correct copy via electronic mail (when available) and regular U.S. Mail to all parties on this 5TH day of July, 2013.



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JUL 08 2013

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:)
 (1) The Approval Of The Terms And Conditions Of The)
 Renewable Energy Purchase Agreement For Biomass)
 Energy Resources Between The Company And)
 EcoPower Generation-Hazard LLC; (2) Authorization) Case No. 2013-00144
 To Enter Into The Agreement; (3) The Grant of Certain)
 Declaratory Relief; And (4) The Grant Of All)
 Other Required Approvals And Relief)

PUBLIC VERSION
 DIRECT TESTIMONY
 AND EXHIBITS
 OF
 LANE KOLLEN

ON BEHALF OF THE
 KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

J. KENNEDY AND ASSOCIATES, INC.
 ROSWELL, GEORGIA

July 5, 2013

J. Kennedy and Associates, Inc.

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The Mitchell Generating Station; (3) Declaratory Rulings;)
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Other Required Approvals And Relief)

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DIRECT TESTIMONY OF LANE KOLLEN

I. QUALIFICATIONS AND SUMMARY

1 **Q. Please state your name and business address.**

2 A. My name is Lane Kollen. My business address is J. Kennedy and Associates, Inc.
3 ("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia
4 30075.

5
6 **Q. What is your occupation and by whom are you employed?**

7 A. I am a utility rate and planning consultant holding the position of Vice President and
8 Principal with the firm of Kennedy and Associates.

9
10 **Q. Please describe your education and professional experience.**

J. Kennedy and Associates, Inc.

1 A. I earned a Bachelor of Business Administration in Accounting degree and a Master
2 of Business Administration degree from the University of Toledo. I also earned a
3 Master of Arts degree in theology from Luther Rice University. I am a Certified
4 Public Accountant (“CPA”), with a practicing license, a Certified Management
5 Accountant (“CMA”), and a Chartered Global Management Accountant (“CGMA”).

6 I have been an active participant in the utility industry for more than thirty
7 years, initially as an employee of The Toledo Edison Company from 1976 to 1983
8 and thereafter as a consultant in the industry since 1983. I have testified as an expert
9 witness on planning, ratemaking, accounting, finance, and tax issues in proceedings
10 before federal and state regulatory commissions and courts on hundreds of
11 occasions.

12 I have testified before the Kentucky Public Service Commission on dozens of
13 occasions, including the most recent Kentucky Power Company (“Kentucky Power”
14 or “Company”) base rate proceedings, Case Nos. 2009-00459 and 2005-00341; the
15 Company’s pending Mitchell acquisition proceeding, Case No. 2012-00578; the
16 Company’s purchased wind power proceeding, Case No. 2009-00545; various
17 Company Environmental Cost Recovery (“ECR”) proceedings; and other
18 proceedings involving the Company, Louisville Gas and Electric Company,
19 Kentucky Utilities Company, Big Rivers Electric Corporation, and East Kentucky
20 Power Cooperative, Inc. My qualifications and regulatory appearances are further
21 detailed in my Exhibit ___(LK-1).

1

2 **Q. On whose behalf are you testifying?**

3 A. I am testifying on behalf of the Kentucky Industrial Utility Customers, Inc.
4 (“KIUC”), a group of large customers taking electric service on the Kentucky Power
5 Company system. The members of KIUC participating in this case are: Air Products
6 & Chemicals, Inc., Air Liquide Large Industries U.S. LP, AK Steel Corporation,
7 EQT Corporation, and Marathon Petroleum Company LP.

8

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to address and make recommendations in response
11 to the Company’s request to: 1) enter into a 20 year renewable energy purchase
12 agreement (“REPA”) to purchase the output of a biomass generating facility owned
13 and operated by ecoPower Generation-Hazard LLC, 2) approve the terms and
14 conditions of the REPA, and 3) declare that the recovery of all costs associated with
15 the REPA through a rider is appropriate.

16

17 **Q. Please summarize your testimony.**

18 A. I recommend that the Commission reject the Company’s request to recover [REDACTED]
19 [REDACTED] through its proposed rider over the next 20 years.¹ Contrary to the

¹ This amount will be more or less depending only on the output of the facility. The REPA specifies the rates that will be applied to the energy output.

1 Company's claims set forth in its Application, the REPA is not necessary for it to
2 provide "adequate, efficient and reasonable service" to its customers and it will not
3 result in fair, just, and reasonable rates for numerous reasons.

4 First and fundamentally, the Company does not need the capacity or energy
5 from the REPA,² a fact that the Company readily acknowledges. In Case No. 2009-
6 00545, the Commission rejected a similar request by the Company to enter into a
7 REPA with FPL Illinois Wind, LLC to purchase the output and environmental
8 attributes for 100 mW of wind power over a 20 year term. In that case, the
9 Commission found that it was required to "analyze the need for this additional
10 generating capacity" pursuant to the statutory requirements for the certification of
11 new facilities as set forth in KRS 278.020(1). In that case, the Commission rejected
12 the Company's request because there was no federal or state renewables mandate,
13 the additional generation was not needed, and the Company failed to demonstrate
14 that the proposed REPA was least-cost compared to other available energy sources.
15 There still is no federal or state renewables mandate, the additional generation is not
16 needed, and the Company has not shown that this REPA is least-cost compared to
17 other available energy sources.

² The Company has pending a proposal to acquire an undivided 50% ownership interest in each of the Mitchell 1 and Mitchell 2 coal-fired generating units prior to the date when it plans to retire Big Sandy 2. The Company also has pending a gas conversion option for Big Sandy 1 in lieu of retirement or the replacement of Big Sandy 1 capacity with other capacity pursuant to a competitive bid. It does not need the REPA capacity or energy if it is able to economically replace Big Sandy 2 and to economically modify or replace Big Sandy 1.

1 Second, the Company failed to issue a Request for Proposal (“RFP”) for any
2 capacity or energy, generally, or for renewable capacity or energy, more
3 specifically.³ Thus, even if there were a need for capacity or energy, the Company
4 considered no other options and there are no objective benchmarks against which to
5 compare the Company’s proposed REPA. The Company’s failure to issue an RFP is
6 addressed further by KIUC witness Mr. Alan Taylor.

7 Third, the Company failed to provide any evidence that the capacity and
8 energy is least cost, or even that it is least cost compared to other renewable capacity
9 and energy resources, another fact that the Company readily acknowledges. This
10 issue is addressed further by Mr. Taylor.

11 Fourth, the cost of the REPA is excessive compared to other available energy
12 sources, including, but not limited to, market purchases from PJM based on PJM
13 forward prices, yet another fact that the Company readily acknowledges. .

14 Fifth, the REPA will increase rates unnecessarily and significantly. The
15 resulting rates will not be fair, just, and reasonable. The Company estimates that the
16 initial rate increase will be \$35.151 million, or 7.0% on a total revenues basis, in
17 2017 when the facility will be completed. However, the Company’s estimate of the
18 initial rate increase is understated. The Company’s estimate does not include the
19 effects of the increased (“richer”) common equity ratio necessary to offset the

³The Company failed to issue an RFP in Case No. 2009-00545 (proposed REPA with FPL Illinois Wind), Case No. 2011-00401 (proposed Big Sandy 2 environmental retrofits), Case No. 2012-00578 (acquisition of 50% of Mitchell units).

1 treatment by the credit rating agencies of the REPA as a debt equivalent. If the
2 effect of the richer common equity ratio is included, then the initial rate increase will
3 be \$39.284 million, or 7.8% on a total revenue basis. In addition, the Company's
4 estimate does not include the additional rate increases that will occur each year for
5 20 years through the proposed rider due to the annual escalation factors incorporated
6 in the REPA. These additional increases add yet another 5.3% to the total rate
7 increases over the term of the REPA. The economic effects of these unnecessary
8 rate increases on the people and businesses in the Kentucky Power Company service
9 territory are addressed further by KIUC witness Dr. Paul Coomes.

10 Sixth, in stark contrast to the harm that will be visited on customers, the
11 Company actually will benefit from the REPA because it will retain 40% of the
12 margins from additional off-system sales ("OSS") through the operation of the
13 System Sales Clause ("SSC"). The Company readily acknowledges this fact. This
14 result clearly is inequitable. If the Commission approves the REPA, then it also
15 should direct that these incremental OSS margins be assigned 100% to customers so
16 that the Company is not enriched while customers are harmed.

17 Finally, the Company's reliance on claims of economic development and fuel
18 diversity benefits as the bases for approval of the REPA, while laudable goals, are
19 not sufficient to overcome the lack of need for the resource, the failure to issue an
20 RFP, the failure to ensure that all necessary resources are acquired at least cost, the
21 unnecessary and significant rate increase, and the enrichment of the Company at the

1 expense of its customers.

2 The Commission should exercise particular care in its review of this REPA
3 due to the sheer magnitude of the rate recoveries over the 20 year term and due to the
4 provisions of SB 46 enacted into law earlier this year. Under SB 46, once the
5 Commission approves an agreement to purchase power from a biomass facility, it
6 never can revisit the terms or the costs of the agreement for the entire initial term of
7 that agreement.

8

9 **II. THE REPA IN THIS CASE SHOULD BE REJECTED BECAUSE IT IS**
10 **NOT NEEDED, NOT JUST OR REASONABLE AND NOT LEAST COST**
11

12 **Q. Please describe the Company's request for approval of a REPA in Case No.**
13 **2009-00545.**

14 A. In that proceeding, the Company sought approval to enter into a REPA with FPL
15 Illinois Wind, LLC. Under the terms of that REPA, Kentucky Power would have
16 purchased a 100 mW share of the electrical output and environmental attributes of
17 the Lee-DeKalh Wind Energy Center for a 20-year term.

18

19 **Q. Did the Company seek certification of the REPA in Case 2009-00545 under the**
20 **certification statute, KRS 278.020?**

21 A. No. Similar to its request in this proceeding, the Company sought approval of the
22 REPA as "evidence of indebtedness under KRS 278.300" in Case No. 2009-00545.

1 It did not seek certification under KRS 278.020. Nevertheless, the Commission
2 determined that that it would apply the standards set forth in KRS 278.020. In its
3 Order in that proceeding, the Commission stated that the “purposes and uses of the
4 proposed issue” were for the acquisition of new generation and, consistent with that
5 determination, the Commission concluded that “there must be a need for additional
6 generation and the absence of wasteful duplication,” two specific requirements set
7 forth in the certification statute.

8 In that Order, the Commission stated that “there is no mandate at this time for
9 utilities in Kentucky to supply renewable energy.” The Commission further
10 determined that “Kentucky Power has not satisfied its burden of proof to
11 demonstrate that the wind power is needed or that it will over time be least cost.”
12

13 **Q. Starting with the first criterion addressed by the Commission in Case No. 2009-**
14 **00545, is there a statutory “mandate at this time for utilities in Kentucky to**
15 **supply renewable energy”?**

16 **A.** No. There are no federal or state mandates for utilities in Kentucky to supply
17 renewable energy.
18

19 **Q. Has the Company met the “burden of proof to demonstrate that the [biomass]**
20 **power is needed”?**

1 A. No. To the contrary, the Company readily admits that the REPA is not needed and
2 readily admits that it performed no studies or analyses to demonstrate that the power
3 is needed. When asked to supply copies of all studies and analyses demonstrating
4 Kentucky Power's need for the energy and capacity supplied by the REPA, the
5 Company responded to KIUC 1-19 that "there are no studies or analysis." I have
6 provided a copy of the response to KIUC 1-19 as my Exhibit ___ (LK-2).

7

8 **Q. Has the Company met the "burden of proof to demonstrate that the [biomass]**
9 **power . . . will over time be least cost"?**

10 A. No. To the contrary, the Company readily admits that the REPA is not least cost,
11 that it performed no studies to determine if it was the least cost resource, and that it
12 did not test the cost of the REPA against the market and other alternatives by issuing
13 an RFP. In response to AG-1-7, the Company stated that "It is unlikely that any
14 renewable resources in Kentucky would be the least cost option."

15 In response to KIUC 1-13, asking whether the Company had performed any
16 studies in order to identify the least-cost means of providing energy and capacity, the
17 Company stated: "There were no studies performed."

18 In response to KIUC 1-12, asking whether it had performed an RFP to
19 determine the least cost renewable source of capacity and energy, the Company's
20 stated that it "did not conduct an RFP to determine the least cost 'renewable'
21 capacity and energy."

1 In response to PSC Staff 1-11, the Company stated that “Neither Kentucky
2 Power, American Electric Power (“AEP”) or any AEP subsidiary or affiliate has
3 performed any economic studies or analyses in connection with the ecoPower
4 biomass generating facility.” I have provided a copy of the response to AG-1-7 as
5 my Exhibit__(LK-3), the response to KIUC 1-13 as my Exhibit__(LK-4), the
6 response to KIUC 1-12 as my Exhibit__(LK-5), and the response to PSC Staff 1-11
7 as my Exhibit__(LK-6).

8
9 **Q. Should the Commission approve the Company’s request if it applies the same**
10 **criteria that it applied in Case No. 2009-00545?**

11 A. No. The Company’s proposed REPA in this case fails each criterion set forth by the
12 Commission for review and approval of the proposed REPA in Case No. 2009-
13 00545. The Company has offered no compelling reason for the Commission to
14 depart from the application of those same criteria or to reverse itself based on
15 essentially the same factual basis that it addressed in Case No. 2009-00545.

16
17 **III. THE RATE INCREASES FOR THE REPA ARE UNNECESSARY AND**
18 **AVOIDABLE; IF THE REPA IS APPROVED, THE RATE INCREASES**
19 **WILL BE GREATER THAN ESTIMATED BY THE COMPANY**
20

21 **Q. Please describe the REPA rate increases.**

22 A. The Company estimates that the REPA will require an initial rate increase of

1 \$50.661 million through its proposed rider, which it estimates will be offset by
2 \$12.780 million in avoided fuel costs, presumably through the Fuel Adjustment
3 Clause (“FAC”) and \$2.730 million in avoided capacity costs, for a net increase of
4 \$35.151 million. The Company’s estimate does not include any potential offset for
5 Section 45 production tax credits. [Wohnhas Direct at 4]. The Company’s
6 calculations are summarized on Mr. Wohnhas’ Exhibit RKW-1. The REPA will
7 require additional annual increases in the proposed rider to reflect the annual
8 escalation of the energy prices set forth in the REPA over the 20 year term of the
9 contract.

10
11 **Q. What is the magnitude of the rate increases over the 20 year term of the REPA?**

12 A. The sum of the increases through the proposed rider to recover the payments to
13 ecoPower over the term of the REPA is [REDACTED] before any offsets for avoided
14 fuel costs and avoided capacity costs.

15
16 **Q. Are the REPA rate increases necessary?**

17 A. No. The REPA itself is unnecessary. Therefore, the rate increases are unnecessary
18 and can be avoided simply by rejecting the proposed REPA.

19
20 **Q. Is the Company’s calculation of the estimated rate increase correct?**

1 A. No. The Company's estimate quantified only the amount that it would recover
2 through a rider. The Company did not quantify or include the effects on base and
3 environmental surcharge rates of a richer per books common equity ratio that it
4 readily acknowledges will be necessary in order to offset the additional debt imputed
5 by the credit rating agencies ("debt equivalent") for such purchased power
6 agreements. [Wohnhas Direct at 5-7]. I refer to this additional revenue requirement
7 as the "common equity penalty."

8 Although the REPA will not require the Company actually to issue additional
9 financing, the treatment by the credit rating agencies of the REPA as a debt
10 equivalent will require the Company to increase its actual common equity by
11 displacing or avoiding the issuance of lower cost debt in order to maintain its credit
12 metrics.⁴

13
14 **Q. What is the practical effect of the debt equivalent and the additional common**
15 **equity?**

16 A. The practical effect is that the Company will have to increase its actual common
17 equity and reduce its actual long term debt so that when the rating agencies add the
18 debt equivalent to the long term debt, the Company's capitalization ratios will
19 remain the same as if it had not entered into the REPA. This will result in a richer

⁴ Its present bond ratings reflect a capital structure of approximately 55% debt and 45% common equity.

1 per books common equity ratio, which, in turn, will be reflected in the Company's
2 capitalization and weighted cost of capital for ratemaking purposes and used in the
3 quantification of its base revenue requirement, environmental surcharge revenue, and
4 any other revenue requirement that includes a return on capitalization or rate base.

5
6 **Q. Does the Company agree that this is the practical effect and that it will seek to**
7 **recover the cost of the additional equity?**

8 A. Yes. In response to KIUC 2-15, the Company stated "[t]o the extent that additional
9 equity is necessary to maintain the BBB/Baa2 investment grade rating, KPCo
10 expects to earn a return on that equity in rates." I have attached a copy of this
11 response as my Exhibit__(LK-7).

12
13 **Q. Has the Company provided its calculation of the debt equivalent and the**
14 **additional common equity that will be necessary due to the REPA?**

15 A. Yes. The Company provided calculations of the debt equivalents and the additional
16 per books common equity that will be necessary due to the REPA under 10% and
17 25% risk factor scenarios in response to KIUC 1-38. I have replicated the
18 Company's response to KIUC 1-38 as my Exhibit__(LK-8), except for the
19 confidential attachment. Mr. Wohnhas provided additional support for the
20 calculations of the debt equivalents and the additional per books common equity in

1 response to KIUC 2-14, which I have replicated as my Exhibit ___ (LK-9), except for
2 the confidential attachment.

3 Mr. Wohnhas calculated debt equivalents of [REDACTED] million and [REDACTED]
4 million for assumed 10% and 25% risk factors, respectively, and calculated the
5 additional per books common equity necessary for those debt equivalents of [REDACTED]
6 million and [REDACTED] million, respectively. Mr. Wohnhas calculated the additional
7 per books common equity by multiplying a 45% common equity ratio times the debt
8 equivalent amounts.

9 Mr. Wohnhas did not quantify the revenue requirement effect of the richer
10 per books common equity ratio and the displacement of lower cost debt.

11
12 **Q. Do you agree with the Company's use of a 10% risk factor to quantify the low**
13 **end of the range of the debt equivalent of the REPA for credit rating purposes?**

14 **A.** No. There is no evidence that the rating agencies will use anything less than a 25%
15 risk factor to quantify the debt equivalent of the REPA. In its article entitled
16 "Methodology for Imputing Debt for U.S. Utilities' Power Purchase Agreements,"
17 Standard & Poor's states that it will employ a risk factor of 25% if there is a power
18 cost adjustment mechanism, such as that proposed by the Company in this case.
19 More specifically, Standard & Poor's states: "In cases where a regulator has
20 established a power cost adjustment mechanism that recovers all prudent PPA costs,
21 we employ a risk factor of 25% because the recovery hurdle is lower than it is for a

1 utility that must litigate time and again its right to recover these costs.” The
2 Company replicated the entirety of the Standard & Poor’s article as Exhibit RKW-2
3 attached to Mr. Wohnhas’ Direct Testimony.
4

5 **Q. Is the Company able to cite any evidence that Standard & Poor’s would use or**
6 **has ever used a risk factor of less than 25% where a regulator has established a**
7 **power cost adjustment mechanism that recovers all prudent PPA costs?**

8 A. No. The Company was asked this question in KIUC 2-16 and could cite no instances
9 where Standard & Poor’s would or has ever used a risk factor of less than 25% in
10 those circumstances. The Company further stated that it “understands that most
11 regulated PPAs are assigned a 25% risk factor.” I have attached a copy of this
12 response as my Exhibit __ (LK-10).
13

14 **Q. What is the effect on the Company’s base and environmental surcharge revenue**
15 **requirements of the REPA debt equivalent and the additional common equity**
16 **necessary to maintain its capital structure for credit ratings purposes?**

17 A. The effect is an increase in the base and environmental surcharge revenue
18 requirements of \$4.133 million. I multiplied the Company’s quantification of the
19 additional equity based on a 25% risk factor, which I obtained from the confidential
20 attachment provided in response to KIUC 1-38, times the excess of the Company’s

1 grossed-up return on equity over the grossed-up weighted average cost of the debt
2 displaced (10.5% divided by 0.6047 less 6.48% divided by 0.9958)⁵

3 This results in a combined increase of \$39.284 million, or 7.84% on total
4 revenues.

5
6 **Q. Should the Commission apply a strict scrutiny test when assessing the**
7 **Company's request to enter into this REPA and recover the costs thereunder?**

8 **A.** Yes. A strict scrutiny test should be applied because of the special regulatory
9 treatment awarded to biomass power plants by SB 46. Under this new law, once a
10 biomass power plant is approved for recovery from rate payers, the Commission can
11 never revisit that decision. The prohibition against subsequent Commission review
12 would appear to apply even if it later turned out that the contract was procured by
13 fraud, if there was a change in the law, if lower cost resources were available, or for
14 any other significant reason which we cannot envision now. I am aware of no other
15 contract or power plant resource which receives such favorable treatment. I cannot
16 think of a rational basis to treat biomass power plants differently from other types of
17 renewable resources, such as wind, solar or landfill gas. SB 46 gives the developers
18 of biomass power plants an undue advantage, which comes at the expense of

⁵The return on equity and the gross-up factors were obtained from the record in Case No. 2009-00459, the Company's most recent base rate case proceeding. The weighted average cost of debt was obtained from the confidential attachment provided in response to KIUC 1-38.

1 customers.

2

3 **Q. Does this complete your testimony?**

4 **A. Yes.**

AFFIDAVIT

STATE OF GEORGIA)

COUNTY OF FULTON)

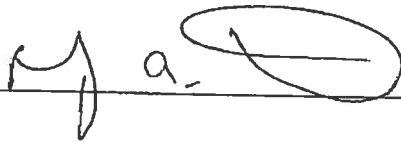
LANE KOLLEN, being duly sworn, deposes and states: that the attached are his sworn Testimony and Exhibits and that the statements contained are true and correct to the best of his knowledge, information and belief.

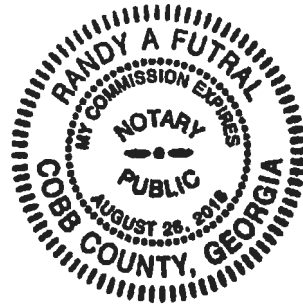


Lane Kollen

Sworn to and subscribed before me on this
5th day of July 2013.

Notary Public





COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:)
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EXHIBITS
OF
LANE KOLLEN

ON BEHALF OF THE
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

J. KENNEDY AND ASSOCIATES, INC.
ROSWELL, GEORGIA

July 5, 2013

EXHIBIT __ (LK-1)

RESUME OF LANE KOLLEN, VICE PRESIDENT

EDUCATION

**University of Toledo, BBA
Accounting**

University of Toledo, MBA

Luther Rice University, MA

PROFESSIONAL CERTIFICATIONS

Certified Public Accountant (CPA)

Certified Management Accountant (CMA)

PROFESSIONAL AFFILIATIONS

American Institute of Certified Public Accountants

Georgia Society of Certified Public Accountants

Institute of Management Accountants

Mr. Kollen has more than thirty years of utility industry experience in the financial, rate, tax, and planning areas. He specializes in revenue requirements analyses, taxes, evaluation of rate and financial impacts of traditional and nontraditional ratemaking, utility mergers/acquisition and diversification. Mr. Kollen has expertise in proprietary and nonproprietary software systems used by utilities for budgeting, rate case support and strategic and financial planning.

RESUME OF LANE KOLLEN, VICE PRESIDENT

EXPERIENCE

1986 to

Present:

J. Kennedy and Associates, Inc.: Vice President and Principal. Responsible for utility stranded cost analysis, revenue requirements analysis, cash flow projections and solvency, financial and cash effects of traditional and nontraditional ratemaking, and research, speaking and writing on the effects of tax law changes. Testimony before Connecticut, Florida, Georgia, Indiana, Louisiana, Kentucky, Maine, Maryland, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, West Virginia and Wisconsin state regulatory commissions and the Federal Energy Regulatory Commission.

1983 to

1986:

Energy Management Associates: Lead Consultant.

Consulting in the areas of strategic and financial planning, traditional and nontraditional ratemaking, rate case support and testimony, diversification and generation expansion planning. Directed consulting and software development projects utilizing PROSCREEN II and ACUMEN proprietary software products. Utilized ACUMEN detailed corporate simulation system, PROSCREEN II strategic planning system and other custom developed software to support utility rate case filings including test year revenue requirements, rate base, operating income and pro-forma adjustments. Also utilized these software products for revenue simulation, budget preparation and cost-of-service analyses.

1976 to

1983:

The Toledo Edison Company: Planning Supervisor.

Responsible for financial planning activities including generation expansion planning, capital and expense budgeting, evaluation of tax law changes, rate case strategy and support and computerized financial modeling using proprietary and nonproprietary software products. Directed the modeling and evaluation of planning alternatives including:

Rate phase-ins.

Construction project cancellations and write-offs.

Construction project delays.

Capacity swaps.

Financing alternatives.

Competitive pricing for off-system sales.

Sale/leasebacks.

RESUME OF LANE KOLLEN, VICE PRESIDENT

CLIENTS SERVED

Industrial Companies and Groups

Air Products and Chemicals, Inc.	Lehigh Valley Power Committee
Airco Industrial Gases	Maryland Industrial Group
Alcan Aluminum	Multiple Intervenors (New York)
Armco Advanced Materials Co.	National Southwire
Armco Steel	North Carolina Industrial Energy Consumers
Bethlehem Steel	Occidental Chemical Corporation
Connecticut Industrial Energy Consumers	Ohio Energy Group
ELCON	Ohio Industrial Energy Consumers
Enron Gas Pipeline Company	Ohio Manufacturers Association
Florida Industrial Power Users Group	Philadelphia Area Industrial Energy Users Group
Gallatin Steel	PSI Industrial Group
General Electric Company	Smith Cogeneration
GPU Industrial Intervenors	Taconite Intervenors (Minnesota)
Indiana Industrial Group	West Penn Power Industrial Intervenors
Industrial Consumers for Fair Utility Rates - Indiana	West Virginia Energy Users Group
Industrial Energy Consumers - Ohio	Westvaco Corporation
Kentucky Industrial Utility Customers, Inc.	
Kimberly-Clark Company	

**Regulatory Commissions and
Government Agencies**

Cities in Texas-New Mexico Power Company's Service Territory
Cities in AEP Texas Central Company's Service Territory
Cities in AEP Texas North Company's Service Territory
Georgia Public Service Commission Staff
Kentucky Attorney General's Office, Division of Consumer Protection
Louisiana Public Service Commission Staff
Maine Office of Public Advocate
New York State Energy Office
Office of Public Utility Counsel (Texas)

RESUME OF LANE KOLLEN, VICE PRESIDENT

Utilities

Allegheny Power System
Atlantic City Electric Company
Carolina Power & Light Company
Cleveland Electric Illuminating Company
Delmarva Power & Light Company
Duquesne Light Company
General Public Utilities
Georgia Power Company
Middle South Services
Nevada Power Company
Niagara Mohawk Power Corporation

Otter Tail Power Company
Pacific Gas & Electric Company
Public Service Electric & Gas
Public Service of Oklahoma
Rochester Gas and Electric
Savannah Electric & Power Company
Seminole Electric Cooperative
Southern California Edison
Talquin Electric Cooperative
Tampa Electric
Texas Utilities
Toledo Edison Company

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
10/86	U-17282 Interim	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Cash revenue requirements financial solvency.
11/86	U-17282 Interim Rebuttal	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Cash revenue requirements financial solvency.
12/86	9613	KY	Attorney General Div. of Consumer Protection	Big Rivers Electric Corp.	Revenue requirements accounting adjustments financial workout plan.
1/87	U-17282 Interim	LA 19th Judicial District Ct.	Louisiana Public Service Commission Staff	Gulf States Utilities	Cash revenue requirements, financial solvency.
3/87	General Order 236	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Tax Reform Act of 1986.
4/87	U-17282 Prudence	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Prudence of River Bend 1, economic analyses, cancellation studies.
4/87	M-100 Sub 113	NC	North Carolina Industrial Energy Consumers	Duke Power Co.	Tax Reform Act of 1986.
5/87	86-524-E-SC	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Revenue requirements, Tax Reform Act of 1986.
5/87	U-17282 Case In Chief	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, River Bend 1 phase-in plan, financial solvency.
7/87	U-17282 Case In Chief Surrebuttal	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, River Bend 1 phase-in plan, financial solvency.
7/87	U-17282 Prudence Surrebuttal	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Prudence of River Bend 1, economic analyses, cancellation studies.
7/87	86-524 E-SC Rebuttal	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Revenue requirements, Tax Reform Act of 1986.
8/87	9885	KY	Attorney General Div. of Consumer Protection	Big Rivers Electric Corp.	Financial workout plan.
8/87	E-015/GR-87-223	MN	Taconite Intervenor	Minnesota Power & Light Co.	Revenue requirements, O&M expense, Tax Reform Act of 1986.
10/87	870220-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Revenue requirements, O&M expense, Tax Reform Act of 1986.
11/87	87-07-01	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power Co.	Tax Reform Act of 1986.
1/88	U-17282	LA 19th Judicial District Ct.	Louisiana Public Service Commission	Gulf States Utilities	Revenue requirements, River Bend 1 phase-in plan, rate of return.
2/88	9934	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Economics of Trimble County, completion.
2/88	10064	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Revenue requirements, O&M expense, capital structure, excess deferred income taxes.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
5/88	10217	KY	Alcan Aluminum National Southwire	Big Rivers Electric Corp.	Financial workout plan.
5/88	M-87017-1C001	PA	GPU Industrial Intervenors	Metropolitan Edison Co.	Nonutility generator deferred cost recovery.
5/88	M-87017-2C005	PA	GPU Industrial Intervenors	Pennsylvania Electric Co.	Nonutility generator deferred cost recovery.
6/88	U-17282	LA 19th Judicial District Ct.	Louisiana Public Service Commission	Gulf States Utilities	Prudence of River Bend 1 economic analyses, cancellation studies, financial modeling.
7/88	M-87017-1C001 Rebuttal	PA	GPU Industrial Intervenors	Metropolitan Edison Co.	Nonutility generator deferred cost recovery, SFAS No. 92.
7/88	M-87017-2C005 Rebuttal	PA	GPU Industrial Intervenors	Pennsylvania Electric Co.	Nonutility generator deferred cost recovery, SFAS No. 92.
9/88	88-05-25	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power Co.	Excess deferred taxes, O&M expenses.
9/88	10064 Rehearing	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Premature retirements, interest expense.
10/88	88-170-EL-AIR	OH	Ohio Industrial Energy Consumers	Cleveland Electric Illuminating Co.	Revenue requirements, phase-in, excess deferred taxes, O&M expenses, financial considerations, working capital.
10/88	88-171-EL-AIR	OH	Ohio Industrial Energy Consumers	Toledo Edison Co.	Revenue requirements, phase-in, excess deferred taxes, O&M expenses, financial considerations, working capital.
10/88	8800-355-EI	FL	Florida Industrial Power Users' Group	Florida Power & Light Co.	Tax Reform Act of 1986, tax expenses, O&M expenses, pension expense (SFAS No. 87).
10/88	3780-U	GA	Georgia Public Service Commission Staff	Atlanta Gas Light Co.	Pension expense (SFAS No. 87).
11/88	U-17282 Remand	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Rate base exclusion plan (SFAS No. 71).
12/88	U-17970	LA	Louisiana Public Service Commission Staff	AT&T Communications of South Central States	Pension expense (SFAS No. 87).
12/88	U-17949 Rebuttal	LA	Louisiana Public Service Commission Staff	South Central Bell	Compensated absences (SFAS No. 43), pension expense (SFAS No. 87), Part 32, income tax normalization.
2/89	U-17282 Phase II	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, phase-in of River Bend 1, recovery of canceled plant.
6/89	881602-EU 890326-EU	FL	Talquin Electric Cooperative	Talquin/City of Tallahassee	Economic analyses, incremental cost-of-service, average customer rates.
7/89	U-17970	LA	Louisiana Public Service Commission Staff	AT&T Communications of South Central States	Pension expense (SFAS No. 87), compensated absences (SFAS No. 43), Part 32.
8/89	8555	TX	Occidental Chemical Corp.	Houston Lighting & Power Co.	Cancellation cost recovery, tax expense, revenue requirements.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
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Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
8/89	3840-U	GA	Georgia Public Service Commission Staff	Georgia Power Co.	Promotional practices, advertising, economic development.
9/89	U-17282 Phase II Detailed	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, detailed investigation.
10/89	8880	TX	Enron Gas Pipeline	Texas-New Mexico Power Co.	Deferred accounting treatment, sale/leaseback.
10/89	8928	TX	Enron Gas Pipeline	Texas-New Mexico Power Co.	Revenue requirements, imputed capital structure, cash working capital.
10/89	R-891364	PA	Philadelphia Area Industrial Energy Users Group	Philadelphia Electric Co.	Revenue requirements.
11/89 12/89	R-891364 Surrebuttal (2 Filings)	PA	Philadelphia Area Industrial Energy Users Group	Philadelphia Electric Co.	Revenue requirements, sale/leaseback.
1/90	U-17282 Phase II Detailed Rebuttal	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, detailed investigation.
1/90	U-17282 Phase III	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Phase-in of River Bend 1, deregulated asset plan.
3/90	890319-EI	FL	Florida Industrial Power Users Group	Florida Power & Light Co.	O&M expenses, Tax Reform Act of 1986.
4/90	890319-EI Rebuttal	FL	Florida Industrial Power Users Group	Florida Power & Light Co.	O&M expenses, Tax Reform Act of 1986.
4/90	U-17282	LA 19 th Judicial District Ct.	Louisiana Public Service Commission	Gulf States Utilities	Fuel clause, gain on sale of utility assets.
9/90	90-158	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Revenue requirements, post-test year additions, forecasted test year.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements.
3/91	29327, et. al.	NY	Multiple Intervenor	Niagara Mohawk Power Corp.	Incentive regulation.
5/91	9945	TX	Office of Public Utility Counsel of Texas	El Paso Electric Co.	Financial modeling, economic analyses, prudence of Palo Verde 3.
9/91	P-910511 P-910512	PA	Allegheny Ludlum Corp., Armco Advanced Materials Co., The West Penn Power Industrial Users' Group	West Penn Power Co.	Recovery of CAAA costs, least cost financing.
9/91	91-231-E-NC	WV	West Virginia Energy Users Group	Monongahela Power Co.	Recovery of CAAA costs, least cost financing.
11/91	U-17282	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Asset impairment, deregulated asset plan, revenue requirements.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
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as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
12/91	91-410-EL-AIR	OH	Air Products and Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Revenue requirements, phase-in plan.
12/91	PUC Docket 10200	TX	Office of Public Utility Counsel of Texas	Texas-New Mexico Power Co.	Financial integrity, strategic planning, declined business affiliations.
5/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Revenue requirements, O&M expense, pension expense, OPEB expense, fossil dismantling, nuclear decommissioning.
8/92	R-00922314	PA	GPU Industrial Intervenors	Metropolitan Edison Co.	Incentive regulation, performance rewards, purchased power risk, OPEB expense.
9/92	92-043	KY	Kentucky Industrial Utility Consumers	Generic Proceeding	OPEB expense.
9/92	920324-EI	FL	Florida Industrial Power Users' Group	Tampa Electric Co.	OPEB expense.
9/92	39348	IN	Indiana Industrial Group	Generic Proceeding	OPEB expense.
9/92	910840-PU	FL	Florida Industrial Power Users' Group	Generic Proceeding	OPEB expense.
9/92	39314	IN	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co.	OPEB expense.
11/92	U-19904	LA	Louisiana Public Service Commission Staff	Gulf States Utilities /Entergy Corp.	Merger.
11/92	8649	MD	Westvaco Corp., Eastalco Aluminum Co.	Potomac Edison Co.	OPEB expense.
11/92	92-1715-AU-COI	OH	Ohio Manufacturers Association	Generic Proceeding	OPEB expense.
12/92	R-00922378	PA	Armco Advanced Materials Co., The WPP Industrial Intervenors	West Penn Power Co.	Incentive regulation, performance rewards, purchased power risk, OPEB expense.
12/92	U-19949	LA	Louisiana Public Service Commission Staff	South Central Bell	Affiliate transactions, cost allocations, merger.
12/92	R-00922479	PA	Philadelphia Area Industrial Energy Users' Group	Philadelphia Electric Co.	OPEB expense.
1/93	8487	MD	Maryland Industrial Group	Baltimore Gas & Electric Co., Bethlehem Steel Corp.	OPEB expense, deferred fuel, CWIP in rate base.
1/93	39498	IN	PSI Industrial Group	PSI Energy, Inc.	Refunds due to over-collection of taxes on Marble Hill cancellation.
3/93	92-11-11	CT	Connecticut Industrial Energy Consumers	Connecticut Light & Power Co	OPEB expense.
3/93	U-19904 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities /Entergy Corp.	Merger.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
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as of May 2013**

Date	Case	Jurisdic.	Party	Utility	Subject
3/93	93-01-EL-EFC	OH	Ohio Industrial Energy Consumers	Ohlo Power Co.	Affiliate transactions, fuel.
3/93	EC92-21000 ER92-806-000	FERC	Louisiana Public Service Commission Staff	Gulf States Utilities /Entergy Corp.	Merger.
4/93	92-1464-EL-AIR	OH	Air Products Armco Steel Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Revenue requirements, phase-in plan.
4/93	EC92-21000 ER92-806-000 (Rebuttal)	FERC	Louisiana Public Service Commission	Gulf States Utilities /Entergy Corp.	Merger.
9/93	93-113	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Fuel clause and coal contract refund.
9/93	92-490, 92-490A, 90-360-C	KY	Kentucky Industrial Utility Customers and Kentucky Attorney General	Big Rivers Electric Corp.	Disallowances and restitution for excessive fuel costs, illegal and improper payments, recovery of mine closure costs.
10/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Revenue requirements, debt restructuring agreement, River Bend cost recovery.
1/94	U-20647	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	Audit and investigation into fuel clause costs.
4/94	U-20647 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	Nuclear and fossil unit performance, fuel costs, fuel clause principles and guidelines.
5/94	U-20178	LA	Louisiana Public Service Commission Staff	Louisiana Power & Light Co.	Planning and quantification issues of least cost integrated resource plan.
9/94	U-19904 Initial Post-Merger Earnings Review	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	River Bend phase-in plan, deregulated asset plan, capital structure, other revenue requirement issues.
9/94	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	G&T cooperative ratemaking policies, exclusion of River Bend, other revenue requirement issues.
10/94	3905-U	GA	Georgia Public Service Commission Staff	Southern Bell Telephone Co.	Incentive rate plan, earnings review.
10/94	5258-U	GA	Georgia Public Service Commission Staff	Southern Bell Telephone Co.	Alternative regulation, cost allocation.
11/94	U-19904 Initial Post-Merger Earnings Review (Rebuttal)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	River Bend phase-in plan, deregulated asset plan, capital structure, other revenue requirement issues.
11/94	U-17735 (Rebuttal)	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	G&T cooperative ratemaking policy, exclusion of River Bend, other revenue requirement issues.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Revenue requirements. Fossil dismantling, nuclear decommissioning.
6/95	3905-U Rebuttal	GA	Georgia Public Service Commission	Southern Bell Telephone Co.	Incentive regulation, affiliate transactions, revenue requirements, rate refund.
6/95	U-19904 (Direct)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	Gas, coal, nuclear fuel costs, contract prudence, base/fuel realignment.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
10/95	95-02614	TN	Tennessee Office of the Attorney General Consumer Advocate	BellSouth Telecommunications, Inc.	Affiliate transactions.
10/95	U-21485 (Direct)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	Nuclear O&M, River Bend phase-in plan, base/fuel realignment, NOL and AltMin asset deferred taxes, other revenue requirement issues.
11/95	U-19904 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co. Division	Gas, coal, nuclear fuel costs, contract prudence, base/fuel realignment.
11/95	U-21485 (Supplemental Direct)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	Nuclear O&M, River Bend phase-in plan, base/fuel realignment, NOL and AltMin asset deferred taxes, other revenue requirement issues.
12/95	U-21485 (Surrebuttal)				
1/96	95-299-EL-AIR 95-300-EL-AIR	OH	Industrial Energy Consumers	The Toledo Edison Co., The Cleveland Electric Illuminating Co.	Competition, asset write-offs and revaluation, O&M expense, other revenue requirement issues.
2/96	PUC Docket 14965	TX	Office of Public Utility Counsel	Central Power & Light	Nuclear decommissioning.
5/96	95-485-LCS	NM	City of Las Cruces	El Paso Electric Co.	Stranded cost recovery, municipalization.
7/96	8725	MD	The Maryland Industrial Group and Redland Genstar, Inc.	Baltimore Gas & Electric Co., Potomac Electric Power Co., and Constellation Energy Corp.	Merger savings, tracking mechanism, earnings sharing plan, revenue requirement issues.
9/96 11/96	U-22092 U-22092 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	River Bend phase-in plan, base/fuel realignment, NOL and AltMin asset deferred taxes, other revenue requirement issues, allocation of regulated/nonregulated costs.
10/96	96-327	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Environmental surcharge recoverable costs.
2/97	R-00973877	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Stranded cost recovery, regulatory assets and liabilities, intangible transition charge, revenue requirements.
3/97	96-489	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Environmental surcharge recoverable costs, system agreements, allowance inventory, jurisdictional allocation.
6/97	TO-97-397	MO	MCI Telecommunications Corp., Inc., MCImetro Access Transmission Services, Inc.	Southwestern Bell Telephone Co.	Price cap regulation, revenue requirements, rate of return.
6/97	R-00973953	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.
7/97	R-00973954	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
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Lane Kollen
as of May 2013

Date	Case	Jurisdct.	Party	Utility	Subject
7/97	U-22092	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Depreciation rates and methodologies, River Bend phase-in plan.
8/97	97-300	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas & Electric Co., Kentucky Utilities Co.	Merger policy, cost savings, surcredit sharing mechanism, revenue requirements, rate of return.
8/97	R-00973954 (Surrebuttal)	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.
10/97	97-204	KY	Alcan Aluminum Corp. Southwire Co.	Big Rivers Electric Corp.	Restructuring, revenue requirements, reasonableness.
10/97	R-974008	PA	Metropolitan Edison Industrial Users Group	Metropolitan Edison Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements.
10/97	R-974009	PA	Penelec Industrial Customer Alliance	Pennsylvania Electric Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements.
11/97	97-204 (Rebuttal)	KY	Alcan Aluminum Corp. Southwire Co.	Big Rivers Electric Corp.	Restructuring, revenue requirements, reasonableness of rates, cost allocation.
11/97	U-22491	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, other revenue requirement issues.
11/97	R-00973953 (Surrebuttal)	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.
11/97	R-973981	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, fossil decommissioning, revenue requirements, securitization.
11/97	R-974104	PA	Duquesne Industrial Intervenors	Duquesne Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements, securitization.
12/97	R-973981 (Surrebuttal)	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, fossil decommissioning, revenue requirements.
12/97	R-974104 (Surrebuttal)	PA	Duquesne Industrial Intervenors	Duquesne Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements, securitization.
1/98	U-22491 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, other revenue requirement issues.
2/98	8774	MD	Westvaco	Potomac Edison Co.	Merger of Duquesne, AE, customer safeguards, savings sharing.
3/98	U-22092 (Allocated Stranded Cost Issues)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Restructuring, stranded costs, regulatory assets, securitization, regulatory mitigation.

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdiction	Party	Utility	Subject
3/98	8390-U	GA	Georgia Natural Gas Group, Georgia Textile Manufacturers Assoc.	Atlanta Gas Light Co.	Restructuring, unbundling, stranded costs, incentive regulation, revenue requirements.
3/98	U-22092 (Allocated Stranded Cost Issues) (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Restructuring, stranded costs, regulatory assets, securitization, regulatory mitigation.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro-Electric Co.	Restructuring, unbundling, stranded costs, T&D revenue requirements.
10/98	9355-U	GA	Georgia Public Service Commission Adversary Staff	Georgia Power Co.	Affiliate transactions.
10/98	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	G&T cooperative ratemaking policy, other revenue requirement issues.
11/98	U-23327	LA	Louisiana Public Service Commission Staff	SWEPSCO, CSW and AEP	Merger policy, savings sharing mechanism, affiliate transaction conditions.
12/98	U-23358 (Direct)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
12/98	98-577	ME	Maine Office of Public Advocate	Maine Public Service Co.	Restructuring, unbundling, stranded cost, T&D revenue requirements.
1/99	98-10-07	CT	Connecticut Industrial Energy Consumers	United Illuminating Co.	Stranded costs, investment tax credits, accumulated deferred income taxes, excess deferred income taxes.
3/99	U-23358 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
3/99	98-474	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co.	Revenue requirements, alternative forms of regulation.
3/99	98-426	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Revenue requirements, alternative forms of regulation.
3/99	99-082	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co.	Revenue requirements.
3/99	99-083	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Revenue requirements.
4/99	U-23358 (Supplemental Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
4/99	99-03-04	CT	Connecticut Industrial Energy Consumers	United Illuminating Co.	Regulatory assets and liabilities, stranded costs, recovery mechanisms.
4/99	99-02-05	Ct	Connecticut Industrial Utility Customers	Connecticut Light and Power Co.	Regulatory assets and liabilities, stranded costs, recovery mechanisms.
5/99	98-426 99-082 (Additional Direct)	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co.	Revenue requirements.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
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Lane Kollen
as of May 2013

Date	Case	Jurisdct.	Party	Utility	Subject
5/99	98-474 99-083 (Additional Direct)	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Revenue requirements.
5/99	98-426 98-474 (Response to Amended Applications)	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co., Kentucky Utilities Co.	Alternative regulation.
6/99	97-596	ME	Maine Office of Public Advocate	Bangor Hydro-Electric Co.	Request for accounting order regarding electric industry restructuring costs.
6/99	U-23358	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Affiliate transactions, cost allocations.
7/99	99-03-35	CT	Connecticut Industrial Energy Consumers	United Illuminating Co.	Stranded costs, regulatory assets, tax effects of asset divestiture.
7/99	U-23327	LA	Louisiana Public Service Commission Staff	Southwestern Electric Power Co., Central and South West Corp, American Electric Power Co.	Merger Settlement and Stipulation.
7/99	97-596 Surrebuttal	ME	Maine Office of Public Advocate	Bangor Hydro-Electric Co.	Restructuring, unbundling, stranded cost, T&D revenue requirements.
7/99	98-0452-E-GI	WV	West Virginia Energy Users Group	Monongahela Power, Potomac Edison, Appalachian Power, Wheeling Power	Regulatory assets and liabilities.
8/99	98-577 Surrebuttal	ME	Maine Office of Public Advocate	Maine Public Service Co.	Restructuring, unbundling, stranded costs, T&D revenue requirements.
8/99	98-426 99-082 Rebuttal	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co.	Revenue requirements.
8/99	98-474 98-083 Rebuttal	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Revenue requirements.
8/99	98-0452-E-GI Rebuttal	WV	West Virginia Energy Users Group	Monongahela Power, Potomac Edison, Appalachian Power, Wheeling Power	Regulatory assets and liabilities.
10/99	U-24182 Direct	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, affiliate transactions, tax issues, and other revenue requirement issues.
11/99	PUC Docket 21527	TX	The Dallas-Fort Worth Hospital Council and Coalition of Independent Colleges and Universities	TXU Electric	Restructuring, stranded costs, taxes, securitization.

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Date	Case	Jurisdic.	Party	Utility	Subject
11/99	U-23358 Surrebuttal Affiliate Transactions Review	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Service company affiliate transaction costs.
01/00	U-24182 Surrebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, affiliate transactions, tax issues, and other revenue requirement issues.
04/00	99-1212-EL-ETP 99-1213-EL-ATA 99-1214-EL-AAM	OH	Greater Cleveland Growth Association	First Energy (Cleveland Electric Illuminating, Toledo Edison)	Historical review, stranded costs, regulatory assets, liabilities.
05/00	2000-107	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	ECR surcharge roll-in to base rates.
05/00	U-24182 Supplemental Direct	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Affiliate expense proforma adjustments.
05/00	A-110550F0147	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Merger between PECO and Unicom.
05/00	99-1658-EL-ETP	OH	AK Steel Corp.	Cincinnati Gas & Electric Co.	Regulatory transition costs, including regulatory assets and liabilities, SFAS 109, ADIT, EDIT, ITC.
07/00	PUC Docket 22344	TX	The Dallas-Fort Worth Hospital Council and The Coalition of Independent Colleges and Universities	Statewide Generic Proceeding	Escalation of O&M expenses for unbundled T&D revenue requirements in projected test year.
07/00	U-21453	LA	Louisiana Public Service Commission	SWEPCO	Stranded costs, regulatory assets and liabilities.
08/00	U-24064	LA	Louisiana Public Service Commission Staff	CLECO	Affiliate transaction pricing ratemaking principles, subsidization of nonregulated affiliates, ratemaking adjustments.
10/00	SOAH Docket 473-00-1015 PUC Docket 22350	TX	The Dallas-Fort Worth Hospital Council and The Coalition of Independent Colleges and Universities	TXU Electric Co.	Restructuring, T&D revenue requirements, mitigation, regulatory assets and liabilities.
10/00	R-00974104 Affidavit	PA	Duquesne Industrial Intervenors	Duquesne Light Co.	Final accounting for stranded costs, including treatment of auction proceeds, taxes, capital costs, switchback costs, and excess pension funding.
11/00	P-00001837 R-00974008 P-00001838 R-00974009	PA	Metropolitan Edison Industrial Users Group Penelec Industrial Customer Alliance	Metropolitan Edison Co., Pennsylvania Electric Co.	Final accounting for stranded costs, including treatment of auction proceeds, taxes, regulatory assets and liabilities, transaction costs.
12/00	U-21453, U-20925, U-22092 (Subdocket C) Surrebuttal	LA	Louisiana Public Service Commission Staff	SWEPCO	Stranded costs, regulatory assets.

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01/01	U-24993 Direct	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
01/01	U-21453, U-20925, U-22092 (Subdocket B) Surrebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Industry restructuring, business separation plan, organization structure, hold harmless conditions, financing.
01/01	Case No. 2000-386	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas & Electric Co.	Recovery of environmental costs, surcharge mechanism.
01/01	Case No. 2000-439	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Recovery of environmental costs, surcharge mechanism.
02/01	A-110300F0095 A-110400F0040	PA	Met-Ed Industrial Users Group, Penelec Industrial Customer Alliance	GPU, Inc. FirstEnergy Corp.	Merger, savings, reliability.
03/01	P-00001860 P-00001861	PA	Met-Ed Industrial Users Group, Penelec Industrial Customer Alliance	Metropolitan Edison Co., Pennsylvania Electric Co.	Recovery of costs due to provider of last resort obligation.
04/01	U-21453, U-20925, U-22092 (Subdocket B) Settlement Term Sheet	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Business separation plan: settlement agreement on overall plan structure.
04/01	U-21453, U-20925, U-22092 (Subdocket B) Contested Issues	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Business separation plan: agreements, hold harmless conditions, separations methodology.
05/01	U-21453, U-20925, U-22092 (Subdocket B) Contested Issues Transmission and Distribution Rebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Business separation plan: agreements, hold harmless conditions, separations methodology.
07/01	U-21453, U-20925, U-22092 (Subdocket B) Transmission and Distribution Term Sheet	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Business separation plan: settlement agreement on T&D Issues, agreements necessary to implement T&D separations, hold harmless conditions, separations methodology.
10/01	14000-U	GA	Georgia Public Service Commission Adversary Staff	Georgia Power Company	Revenue requirements, Rate Plan, fuel clause recovery.
11/01	14311-U Direct Panel with Bolin Killings	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co	Revenue requirements, revenue forecast, O&M expense, depreciation, plant additions, cash working capital.

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11/01	U-25687 Direct	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Revenue requirements, capital structure, allocation of regulated and nonregulated costs, River Bend uprate.
02/02	PUC Docket 25230	TX	The Dallas-Fort Worth Hospital Council and the Coalition of Independent Colleges and Universities	TXU Electric	Stipulation. Regulatory assets, securitization financing.
02/02	U-25687 Surrebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Revenue requirements, corporate franchise tax, conversion to LLC, River Bend uprate.
03/02	14311-U Rebuttal Panel with Bolin Killings	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co.	Revenue requirements, earnings sharing plan, service quality standards.
03/02	14311-U Rebuttal Panel with Michelle L. Thebert	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co.	Revenue requirements, revenue forecast, O&M expense, depreciation, plant additions, cash working capital.
03/02	001148-EI	FL	South Florida Hospital and Healthcare Assoc.	Florida Power & Light Co.	Revenue requirements. Nuclear life extension, storm damage accruals and reserve, capital structure, O&M expense.
04/02	U-25687 (Suppl. Surrebuttal)	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Revenue requirements, corporate franchise tax, conversion to LLC, River Bend uprate.
04/02	U-21453, U-20925 U-22092 (Subdocket C)	LA	Louisiana Public Service Commission	SWEPCO	Business separation plan, T&D Term Sheet, separations methodologies, hold harmless conditions.
08/02	EL01-88-000	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	System Agreement, production cost equalization, tariffs.
08/02	U-25888	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc. and Entergy Louisiana, Inc.	System Agreement, production cost disparities, prudence.
09/02	2002-00224 2002-00225	KY	Kentucky Industrial Utilities Customers, Inc.	Kentucky Utilities Co., Louisville Gas & Electric Co.	Line losses and fuel clause recovery associated with off-system sales.
11/02	2002-00146 2002-00147	KY	Kentucky Industrial Utilities Customers, Inc.	Kentucky Utilities Co., Louisville Gas & Electric Co.	Environmental compliance costs and surcharge recovery.
01/03	2002-00169	KY	Kentucky Industrial Utilities Customers, Inc.	Kentucky Power Co.	Environmental compliance costs and surcharge recovery.
04/03	2002-00429 2002-00430	KY	Kentucky Industrial Utilities Customers, Inc.	Kentucky Utilities Co., Louisville Gas & Electric Co.	Extension of merger surcredit, flaws in Companies' studies.
04/03	U-26527	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Revenue requirements, corporate franchise tax, conversion to LLC, capital structure, post-test year adjustments.

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06/03	EL01-88-000 Rebuttal	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	System Agreement, production cost equalization, tariffs.
06/03	2003-00068	KY	Kentucky Industrial Utility Customers	Kentucky Utilities Co.	Environmental cost recovery, correction of base rate error.
11/03	ER03-753-000	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Unit power purchases and sale cost-based tariff pursuant to System Agreement.
11/03	ER03-583-000, ER03-583-001, ER03-583-002 ER03-681-000, ER03-681-001 ER03-682-000, ER03-682-001, ER03-682-002 ER03-744-000, ER03-744-001 (Consolidated)	FERC	Louisiana Public Service Commission	Entergy Services, Inc., the Entergy Operating Companies, EWO Marketing, L.P. and Entergy Power, Inc.	Unit power purchases and sale agreements, contractual provisions, projected costs, leveled rates, and formula rates.
12/03	U-26527 Surrebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Revenue requirements, corporate franchise tax, conversion to LLC, capital structure, post-test year adjustments.
12/03	2003-0334 2003-0335	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co., Louisville Gas & Electric Co.	Earnings Sharing Mechanism.
12/03	U-27136	LA	Louisiana Public Service Commission Staff	Entergy Louisiana, Inc.	Purchased power contracts between affiliates, terms and conditions.
03/04	U-26527 Supplemental Surrebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Revenue requirements, corporate franchise tax, conversion to LLC, capital structure, post-test year adjustments.
03/04	2003-00433	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas & Electric Co.	Revenue requirements, depreciation rates, O&M expense, deferrals and amortization, earnings sharing mechanism, merger surcredit, VDT surcredit.
03/04	2003-00434	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Revenue requirements, depreciation rates, O&M expense, deferrals and amortization, earnings sharing mechanism, merger surcredit, VDT surcredit.
03/04	SOAH Docket 473-04-2459 PUC Docket 29206	TX	Cities Served by Texas- New Mexico Power Co.	Texas-New Mexico Power Co.	Stranded costs true-up, including valuation issues, ITC, ADIT, excess earnings.
05/04	04-169-EL-UNC	OH	Ohio Energy Group, Inc.	Columbus Southern Power Co. & Ohio Power Co.	Rate stabilization plan, deferrals, T&D rate increases, earnings.

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Date	Case	Jurisdct.	Party	Utility	Subject
06/04	SOAH Docket 473-04-4555 PUC Docket 29526	TX	Houston Council for Health and Education	CenterPoint Energy Houston Electric	Stranded costs true-up, including valuation issues, ITC, EDIT, excess mitigation credits, capacity auction true-up revenues, interest.
08/04	SOAH Docket 473-04-4555 PUC Docket 29526 (Suppl Direct)	TX	Houston Council for Health and Education	CenterPoint Energy Houston Electric	Interest on stranded cost pursuant to Texas Supreme Court remand.
09/04	U-23327 Subdocket B	LA	Louisiana Public Service Commission Staff	SWEPCO	Fuel and purchased power expenses recoverable through fuel adjustment clause, trading activities, compliance with terms of various LPSC Orders.
10/04	U-23327 Subdocket A	LA	Louisiana Public Service Commission Staff	SWEPCO	Revenue requirements.
12/04	Case Nos. 2004-00321, 2004-00372	KY	Gallatin Steel Co.	East Kentucky Power Cooperative, Inc., Big Sandy Recc, et al.	Environmental cost recovery, qualified costs, TIER requirements, cost allocation.
01/05	30485	TX	Houston Council for Health and Education	CenterPoint Energy Houston Electric, LLC	Stranded cost true-up including regulatory Central Co. assets and liabilities, ITC, EDIT, capacity auction, proceeds, excess mitigation credits, retrospective and prospective ADIT.
02/05	18638-U	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co.	Revenue requirements.
02/05	18638-U Panel with Tony Wackerty	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co.	Comprehensive rate plan, pipeline replacement program surcharge, performance based rate plan.
02/05	18638-U Panel with Michelle Thebert	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co.	Energy conservation, economic development, and tariff issues.
03/05	Case Nos. 2004-00426, 2004-00421	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co., Louisville Gas & Electric	Environmental cost recovery, Jobs Creation Act of 2004 and §199 deduction, excess common equity ratio, deferral and amortization of nonrecurring O&M expense.
06/05	2005-00068	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	Environmental cost recovery, Jobs Creation Act of 2004 and §199 deduction, margins on allowances used for AEP system sales.
06/05	050045-EI	FL	South Florida Hospital and Healthcare Assoc.	Florida Power & Light Co.	Storm damage expense and reserve, RTO costs, O&M expense projections, return on equity performance Incentive, capital structure, selective second phase post-test year rate increase.
08/05	31056	TX	Alliance for Valley Healthcare	AEP Texas Central Co.	Stranded cost true-up including regulatory assets and liabilities, ITC, EDIT, capacity auction, proceeds, excess mitigation credits, retrospective and prospective ADIT.
09/05	20298-U	GA	Georgia Public Service Commission Adversary Staff	Atmos Energy Corp.	Revenue requirements, roll-in of surcharges, cost recovery through surcharge, reporting requirements.

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09/05	20298-U Panel with Victoria Taylor	GA	Georgia Public Service Commission Adversary Staff	Almos Energy Corp.	Affiliate transactions, cost allocations, capitalization, cost of debt.
10/05	04-42	DE	Delaware Public Service Commission Staff	Artesian Water Co.	Allocation of tax net operating losses between regulated and unregulated.
11/05	2005-00351 2005-00352	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co., Louisville Gas & Electric	Workforce Separation Program cost recovery and shared savings through VDT surcredit.
01/06	2005-00341	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Co.	System Sales Clause Rider, Environmental Cost Recovery Rider. Net Congestion Rider, Storm damage, vegetation management program, depreciation, off-system sales, maintenance normalization, pension and OPEB.
03/06	PUC Docket 31994	TX	Cities	Texas-New Mexico Power Co.	Stranded cost recovery through competition transition or change.
05/06	31994 Supplemental	TX	Cities	Texas-New Mexico Power Co.	Retrospective ADFIT, prospective ADFIT.
03/06	U-21453, U-20925, U-22092	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Jurisdictional separation plan.
03/06	NOPR Reg 104385-OR	IRS	Alliance for Valley Health Care and Houston Council for Health Education	AEP Texas Central Company and CenterPoint Energy Houston Electric	Proposed Regulations affecting flow- through to ratepayers of excess deferred income taxes and investment tax credits on generation plant that is sold or deregulated.
04/06	U-25116	LA	Louisiana Public Service Commission Staff	Entergy Louisiana, Inc.	2002-2004 Audit of Fuel Adjustment Clause Filings. Affiliate transactions.
07/06	R-00061366, Et. al.	PA	Met-Ed Ind. Users Group Pennsylvania Ind. Customer Alliance	Metropolitan Edison Co., Pennsylvania Electric Co.	Recovery of NUG-related stranded costs, government mandated programs costs, storm damage costs.
07/06	U-23327	LA	Louisiana Public Service Commission Staff	Southwestern Electric Power Co.	Revenue requirements, formula rate plan, banking proposal.
08/06	U-21453, U-20925, U-22092 (Subdocket J)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Jurisdictional separation plan.
11/06	05CVH03-3375 Franklin County Court Affidavit	OH	Various Taxing Authorities (Non-Utility Proceeding)	State of Ohio Department of Revenue	Accounting for nuclear fuel assemblies as manufactured equipment and capitalized plant.
12/06	U-23327 Subdocket A Reply Testimony	LA	Louisiana Public Service Commission Staff	Southwestern Electric Power Co.	Revenue requirements, formula rate plan, banking proposal.
03/07	U-29764	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc., Entergy Louisiana, LLC	Jurisdictional allocation of Entergy System Agreement equalization remedy receipts.
03/07	PUC Docket 33309	TX	Cities	AEP Texas Central Co.	Revenue requirements, including functionalization of transmission and distribution costs.

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03/07	PUC Docket 33310	TX	Cities	AEP Texas North Co.	Revenue requirements, including functionalization of transmission and distribution costs.
03/07	2006-00472	KY	Kentucky Industrial Utility Customers, Inc.	East Kentucky Power Cooperative	Interim rate increase, RUS loan covenants, credit facility requirements, financial condition.
03/07	U-29157	LA	Louisiana Public Service Commission Staff	Cleco Power, LLC	Permanent (Phase II) storm damage cost recovery.
04/07	U-29764 Supplemental and Rebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc., Entergy Louisiana, LLC	Jurisdictional allocation of Entergy System Agreement equalization remedy receipts.
04/07	ER07-682-000 Affidavit	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Allocation of intangible and general plant and A&G expenses to production and state income tax effects on equalization remedy receipts.
04/07	ER07-684-000 Affidavit	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Fuel hedging costs and compliance with FERC USOA.
05/07	ER07-682-000 Affidavit	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Allocation of intangible and general plant and A&G expenses to production and account 924 effects on MSS-3 equalization remedy payments and receipts.
06/07	U-29764	LA	Louisiana Public Service Commission Staff	Entergy Louisiana, LLC, Entergy Gulf States, Inc.	Show cause for violating LPSC Order on fuel hedging costs.
07/07	2006-00472	KY	Kentucky Industrial Utility Customers, Inc.	East Kentucky Power Cooperative	Revenue requirements, post-test year adjustments, TIER, surcharge revenues and costs, financial need.
07/07	ER07-956-000 Affidavit	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Storm damage costs related to Hurricanes Katrina and Rita and effects of MSS-3 equalization payments and receipts.
10/07	05-UR-103 Direct	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Company, Wisconsin Gas, LLC	Revenue requirements, carrying charges on CWIP, amortization and return on regulatory assets, working capital, incentive compensation, use of rate base in lieu of capitalization, quantification and use of Point Beach sale proceeds.
10/07	05-UR-103 Surrebuttal	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Company, Wisconsin Gas, LLC	Revenue requirements, carrying charges on CWIP, amortization and return on regulatory assets, working capital, incentive compensation, use of rate base in lieu of capitalization, quantification and use of Point Beach sale proceeds.
10/07	25060-U Direct	GA	Georgia Public Service Commission Public Interest Adversary Staff	Georgia Power Company	Affiliate costs, incentive compensation, consolidated income taxes, §199 deduction.
11/07	06-0033-E-CN Direct	WV	West Virginia Energy Users Group	Appalachian Power Company	IGCC surcharge during construction period and post-in-service date.

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11/07	ER07-682-000 Direct	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Functionalization and allocation of intangible and general plant and A&G expenses.
01/08	ER07-682-000 Cross-Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Functionalization and allocation of intangible and general plant and A&G expenses.
01/08	07-551-EL-AIR Direct	OH	Ohio Energy Group, Inc.	Ohio Edison Company, Cleveland Electric Illuminating Company, Toledo Edison Company	Revenue requirements.
02/08	ER07-956-000 Direct	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Functionalization of expenses in account 923; storm damage expense and accounts 924, 228.1, 182.3, 254 and 407.3; tax NOL carrybacks in accounts 165 and 236; ADIT; nuclear service lives and effect on depreciation and decommissioning.
03/08	ER07-956-000 Cross-Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Functionalization of expenses in account 923; storm damage expense and accounts 924, 228.1, 182.3, 254 and 407.3; tax NOL carrybacks in accounts 165 and 236; ADIT; nuclear service lives and effect on depreciation and decommissioning.
04/08	2007-00562, 2007-00563	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co., Louisville Gas and Electric Co.	Merger surcredit.
04/08	26837 Direct Panel with Thomas K. Bond, Cynthia Johnson, and Michelle Thebert	GA	Georgia Public Service Commission Staff	SCANA Energy Marketing, Inc.	Rule Nisi complaint.
05/08	26837 Rebuttal Panel with Thomas K. Bond, Cynthia Johnson, and Michelle Thebert	GA	Georgia Public Service Commission Staff	SCANA Energy Marketing, Inc.	Rule Nisi complaint.
05/08	26837 Supplemental Rebuttal Panel with Thomas K. Bond, Cynthia Johnson, and Michelle Thebert	GA	Georgia Public Service Commission Staff	SCANA Energy Marketing, Inc.	Rule Nisi complaint.

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Date	Case	Jurisdct.	Party	Utility	Subject
06/08	2008-00115	KY	Kentucky Industrial Utility Customers, Inc.	East Kentucky Power Cooperative, Inc.	Environmental surcharge recoveries, including costs recovered in existing rates, TIER.
07/08	27163 Direct	GA	Georgia Public Service Commission Public Interest Advocacy Staff	Atmos Energy Corp.	Revenue requirements, including projected test year rate base and expenses.
07/08	27163 Panel with Victoria Taylor	GA	Georgia Public Service Commission Public Interest Advocacy Staff	Atmos Energy Corp.	Affiliate transactions and division cost allocations, capital structure, cost of debt.
08/08	6680-CE-170 Direct	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Power and Light Company	Nelson Dewey 3 or Colombia 3 fixed financial parameters.
08/08	6680-JR-116 Direct	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Power and Light Company	CWIP In rate base, labor expenses, pension expense, financing, capital structure, decoupling.
08/08	6680-JR-116 Rebuttal	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Power and Light Company	Capital structure.
08/08	6690-JR-119 Direct	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Public Service Corp.	Prudence of Weston 3 outage, incentive compensation, Crane Creek Wind Farm incremental revenue requirement, capital structure.
09/08	6690-JR-119 Surrebuttal	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Public Service Corp.	Prudence of Weston 3 outage, Section 199 deduction.
09/08	08-935-EL-SSO, 08-918-EL-SSO	OH	Ohio Energy Group, Inc.	First Energy	Standard service offer rates pursuant to electric security plan, significantly excessive earnings test.
10/08	08-917-EL-SSO	OH	Ohio Energy Group, Inc.	AEP	Standard service offer rates pursuant to electric security plan, significantly excessive earnings test.
10/08	2007-564, 2007-565, 2008-251 2008-252	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Co., Kentucky Utilities Company	Revenue forecast, affiliate costs, depreciation expenses, federal and state income tax expense, capitalization, cost of debt.
11/08	EL08-51	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Spindletop gas storage facilities, regulatory asset and bandwidth remedy.
11/08	35717	TX	Cities Served by Oncor Delivery Company	Oncor Delivery Company	Recovery of old meter costs, asset ADFIT, cash working capital, recovery of prior year restructuring costs, levelized recovery of storm damage costs, prospective storm damage accrual, consolidated tax savings adjustment.
12/08	27800	GA	Georgia Public Service Commission	Georgia Power Company	AFUDC versus CWIP in rate base, mirror CWIP, certification cost, use of short term debt and trust preferred financing, CWIP recovery, regulatory incentive.
01/09	ER08-1056	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Entergy System Agreement bandwidth remedy calculations, including depreciation expense, ADIT, capital structure.
01/09	ER08-1056 Supplemental Direct	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Blytheville leased turbines; accumulated depreciation.

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02/09	EL08-51 Rebuttal	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Spindletop gas storage facilities regulatory asset and bandwidth remedy.
02/09	2008-00409 Direct	KY	Kentucky Industrial Utility Customers, Inc.	East Kentucky Power Cooperative, Inc.	Revenue requirements.
03/09	ER08-1056 Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Entergy System Agreement bandwidth remedy calculations, including depreciation expense, ADIT, capital structure.
03/09	U-21453, U-20925 U-22092 (Subdocket J)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States Louisiana, LLC	Violation of EGSI separation order, ETI and EGSL separation accounting, Spindletop regulatory asset.
04/09	U-21453, U-20925 U-22092 (Subdocket J) Rebuttal	LA	Louisiana Public Service Commission Staff	Entergy Gulf States Louisiana, LLC	Violation of EGSI separation order, ETI and EGSL separation accounting, Spindletop regulatory asset.
04/09	2009-00040 Direct-Interim (Oral)	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Emergency interim rate increase; cash requirements.
04/09	PUC Docket 36530	TX	State Office of Administrative Hearings	Oncor Electric Delivery Company, LLC	Rate case expenses.
05/09	ER08-1056 Rebuttal	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Entergy System Agreement bandwidth remedy calculations, including depreciation expense, ADIT, capital structure.
06/09	2009-00040 Direct- Permanent	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Revenue requirements, TIER, cash flow.
07/09	080677-EI	FL	South Florida Hospital and Healthcare Association	Florida Power & Light Company	Multiple test years, GBRA rider, forecast assumptions, revenue requirement, O&M expense, depreciation expense, Economic Stimulus Bill, capital structure.
08/09	U-21453, U-20925, U-22092 (Subdocket J) Supplemental Rebuttal	LA	Louisiana Public Service Commission	Entergy Gulf States Louisiana, LLC	Violation of EGSI separation order, ETI and EGSL separation accounting, Spindletop regulatory asset.
08/09	8516 and 29950	GA	Georgia Public Service Commission Staff	Atlanta Gas Light Company	Modification of PRP surcharge to include infrastructure costs.
09/09	05-UR-104 Direct and Surrebuttal	WI	Wisconsin Industrial Energy Group	Wisconsin Electric Power Company	Revenue requirements, incentive compensation, depreciation, deferral mitigation, capital structure, cost of debt.
09/09	09AL-299E	CO	CF&I Steel, Rocky Mountain Steel Mills LP, Climax Molybdenum Company	Public Service Company of Colorado	Forecasted test year, historic test year, proforma adjustments for major plant additions, tax depreciation.

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09/09	6680-JR-117 Direct and Surrebuttal	WI	Wisconsin Industrial Energy Group	Wisconsin Power and Light Company	Revenue requirements, CWIP in rate base, deferral mitigation, payroll, capacity shutdowns, regulatory assets, rate of return.
10/09	09A-415E	CO	Cripple Creek & Victor Gold Mining Company, et al.	Black Hills/CO Electric Utility Company	Cost prudence, cost sharing mechanism.
10/09	EL09-50 Direct	LA	Louisiana Public Service Commission	Entergy Services, Inc.	Waterford 3 sale/leaseback accumulated deferred income taxes, Entergy System Agreement bandwidth remedy calculations.
10/09	2009-00329	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Company, Kentucky Utilities Company	Trimble County 2 depreciation rates.
12/09	PUE-2009-00030	VA	Old Dominion Committee for Fair Utility Rates	Appalachian Power Company	Return on equity incentive.
12/09	ER09-1224 Direct	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Hypothetical versus actual costs, out of period costs, Spindletop deferred capital costs, Waterford 3 sale/leaseback ADIT.
01/10	ER09-1224 Cross-Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Hypothetical versus actual costs, out of period costs, Spindletop deferred capital costs, Waterford 3 sale/leaseback ADIT.
01/10	EL09-50 Rebuttal	LA	Louisiana Public Service Commission	Entergy Services, Inc.	Waterford 3 sale/leaseback accumulated deferred income taxes, Entergy System Agreement bandwidth remedy calculations.
02/10	ER09-1224 Final	FERC	Louisiana Public Service Commission	Entergy Services, Inc.	Hypothetical versus actual costs, out of period costs, Spindletop deferred capital costs, Waterford 3 sale/leaseback ADIT.
02/10	30442 Wackerly-Kollen Panel	GA	Georgia Public Service Commission Staff	Atmos Energy Corporation	Revenue requirement issues.
02/10	30442 McBride-Kollen Panel	GA	Georgia Public Service Commission Staff	Atmos Energy Corporation	Affiliate/division transactions, cost allocation, capital structure.
02/10	2009-00353	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Company, Kentucky Utilities Company	Rate-making recovery of wind power purchased power agreements.
03/10	2009-00545	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Company	Rate-making recovery of wind power purchased power agreement.
03/10	E015/GR-09-1151	MN	Large Power Interveners	Minnesota Power	Revenue requirement issues, cost overruns on environmental retrofit project.
03/10	EL10-55	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Depreciation expense and effects on System Agreement tariffs.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
04/10	2009-00459	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Company	Revenue requirement issues.
04/10	2009-00458, 2009-00459	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Company, Louisville Gas and Electric Company	Revenue requirement issues.
08/10	31647	GA	Georgia Public Service Commission Staff	Atlanta Gas Light Company	Revenue requirement and synergy savings issues.
08/10	31647 Wackerly-Kollen Panel	GA	Georgia Public Service Commission Staff	Atlanta Gas Light Company	Affiliate transaction and Customer First program issues.
08/10	2010-00204	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Company, Kentucky Utilities Company	PPL acquisition of E.ON U.S. (LG&E and KU) conditions, acquisition savings, sharing deferral mechanism.
09/10	38339 Direct and Cross-Rebuttal	TX	Gulf Coast Coalition of Cities	CenterPoint Energy Houston Electric	Revenue requirement issues, including consolidated tax savings adjustment, incentive compensation FIN 48; AMS surcharge including roll-in to base rates; rate case expenses.
09/10	EL10-55	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Depreciation rates and expense input effects on System Agreement tariffs.
09/10	2010-00167	KY	Gallatin Steel	East Kentucky Power Cooperative, Inc.	Revenue requirements.
09/10	U-23327 Subdocket E Direct	LA	Louisiana Public Service Commission	SWEPSCO	Fuel audit: S02 allowance expense, variable O&M expense, off-system sales margin sharing.
11/10	U-23327 Rebuttal	LA	Louisiana Public Service Commission	SWEPSCO	Fuel audit: S02 allowance expense, variable O&M expense, off-system sales margin sharing.
09/10	U-31351	LA	Louisiana Public Service Commission Staff	SWEPSCO and Valley Electric Membership Cooperative	Sale of Valley assets to SWEPSCO and dissolution of Valley.
10/10	10-1261-EL-JNC	OH	Ohio OCC, Ohio Manufacturers Association, Ohio Energy Group, Ohio Hospital Association, Appalachian Peace and Justice Network	Columbus Southern Power Company	Significantly excessive earnings test.
10/10	10-0713-E-PC	WV	West Virginia Energy Users Group	Monongahela Power Company, the Potomac Edison Power Company	Merger of First Energy and Allegheny Energy.
10/10	U-23327 Subdocket F Direct	LA	Louisiana Public Service Commission Staff	SWEPSCO	AFUDC adjustments in Formula Rate Plan.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
11/10	EL10-55 Rebuttal	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Depreciation rates and expense input effects on System Agreement tariffs.
12/10	ER10-1350 Direct	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Waterford 3 lease amortization, ADIT, and fuel inventory effects on System Agreement tariffs.
01/11	ER10-1350 Cross-Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and the Entergy Operating Companies	Waterford 3 lease amortization, ADIT, and fuel inventory effects on System Agreement tariffs.
03/11	ER10-2001 Direct	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and Entergy Arkansas, Inc.	EAI depreciation rates.
04/11	Cross-Answering				
04/11	U-23327 Subdocket E	LA	Louisiana Public Service Commission Staff	SWEPCO	Settlement, including resolution of SO2 allowance expense, variable O&M expense, and tiered sharing of off-system sales margins.
04/11	38306 Direct	TX	Cities Served by Texas- New Mexico Power Company	Texas-New Mexico Power Company	AMS deployment plan, AMS Surcharge, rate case expenses.
05/11	Supplemental Direct				
05/11	11-0274-E-GI	WV	West Virginia Energy Users Group	Appalachian Power Company and Wheeling Power Company	Deferral recovery phase-in, construction surcharge.
05/11	2011-00036	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Revenue requirements.
06/11	29849	GA	Georgia Public Service Commission Staff	Georgia Power Company	Accounting issues related to Vogtle risk-sharing mechanism.
07/11	ER11-2161 Direct and Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and Entergy Texas, Inc.	ETI depreciation rates; accounting issues.
07/11	PUE-2011-00027	VA	Virginia Committee for Fair Utility Rates	Virginia Electric and Power Company	Return on equity performance incentive.
07/11	11-346-EL-SSO 11-348-EL-SSO 11-349-EL-AAM 11-350-EL-AAM	OH	Ohio Energy Group	AEP-OH	Equity Stabilization Incentive Plan; actual earned returns; ADIT offsets in riders.
08/11	ER-11-2161 Cross-Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and Entergy Texas, Inc.	ETI depreciation rates; accounting issues.
08/11	U-23327 Subdocket F Rebuttal	LA	Louisiana Public Service Commission Staff	SWEPCO	Depreciation rates and service lives; AFUDC adjustments.
08/11	05-UR-105	WI	Wisconsin Industrial Energy Group	WE Energies, Inc.	Suspended amortization expenses; revenue requirements.

J. KENNEDY AND ASSOCIATES, INC.

Expert Testimony Appearances
of
Lane Kollen
as of May 2013

Date	Case	Jurisdict.	Party	Utility	Subject
08/11	ER11-2161 Cross-Answering	FERC	Louisiana Public Service Commission	Entergy Services, Inc. and Entergy Texas, Inc.	ETI depreciation rates; accounting issues.
09/11	PUC Docket 39504	TX	Gulf Coast Coalition of Cities	CenterPoint Energy Houston Electric	Investment tax credit, excess deferred income taxes; normalization.
09/11	2011-00161 2011-00162	KY	Kentucky Industrial Utility Consumers, Inc.	Louisville Gas & Electric Company, Kentucky Utilities Company	Environmental requirements and financing.
10/11	11-4571-EL-UNC 11-4572-EL-UNC	OH	Ohio Energy Group	Columbus Southern Power Company, Ohio Power Company	Significantly excessive earnings.
10/11	4220-UR-117 Direct	WI	Wisconsin Industrial Energy Group	Northern States Power-Wisconsin	Nuclear O&M, depreciation.
11/11	4220-UR-117 Surrebuttal	WI	Wisconsin Industrial Energy Group	Northern States Power-Wisconsin	Nuclear O&M, depreciation.
11/11	PUC Docket 39722	TX	Cities Served by AEP Texas Central Company	AEP Texas Central Company	Investment tax credit, excess deferred income taxes; normalization.
02/12	PUC Docket 40020	TX	Cities Served by Oncor	Lone Star Transmission, LLC	Temporary rates.
03/12	2011-00401	KY	Kentucky Industrial Utility Customers, Inc.	Kentucky Power Company	Big Sandy 2 environmental retrofits and environmental surcharge recovery.
4/12	2011-00036 Direct Rehearing Supplemental Direct Rehearing	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Rate case expenses, depreciation rates and expense.
04/12	10-2929-EL-UNC	OH	Ohio Energy Group	AEP Ohio Power	State compensation mechanism, CRES capacity charges, Equity Stabilization Mechanism
05/12	11-346-EL-SSO 11-348-EL-SSO	OH	Ohio Energy Group	AEP Ohio Power	State compensation mechanism, Equity Stabilization Mechanism, Retail Stability Rider.
05/12	11-4393-EL-RDR	OH	Ohio Energy Group	Duke Energy Ohio, Inc.	Incentives for over-compliance on EE/PDR mandates.
06/12	40020	TX	Cities Served by Oncor	Lone Star Transmission, LLC	Revenue requirements, including ADIT, bonus depreciation and NOL, working capital, self insurance, depreciation rates, federal income tax expense.
07/12	120015-EI	FL	South Florida Hospital and Healthcare Association	Florida Power & Light Company	Revenue requirements, including vegetation management, nuclear outage expense, cash working capital, CWIP in rate base.
07/12	2012-00063	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Environmental retrofits, including environmental surcharge recovery.
09/12	05-UR-106	WI	Wisconsin Industrial Energy Group, Inc.	Wisconsin Electric Power Company	Section 1603 grants, new solar facility, payroll expenses, cost of debt.

J. KENNEDY AND ASSOCIATES, INC.

**Expert Testimony Appearances
of
Lane Kollen
as of May 2013**

Date	Case	Jurisdct.	Party	Utility	Subject
10/12	2012-00221 2012-00222	KY	Kentucky Industrial Utility Customers, Inc.	Louisville Gas and Electric Company, Kentucky Utilities Company	Revenue requirements, including off-system sales, outage maintenance, storm damage, injuries and damages, depreciation rates and expense.
10/12	120015-El Direct Rebuttal	FL	South Florida Hospital and Healthcare Association	Florida Power & Light Company	Settlement issues.
10/12	40604	TX	Steering Committee of Cities Served by Oncor	Cross Texas Transmission, LLC	Policy and procedural issues, revenue requirements, including AFUDC, ADIT – bonus depreciation & NOL, incentive compensation, staffing, self-insurance, net salvage, depreciation rates and expense, income tax expense.
11/12	40627 Direct	TX	City of Austin d/b/a Austin Energy	City of Austin d/b/a Austin Energy	Rate case expenses.
12/12	40443	TX	Cities Served by SWEPCO	Southwestern Electric Power Company	Revenue requirements, including depreciation rates and service lives, O&M expenses, consolidated tax savings, CWIP in rate base, Turk plant costs.
12/12	U-29764	LA	Louisiana Public Service Commission Staff	Entergy Gulf States Louisiana, LLC and Entergy Louisiana, LLC	Termination of purchased power contracts between EGSL and ETI, Spindletop regulatory asset.
01/13	ER12-1384	FERC	Louisiana Public Service Commission	Entergy Gulf States Louisiana, LLC and Entergy Louisiana, LLC	Little Gypsy 3 cancellation costs.
02/13	40627 Rebuttal	TX	City of Austin d/b/a Austin Energy	City of Austin d/b/a Austin Energy	Rate case expenses.
03/13	12-426-EL-SSO	OH	The Ohio Energy Group	The Dayton Power and Light Company	Capacity charges under state compensation mechanism, Service Stability Rider, Switching Tracker.
04/13	12-2400-EL-UNC	OH	The Ohio Energy Group	Duke Energy Ohio, Inc.	Capacity charges under state compensation mechanism, deferrals, rider to recover deferrals.
04/13	2012-00578	KY	Kentucky Industrial Customers, Inc.	Kentucky Power Company	Resource plan, including acquisition of interest in Mitchell plant.

EXHIBIT __ (LK-2)

Kentucky Power Company

REQUEST

Provide all studies and analysis demonstrating Kentucky Power's need for the energy and capacity supplied in the REPA. Please provide all reports, analyses, workpapers, and documentation of any type that was produced from conducting such studies or analysis. This information should be provided electronically with all formulas intact and no pasted in values.

RESPONSE

There are no studies or analysis. Please see the Company's response to KIUC 1-11.

WITNESS: Gregory G Pauley

EXHIBIT __ (LK-3)

Kentucky Power Company

REQUEST

Reference Pauley at page 6. Given that KPCo has conceded that the proposed Purchase Agreement is not the least cost alternative to supply capacity and energy (emphasis supplied), does KPCo. believe that it is not required to identify the least cost alternative for its energy capacity? Explain in detail with references to any Commission precedent for support of any assertion/answer if it is in the affirmative.

RESPONSE

Entering into the REPA with EcoPower is a unique opportunity for the Company to increase its fuel diversity and promote economic growth, all within the Commonwealth of Kentucky. It is unlikely that any renewable resources in Kentucky would be the least cost option. However, to move forward with fuel diversity, the Commission must decide when and if it is the proper time to approve a facility that is not the least cost option. The Company believes that the EcoPower biomass facility is the appropriate facility to do so.

WITNESS: Gregory G Pauley

EXHIBIT __ (LK-4)

Kentucky Power Company

REQUEST

Did Kentucky Power perform any studies in order to identify the least-cost means of providing energy and capacity to Kentucky Power. Please provide all reports, analyses, workpapers, and documentation of any type that was produced from conducting those studies. If no studies were performed, please explain why they were not performed. This information should be provided electronically with all formulas intact and no pasted in values.

RESPONSE

There were no studies performed.

Please see the Company's response to KIUC 1-11.

WITNESS: Gregory G Pauley

EXHIBIT__(LK-5)

Kentucky Power Company

REQUEST

Refer to Mr. Pauley's Testimony, page 6 beginning on line 18.

- a. If the REPA is not the least cost alternative to supply the contracted capacity and energy; is it the least cost "renewable" capacity and energy?
- b. Did Kentucky Power conduct an RFP to determine the least cost "renewable" capacity and energy? If so, then please provide all reports, analyses, workpapers, and documentation of any type in support of your answer. If not, then please explain why it did not.

RESPONSE

a. & b. KPCo did not conduct an RFP to determine the least cost "renewable" capacity and energy. See the Company's response to KIUC 1-1 and KIUC 1-11.

WITNESS: Gregory G. Pauley/ Jay F. Godfrey

EXHIBIT __ (LK-6)

Kentucky Power Company

REQUEST

Refer to page 7 of the Pauley Testimony, lines 12-19. Provide any economic studies or analyses that have been performed in connection with the ecoPower biomass generating facility by Kentucky Power, American Electric Power ("AEP"), any AEP subsidiaries or affiliates, by ecoPower.

RESPONSE

Neither Kentucky Power, American Electric Power ("AEP") or any AEP subsidiary or affiliate has performed any economic studies or analyses in connection with the ecoPower biomass generating facility.

WITNESS: Gregory G Pauley

EXHIBIT __ (LK-7)

KENTUCKY POWER COMPANY

REQUEST

Refer to Wohnhas Exhibit RKW-1.

- a. Please explain why Mr. Wohnhas did not include the cost of the additional equity contribution in the capital structure to offset the PPA debt equivalent in total capitalization.
- b. Please confirm that if Mr. Wohnhas had included the costs associated with a richer common equity ratio necessary to offset the imputed PPA debt equivalent that it would increase the incremental revenue requirement and the percentage increase.
- c. Is it the Company's position that it will not seek to include the costs associated with a richer common equity ratio necessary to offset the imputed PPA debt equivalent in the revenue requirement, regardless of the effect would have been reflected in whole or in part in the proposed recovery rider, in base rates, ECR rider, or any other rider or rate that includes a return on rate base investment or capitalization? If this is the Company's position, then please explain how it will adjust the test year common equity ratio for ratemaking purposes to exclude the increment necessary to offset the PPA debt equivalent. Please be specific. If this is not the Company's position, then please confirm that it will seek to include the costs associated with a richer common equity ratio necessary to offset the imputed PPA debt equivalent in the revenue requirement, describe how it will seek to do so and in which tariff components (proposed rider, ECR, base, etc.).

RESPONSE

- a. Exhibit RKW-1 demonstrates only the cost to be recovered through the cost recovery rider. The effect, if any, of any additional equity contribution on the Company's base rates was not calculated because it was not relevant to the calculation in Exhibit RKW-1.
- b. The question misstates the effect of any required equity capital contribution. It will not, as the question states, result in "a richer common equity ratio." To the contrary, the equity contribution would be for the purpose of maintaining the existing debt/equity ratio. Subject to that clarification, please see the Company's response to part (c) below.

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Page 2 of 2

- c. No. To the extent that additional equity is necessary to maintain the BBB/Baa2 investment grade credit rating, KPCo expects to earn a return on that equity in rates. However, the plant will not be in service until 2017, and any adjustment to equity would not be made until the plant goes into service. Between now and 2017, there will be any number of positive and negative items that would affect the capitalization and the cost of capital for Kentucky Power, and any additional equity would be part of the overall financing plan for the Company.

WITNESS: Ranie K Wohnhas

EXHIBIT __ (LK-8)

Kentucky Power Company

REQUEST

Refer to page 5 lines 16-23 of Mr. Wohnhas' Direct Testimony wherein he describes the S&P's imputed debt calculation, including the calculation of the net present value of the capacity payments and the "risk factor" that S&P's applies to the net present value.

- a. Please provide the projected capacity payments by year for the 20 year term of the REPA. Provide all assumptions, data, and calculations used for this purpose, including the basis for separating the energy rate pursuant to the REPA into a capacity rate and energy rate for the purpose of calculating the capacity payments for the debt equivalent, and all electronic spreadsheets with formulas intact.
- b. Please provide the Company's "risk factor" based on other debt equivalent calculations either for the Company or other AEP utilities and provide a copy of the source documents relied on for this risk fact
- c. Does Kentucky Power plan to add additional equity to its capital structure in response to this imputed debt? If so, how much? At what cost? Please provide all reports, analyses, workpapers, and documentation of any type in support of your answer.

RESPONSE

- a. Please see KIUC 1-38 Confidential Attachment 1 that was prepared in January 2013. It is the Company's opinion that a low risk factor will be applied to this plant. The expectation is that any debt imputation would apply beginning when the plant goes in service.
- b. Based on discussions with S&P, it is the Company's understanding that the routine risk factor with regulatory recovery is 25%; however, the cost recovery mechanisms to be sought by the Company are anticipated to reduce this risk factor. Upon receipt of Commission orders approving the REPA and establishing a cost recovery mechanism, the Company will provide the details to S&P in an effort to reduce the risk factor as low as possible given legislation regarding continued binding effect of the Commission's order, the order itself, and contract terms will allow.
- c. KIUC 1-38 Confidential Attachment 1 assumed that the additional equity contribution would be in the range of \$15 million to \$38 million depending on the risk factor attributed.

WITNESS: Ranie K. Wohnhas

EXHIBIT __ (LK-9)

KENTUCKY POWER COMPANY

REQUEST

Refer to the Company's response to KIUC 1-38 and the attachment to that response regarding AEP's consideration of debt equivalents in the evaluation of PPA resource bids.

- a. Please describe the Company's calculation of the additional equity contributions that are shown on the attachment to this response and provide the electronic spreadsheet with formulas intact. In addition, please describe and source all assumptions used in this calculation.
- b. Please explain why the Company calculated the additional equity contribution as 45.0% of the debt equivalent under the 10% and 25% risk factor assumptions rather than solving so that the equity ratio was 45.0% of total capitalization after including the PPA debt equivalent in total capitalization. Was it the Company's intent to calculate the additional equity contribution so that the equity ratio was 45.0% of total capitalization after including the PPA debt equivalent in total capitalization? If that was not the Company's intent, then please explain why it was not.

RESPONSE

- a. The Company multiplied the imputed debt by 45%, which assumed that after adjusting for the PPA, KPCo would still be capitalized in the 55% debt to capitalization range post PPA analysis. There were no further assumptions for this calculation. See KIUC 2-14, Attachment 1 on the enclosed CD for the spreadsheet with formulas intact. Confidential treatment is being sought for Attachment 1 in its entirety.
- b. Multiplying the debt imputation by 45% was a quick analysis that was conducted to manage the overall debt to capitalization to the 55% range. It was KPCo's intent to keep the debt to capitalization in the 55% range for this analysis.

WITNESS: Ranie K Wohnhas

EXHIBIT __ (LK-10)

KENTUCKY POWER COMPANY

REQUEST

Refer to page 3 Exhibit RKW-2, which replicates the S&P's methodology for imputing debt for U.S. utilities' power purchase agreements, wherein S&P's states:

In cases where a regulator has established a power cost adjustment mechanism that recovers all prudent PPA costs, we employ a risk factor of 25% because the recovery hurdle is lower than it is for a utility that must litigate time and again its right to recover costs.

Please provide all written evidence and documentation that S&P's would use or has ever used a risk factor of less than 25% where a regulator has established a power cost adjustment mechanism that recovers all prudent PPA costs. In addition, provide all examples of which AEP is aware where S&P's used a risk factor of less than 25% to calculate the risk factor for imputing debt for a PPA. Provide all relevant facts for each such example.

RESPONSE

The Company is not aware of any reports where S&P publishes PPA risk factor calculations by contract.

The Company understands that most regulated PPAs are assigned a 25% risk factor. However, on Page 3 of Exhibit RKW-2, S&P states that these risk factors typically range between 0% to 50% but can be as high as 100%. The strongest recovery mechanisms translate into the smallest risk factors.

With the legislation in place in Kentucky whereas future Commissions cannot disallow approved contracts, the Company believes that a low risk factor should be used for analyzing the contract.

WITNESS: Ranie K Wolnhas

serve a growing national market, the model can predict how much of the total impact in the region is due to companies buying more goods from each other, and also how much is due to the growth in income of households in the region, and how they buy more retail, personal and other items locally.

Caveats and limitations

The limitations of input-output models are well-known by economists, and users should be aware of these in interpreting results. The most important are:

1. Input-output models assume fixed factor proportions to produce any level of output. That is, there are no economies of scale. To make a thousand cakes requires the same mixture of ingredients and labor as the mixture to make one cake. This is not a serious limitation for small changes in production levels in mature industries, but may be problematic for large changes in less developed industries.
2. The models implicitly assume there is no adjustment to product prices or wages as production levels change. Again, this is not a serious limitation for small changes in established labor and product markets.
3. Similarly, the models implicitly assume no migration of labor or other factors as economic conditions change. The number of households in a region remains fixed even if there is a dramatic increase or decrease in economic activity. For major industrial developments, particularly in a narrowly defined region like a county, input-output models would not be able to capture important dynamics that are likely to occur in the labor and product markets. For example, if an auto assembly plant was constructed in a sparsely populated county, new firms would spring up in the county to serve the plant and households would move to the county to take advantage of the job opportunities. As such, a standalone input-output model, using historical data on the county, would underestimate the industrial linkages, the impact on local wages, and the spending of households in the region.
4. Related to the last two points, the models are static. That is, there is no mechanism built in that takes account of changes to technology, preferences, industry structure, or household behavior over time.

References

Hewings, Geoffrey. *Regional Analysis*. (1985). Beverly Hills: Sage Publications.

MIG (Minnesota Implan Group). www.implan.com

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JUL 08 2013

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:)
(1) The Approval Of The Terms And Conditions Of The)
Renewable Energy Purchase Agreement For Biomass)
Energy Resources Between The Company And)
EcoPower Generation-Hazard LLC; (2) Authorization) Case No. 2013-00144
To Enter Into The Agreement; (3) The Grant of Certain)
Declaratory Relief; And (4) The Grant Of All)
Other Required Approvals And Relief)

DIRECT TESTIMONY
OF
ALAN S. TAYLOR

ON BEHALF OF THE
KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

SEDWAY CONSULTING, INC.
BOULDER, COLORADO

JULY 5, 2013

Sedway Consulting, Inc.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:)
(1) The Approval Of The Terms And Conditions Of The)
Renewable Energy Purchase Agreement For Biomass)
Energy Resources Between The Company And)
EcoPower Generation-Hazard LLC; (2) Authorization) Case No. 2013-00144
To Enter Into The Agreement; (3) The Grant Of Certain)
The Mitchell Generating Station; (3) Declaratory Rulings;)
Declaratory Relief; And (4) The Grant Of All)
Other Required Approvals And Relief)

DIRECT TESTIMONY OF ALAN S. TAYLOR

1 Q. Please state your name and business address.

2 A. My name is Alan S. Taylor. My business address is Sedway Consulting, Inc.
3 ("Sedway Consulting"), 821 15th Street, Boulder, Colorado 80302.

4
5 Q. By whom are you employed and what position do you hold?

6 A. I am President of Sedway Consulting, Inc.

7
8 Q. Please describe your duties and responsibilities in that position.

9 A. I perform consulting engagements in which I assist utilities, regulators, and
10 customers with the challenges that they may face in today's dynamic electricity
11 marketplace. My area of specialization is in the economic and financial analysis of
12 renewable and conventional power supply options and in providing independent
13 evaluation services in utility solicitations for such resources. In recent years, I have

Sedway Consulting, Inc.

1 overseen solicitations and evaluated over a thousand proposals for power supply
2 options.

3

4 **Q. Please describe your education and professional experience.**

5 A. I earned a Bachelor of Science Degree in energy engineering from the Massachusetts
6 Institute of Technology and a Masters of Business Administration from the Haas
7 School of Business at the University of California, Berkeley, where I specialized in
8 finance and graduated valedictorian.

9

10 I have worked in the utility planning and operations area for 27 years, predominantly
11 as a consultant specializing in integrated resource planning, competitive bidding
12 analysis, utility industry restructuring, market price forecasting, and asset valuation.

13 I have testified before state commissions in proceedings involving resource
14 solicitations, environmental surcharges, and fuel adjustment clauses.

15

16 I began my career at Baltimore Gas & Electric Company (BG&E), where I
17 performed efficiency and environmental compliance testing on the utility system's
18 power plants. I subsequently worked for five years as a senior consultant at Energy
19 Management Associates (EMA, subsequently New Energy Associates and now a
20 division of Ventyx), training and assisting over two dozen utilities in their use of
21 EMA's operational and strategic planning models, PROMOD III and

1 PROSCREEN II. During my graduate studies, I was employed by Pacific Gas &
2 Electric Company (PG&E), where I analyzed the utility's proposed demand side
3 management (DSM) incentive ratemaking mechanism, and by Lawrence Berkeley
4 Laboratory (LBL), where I evaluated utility regulatory policies surrounding the
5 development of brownfield generation sites.

6
7 Subsequently, I worked at PHB Hagler Bailly (and its predecessor firms) for ten
8 years, serving ultimately as a vice president in the firm's Global Economic Business
9 Services practice and then as a senior member of the Wholesale Energy Markets
10 practice of PA Consulting Group when that firm acquired PHB Hagler Bailly in
11 2000. In 2001, I founded Sedway Consulting, Inc. and have continued to specialize
12 in economic analyses associated with electricity wholesale markets. As noted above,
13 I have overseen dozens of utility resource solicitations and evaluated over a thousand
14 power supply proposals.

15
16 **Q. On whose behalf are you testifying?**

17 **A.** I am testifying on behalf of the Kentucky Industrial Utility Customers, Inc.
18 ("KIUC"), a group of large customers taking electric service on the Kentucky Power
19 Company system.

1 **Q. What is the purpose of your testimony?**

2 A. The purpose of my testimony is to address and make recommendations in response
3 to the Company's request to: 1) enter into a 20 year renewable energy purchase
4 agreement ("REPA") to purchase the output of a biomass generating facility owned
5 and operated by ecoPower Generation-Hazard LLC ("ecoPower"), 2) approve the
6 terms and conditions of the REPA, and 3) declare that the recovery of all costs
7 associated with the REPA through a rider is appropriate.

8
9 **Q. Please summarize your testimony.**

10 A. The Company has professed that the ecoPower REPA provides economic
11 development and fuel diversity benefits. While I think that these goals are laudable,
12 they may be able to be provided by other opportunities at a much lower cost.
13 I believe that there was (and may still be) sufficient time and justification for the
14 Company to conduct a solicitation for resources whereby it could gauge whether or
15 not the costs of the ecoPower REPA are fair, just and reasonable. Absent such a
16 process, the Company has judged and executed the ecoPower REPA in a vacuum,
17 and by its Application, is asking the Commission to approve the transaction without
18 the Commission having any way of determining that its costs are fair, just, and
19 reasonable. When the Company began negotiations with ecoPower for the proposed
20 facility, the initial price was much lower. Over the course of the multi-year
21 negotiations, the contract price increased 49% -- due to a variety of changing

1 circumstances. Over the same time period, renewable technology costs in the broader
2 market have declined substantially, and I have seen 20-year REPA proposals offered
3 at contract prices that are less than a third of the ecoPower REPA's price. I
4 recommend that the Commission reject the Company's request and encourage the
5 Company to conduct a renewable resource solicitation to determine whether or not
6 the ecoPower transaction represents the least-cost option for achieving the
7 Company's stated goals.

8
9 In addition, the provisions in the REPA for addressing the benefits associated with
10 Section 45 federal production tax credits (PTC) are weak and vague, exposing the
11 Company's customers to unnecessary risks and costs. If the Commission sees fit to
12 approve the ecoPower transaction, it should do so with conditions that require
13 stronger and more clear-cut price-reduction provisions. If the Commission sees fit to
14 reject the ecoPower transaction and encourage the Company to conduct a renewable
15 solicitation, the Company should be instructed to review and potentially strengthen
16 its tax credit provisions in any subsequent REPA.

17
18 Also, I believe that the costs of the renewable energy credits (REC) that are expected
19 to be generated by the ecoPower project will be quite high. The Company has
20 indicated that these RECs may be sold into the market or utilized to address a
21 renewable portfolio standard (RPS) requirement in Kentucky, should one be enacted

1 at some point during the ecoPower transaction's term. On the first point, I have used
2 the Company's energy and capacity price forecasts to estimate the expected cost of
3 the ecoPower transaction RECs and have found that the cost of these RECs is likely
4 to be much higher than current and future REC prices. My analysis indicated that
5 the above-market cost of the ecoPower RECs could be in the range of \$288 million
6 to \$432 million over the term of the REPA. On the second point, I believe that a
7 solicitation for renewable resources would provide the Company with a suite of
8 options from which it could develop a least-cost strategy for preparing for a potential
9 future RPS requirement.

10
11 Lastly, the environmental qualities of the proposed project may not be as strong as
12 other renewable alternatives. Emissions and other impacts from the ecoPower
13 biomass facility and the fleet of diesel-fueled trucks that will deliver fuel to the plant
14 are detrimental aspects not shared with other possible renewable energy options.
15 And federal executive actions undertaken by the Obama Administration in recent
16 weeks regarding carbon emissions may cause significant problems for the future
17 viability of the ecoPower facility.

18

1 **Q. So you believe that the Company should have conducted a solicitation for**
2 **renewable power supplies to gauge the cost-effectiveness of the ecoPower**
3 **transaction?**

4 **A. Yes. Without the results of a solicitation or at least some compilation of market**
5 **information, there is no basis for judging the cost-effectiveness of the ecoPower**
6 **transaction. In response to KIUC data request 1-1 and the Kentucky Public Service**
7 **Commission (KPSC) Staff data request 1-11, the Company admitted that it neither**
8 **conducted a solicitation nor performed any economic studies or analyses in**
9 **connection with the ecoPower transaction. Thus, there is no context or analysis from**
10 **which to conclude that the ecoPower transaction represents the utility's least-cost**
11 **option for achieving its stated goals.**

Q. Are there ever circumstances where a utility may appropriately consider and potentially execute a power supply contract without conducting a solicitation?

A. Yes. Although I would say that the utility industry norm is to conduct solicitations when seeking long-term power supplies, occasionally “non-RFP” or “bilateral” opportunities arise and are pursued by utilities if such opportunities represent compelling value propositions with pressing time constraints. It may be the case that a solicitation would take too long to conduct and the opportunities require expedited consideration to capture their benefits.

Q. Can you provide some examples of such pressing time constraints?

A. Yes. For example, key parts of a project (e.g., equipment agreements, options on land, transmission queue status, etc.) may be about to expire or beneficial tax provisions may be about to sunset. In such circumstances, the developer may be willing to offer rather low, attractive prices to a utility for a near-term power supply agreement. However, even under these circumstances, the utility usually evaluates the opportunity in the context of some sort of comparative information (e.g., results from an earlier solicitation conducted by that utility, results from an affiliate’s solicitation, market reports, etc.).

Q. Did Kentucky Power provide such comparative information?

A. No. In response to KPSC data request 1-11, the Company admitted that no economic analysis was done.

Q. Do you think that the ecoPower transaction qualifies as a low-cost opportunity with a pressing time constraint?

A. No. Initially, when the original offer was provided to the Company in late 2010, it may have. However, over the ensuing two and a half years until the REPA was executed, the contract price rose 49% while market prices from competing renewable technologies have declined markedly. In its response to KIUC data request 2-2, Kentucky Power stated that the contract price increased because, with the passage of time, the project no longer qualified for Section 1603 30% cash grants or for certain accelerated tax depreciation benefits that had been assumed in the lower original price. Also, the developer's estimated operating expenses increased. This undermines any potential premise that the project should be pursued and approved outside of a solicitation because it has cost-saving benefits that are about to disappear. Quite to the contrary, the fact that the cash grants and accelerated tax depreciation benefits are no longer available takes away the "pressing time constraint" aspect (and the associated low contract price) and strongly argues against approving this transaction without vetting it through a competitive solicitation.

Q. But is it not the case that the ecoPower facility may be eligible for Section 45 federal renewable production tax credits that would be unavailable if the developer does not commence construction soon?

A. Yes to the first part; the second part may already be taken care of. First, the PTCs

are available to developers of open-loop biomass¹ projects (such as ecoPower's proposed facility) that are under construction by the end of 2013. That is the current deadline, and missing it may render a developer ineligible to capitalize on the benefits of the PTCs. However, it is worth noting that the PTC tax provisions have been in existence since the 1992 Energy Policy Act, have expired or been due to expire several times over the last two decades, and have been extended each time. Whether Congress will do that again is anyone's guess. Barring Congressional action, ecoPower must commence construction before the end of this year to be eligible for the PTCs. However, and to the point of the second part of the question, it appears that ecoPower has already commenced construction. In response to the KPSC's data request 1-8, the Company stated that project construction was already underway in that construction work for the Chipper Building began on April 22, 2013. Thus, ecoPower may already be in a position to qualify for the PTCs.

- Q. Are other renewable technologies under the same 2013 deadline for eligibility for tax credits?**
- A. Some are, such as wind; others are not. For example, solar projects have until December 31, 2016 to be completed and still be eligible for the renewable energy

¹ "Open-loop" biomass refers to those facilities that rely on a fuel source that was not planted specifically for use as a biomass fuel but which instead is usually a waste product from another industry.

30% investment tax credits (ITC) that are analogous to the PTCs for wind and biomass.

Q. So if Kentucky Power launched a renewable solicitation quickly, the benefits of federal renewable energy tax credits might still be achievable for the ecoPower project and competing projects?

A. Perhaps. Certainly for solar projects. For the ecoPower and other non-solar renewable alternatives, construction will need to start by the end of this year or we will need to see another extension from Congress (as has occurred numerous times in the past). In any case, there are five important points to make here:

- 1) If indeed the December 31, 2013 deadline is a pressing issue for the ecoPower transaction, the Company should not be rewarded (by a Commission approval of the ecoPower REPA) for failing to conduct a solicitation up to this point,
- 2) Congress may extend the PTC deadline again, as it did in 1999, 2002, 2004, 2005, 2006, 2008, 2009, and 2013,
- 3) The fact that the Company is seeking approval for a contract price in the ecoPower REPA that does not automatically include the PTC benefits suggests that they want their customers to bear all the risks that ecoPower (for whatever

reason) does not capture such benefits; in addition, per the REPA and as noted in the Company's response to KIUC data request 2-1, the Company's customers would reap only a portion of those benefits if the project moved forward and ecoPower were granted the PTCs,

- 4) The ecoPower contract price has already increased 49% from its initial proposed value because of the expiration of other tax benefits; thus, the impetus for moving quickly has largely disappeared,
- 5) According to the Company's response to KPSC data request 1-1(d)(iii), the PTC benefits may amount to a contract price reduction in the range of \$5/MWh-\$10/MWh and only for the 10-year period of the tax credit; this translates into a few percentage points of the 49% price increase referenced above.

Q. So you do not see the December 31, 2013 deadline for the Section 45 PTCs as a pressing time constraint?

A. No. Because of an unusual contracting feature, failure to achieve the PTC benefits is already incorporated into the ecoPower REPA contract price for which the Company is seeking Commission approval. Also, other renewable technologies may be in a better position to garner greater tax benefits. First, several renewable technologies (such as wind) are eligible for a \$/MWh PTC rate that is twice as high as that

afforded to open-loop biomass. Second, as noted above, solar projects have until December 31, 2016 to qualify for substantial tax benefits.

Q. What do you mean as “an unusual contracting feature” in your above response?

A. In many REPAs that I have reviewed, the renewable project developer is fully at risk for obtaining any available PTC benefits and including them in the proposed contract price. If the developer fails to advance the proposed project in time to obtain such benefits, the developer may terminate the REPA. The Company’s ecoPower REPA, on the other hand, includes a firm price that ecoPower is guaranteed if it does not obtain the PTC benefits, awards a generous portion of the benefits to ecoPower if the project does qualify for the PTCs, and leaves open to discussion (and potential dispute) the \$/MWh price reduction associated with the Company’s portion of the benefits. Thus, if the Commission decides to approve the ecoPower REPA, I believe that it should do so with conditions that require stronger and more clear-cut price-reduction provisions.

Q. Turning to the value of the RECs that the ecoPower project is expected to produce, do you think that the Company will be able to generate enough revenues (through the sale of those RECs) to economically justify the project?

A. No; the cost of the ecoPower RECs are likely to be much higher than the REC market prices. In its response to KPSC data request 1-5, the Company admitted that

it was seeing current REC values in the marketplace of \$2/REC-\$6/REC. In response to KIUC data request 1-36, the Company indicated that it had not performed an assessment of the value of the ecoPower RECs. Thus, I performed that analysis, using the Company's latest forecast(s) of future energy and capacity prices (for power purchases and sales at the AEP generating hub) as provided in the Company's response to KIUC data request 2-10. That response included a base case \$/MWh forecast of on-peak and off-peak energy prices and capacity prices through 2030, as well as four alternative scenarios. I performed two analyses – one with the base case price assumptions and a second with the alternative scenario that had the highest market energy and capacity price assumptions (because this would yield the lowest, most optimistic estimate of the cost of the ecoPower RECs). Under base case assumptions, I determined that the RECs from the project would cost the Company an average of over \$50/REC over the life of the REPA. For the highest highest market energy and capacity price scenario, the average was over \$38/REC. In both analyses, to keep things simple, I did not include the debt equivalence costs that are discussed in KIUC witness Mr. Lane Kollen's testimony; had I, the REC costs would have been even higher. Clearly, generating RECs at these prices is unlikely to result in cost-effective sales if the market price of RECs remains in the range of \$2/REC-\$6/REC. Indeed, such sales would yield a significant loss.

Q. Might the sales price of RECs increase in the future?

A. Perhaps. However, given that other renewable technologies can provide renewable energy (and associated RECs) at contract prices that are so much lower than the ecoPower project, the long-term market price for RECs is unlikely to climb anywhere near the ecoPower cost range. In fact, I have seen many proposed renewable projects in recent years that could generate renewable energy and RECs at prices that are less than the forecasted prices for “brown” power. That suggests a negative REC price. While I do not think that REC market prices will go negative, the fact that there are renewable opportunities that are so much less expensive than the ecoPower project will put downward pressure on REC market prices and probably keep them from increasing anywhere near the range of the projected costs of the ecoPower RECs.

Q. Based on the cost and sales prices estimates provided above, what range of above-market REC costs might the Company’s customers be forced to bear over the term of the ecoPower REPA?

A. If one uses the 450,000 MWh/year estimate of generation from the ecoPower project that the Company provided in its response to KIUC data request 2-6, a \$38 REC cost and a \$6 REC sales price, the above-market loss for customers would be \$288 million. With a \$50 REC cost and a \$2 REC sales price, the above-market loss for customers would be \$432 million.

Q. Do you think that the ecoPower biomass technology is as “green” as other renewable technologies like wind or solar?

A. Although I think that biomass has a place in the suite of renewable energy alternatives for our country’s energy needs, it clearly is not as green as other renewable technologies. In the case of wind and solar projects, their fuel source is free, is not dependent on fossil fuels, and does not result in greenhouse gas emissions. In contrast, the ecoPower open-loop biomass facility will require the procurement and transportation of wood products to the facility for combustion – resulting in significant greenhouse gas emissions and diesel fuel consumption. Indeed, diesel-fueled delivery trucks will be a source of air pollution, as well as noise, traffic impacts, and road wear and tear. Because open-loop biomass facilities have a significant fossil-fuel-based element of their fuel stream (i.e., the diesel fuel for the trucks), some have questioned the “greenness” of the technology.

Q. But does the REPA expose the Company’s customers to fluctuations in diesel fuel prices?

A. No. The ecoPower REPA has a firm, fixed price that inherently includes the developer’s best estimate of trucking costs (presumably with some risk premium as a buffer) over the term of the REPA. If diesel (and other fuel related) costs are lower than expected, ecoPower will reap additional profits. If they are higher than

expected, this will reduce the profitability of the project for ecoPower and may imperil the continued operation of the facility. If the current REPA was approved, that could lead to another regulatory proceeding in the future regarding an amended REPA with yet a higher price. Other renewable projects – such as wind and solar – do not have these fossil-fuel-price-related risks.

Q. Are there emissions risks associated with the biomass facility itself?

A. Yes. President Obama recently released a plan for the U.S. Environmental Protection Agency (EPA) to issue new carbon emission standards for new and existing power plants. Back in 2011, the EPA released proposed carbon emission standards for biomass facilities that were extremely high and that could not be met by even the most efficient biomass plants. Under Congressional pressure at that time, the EPA announced on July 1, 2011 that it would delay the enforcement of these standards for three years to assess air quality issues. As we reach the end of this three-year period and with President Obama's recent declaration, there is much uncertainty surrounding the viability of the ecoPower biomass facility and its ability to meet future carbon emission standards.

Q. What then do you think that the Company should do?

A. It should conduct a solicitation for renewable resources that will allow it to meet the economic development and fuel diversity goals that it expects to receive from the

ecoPower transaction. Only then will it have a sufficient basis for determining whether the ecoPower transaction (with all of the risks and concerns that I have identified above) makes sense or whether another proposed project is better suited and more cost-effective in meeting the Company's goals.

Q. Does this conclude your testimony?

A. Yes.

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PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:)
 (1) The Approval Of The Terms And Conditions Of The)
 Renewable Energy Purchase Agreement For Biomass)
 Energy Resources Between The Company And)
 EcoPower Generation-Hazard LLC; (2) Authorization) Case No. 2013-00144
 To Enter Into The Agreement; (3) The Grant of Certain)
 Declaratory Relief; And (4) The Grant Of All)
 Other Required Approvals And Relief)

DIRECT TESTIMONY
 AND EXHIBITS
 OF
 PAUL COOMES

ON BEHALF OF THE
 KENTUCKY INDUSTRIAL UTILITY CUSTOMERS, INC.

PAUL COOMES, PH.D., CONSULTING ECONOMIST
 LOUISVILLE, KY

JUNE 28, 2013

Paul Coomes, Ph.D.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:)
(1) The Approval Of The Terms And Conditions Of The)
Renewable Energy Purchase Agreement For Biomass)
Energy Resources Between The Company And)
EcoPower Generation-Hazard LLC; (2) Authorization) Case No. 2013-00144
To Enter Into The Agreement; (3) The Grant Of Certain)
The Mitchell Generating Station; (3) Declaratory Rulings;)
Declaratory Relief; And (4) The Grant Of All)
Other Required Approvals And Relief)

DIRECT TESTIMONY OF PAUL COOMES

- 1 Q. Please state your name and business address.
- 2 A. My name is Paul Coomes. My business address is 3604 Trail Ridge Road,
3 Louisville KY 40241.
- 4
- 5 Q. What is your occupation?
- 6 A. I am an Emeritus Professor of Economics, the University of Louisville, and
7 independently perform consulting work as an economist.
- 8
- 9 Q. Please describe your education and professional experience.
- 10 A. I have a doctorate in economics from the University of Texas at Austin. Before that I
11 earned a master's degree in economics from Indiana University in Bloomington, and
12 a bachelor's degree in economics from Brescia University in Owensboro. I joined

Paul Coomes, Ph.D.

1 the faculty of the University of Louisville in 1985, moving up the ranks to become a
2 full professor. I retired in 2012, with the distinction 'emeritus'. I have been active in
3 several fields, including economic development, urban and regional economics,
4 labor economics, demographics, public economics, and real estate economics. I
5 continue to write and publish in academic journals.
6

7 **Q. Have you testified before the Public Utility Commission of Kentucky before?**

8 A. Yes, several times. I have also testified before the Ohio Public Utility Commission,
9 and have filed testimony before the Missouri Public Utility Commission.
10

11 **Q. On whose behalf are you testifying today?**

12 A. I am testifying on behalf of the Kentucky Industrial Utility Customers, Inc.
13 ("KIUC"), a group of large customers taking electric service on the Kentucky Power
14 Company system. The members of KIUC participating in this case are: Air Products
15 & Chemicals, Inc., Air Liquide Large Industries U.S. LP, AK Steel Corporation,
16 EQT Corporation, and Marathon Petroleum Company LP.
17

18 **Q. What is the purpose of your testimony?**

19 A. The purpose of my testimony is to explain the likely regional economic
20 consequences of the proposed biomass generation facility.
21

1 **Q. Please summarize your testimony.**

2 A. I examined two primary consequences of the proposed biomass facility. First, I
3 compared the expected job and labor income impacts in the region of using wood
4 products to generate electricity to those likely if the same amount of electricity were
5 produced using coal. I found that using wood as a fuel is likely to support about one
6 hundred more jobs in the region than using coal, as wood production and delivery is
7 more labor-intensive than for coal. However, because coal mining jobs pay such a
8 higher wage than timber-related jobs, the total earnings of workers in the region are
9 only \$1.68 million higher with wood (\$6.40 million) than with coal (\$4.71 million)
10 as a fuel. Another consequence is that by substituting wood for coal as a fuel reduces
11 the amount of coal severance taxes collected by the state of Kentucky. The amount
12 of coal needed to produce the electricity of the proposed biomass plant is associated
13 with about \$482,000 in state severance tax receipts.

14
15 Second, I examined one of the impacts of the rise in electricity rates associated with
16 the proposed biomass plant. According to testimony, electricity rates for Kentucky
17 Power customers will rise by 7 percent due to the biomass plant. I estimate that the
18 reduction in household spending alone will reduce employment in the region by
19 about one hundred jobs, assuming no substitution away from electricity as its price
20 rises. The higher electricity rates will also result in increased prices for goods and
21 services at commercial establishments, and a higher risk of industry relocations –

1 particularly for energy-intensive manufacturers in the region. But I have not made
2 estimates of the magnitude of the impacts due to higher energy prices for commercial
3 and industrial customers.

4

5 **Q. So, you are saying that you found no positive net regional economic impact**
6 **from the proposed biomass generating facility?**

7

8 A. That is correct, given the information I have and the factors considered. Burning
9 wood as a fuel rather than coal is likely to support more jobs and earnings in the
10 region. Wood is a more labor-intensive industry than coal mining. However, the
11 associated rise in electricity rates from burning wood reduces the discretionary
12 income of households in the region, and their reduced spending on goods and
13 services decreases employment sufficiently to offset any job gains in logging,
14 sawmills, and trucking.

15

16 **Q. Did you prepare a report containing the details of your analysis?**

17 A. Yes, I have attached a 13-page report that goes through the assumptions, methods,
18 and more detailed conclusions.

19

20 **Q. Does this complete your testimony?**

21 A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

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EXHIBITS
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PAUL COOMES, PH.D., CONSULTING ECONOMIST
LOUISVILLE, KY

JUNE 28, 2013

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June 28, 2013

TO: Mike Kurtz, Esq.
 representing Kentucky Industrial Utility Customers (KIUC)

FROM: Paul Coomes, Ph.D.
 Consulting Economist

RE: regional economic impacts of ecoPower biomass generation agreement

Please find below my estimates of the regional economic implications of the proposed agreement between Kentucky Power Company, ecoPower, and a supplier of wood for the generation plant. I find that:

- Using wood as a fuel source generates about 104 more jobs in the region than using coal to generate the same amount of electricity. I estimate using wood is associated with about 176 total regional jobs, while using coal is associated with about 73 jobs. However, because coal mining jobs pay such a higher wage than timber-related jobs, the total earnings of workers in the region is only \$1.68 million higher with wood (\$6.40 million) than with coal (\$4.71 million) as a fuel.
- Using wood as a fuel source instead of coal would have significant impacts on state and local tax revenues. Coal is subject to a severance tax of 4.5 percent of value, while wood is not taxed. The amount of coal needed to offset the wood requirements of the proposed biomass plant would generate about \$482,000 annually in state severance taxes, a portion of which is shared back to local governments in the region.
- The increased cost of electricity associated with the proposed biomass plant would have negative economic impacts in the region. According to testimony, electricity rates for Kentucky Power customers will rise by 7 percent due to the biomass plant. This will result in a reduction in discretionary income for households, increased prices for goods and services at commercial establishments, and a higher risk of industry relocations – particularly for energy-intensive manufacturers in the region. I estimate that the reduction in household spending alone will reduce employment in the region by 104 jobs, assuming no substitution away from electricity as its price rises.

Background: the proposed energy arrangement and putative economic impacts

Kentucky Power Company is asking for approval to enter into a 20-year Renewable Energy Purchase Agreement (REPA) with ecoPower for 58.5 megawatts of electricity load, generated from burning local low grade wood products, with the costs passed through to customers using a surcharge on their bills. The managing director of Kentucky Power has testified that the REPA is projected to result in a 7 percent increase in electricity rates for customers. The higher electricity rates presumably result from the smaller capacity of the proposed biomass plant and the lack of economies of scale derived from much larger coal-fired plants.

Kentucky Power Company and ecoPower Generation-Hazard LLC have testified that the proposed new generation plant and the related local wood purchases will result in 30 full-time jobs to operate the generation facility and 225 “timber and trucking” jobs in the region.

There has apparently been no analysis of the *net* economic impact of the biomass generation facility. That is, assuming for now that the proponents’ estimates of jobs related to the electricity generation and wood supply operations are correct, how does that compare to the number of jobs that would occur if the electricity were generated by other means? If the electricity were generated by coal-fired plants in the region there would also be associated coal and transportation jobs in the region. Moreover, since electricity rates are projected to be higher under the biomass proposal, what is the negative impact on jobs in the region from the higher energy costs? The true regional economic impact should be viewed as the net result of a new policy path relative to the existing policy path, rather than simply listing the gross economic activity associated with the new policy path.

In this report, I analyze the *net* regional economic impact of the proposed biomass generation plant relative to the coal-fired alternative. To do this, I develop two scenarios, each with the same annual electricity production, but one using existing coal-fired plants and regional coal supplies, the other using the proposed biomass plant and regional wood supplies. This allows me to compare the number of jobs and the amount of worker earnings from the two possibilities. A regional input-output model is used to predict the linkages to the regional economy from each policy, to determine any differences in inter-industry spending and employee spending from the two technologies.

Additionally, I estimate the negative regional economic impacts of the higher electricity rates on customers. For residential customers, the impact is primarily due to their reduced discretionary spending in the region due to the higher household energy bills. Commercial electricity customers - like restaurants, dentists, hardware stores, and banks - would attempt to pass their higher electricity costs on to their customers in the form of higher retail prices for

goods and services. The result would be a higher cost of living in the area, further reducing the discretionary income of residents. How much retail prices would rise in the region is beyond the scope of this project, but certainly the regional economic impacts are negative. For industrial customers, any impacts would be due to a reduction in regional industrial output as some companies shift production to lower cost sites. This is also much harder to quantify than the residential impacts, but the impacts are clearly negative. Very energy-intensive manufacturing facilities would be the most likely to scale down or relocate to a lower cost region, leading to job and income losses in eastern Kentucky.

Comparison of Regional Economic Impacts – Wood vs. Coal as Fuel

In this section, I develop estimates of the annual economic impacts in the region from using wood to generate electricity instead of coal. There are many complicating variables to potentially consider, but to shine light on the most important issues I make some simplifying assumptions:

1. The electricity to be produced by the proposed biomass plant can be generated from burning either wood or coal, and both can be obtained from the 20-county region. Wood products are delivered by large trucks, and coal is assumed to be delivered by barge or rail.
2. The proposed wood-fired biomass generating facility has a capacity of 58.5 megawatts, so I compare that wood requirement with the coal requirement for the same amount of electricity generation. The biomass generating plant would operate with a net capacity factor of 88 percent, according to ecoPower testimony¹, and thus would operate for 7,709 hours per year, generating 451,000 megawatt hours of electricity. The developers state that the heat rate of the biomass plant would be 12,778 BTUs per kilowatt hour. A conventional coal-fired plant has a heat rate of about 10,200 BTUs per kilowatt hour², more efficient since coal-fired units are larger and obtain economies of scale.
3. I focus on the operating expenses, implicitly assuming that the capital costs per unit of electricity are the same between wood and coal. Presumably, the capital costs per unit of a coal-fired plant are lower, also due to economies of scale, but this discussion focuses only on the regional economic impacts due to fuel differences.
4. Additional assumptions related to the energy content and cost of delivered fuel were derived from existing testimony and industry studies, as shown in the next table. I use \$25 per ton as the cost of delivered wood³, with an energy content of 10 million BTUs

¹ See response to KIUC First Set of Data Requests, #4, pro forma.

² See the study www.onlocationinc.com/heatratepaper.pdf, showing that most coal-fired plants have a heat rate between 9,000 and 12,000 BTUs per kilowatt hour. The most common value is 10,000 BTUs. The nearby Big Sandy plant has a heat rate of 10,200 BTUs.

³ As shown in the ecoPower pro forma, response to KIUC First Set of Data Requests, #4. For an analysis of biomass fuel costs in Florida, see www.nacdnet.org/resources/guides/biomass/pdfs/AppendixE.pdf. The study shows wood provided at a cost between \$2 and \$3 per million BTUs, with the cost rising as distance from the generating plant increases. The cost of \$3 per million BTUs is equivalent to \$25.80 per ton of delivered wood containing 8.6 million BTUs.

per ton⁴. I use \$70 per ton as the cost of delivered Appalachian coal, with a BTU content of 25 million BTUs per ton⁵.

Assumptions for Comparison	
Electricity Capacity for Comparison	58.5 megawatts
Hours of generation per year	7,709 hours
Heat rate for small wood-fired plant	12,778 BTUs per kilowatt hour
Heat rate for large coal-fired plant	10,200 BTUs per kilowatt hour
Energy per ton of wood delivered	10,000,000 BTUs
Energy per ton of coal delivered	25,000,000 BTUs
Cost of wood at sawmill	\$19 per ton
Delivery cost of wood, source to electricity plant	\$6.11 per ton
Cost of coal at mine	\$58 per ton
Delivery cost of coal, mine to electricity plant	\$11.82 per ton
Wood needed	576,243 tons
	\$10,886,229 cost of fuel at source
Coal needed	183,994 tons
	\$10,705,486 cost of fuel at source

These assumptions were used to predict the regional economic impacts of the respective fuel and transportation requirements. I purchased the latest detailed economic data for the 20-county region and built an input-output model that represents all the inter-industry and household purchases annually⁶. I then simulated the full economic impacts of making the wood and coal purchases required to deliver the amount of electricity generated by the proposed biomass plant.

For wood, I used the ecoPower assumption that 40% of the fuel would come from the Whitesburg sawmill and 60% would come directly from the forest or other sources. I assumed that the average truck trip would be the same as the distance between the Whitesburg sawmill and the Hazard-area generation plant, about 42 miles. The delivery cost per ton per mile was derived from ecoPower's stated cost to deliver wood chips to the Kingsport TN paper plant,

⁴ According to response #4 to KIUC First Set of Data Requests, ecoPower cites a University of Kentucky study that documents an average of 5,000 BTUs per pound on representative sawmill samples. This is equivalent to 10 million BTUs per ton.

⁵ SNL Financial's Briefing Book for the Big Sandy coal plant shows a plant heat rate of 10,200 BTUs per kilowatt hour. The heat content of the central Appalachian coal varied between 12,100 and 12,300 BTUs per pound over the last five years reported, and the cost of delivered coal varied between \$64.41 and \$78.31 per ton.

⁶ See Appendix A for a discussion of regional input-output models.

about \$0.15 per mile. So, I have simulated an increase in regional demand for three industries – sawmills, commercial logging, and trucking.

Some adjustments had to be made to the IMPLAN model to more accurately measure the amount of extra income commercial loggers would receive from the additional biomass business. For example, payments to landowners for low quality logs and residual wood products in the forest will be lower per ton than for the high quality sawtimber logs. IMPLAN does not distinguish the two products, and necessarily uses an average based on historical sales, which are dominated by the high quality logs in the area. It is beyond the scope of this report to determine with much precision the payment rates per ton that landowners will receive for the lower quality wood, much of which ecoPower states would have otherwise been left to rot on the forest floor. There are a number of ways that wood products are purchased from landowners, and contracts can be quite complicated, dealing with the size and type of wood, access roads, mitigation arrangements. A set of continuing studies out of North Carolina reveal that hardwood sawtimber demands a price of about four times that of pulpwood in the forest.⁷ So, I have used that ratio to adjust down the IMPLAN estimate of income received by loggers.

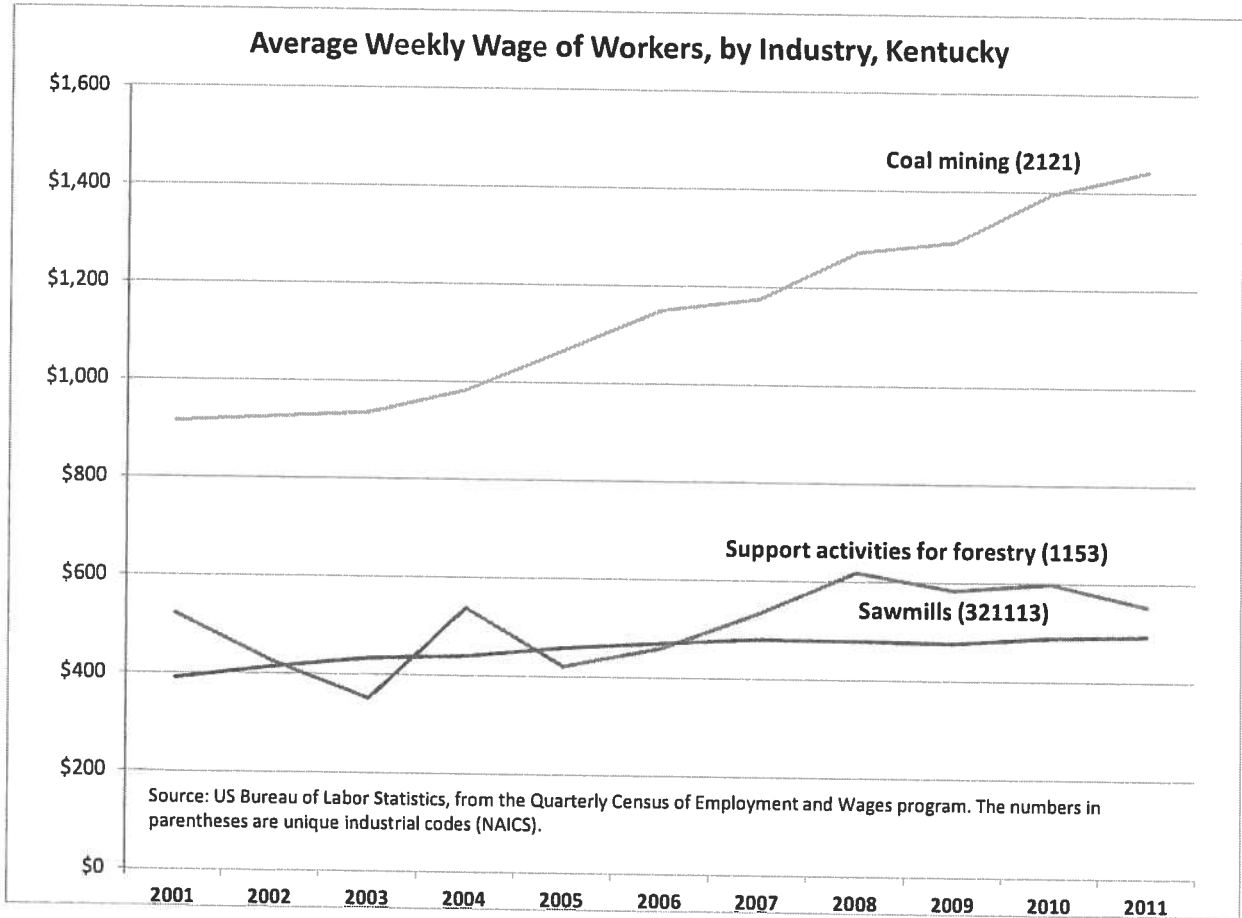
For coal, I used published data on the Big Sandy plant to derive the average delivery cost per ton. It varies significantly year to year, so I took the average of the last five years, which is \$11.82. I simulated the increase in regional demand for coal and transportation using both barge and rail modes, but the predicted economic results were almost identical so I report only the results for barge mode below.

The wood scenario requires 105 direct jobs, compared to 34 direct jobs in the coal scenario. Wood and its delivery via truck is evidently more labor-intensive, as the model predicts nearly three times more *direct* jobs than for coal. After accounting for the inter-industry linkages in the region, as well as household spending due to the wages of workers, the total number of jobs related to wood as a fuel source is 176, compared to 73 jobs from using coal. So, from a net point of view, using wood as an energy source supports about more 103 jobs in the region than using coal.

However, the difference in total regional labor earnings between the two fuels is only \$1.7 million per year, or 36 percent higher in wood than coal, despite the much higher direct labor

⁷ For a discussion of the supply chain in Georgia, including a sample forest products sale agreement, see www.gfc.state.ga.us/resources/publications/Volume1-OverviewofTimberandBiomassSupplyChain.pdf. For historical data on prices of sawtimber and pulp wood, for both hard and soft wood, in North Carolina, see <http://www.ces.ncsu.edu/forestry/price/forest2market/f2m1q13.pdf>

requirement for wood. This is due to the much higher household spending impact per coal job, which in turn is caused by the much higher pay in coal mining than in sawmills and logging.



The higher pay in coal mining is easily seen in publicly available data. I downloaded the latest estimates of average weekly wages by industry from the US Bureau of Labor Statistics, and summarized the history in the accompanying chart. These estimates are derived from comprehensive business filings of unemployment insurance premiums, and therefore are considered very accurate. Note that coal mining jobs paid over \$1,400 per week in 2011, nearly three times the wage rate of workers in sawmills and forestry⁸.

I cannot reconcile my estimate of 176 jobs in the wood products and related industries with ecoPower’s estimate of 225 “timber and trucking” jobs in the region. Note that my estimate includes the 105 direct jobs in the forest, at the sawmill(s), as well as the trucking jobs throughout. My regional economic comparison above has the advantage that wood and coal

⁸ BLS does not show recent wage estimates for the ‘Forestry and logging’ industry, NAICS 113, presumably due to the few operations in Kentucky. For 2011, BLS reports only 96 establishments in the state, and does not disclose employment or wage for the industry. The last period for which estimates were published, 2007, shows fewer than 500 employees statewide, with average weekly wage of \$373,

are considered using the same method and model, with standard terminology and definitions for industries considered.

I also made some basic estimates of the fiscal impacts of the two fuel sources. Assuming an effective tax rate of 7 percent of labor earnings, I predict that using wood would generate about \$118,000 more annually in Kentucky state income and sales tax collections than when using coal. However, coal is subject to a 4.5 percent state severance tax, while wood production is not taxed. I estimate that using coal would generate about \$482,000 in coal severance taxes annually. Thus, on net, the state would receive about \$364,000 less in tax receipts under the wood burning scenario compared to the coal burning scenario.

Impact from Residential Electricity Rate Increases

In this section I analyze the economic impacts of a seven percent annual increase in residential electricity rates. We model this as a decrease in households' discretionary incomes, since the electricity cost increases will have to be made up by reductions in spending on other items.

The IMPLAN modeling system, described further in Appendix A, allows us to take account of the different spending patterns of households across income groups. The model has detailed spending patterns for households in each of nine income groups, ranging from less than \$10,000 to more than \$150,000 in annual income. IMPLAN's spending profiles are derived from the Consumer Expenditure Survey program of the US Bureau of Labor Statistics, which are in turn based on detailed spending diaries by households around the United States. The latest estimates for the 20-county Kentucky Power service territory show total household spending on electricity of \$263 million, which is 1.7 percent of total household spending. Note that spending on electricity as a share of total household spending first rises with income and then falls. Households with the highest income spend only 1 percent of their budgets on electricity.

Estimated Distribution of Household Income, and Annual Expenditure on Electricity, Kentucky Power Service Territory

	Number of households	Total household spending, 2013	Household expenditures on electricity and distribution services (IMPLAN commodity #3031)	Electricity expenditures per household	Electricity expenditures as share of total household spending on commodities
Households less than \$10,000	19,535	\$832,472,758	\$16,041,952	\$821	1.9%
Households \$10,000 to \$15,000	15,389	\$630,564,902	\$15,777,833	\$1,025	2.5%
Households \$15,000 to \$25,000	26,558	\$1,325,309,094	\$29,809,361	\$1,122	2.2%
Households \$25,000 to \$35,000	23,086	\$1,485,686,591	\$33,079,140	\$1,433	2.2%
Households \$35,000 to \$50,000	28,176	\$2,267,033,953	\$42,777,630	\$1,518	1.9%
Households \$50,000 to \$75,000	33,145	\$3,309,398,436	\$54,267,475	\$1,637	1.6%
Households \$75,000 to \$100,000	19,749	\$2,078,323,460	\$30,589,045	\$1,549	1.5%
Households \$100,000 to \$150,000	15,939	\$1,672,021,892	\$22,957,529	\$1,440	1.4%
Households greater than \$150,000	8,052	\$1,684,951,603	\$17,689,924	\$2,197	1.0%
Total Households	189,629	\$15,285,762,690	\$262,989,888	\$1,387	1.7%

Service territory includes 20 counties in eastern Kentucky.

For example, households earning less than \$10,000 spend \$16 million annually on electricity, accounting for 1.9 percent of their spending on all commodities. The greatest spending on electricity, over \$54 million, is by households with income between \$50,000 and \$75,000.

Perhaps more importantly is how households spend the rest of their incomes. As the higher electricity rates reduce discretionary income, households in different income brackets will choose to purchase less of different things. For example, insurance accounts for 3.8 percent of spending by the highest income households, compared to but 1.8 percent for households in the lowest income bracket. Conversely, telecommunications accounts for 2.2 percent of spending by the highest income households, compared to but 1.1 percent for households in the lowest income bracket. Our IMPLAN model distinguishes spending patterns across income groups. It also has detailed estimates about how much of regional household spending is absorbed by regional businesses and how much is imported from outside the state.

The latest estimates on household income distribution for the 20-county service territory of Kentucky Power were used to simulate the economic impacts of households reducing their regional spending as a consequence of higher electricity rates. Kentucky Power has testified that the ecoPower contract will result in electricity rates that are 7 percent higher than they would be otherwise. This results in more household spending on electricity, but less spending on other items in the household budget. Assuming no substitution (buying less electricity as its price rises), the regional economic impact can be estimated by simulating a reduction in discretionary household income by an amount equivalent to the 7 percent electricity spending increase, or \$18.4 million.

IMPLAN allows economic impacts to be expressed in many different ways, including employment, labor income, other value added, and output – all available for each of 440 industries. We discuss only the employment impacts here. I estimate that 104 jobs would be lost just as a result of residential effects of the \$18.4 million increase in electricity bills. The model predicts that 197 industries would suffer some employment loss due to the reduced spending of households. The ten industries hardest hit by employment loss are shown below. Restaurants have the single largest predicted employment loss. Three health care industries – hospitals, physician offices, and nursing homes - follow tightly behind, with a combined employment loss of 22 jobs. As expected, retail industries populated the top of the list of most impacted industries, as well as the detailed industries not shown, and account most of the regional job losses predicted.

Predicted Employment Impacts in Region due to Electricity Rate Hike	
Industry	Jobs
Food services and drinking places	-12.2
Private hospitals	-9.8
Offices of physicians, dentists, and other health practitioners	-6.9
Nursing and residential care facilities	-5.5
Retail Stores - General merchandise	-5.0
Retail Stores - Food and beverage	-4.7
Medical and diagnostic labs and outpatient and other ambulatory care services	-3.0
Retail Stores - Motor vehicle and parts	-3.0
Real estate establishments	-2.9
Wholesale trade businesses	-2.7
subtotal, top ten	-55.7
other industries	-48.6
Total, all industries	-104.3

The above approach implicitly assumes that households continue to purchase the same quantity of electricity as the price rises. As their expenditure on electricity rises, they have less household income available to spend on other items. A seven percent increase in electricity rates results in a seven percent increase in household expenditure on electricity. That is, I am assuming zero price elasticity of demand for electricity. It is beyond the scope of this analysis to estimate the price elasticity for electricity in eastern Kentucky, short-term and long-term. Published estimates consistently place the residential short-run price elasticity at around -0.2, that is very inelastic⁹. This suggests my estimates are close, but probably overstate the reduction in expenditures on other items by households in the region. Using the price elasticity of -0.2 implies that households would increase spending on electricity by 5.6 percent, not the full 7 percent. Following the same method as above, this implies that household income available to spend on other items would be reduced by \$14.7 million rather than \$18.4 million. The predicted regional losses associated with this reduced regional spending on non-electricity items would be 83 jobs rather than the 104 estimated earlier.

⁹ For example see "Regional Differences in the Price-Elasticity of Demand For Energy", by Mark Bernstein and James Griffin, RAND Technical Report, 2005.

Appendix A Methodology

The primary tool used to evaluate the two fuel scenarios and the residential energy cost shock is a sophisticated regional input-output model called IMPLAN. Input-output models are well-suited to estimate the broad range of economic impacts on a region due to an external shock, such as energy price increases. IMPLAN is a powerful tool because of its rich representation of the linkages among industries and households in a study area. IMPLAN is arguably the best software available for such regional modeling, and is widely used for impact studies around the world. While other systems exist for the predicting economic impacts, notably the federal government's RIMS-II product, IMPLAN's user interface is unique and the underlying model incorporates an advanced Social Accounting Matrix, which conquers some of the traditional limitations of regional input-output models. IMPLAN also provides the advantage of transparency – the user can see what underlying data and coefficients are used by the model, and the user has the ability to manipulate these if better information is available.

Structure

At the heart of input-output models is a matrix containing a detailed description of how much each industry in an economy must purchase from each of the other industries in order to make its products and services. A good way to think of an input-output matrix is as a set of production recipes, with the entries in a column indicating how much each row industry supplies to the column industry to produce its annual output. So, when households or other sectors in an economy seek to purchase more of an industry's output, the input-output model can be solved to predict how much output rises in all industries in the economy.

Regional input-output modeling systems, like IMPLAN, begin with a national matrix of inter-industry purchasing requirements and differentiate between what can be supplied from other industries in the region and what must be imported from outside the region. The adjustments are based primarily on the existence and size of each industry in the region. So, if for example an auto assembly plant requires glass mirrors and there is no glass mirror manufacturer in the region, then the regional input-output will predict that component will need to be imported to make autos. Generally, the more inputs that can be supplied from regional firms, the greater the resulting regional economic impacts when there is a growth in demand for the region's products.

Elaborate regional input-output modeling systems, like IMPLAN, produce rich estimates of how economic shocks permeate a region. Economic multipliers summarize how regional jobs, payroll, value-added, and output change as a result of a shock to any particular industry. These impacts are decomposed into the inter-industry effects (indirect impacts) and the household spending effects (induced impacts). For example, if a local auto assembly plant expands to