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November 18, 2010

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PUBLIC SERVICE  
COMMISSION

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

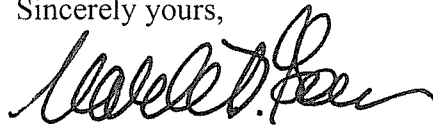
Re: PSC Case No. 2010-00238  
In the Matter of: An Investigation of East Kentucky Power  
Cooperative, Inc.'s Need for the Smith 1 Generating Facility

Dear Mr. Derouen:

Please find enclosed for filing with the Commission in the above-referenced case an original and ten redacted copies of certain Exhibits of East Kentucky Power Cooperative, Inc. ("EKPC") in responding to items contained in the Commission's Order dated June 22, 2010, as well as EKPC's Petition for Confidential Treatment of Information ("Petition"). Prepared testimonies of Anthony S. Campbell, Julia J. Tucker, David K. Mitchell, and Gary G. Stansberry are also enclosed. One unredacted copy of the designated confidential portion of the Exhibits, which is the subject of the Petition, is enclosed in a sealed envelope.

Please file same of record in the captioned case.

Sincerely yours,



Mark David Goss

Enclosures

cc: All Parties of Record

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**COMMONWEALTH OF KENTUCKY**

**BEFORE THE PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF:**

**AN INVESTIGATION OF EAST KENTUCKY )      **CASE NO.**  
POWER COOPERATIVE INC.'S NEED FOR )      **2010-00238**  
THE SMITH 1 GENERATING FACILITY )**

**PETITION FOR CONFIDENTIAL  
TREATMENT OF INFORMATION**

Comes now the petitioner, East Kentucky Power Cooperative, Inc. (“EKPC”),  
and as grounds for this Petition for Confidential Treatment of Information (the “Petition”),  
states as follows:

1. This Petition is filed in conjunction with the filing of EKPC’s Direct  
Testimony in this case, required by Commission Order dated June 22, 2010, and  
subsequently amended July 16, 2010, September 7, 2010, September 24, 2010 and  
November 10, 2010, and relates to confidential information contained in certain exhibits  
and supporting assumptions that is entitled to protection pursuant to 807 KAR 5:001  
Section 7 and KRS §61.878(1)(c)1 and §61.878(1)(c)2c.

2. The information designated as confidential in these exhibits and  
supporting assumptions include fuel, emission, purchased power, and load/financial  
forecast assumptions that are proprietary in nature. The open disclosure of such  
information could present an unfair commercial advantage to competitors of EKPC in  
EKPC’s efforts to compete with the power marketers, utilities and other entities that deal  
in the market for surplus bulk power, and to compete with other utilities in Kentucky for

new industrial customers. As such this information is confidential and not subject to public disclosure pursuant to KRS §61.878(1)(c)1.

3. The subject information is also entitled to protection pursuant to KRS §61.878(1)(c)2c, as records generally recognized as confidential or proprietary which are confidentially disclosed to an agency in conjunction with the regulation of a commercial enterprise.

4. Along with this Petition, EKPC has enclosed one copy of the subject exhibits with the confidential information identified by highlighting or other designation, and 10 copies of the same exhibits with the confidential information redacted. The identified confidential information is not known outside of EKPC and is distributed within EKPC only to persons with a need to use it for business purposes. It is entitled to confidential treatment pursuant to 807 KAR 5:001 Section 7 and the various sections of KRS 61.878 delineated above.

WHEREFORE, EKPC respectfully requests the Public Service Commission to grant confidential treatment to the identified information and deny public disclosure of said information.

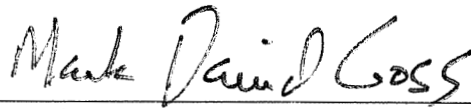
Respectfully submitted,



Mark David Goss  
Frost Brown Todd LLC  
250 West Main Street, Suite 2800  
Lexington, KY 40507-1749  
(859) 231-000—Telephone  
(859) 231-0011—Facsimile  
Counsel for East Kentucky Power Cooperative, Inc.

**CERTIFICATE OF SERVICE**

This is to certify that an original and 10 copies of the foregoing Petition for Confidential Treatment of Information in the above-styled case were hand-delivered to the Office of Jeffrey Derouen, Executive Director of the Kentucky Public Service Commission, 211 Sower Boulevard, Frankfort, Kentucky 40601 on November 18, 2010, and sent by first class mail to: Honorable Michael R. Campbell, Campbell and Rogers, 154 Flemingsburg Drive, Morehead, KY 40351; Honorable Dennis G. Howard II, Esq., Assistant Attorney General, P.O. Box 2000, Frankfort, Kentucky 40602-2000; Honorable Michael L. Kurtz, Attorney at Law, Boehm, Kurtz & Lowry, 36 East Seventh Street, Suite 1510, Cincinnati, OH 45202; and Honorable Robert Ukeiley, 435R Chestnut Street, Suite 1, Berea, KY 40403.



\_\_\_\_\_  
Counsel for East Kentucky Power Cooperative, Inc.



**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In re the Matter of:**

**AN INVESTIGATION OF EAST KENTUCKY )**  
**POWER COOPERATIVE, INC. 'S NEED FOR ) CASE NO. 2010-00238**  
**THE SMITH 1 GENERATING FACILITY )**

**RESPONSES TO COMMISSION STAFF'S**  
**INVESTIGATION INTO THE NEED FOR**  
**SMITH 1 GENERATING FACILITY**  
**COMMISSION REQUEST DATED JUNE 22, 2010**



**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**AN INVESTIGATION OF EAST KENTUCKY ) CASE NO.**  
**POWER COOPERATIVE, INC.'S NEED FOR ) 2010-00238**  
**THE SMITH 1 GENERATING FACILITY )**

**TESTIMONY OF**  
**ANTHONY S. CAMPBELL**  
**PRESIDENT AND CHIEF EXECUTIVE OFFICER**  
**EAST KENTUCKY POWER COOPERATIVE, INC.**

**Filed: November 18, 2010**

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

2 A. My name is Anthony S. Campbell and my business address is East Kentucky Power  
3 Cooperative, Inc. (EKPC), 4775 Lexington Road, Winchester, Kentucky 40391. I am  
4 President and Chief Executive Officer.

5 **Q. How long have you been employed by East Kentucky Power Cooperative, Inc.  
6 (“EKPC”)?**

7 A. I have been employed by EKPC since June 2009.

8 **Q. Please state your education and professional experience.**

9 A. I received a Bachelor of Science degree in electrical engineering from the Southern  
10 Illinois University at Carbondale and a Masters of Business Administration from the  
11 University of Illinois at Champaign. Prior to joining EKPC, I served as CEO of  
12 Citizens Electric Corporation, a transmission and distribution company located in  
13 southeast Missouri.

14 **Q. Please provide a brief description of your duties at EKPC.**

15 A. The Board of Directors has given me, as CEO, the responsibility for managing the  
16 Cooperative’s business on a day-to-day basis. I carry out the Board’s strategy within  
17 the guidelines and policies developed by the Board.

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

19 A. The purpose of my testimony is to introduce other witnesses providing testimony and  
20 to provide an overview of the results of EKPC’s analysis.

21 **Q. Please list EKPC’s witnesses who will provide detailed testimony regarding the  
22 investigation of the Smith 1 generating facility.**

1 A. (1) Mr. David K. Mitchell, Vice-President of Construction at EKPC, will discuss the  
2 Smith 1 cost estimate by major component and the operational and financial impacts  
3 of a hypothetical delay of the in-service date for Smith 1 of two years and four years.  
4 (2) Ms. Julia J. Tucker, Director of Power Supply Planning at EKPC, will discuss  
5 EKPC's most recent long-term load forecast and EKPC's existing generating  
6 capacity, provide information regarding peaks, capacity, sales and reserve  
7 requirements, discuss EKPC's efficiency and other demand-side management  
8 programs and their impacts, and discuss EKPC's production costing model.  
9 (3) Gary G. Stansberry, Manager of Performance Measures at EKPC, will discuss the  
10 financial results of each alternative scenario compared to Smith 1 as planned, provide  
11 revenue requirements of each scenario and the impact on member rates.

12 **Q. What is the background of the Smith 1 Unit?**

13 A. On August 29, 2006, in Case No. 2005-00053, the Commission granted EKPC a  
14 Certificate of Public Convenience and Necessity ("CPCN") to construct the 278 MW  
15 Smith Circulating Fluidized Bed Generating Unit ("Smith 1"). On January 5, 2007, in  
16 light of the decision by Warren Rural Electric Cooperative Corporation to terminate a  
17 power supply agreement with EKPC, the Commission investigated the continued  
18 need for Smith 1 (Case No. 2006-00564). After much discovery, on May 11, 2007,  
19 the Commission issued an Order allowing EKPC to retain the CPCN for Smith 1, as  
20 EKPC submitted evidence during the proceeding that showed: 1) that Smith 1  
21 generation was still needed and 2) that Smith 1 was the least cost power supply  
22 alternative.

1 **Q. Were there portions of the Commission’s Order in Case No. 2006-00564 that**  
2 **were particularly compelling?**

3 A. Yes. The Commission states on pages 9 and 10 of the Order: “With regard to the  
4 Smith No. 1 unit, there are two alternatives to consider. The Commission might order  
5 EKPC to purposefully delay the construction of Smith No. 1 to guarantee that its  
6 native load requirements are sufficient to support the addition of the generating unit.  
7 This course of action, however, would result in the levying of significant contractual  
8 penalties on EKPC and increase its exposure to escalating costs for labor and  
9 materials in the future. On the other hand the Commission might allow EKPC to  
10 proceed with construction of the Smith No. 1 unit and run the risk that EKPC’s native  
11 load growth might not grow as quickly as forecasted—potentially resulting in EKPC  
12 having excess generation capacity. While neither situation is ideal, the latter position  
13 is clearly preferred under the specific facts of this case. In the long run, EKPC’s  
14 ratepayers and the public interest at large will be best served by allowing EKPC to  
15 complete the construction of Smith No. 1 and avoid unnecessary penalties and cost  
16 escalations associated with a lengthy delay. Any risk of reaching a situation where  
17 EKPC has excess generation capacity should be mitigated by EKPC’s careful  
18 development and implementation of a mechanism for making off-system sales.  
19 Accordingly, EKPC will be permitted to continue with the construction of the Smith  
20 No. 1 unit as originally certificated but should develop and implement an appropriate  
21 plan for facilitating off-system sales if the opportunity arises.”

22 **Q. Based on this Order, did EKPC continue its construction of Smith 1?**

1 A. Yes. EKPC was concerned about the labor and materials escalations referenced in the  
2 Order and continued with construction.

3 **Q. Has EKPC prudently incurred costs on Smith 1 to date?**

4 A. Without question. EKPC's load forecasts in 2006 and 2008 supported the continued  
5 need for Smith 1, and Smith 1 was the least cost option. EKPC believes that all of the  
6 costs for Smith 1 to date were prudently incurred.

7 **Q. Since the awarding of the certificates in the above-referenced proceedings, has**  
8 **EKPC conducted its own analyses relating to Smith 1 prior to the Commission's**  
9 **opening of this investigation?**

10 A. Yes. EKPC has reviewed its assumptions relating to Smith 1 numerous times over  
11 the last few years to ensure Smith 1 was still the least cost option. Until recently,  
12 Smith 1 proved to be the least cost option to supply EKPC's power supply needs.

13 **Q. Could you elaborate on what is meant by "until recently"?**

14 A. The Commission's Order initiating the investigation into the need and cost of Smith  
15 1 was coincident with EKPC's completion of its 2010 load forecast. As discussed in  
16 greater detail in Ms. Tucker's testimony, the 2010 load forecast showed a diminished  
17 load growth. The forecast indicates that base load generation is not needed until  
18 approximately 2018. As further discussed in the testimony of Mr. Stansberry, Smith  
19 1 is no longer the least cost option compared to other power supply alternatives.

20 **Q. What is the conclusion reached as a result of your recent analysis?**

21 A. As stated above, the results of EKPC's load forecast do not support the immediate  
22 need for base load generation. Additionally, continuing to build Smith 1 will place an

1 undue burden on EKPC from a long-term debt perspective, and will cause EKPC's  
2 rates to its members to increase substantially. EKPC's Board of Directors has  
3 concluded unanimously that, based upon the results of EKPC's analysis, it must  
4 voluntarily relinquish the CPCN for Smith 1.

5 **Q. How are you proposing to treat the costs already incurred on building Smith 1?**

6 A. Through a separate Application filed with the Commission, EKPC is requesting the  
7 Commission's approval to establish a regulatory asset. This Application contains the  
8 testimony of Mike McNalley, EKPC's Chief Financial Officer, who addresses this  
9 matter at length.

10 **Q. Does this conclude your testimony?**

11 A. Yes.



COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

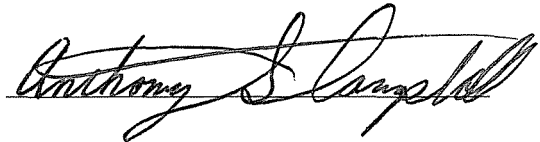
In re the Matter of:

AN INVESTIGATION OF EAST KENTUCKY )  
POWER COOPERATIVE, INC. 'S NEED FOR ) CASE NO. 2010-00238  
THE SMITH 1 GENERATING FACILITY )

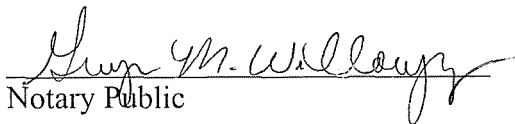
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STATE OF KENTUCKY )  
 )  
COUNTY OF CLARK )

Anthony S. Campbell, being duly sworn, states that he has read the foregoing prepared testimony and that he would respond in the same manner to the questions if so asked upon taking the stand, and that the matters and things set forth therein are true and correct to the best of his knowledge, information and belief.



Subscribed and sworn before me on this 17<sup>th</sup> day of November, 2010.

  
Notary Public

MY COMMISSION EXPIRES NOVEMBER 30, 2013  
NOTARY ID #409352



**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**AN INVESTIGATION OF EAST KENTUCKY ) PSC CASE NO.**  
**POWER COOPERATIVE, INC.'S NEED FOR ) 2010-00238**  
**THE SMITH 1 GENERATING FACILITY )**

**TESTIMONY OF**  
**DAVID K. MITCHELL**  
**VICE-PRESIDENT OF CONSTRUCTION**  
**EAST KENTUCKY POWER COOPERATIVE, INC.**

**Filed: November 18, 2010**



1 service date for Smith 1 of two years and four years.

2 **Q. Are you sponsoring any exhibits in this proceeding?**

3 A. Yes. I am sponsoring Exhibit DKM-1, Smith 1 Cost Estimate.

4 **Q. What is the most recent cost estimate for Smith 1 as currently scheduled?**

5 A. Exhibit DKM-1 reflects EKPC's most recent cost estimate, by major component, of  
6 Smith 1.

7 **Q. How much has EKPC spent on this project to date?**

8 A. As of September 30, 2010, EKPC has spent \$153,448,904 on Smith 1.

9 **Q. How much does this cost increase assuming Smith 1 is delayed for two years and for  
10 four years?**

11 A. The current estimated cost for Smith 1 is roughly \$820 million. A two year delay causes  
12 an increase in the estimated cost to a new total of \$950 million. A four year delay  
13 increases the estimated total cost to \$1.021 billion. The primary reasons for these cost  
14 increases are design changes to address new environmental regulations and assumed  
15 escalation in material and labor expenses. Please see Mr. Stansberry's testimony for  
16 additional details on the cost impacts of delaying the project.

17 **Q. Would you please explain the cost impacts of changing environmental regulation?**

18 A. Changing environmental regulation is expected to require the addition of a tail end SCR  
19 to Smith 1. The anticipated cost of this device to further reduce NOx emissions is  
20 \$65 million in 2010 dollars.

21 **Q. What impacts would a Smith 1 delay for two years and for five years have on  
22 EKPC's operations?**

23 A. There are no adverse impacts on EKPC's operations for a delay of Smith 1 for a period of

1 1-5 years. Please see the testimony of Ms. Tucker for a discussion of EKPC's expansion  
2 plan needs.

3 **Q. Assuming that Smith 1 is cancelled, what are the additional contractual obligations?**

4 A. There are 4 suppliers who may be entitled to receive cancellation charges. EKPC will  
5 negotiate with those suppliers. However, EKPC anticipates that its obligations may reach  
6 \$10 million, which includes contract unwinding costs and asset disposal costs.

7 **Q. Assuming that Smith 1 is cancelled, will EKPC be able to use any of the components  
8 purchased for Smith 1 in any of its other circulating fluidized bed units?**

9 A. Yes. EKPC estimates that components valued at approximately \$14 million could be  
10 placed in inventory as capital spares.

11 **Q. How likely would another utility/merchant plant owner be interested in the Smith 1  
12 equipment purchased?**

13 A. EKPC is in discussions with independent power producers, project developers,  
14 international marketers, EKPC contractors and others but, to date, interest in the Smith 1  
15 equipment has been minimal.

16 **Q. What is the salvage value for this equipment?**

17 A. EKPC estimates that salvage value could range from that of scrap (5 to 10 cents on the  
18 dollar) up to 30% if the project can be sold in whole or in part. EKPC has assumed a \$20  
19 million salvage value in making its financial comparisons.

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

21 A. Yes.





**SMITH STATION UNIT 1  
PRELIMINARY ESTIMATED PROJECT COSTS - SEPTEMBER 2010**

DATE OF ESTIMATE: DECEMBER 28, 2009

CONTRACT NUMBER	CONTRACT	UNIT 1 ESTIMATE DEC 2009
G1	TURBINE GENERATOR	[REDACTED]
G3	SITE IMPROVEMENTS	[REDACTED]
G6	FEEDWATER HEATERS	[REDACTED]
G8	DEAERATOR	[REDACTED]
G11	CONDENSER	[REDACTED]
G16	CIRCULATING WATER PUMPS	[REDACTED]
G17	CONDENSATE PUMPS	[REDACTED]
G21	BOILER FEED PUMPS	[REDACTED]
G36	DISTRIBUTED CONTROL SYSTEM	[REDACTED]
G46	FANS	[REDACTED]
G71	ASH HANDLING EQUIPMENT	[REDACTED]
G82	TURBINE BRIDGE CRANE	[REDACTED]
G101	ALLOY PIPING	[REDACTED]
G131A	LARGE POWER TRANSFORMERS	[REDACTED]
G131B	MEDIUM POWER TRANSFORMERS	[REDACTED]
G131C	SMALL POWER DISTRIBUTION TRANSFORMERS	[REDACTED]
G132	GENERATOR BREAKER & ISOPHASE	[REDACTED]
G146	SWITCHGEAR	[REDACTED]
G201	BOILER ISLAND	[REDACTED]
G204	EMISSIONS MONITORING	[REDACTED] *
G211	COAL/LIMESTONE HANDLING	[REDACTED]
G221	CHIMNEY	[REDACTED]
G222	COOLING TOWER	[REDACTED]





**SMITH STATION UNIT 1**  
**PRELIMINARY ESTIMATED PROJECT COSTS - SEPTEMBER 2010**

DATE OF ESTIMATE: DECEMBER 28, 2009

CONTRACT NUMBER	CONTRACT	UNIT 1 ESTIMATE DEC 2009
G223	CIRCULATING WATER PIPE	[REDACTED]
G241	DAM & WATER RESERVOIR /PUMP HOUSE/PERMIT MITIGATION, DEVELOPMENT, AND LAND	[REDACTED] *
G261/G262	SUBSTRUCTURE I and II	[REDACTED]
G264	ASH SILOS	[REDACTED]
G271	TURBINE BUILDING STRUCTURAL STEEL	[REDACTED]
G281	BUILDING & MECHANICAL WORK	[REDACTED]
G283	ASH HANDLING INSTALLATION	[REDACTED]
G285	RIVER WATER INTAKE & PUMPHOUSE	[REDACTED]
G311	ELECTRICAL & INSTRUMENTATION WORK	[REDACTED]
G332	PAINTING	[REDACTED]
G335	OFFICE AND MAINTENANCE BUILDING	[REDACTED]
G338	PAVING AND ROAD WORK	[REDACTED]
	SUBTOTAL	[REDACTED]
	CONTINGENCY (7% of above subtotal)	[REDACTED]
	SUBTOTAL	[REDACTED]
	ENGINEERING COST	
	ORIGINAL DESIGN	[REDACTED]
	MISC. STUDIES	[REDACTED]
	CONSTRUCTION MANAGEMENT ASSISTANCE	[REDACTED]
	MITIGATION PLAN, DESIGN, AND MANAGEMENT	[REDACTED]
	US ARMY CORP OF ENGINEERS IN-LIEU FEE	[REDACTED] *
	PERMITTING COSTS	[REDACTED] *
	PERFORMANCE TEST	[REDACTED] *
	OWNERS COST	[REDACTED] *
	SUBTOTAL	[REDACTED]
	TOTAL IDC	[REDACTED] *
	PROJECT TOTAL	[REDACTED]
	SUBSTATION TRANSMISSION	[REDACTED] *
	UNIT 1 TOTAL PROJECT COST	\$ 819,333,003

\*Information provided by EKPC.



**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**AN INVESTIGATION OF EAST KENTUCKY ) PSC CASE NO.**  
**POWER COOPERATIVE, INC.'S NEED FOR ) 2010-00238**  
**THE SMITH 1 GENERATING FACILITY )**

**TESTIMONY OF**  
**JULIA J. TUCKER**  
**DIRECTOR OF POWER SUPPLY PLANNING**  
**EAST KENTUCKY POWER COOPERATIVE, INC.**

**Filed: November 18, 2010**



1 A. The purpose of my testimony is to discuss EKPC's most recent long-term load forecast,  
2 EKPC's existing generating capacity, provide information regarding expected sales and  
3 reserve requirements, discuss EKPC's demand-side management programs and their  
4 impacts, and discuss EKPC's power supply options.

5 **Q. Are you sponsoring any exhibits in this proceeding?**

6 A. Yes. I am sponsoring five exhibits: Exhibit JJT-1, EKPC's 2010 Long-Term Load  
7 Forecast; Exhibit JJT-2, EKPC's expected capacity requirements as compared to its  
8 existing generating capacity; Exhibit JJT-3, Current and Planned Energy Efficiency and  
9 Demand Side Management ("DSM") Programs; Exhibit JJT-4, Expansion Plans; and,  
10 Exhibit JJT-5, Production Cost results for each case.

11 **Q. When was EKPC's 2010 Long-Term Load Forecast completed?**

12 A. EKPC completed its preliminary 2010 Long-Term Load Forecast in July. The  
13 preliminary load forecast was presented to EKPC's Board of Directors ("Board") in July  
14 2010. After much review and discussion, the Board approved the 2010 Long-Term Load  
15 Forecast in November 2010. The Executive Summary from the EKPC 2010 Load  
16 Forecast report is included as Exhibit JJT-1. Energy sales and peak demand growth rates  
17 range from the 1.0 to 1.8%. This reflects the downward trend that EKPC has experienced  
18 in its load growth. Energy sales grew from 1999 to 2004 by an average annual rate of  
19 4.2%; however, from 2004 to 2009, the energy sales grew by an average annual rate of  
20 1.2%.

21 **Q. How often does EKPC complete a load forecast?**

22 A. EKPC completes a load forecast every two years, as required by Rural Utilities Service.

23 **Q. Are there any significant changes in the 2010 load forecast as compared to the 2008**

1           **and 2006 load forecasts?**

2    A.    Yes. The significant changes include the following:

3           **Economy**

4           EKPC purchases county level projections of economic and demographic variables from  
5           IHS Global Insight, a consulting firm with expertise in economic modeling. The 2006  
6           and 2008 economic projections did not project the recession that the US experienced  
7           beginning in late 2007. In 2005 when developing the 2006 forecast, the downturn had  
8           not yet begun. However, in 2007 when the 2008 forecast was developed, the majority of  
9           the member systems had begun to see declines in housing starts and development in their  
10          service territory resulting in a more conservative forecast than the 2006 forecast. The  
11          2010 load forecast does have the full impacts of the recession. Most notably,  
12          unemployment reached an all time high and is not expected to return to pre-recession  
13          levels for nearly 10 years. Related, personal income levels are also projected to be lower  
14          than the previous assumptions showed. Therefore, the 20 year projections developed in  
15          2010 for customer growth and energy usage are lower than those in 2008 and 2006.  
16          Lastly, the automotive industry experienced sharp declines both in response to the  
17          national economic downturn and in Kentucky due to various Toyota recalls which  
18          resulted in lower sales and interruptions in automobile manufacturing. EKPC member  
19          systems serve many satellite industrial and commercial customers that produce parts for  
20          Toyota and, as a result of the aforementioned circumstances, were negatively impacted.

21          **Price**

22          The load forecast incorporates future electricity prices and customers' response to  
23          fluctuations in price. The forecast uses the most recent Board approved Twenty-Year

1 Financial Forecast which is developed in house. The 2010 long term projections are  
2 significantly higher than the ones used in the 2008 or the 2006 forecast. These increases  
3 are due to costs to build a scrubber on Cooper 2, assumptions about future environmental  
4 legislation issues such as carbon, and future power supply resources.

5 **Efficiency**

6 EKPC attains future appliance efficiency improvements from the Department of Energy  
7 (DOE) Energy Information Administration (EIA). According to the 2009 update, there  
8 are more improvements in HVAC and water heating than previously assumed. These  
9 efficiency improvements will result in lower sales as consumers change out older less  
10 efficient appliances for newer ones. This impact will be a gradual one. In addition, there  
11 are new lighting standards to take effect in 2012.

12 **Direct Load Control**

13 The 2008 and 2010 load forecasts incorporate the impacts of a direct load control  
14 program that began implementation in 2008. The program is a voluntary program  
15 whereby customers agree to have their water heater(s) and/or air conditioner(s) controlled  
16 during peak hours. The goal is to save 15 MW off the winter peak and 60 MW off the  
17 summer peak.

18 **Q. Was the decline in projected load incorporated into EKPC's analysis of future**  
19 **power supply needs?**

20 A. Yes. Seven cases comparing power supply options were developed based on the 2010  
21 Load Forecast.

22 **Q. What is EKPC's existing generating capacity?**

23 A. EKPC owns and operates three coal fired generating stations, with a total station normal

1 net capacity of 1,883 MW.

2 **Dale Station** consists of four pulverized coal units. Each of the first two units has a station  
3 normal net capacity of 23 MW. These two units became commercial on December 1,  
4 1954. The third and fourth units have a station normal net capacity of 75 MW each. The  
5 third unit went commercial on October 1, 1957 and the fourth unit went commercial on  
6 August 9, 1960. Dale Station has a total station normal net capacity of 196 MW.

7 **Cooper Station** consists of two pulverized coal units. The first unit has a station normal  
8 net capacity of 116 MW and went commercial on February 9, 1965. The second unit has a  
9 station normal net capacity of 225 MW and went commercial on October 28, 1969.

10 Cooper 2 is currently being retrofitted with pollution control equipment that will become  
11 operational in 2012. Cooper Station's total station normal net capacity is 341 MW, which  
12 will be reduced by approximately 8 MW when the pollution control equipment becomes  
13 operational.

14 **Spurlock Station** consists of four units, two pulverized coal and two circulating fluidized  
15 bed boilers. The first unit has a station normal net capacity of 300 MW and became  
16 commercial on September 1, 1977. The second unit has a station normal net capacity of  
17 510 MW and went commercial on March 2, 1981. Both of these units are pulverized coal  
18 units and have been retrofitted with pollution control equipment. The third and fourth  
19 units are circulating fluidized bed boilers and each has a station normal net capacity of 268  
20 MW. The third unit went commercial on March 1, 2005 and the fourth unit went  
21 commercial on April 1, 2009.

22 **Smith Station** has three 150 MW gas fired ABB combustion turbines with winter ratings  
23 of 150 MW each and summer ratings of 110 MW each. These three units went



1 commercial in 1999. There are four 98 MW gas fired GE 7EA combustion turbines with  
2 winter ratings of 98 MW each and summer ratings of 74 MW each. Two of these turbines  
3 went into commercial operation in November 2001 and the last two became commercial in  
4 January 2005. Two new gas fired LMS 100 GE combustion turbines have winter ratings of  
5 97 MW each and summer net capacity of 83 MW each. These units went into commercial  
6 operation in 2010.

7 **Other Generation Resources** - In addition, EKPC owns and operates 16.8 MW of  
8 landfill gas generating plant capacity.

9 In total, EKPC owns and operates 2,936 MW of generating capacity, based on winter  
10 temperature ratings.

11 EKPC purchases 170 MW of hydropower from the Southeastern Power Administration  
12 (“SEPA”) on a long-term basis. The 70 MW at Laurel Dam has continued to be reliable  
13 capacity. However, due to various dam repair projects, the 100 MW provided from the  
14 Cumberland System has not been dependable capacity during the past few years and is not  
15 expected to be considered dependable for another two to three years. Once the dam repairs  
16 are completed, the capacity should return to firm dependable status for the long term.

17 EKPC also has a contract with Duke Energy Ohio to purchase the output of the Greenup  
18 Hydro facility through 2010. Greenup Hydro is run-of-river generation located on the  
19 Ohio River with an average winter capacity of 35 MW. This contract will expire on  
20 December 31, 2010.

21 **Q. How does EKPC’s existing generation capabilities compare to its expected capacity  
22 and energy requirements going forward for the next 20 years?**

23 A. EKPC has adequate summer capacity for the next several years, until approximately

1 2020. However, EKPC is a winter peaking system, and is already lacking sufficient  
2 capacity to cover its winter peak load plus reserves. This data is reflected in Exhibit JJT-  
3 2. The expected energy requirements will drive the type of capacity that EKPC will need  
4 to acquire, such as peaking versus intermediate versus base load. EKPC's average  
5 monthly load is a rough indicator of base load capacity needs. Based on this assumption,  
6 EKPC does not need additional base load capacity until approximately 2018. The seven  
7 cases to be compared for this analysis were developed based on the peak capacity  
8 requirements and the expected energy requirements. If a plan has too much or too little  
9 cost effective energy resources, it will be reflected in the total cost of the plan.

10 **Q. What are EKPC's existing energy efficiency and demand side management**  
11 **programs and how do they impact EKPC's forecast?**

12 A. For over 20 years, EKPC and its 16 member systems have promoted the cost-effective  
13 use of energy by offering conservation and other marketing programs to the retail  
14 customer. These programs were designed to meet the needs of the customer, and to delay  
15 the need for additional generating capacity.

16 These programs are implemented and administered by the member distribution systems.  
17 EKPC supports the member systems with analysis, promotional material, incentives, and  
18 other support services. EKPC considers these programs a part of its overall supply  
19 portfolio, with the understanding that the programs benefit EKPC indirectly, through its  
20 member systems.

21 To incorporate into the 2010 long term load forecast, a demand side management plan  
22 was developed to curtail load. The plan includes programs that are currently in existence  
23 and offered by EKPC's member systems to its customers as well as new programs.

1           **Existing programs include:**

2           Electric Thermal Storage Incentive Program

- 3           •       Tune-Up HVAC Maintenance Program
- 4           •       Button-up Weatherization Program
- 5           •       Touchstone Energy Home Program
- 6           •       Touchstone Energy Manufactured Home Program
- 7           •       Compact Fluorescent Lighting Program
- 8           •       Commercial Advanced Lighting
- 9           •       Interruptible rates for industrial customers

10          **New Programs include:**

- 11          •       Button-up Weatherization with Air Sealing Program
- 12          •       Air Source Heat Pump replacing resistance heat
- 13          •       Dual Fuel
- 14          •       Industrial Compressed Air
- 15          •       Direct Load Control of Air Conditioners and Water Heaters

16          Estimated demand and energy impacts as well as descriptions of the programs are shown  
17          on Exhibit JJT-3. The net total winter peak demand impact grows from 141 MW in 2010  
18          to over 220 MW at the end of the 20 year period.

19   **Q.     Will you please describe EKPC's production costing model?**

20   A.     The primary model used in developing the production costs for each of the evaluated  
21          scenarios was RTSim from Simtec, Inc., of Madison, WI. The RTSim production cost  
22          model calculates the hour-by-hour operation of the generation system including unit  
23          hourly generation, commitment, power purchases and sales, including economy and day

1 ahead transactions, and daily and monthly options. Generating unit input includes  
2 expected operating characteristics, Monte Carlo forced outages, unit ramp rates, and unit  
3 startup characteristics. The RTSim model uses a Monte Carlo simulation to capture the  
4 statistical variations of unit forced outages and deratings. The production cost model is  
5 simulating the actual operation of the power system in supplying the projected customer  
6 loads using the assumptions.

7 Input assumptions for the load are based on the information described in Exhibit JJT-1.

8 Fuel, emission, variable O & M, purchase and sales costs are listed in Exhibit JJT-5. Also  
9 shown by unit in Exhibit JJT-5 is heat rate and unit availability data.

10 **Q. Describe each case evaluated/modeled.**

11 A. Case 1: Smith 1 as planned (2014 completion) – Base Case

12 Case 2: Delay Smith 1 for 2 years (2016 completion)

13 Case 3: Delay Smith 1 for 4 years (2018 completion)

14 Case 4: Cancel Smith 1, build a combined cycle unit in the optimal time frame

15 Case 5: Cancel Smith 1, provide all future power supply needs with a combination of  
16 increased DSM efforts and renewable generation resources

17 Case 6: Cancel Smith 1, depend on Purchased Power until 2022 then construct combined  
18 cycle generation

19 Case 7: Cancel Smith 1, sell the equipment to an entity constructing a similar plant and  
20 enter into a long term purchase agreement with same entity

21 See Exhibit JJT-4 for the capacity expansion plan for each case.

22 **Q. In Case 3, why is EKPC using a four-year delay assumption versus a five-year**  
23 **delay?**

1 A. The optimal time frame to construct a combined cycle unit in Case 4 is 2018. If Smith  
2 were delayed five years it would come on line in 2019. The year difference between the  
3 two cases would have reflected potential savings in capital investments in two different  
4 years. Putting the capital investment in the same year gave a more appropriate  
5 comparison between cases, comparing the actual difference in resource costs and not  
6 reflecting a timing differential.

7 **Q. What was the output of the production costing model?**

8 A. Exhibit JJT-5 reflects the production data by unit for each case. The exhibit includes the  
9 capacity factor, availability factor, average heat rate, fuel cost, variable O&M costs,  
10 emission costs and total variable production cost by unit. It also shows expected off-  
11 system purchases and sales by case.

12 **Q. How do the results of the production costing model flow to the financial forecasting**  
13 **model?**

14 A. As discussed in Mr. Stansberry's testimony, the results of the production cost model are  
15 summarized in a spreadsheet format and electronically incorporated into the financial  
16 forecasting software.

17 **Q. Does this conclude your testimony?**

18 A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In re the Matter of:

AN INVESTIGATION OF EAST KENTUCKY )  
POWER COOPERATIVE, INC. 'S NEED FOR ) CASE NO. 2010-00238  
THE SMITH 1 GENERATING FACILITY )

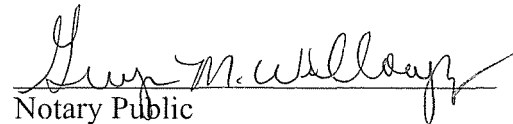
AFFIDAVIT

STATE OF KENTUCKY )  
 )  
COUNTY OF CLARK )

Julia J. Tucker, being duly sworn, states that she has read the foregoing prepared testimony and that she would respond in the same manner to the questions if so asked upon taking the stand, and that the matters and things set forth therein are true and correct to the best of her knowledge, information and belief.



Subscribed and sworn before me on this 17<sup>th</sup> day of November, 2010.

  
Notary Public

MY COMMISSION EXPIRES NOVEMBER 30, 2013  
NOTARY ID #409352

**SECTION 1.0**

**EXECUTIVE SUMMARY**

**Section 1.0**  
**Executive Summary**

East Kentucky Power Cooperative Inc. (EKPC) is a generation and transmission electric cooperative located in Winchester, Kentucky. EKPC is owned by 16 member distribution cooperatives who serve approximately 520,000 retail meters. Member distribution cooperatives served by EKPC include:

Big Sandy RECC	Jackson Energy Cooperative
Blue Grass Energy Coop. Corp.	Licking Valley RECC
Clark Energy Cooperative, Inc.	Nolin RECC
Cumberland Valley Electric	Owen Electric Cooperative
Farmers RECC	Salt River Electric Cooperative
Fleming-Mason Energy Cooperative	Shelby Energy Cooperative, Inc.
Grayson RECC	South Kentucky RECC
Inter-County Energy Coop. Corp.	Taylor County RECC

EKPC's load forecast is prepared every two years in accordance with EKPC's Rural Utilities Service (RUS) approved Work Plan. The Work Plan details the methodology used in preparing the projections. EKPC prepares the load forecast by working jointly with each member system to prepare their load forecast. Member projections are then summed to determine EKPC's forecast for the 20-year period. Member cooperatives use their load forecasts in developing construction work plans, long range work plans, and financial forecasts. EKPC uses the load forecast in such areas as demand-side management analyses, marketing analyses, transmission planning, power supply planning, and financial forecasting.

EKPC's load forecast indicates that total energy requirements are projected to increase by 1.6 percent per year over the 2010 through 2030 period. Net winter peak demand will increase by approximately 1,000 MW, and net summer peak demand will increase by approximately 800 MW. Annual load factor projections are remaining steady at approximately 50 percent. Historical and projected total energy requirements, seasonal peak demands, and annual load factor for the EKPC system are presented in Table 1-1 (page 5). Peak demands are based on coincident hourly-integrated demand intervals. Load Factor is calculated using net peak demand and energy requirements.



Energy projections for the residential, small commercial, and large commercial classifications indicate that during the 2010 through 2030 period, sales to the residential class will increase by 1.4 percent per year, and total commercial and industrial sales will increase by 2.3 percent per year. Class sales are presented in Table 1-5. One member system serves a thin-slab steel mill. This large load is on an interruptible rate and the forecast assumes 360 hours of interruption each year.

<b>Energy Sales and Peak Demands Growth Rates</b>			
	<b>2010-2015</b>	<b>2010-2020</b>	<b>2010-2030</b>
Total Net Energy Requirements	1.1%	1.4%	1.6%
Residential Sales	0.7%	1.2%	1.4%
Total Commercial and Industrial Sales (Excluding steel mill)	2.7%	2.5%	2.3%
Net Winter Peak Demand	1.9%	1.8%	1.8%
Net Summer Peak Demand	1.0%	1.3%	1.6%

Factors considered in preparing the forecast include national, regional, and local economic performance, population and housing trends, service area industrial development, electric price, household income, appliance saturations and efficiencies, demand-side management programs, and weather. A demand-side impacted load forecast is presented in Table 1-1. Details of the demand-side management plan are provided in Section 8 of this report.

Table 1-1

**Peak Demands and Total Requirements**  
*~Historical and Projected~*

Season	Net Winter Peak Demand (MW)	Year	Net Summer Peak Demand (MW)	Year	Total Net Requirements (MWh)	Load Factor (%)
1989 - 90	1,449	1990	1,079	1990	5,489,092	43%
1990 - 91	1,306	1991	1,164	1991	5,958,422	52%
1991 - 92	1,383	1992	1,131	1992	6,099,308	50%
1992 - 93	1,473	1993	1,309	1993	6,860,902	53%
1993 - 94	1,788	1994	1,314	1994	6,917,414	44%
1994 - 95	1,621	1995	1,466	1995	7,761,980	55%
1995 - 96	1,915	1996	1,452	1996	8,505,621	51%
1996 - 97	1,953	1997	1,549	1997	8,850,394	52%
1997 - 98	1,696	1998	1,671	1998	9,073,950	61%
1998 - 99	1,988	1999	1,750	1999	9,825,866	56%
1999 - 00	2,157	2000	1,855	2000	10,521,400	56%
2000 - 01	2,295	2001	1,864	2001	10,750,900	53%
2001 - 02	2,109	2002	2,001	2002	11,456,830	62%
2002 - 03	2,459	2003	1,871	2003	11,568,314	54%
2003 - 04	2,513	2004	1,955	2004	11,865,797	54%
2004 - 05	2,622	2005	2,180	2005	12,527,829	55%
2005 - 06	2,492	2006	2,196	2006	12,331,272	56%
2006 - 07	2,757	2007	2,354	2007	13,080,367	54%
2007 - 08	2,964	2008	2,102	2008	12,948,091	50%
2008 - 09	3,126	2009	2,089	2009	12,380,972	45%
2009 - 10	2,748	2010	2,223	2010	12,781,011	53%
2010 - 11	3,006	2011	2,238	2011	12,855,553	49%
2011 - 12	3,033	2012	2,263	2012	13,024,858	49%
2012 - 13	3,059	2013	2,282	2013	13,124,067	49%
2013 - 14	3,101	2014	2,309	2014	13,318,597	49%
2014 - 15	3,147	2015	2,334	2015	13,516,766	49%
2015 - 16	3,189	2016	2,359	2016	13,739,363	49%
2016 - 17	3,245	2017	2,402	2017	13,942,214	49%
2017 - 18	3,305	2018	2,449	2018	14,197,087	49%
2018 - 19	3,366	2019	2,497	2019	14,455,338	49%
2019 - 20	3,414	2020	2,535	2020	14,708,052	49%
2020 - 21	3,489	2021	2,593	2021	14,985,721	49%
2021 - 22	3,547	2022	2,640	2022	15,245,494	49%
2022 - 23	3,613	2023	2,693	2023	15,535,729	49%
2023 - 24	3,666	2024	2,736	2024	15,822,155	49%
2024 - 25	3,737	2025	2,792	2025	16,090,554	49%
2025 - 26	3,801	2026	2,844	2026	16,376,707	49%
2026 - 27	3,862	2027	2,895	2027	16,655,371	49%
2027 - 28	3,906	2028	2,932	2028	16,909,157	49%
2028 - 29	3,973	2029	2,988	2029	17,167,095	49%
2029 - 30	4,053	2030	3,050	2030	17,464,640	49%

**Table 1-2**

**Historical and Projected Winter Peak Demand**

	Unadjusted Peak Demand (MW)	DSM Impact (MW)	Adjusted Peak Demand (MW)
1989 - 90	1,449	0	1,449
1990 - 91	1,306	0	1,306
1991 - 92	1,383	0	1,383
1992 - 93	1,473	0	1,473
1993 - 94	1,788	0	1,788
1994 - 95	1,621	0	1,621
1995 - 96	1,990	75	1,915
1996 - 97	2,004	51	1,953
1997 - 98	1,789	107	1,682
1998 - 99	2,096	125	1,971
1999 - 00	2,169	29	2,140
2000 - 01	2,322	44	2,278
2001 - 02	2,238	146	2,092
2002 - 03	2,568	133	2,435
2003 - 04	2,610	123	2,487
2004 - 05	2,719	104	2,615
2005 - 06	2,599	122	2,477
2006 - 07	2,840	91	2,749
2007 - 08	3,051	95	2,956
2008 - 09	3,152	49	3,103
2009 - 10	2,868	129	2,739
2010 - 11	3,154	148	3,006
2011 - 12	3,189	155	3,033
2012 - 13	3,223	164	3,059
2013 - 14	3,273	172	3,101
2014 - 15	3,327	180	3,147
2015- 16	3,377	189	3,189
2016 - 17	3,440	195	3,245
2017 - 18	3,505	200	3,305
2018 - 19	3,571	206	3,366
2019-20	3,622	208	3,414
2020-21	3,699	210	3,489
2021-22	3,759	212	3,547
2022-23	3,827	214	3,613
2023-24	3,881	216	3,666
2024-25	3,954	217	3,737
2025-26	4,019	218	3,801
2026-27	4,082	220	3,862
2027-28	4,127	222	3,906
2028-29	4,196	223	3,973
2029-30	4,260	207	4,053

Impacts from interruptible contracts have been subtracted.

**Table 1-3****Historical and Projected Summer Peak Demand**

	Unadjusted Peak Demand (MW)	DSM Impact (MW)	Adjusted Peak Demand (MW)
1990	1,079	0	1,079
1991	1,164	0	1,164
1992	1,131	0	1,131
1993	1,309	0	1,309
1994	1,314	0	1,314
1995	1,518	52	1,466
1996	1,540	88	1,452
1997	1,650	101	1,549
1998	1,675	21	1,654
1999	1,754	16	1,738
2000	1,941	109	1,832
2001	1,980	139	1,841
2002	2,120	142	1,978
2003	1,996	151	1,845
2004	2,052	104	1,948
2005	2,180	10	2,170
2006	2,332	144	2,188
2007	2,481	135	2,346
2008	2,243	149	2,094
2009	2,195	114	2,081
2010	2,369	146	2,223
2011	2,395	157	2,238
2012	2,430	167	2,263
2013	2,461	179	2,282
2014	2,499	190	2,309
2015	2,535	202	2,334
2016	2,572	213	2,359
2017	2,620	219	2,402
2018	2,670	221	2,449
2019	2,721	224	2,497
2020	2,759	224	2,535
2021	2,818	224	2,593
2022	2,865	225	2,640
2023	2,917	225	2,693
2024	2,961	225	2,736
2025	3,017	224	2,792
2026	3,067	224	2,844
2027	3,119	224	2,895
2028	3,157	224	2,932
2029	3,213	225	2,988
2030	3,264	214	3,050

Impacts from interruptible contracts have been subtracted.

**Table 1-4  
Historical and Projected Total Requirements**

	Unadjusted Energy (MWh)	Estimated DSM Impact (MWh)	Total Requirements (MWh)
1990	5,489,092	0	5,489,092
1991	5,958,422	0	5,958,422
1992	6,099,308	0	6,099,308
1993	6,860,902	0	6,860,902
1994	6,917,414	0	6,917,414
1995	7,796,980	35,000	7,761,980
1996	8,540,621	35,000	8,505,621
1997	8,885,394	35,000	8,850,394
1998	9,108,950	35,000	9,073,950
1999	9,860,866	35,000	9,825,866
2000	10,556,400	35,000	10,521,400
2001	10,785,900	35,000	10,750,900
2002	11,491,830	35,000	11,456,830
2003	11,603,314	35,000	11,568,314
2004	11,900,797	35,000	11,865,797
2005	12,569,829	42,000	12,527,829
2006	12,373,272	42,000	12,331,272
2007	13,122,367	42,000	13,080,367
2008	12,990,091	42,000	12,948,091
2009	12,422,972	42,000	12,380,972
2010	12,838,995	57,984	12,781,011
2011	12,933,784	78,231	12,855,553
2012	13,123,079	98,220	13,024,858
2013	13,248,916	124,850	13,124,067
2014	13,469,609	151,011	13,318,597
2015	13,695,339	178,573	13,516,766
2016	13,945,172	205,809	13,739,363
2017	14,168,260	226,047	13,942,214
2018	14,440,867	243,780	14,197,087
2019	14,717,117	261,779	14,455,338
2020	14,968,552	260,500	14,708,052
2021	15,242,854	257,133	14,985,721
2022	15,499,459	253,965	15,245,494
2023	15,784,559	248,830	15,535,729
2024	16,066,805	244,650	15,822,155
2025	16,329,096	238,542	16,090,554
2026	16,609,551	232,844	16,376,707
2027	16,889,740	234,369	16,655,371
2028	17,144,635	235,477	16,909,157
2029	17,402,612	235,517	17,167,095
2030	17,680,570	215,930	17,464,640

Impacts from interruptible contracts have been subtracted.

Historical energy impacts for DSM and interruptible loads are not directly metered and therefore are estimated.

**Table 1-5**  
**Class sales shown are before the impacts of DSM**

Year	Residential Sales (MWh)	Seasonal Sales (MWh)	Small Comm. Sales (MWh)	Public Buildings (MWh)	Large Comm. Sales (MWh)	Public Street And Highway Lighting Sales (MWh)	Total Retail Sales (MWh)
1990	3,497,574	9,094	813,371	9,096	653,502	3,737	4,986,373
1991	3,770,962	9,423	868,031	9,871	725,419	4,029	5,387,735
1992	3,813,577	9,756	913,599	11,586	776,268	4,304	5,529,089
1993	4,230,486	10,144	980,301	13,779	968,345	5,081	6,208,135
1994	4,285,099	10,280	1,014,549	14,240	1,026,927	4,156	6,355,251
1995	4,592,909	11,066	1,097,729	15,889	1,414,196	5,042	7,136,833
1996	4,875,662	12,342	1,138,469	16,785	1,829,516	5,555	7,878,329
1997	4,901,058	11,888	1,163,683	16,272	2,012,108	5,663	8,110,671
1998	5,109,002	11,476	1,230,450	17,315	2,041,910	5,601	8,415,754
1999	5,320,858	11,496	1,336,957	17,765	2,316,814	5,756	9,009,646
2000	5,626,500	12,479	1,446,958	18,280	2,409,695	6,160	9,520,072
2001	5,797,895	12,769	1,505,480	18,865	2,658,579	6,545	10,000,133
2002	6,166,723	14,076	1,577,590	20,453	2,803,844	7,107	10,589,793
2003	6,205,364	13,445	1,550,248	21,754	2,881,780	7,447	10,680,038
2004	6,337,737	13,846	1,598,111	22,974	3,037,246	7,498	11,017,413
2005	6,751,547	14,501	1,733,390	22,530	3,013,699	7,713	11,543,379
2006	6,548,160	13,882	1,777,897	22,196	3,057,184	8,236	11,427,556
2007	6,998,554	14,679	1,861,952	26,427	3,124,043	8,457	12,034,113
2008	7,055,277	14,531	1,872,811	34,074	3,083,589	9,477	12,069,760
2009	6,789,142	13,080	1,787,112	35,507	2,831,935	9,065	11,465,842
2010	6,916,947	13,434	1,820,349	35,741	3,035,175	9,217	11,830,863
2011	6,919,599	13,419	1,846,959	36,195	3,092,314	9,505	11,917,991
2012	6,944,934	13,455	1,877,310	36,596	3,210,477	9,711	12,092,483
2013	6,957,738	13,333	1,917,456	37,314	3,272,546	9,937	12,208,323
2014	7,055,893	13,570	1,959,197	38,037	3,335,403	10,160	12,412,259
2015	7,159,616	13,790	2,001,631	38,752	3,395,326	10,382	12,619,498
2016	7,281,181	14,097	2,044,932	39,450	3,459,446	10,601	12,849,707
2017	7,391,828	14,359	2,089,551	40,127	3,508,475	10,820	13,055,162
2018	7,523,977	14,682	2,134,733	40,784	3,581,071	11,039	13,306,286
2019	7,661,291	15,007	2,180,098	41,444	3,651,747	11,256	13,560,843
2020	7,788,470	15,389	2,225,634	42,105	3,709,435	11,475	13,792,507
2021	7,923,044	15,831	2,271,700	42,768	3,780,129	11,693	14,045,165
2022	8,056,599	16,290	2,317,291	43,396	3,836,002	11,908	14,281,486
2023	8,203,953	16,774	2,362,531	44,026	3,904,812	12,124	14,544,221
2024	8,351,660	17,235	2,407,717	44,669	3,970,782	12,339	14,804,401
2025	8,482,142	17,589	2,453,143	45,327	4,035,146	12,556	15,045,903
2026	8,625,165	18,070	2,499,227	45,986	4,103,086	12,774	15,304,309
2027	8,764,282	18,593	2,545,021	46,621	4,174,930	12,989	15,562,437
2028	8,893,234	18,928	2,590,457	47,232	4,234,283	13,203	15,797,336
2029	9,010,609	19,163	2,635,782	47,870	4,308,104	13,418	16,034,945
2030	9,163,386	19,694	2,681,368	48,548	4,367,000	13,631	16,293,627

**Impacts of interruptible contracts have been subtracted.**

Table 1-5 continued

Year	Total Retail Sales (MWh)	Office Use (MWh)	% Loss	EKPC Sales to Members (MWh)	EKPC Office Use (MWh)	Transmission Loss (%)	Unadjusted Total Requirements (MWh)	Additional DSM Impact (MWh)	Adjusted Total Requirements (MWh)
1990	4,986,373	5,087	5.7	5,295,459	6,287	3.5	5,489,092		
1991	5,387,735	5,333	6.3	5,755,588	6,798	3.4	5,958,422		
1992	5,529,089	5,242	6.2	5,903,267	7,559	3.2	6,099,308		
1993	6,208,135	5,552	6.0	6,612,688	8,026	3.6	6,860,902		
1994	6,355,251	5,614	5.5	6,727,959	8,541	2.7	6,917,414		
1995	7,136,833	5,711	5.5	7,558,452	9,197	2.6	7,761,980		
1996	7,878,329	6,167	5.0	8,301,379	8,856	2.4	8,505,621		
1997	8,110,671	6,349	5.2	8,559,022	8,505	3.3	8,850,394		
1998	8,415,754	6,121	4.5	8,821,630	7,236	2.8	9,073,950		
1999	9,009,646	6,040	4.8	9,468,916	8,157	3.7	9,825,866		
2000	9,520,072	6,606	5.0	10,027,205	7,862	4.8	10,521,400		
2001	10,000,133	6,793	4.0	10,426,995	8,205	3.0	10,750,900		
2002	10,589,793	7,562	4.3	11,071,862	8,818	3.4	11,456,830		
2003	10,680,038	7,681	4.5	11,190,870	9,123	3.3	11,568,314		
2004	11,017,413	8,289	4.4	11,537,505	9,106	2.8	11,865,797		
2005	11,543,379	8,617	4.2	12,060,460	8,902	3.8	12,527,829		
2006	11,427,556	8,924	3.8	11,892,304	7,568	3.6	12,331,272		
2007	12,034,113	10,291	4.3	12,582,260	7,491	3.9	13,080,367		
2008	12,069,760	10,431	4.5	12,646,146	7,912	2.3	12,948,091		
2009	11,465,842	10,116	4.2	11,981,909	8,247	3.3	12,380,972		
2010	11,830,863	10,225	4.2	12,365,949	8,297	3.3	12,796,531	15,520	12,781,011
2011	11,917,991	10,225	4.2	12,457,380	8,330	3.3	12,891,117	35,564	12,855,553
2012	12,092,483	10,225	4.3	12,640,470	8,417	3.3	13,080,545	55,687	13,024,858
2013	12,208,323	10,225	4.3	12,762,031	8,436	3.3	13,206,274	82,208	13,124,067
2014	12,412,259	10,225	4.3	12,975,995	8,478	3.3	13,427,584	108,986	13,318,597
2015	12,619,498	10,225	4.3	13,193,494	8,521	3.3	13,652,549	135,783	13,516,766
2016	12,849,707	10,225	4.3	13,435,050	8,563	3.3	13,902,392	163,029	13,739,363
2017	13,055,162	10,225	4.3	13,650,646	8,606	3.3	14,125,390	183,176	13,942,214
2018	13,306,286	10,225	4.3	13,914,159	8,649	3.3	14,397,940	200,853	14,197,087
2019	13,560,843	10,225	4.3	14,181,268	8,693	3.3	14,674,210	218,871	14,455,338
2020	13,792,507	10,225	4.3	14,424,359	8,736	3.3	14,925,642	217,589	14,708,052
2021	14,045,165	10,225	4.3	14,689,483	8,780	3.3	15,199,858	214,137	14,985,721
2022	14,281,486	10,225	4.3	14,937,462	8,824	3.3	15,456,345	210,852	15,245,494
2023	14,544,221	10,225	4.3	15,213,154	8,868	3.3	15,741,491	205,762	15,535,729
2024	14,804,401	10,225	4.3	15,486,159	8,912	3.3	16,023,858	201,703	15,822,155
2025	15,045,903	10,225	4.3	15,739,582	8,957	3.3	16,285,976	195,422	16,090,554
2026	15,304,309	10,225	4.3	16,010,733	9,001	3.3	16,566,426	189,719	16,376,707
2027	15,562,437	10,225	4.4	16,281,592	9,046	3.3	16,846,575	191,204	16,655,371
2028	15,797,336	10,225	4.4	16,528,072	9,092	3.3	17,101,514	192,356	16,909,157
2029	16,034,945	10,225	4.4	16,777,406	9,137	3.3	17,359,403	192,309	17,167,095
2030	16,293,627	10,225	4.4	17,048,845	9,183	3.3	17,640,153	175,513	17,464,640

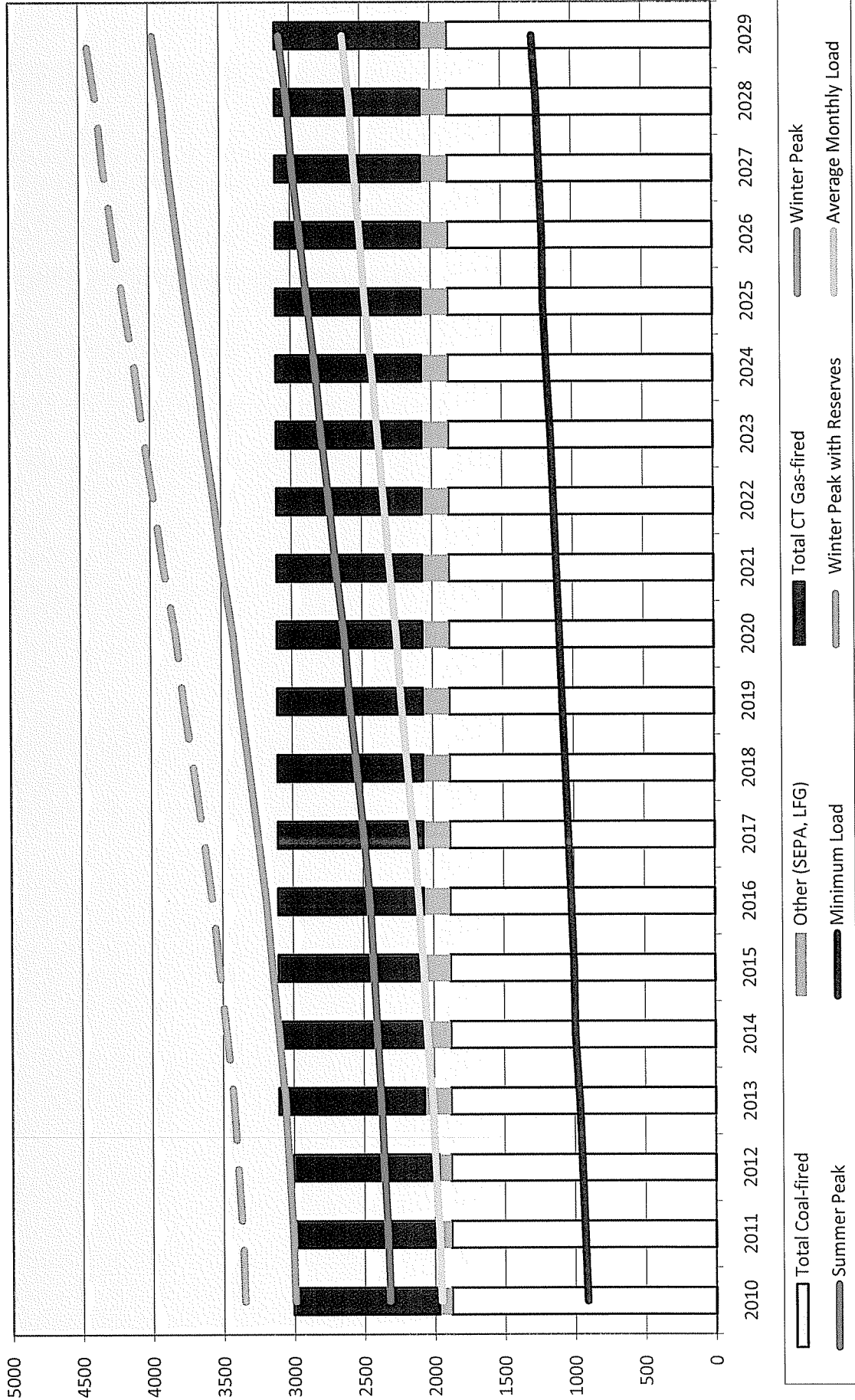
**Impacts of interruptible contracts have been subtracted.**

Demand and Energy Requirements

	Peak Demand		Reserves Required		Required Capacity		Existing Capacity		Capacity Surplus/(Deficit)		Total Energy Requirements	Energy Available from Existing Generation	Energy Surplus/(Deficit)
	Win	Sum	Win	Sum	Win	Sum	Win	Sum	Win	Sum			
2006	2744	2336	329	280	3073	2616	2753	2542	(320)	(74)	12,206,412	8,359,068	(3,847,344)
2007	2859	2487	343	298	3202	2785	2653	2442	(549)	(343)	13,006,363	8,359,068	(4,647,295)
2008	3033	2254	364	270	3397	2524	2653	2442	(744)	(82)	12,957,993	8,359,068	(4,598,925)
2009	3149	2177	378	261	3527	2438	2616	2673	(911)	(234)	12,371,602	9,838,282	(2,533,320)
2010	2994	2320	359	278	3353	2598	3081	2842	(272)	(244)	12,831,350	9,838,282	(2,993,068)
2011	3006	2335	361	280	3367	2615	3046	2802	(321)	(187)	13,000,540	9,838,282	(3,162,258)
2012	3033	2359	364	283	3397	2642	3038	2794	(359)	(152)	13,099,712	9,838,282	(3,261,430)
2013	3059	2378	367	285	3426	2663	3138	2894	(288)	(231)	13,294,199	9,838,282	(3,455,917)
2014	3101	2405	372	289	3473	2694	3138	2894	(335)	(200)	13,492,362	9,838,282	(3,654,080)
2015	3147	2429	378	291	3525	2720	3138	2894	(387)	(174)	13,714,937	9,838,282	(3,876,655)
2016	3189	2453	383	294	3572	2747	3138	2894	(434)	(147)	13,917,699	9,838,282	(4,079,417)
2017	3245	2495	389	299	3634	2794	3138	2894	(496)	(100)	14,172,526	9,838,282	(4,334,244)
2018	3305	2543	397	305	3702	2848	3138	2894	(564)	(46)	14,430,752	9,838,282	(4,592,470)
2019	3366	2591	404	311	3770	2902	3138	2894	(632)	(8)	14,683,427	9,838,282	(4,845,145)
2020	3414	2627	410	315	3824	2942	3138	2894	(686)	(48)	14,961,045	9,838,282	(5,122,763)
2021	3489	2685	419	322	3908	3007	3138	2894	(770)	(113)	15,220,793	9,838,282	(5,382,511)
2022	3547	2731	426	328	3973	3059	3138	2894	(835)	(165)	15,510,989	9,838,282	(5,672,707)
2023	3613	2783	434	334	4047	3117	3138	2894	(909)	(223)	15,797,369	9,838,282	(5,959,087)
2024	3666	2826	440	339	4106	3165	3138	2894	(968)	(271)	16,065,716	9,838,282	(6,227,434)
2025	3737	2882	448	346	4185	3228	3138	2894	(1,047)	(334)	16,351,807	9,838,282	(6,513,525)
2026	3801	2932	456	352	4257	3284	3138	2894	(1,119)	(390)	16,630,476	9,838,282	(6,792,194)
2027	3862	2983	463	358	4325	3341	3138	2894	(1,187)	(447)	16,884,156	9,838,282	(7,045,874)
2028	3906	3020	469	362	4375	3382	3138	2894	(1,237)	(488)	17,142,068	9,838,282	(7,303,786)
2029	3973	3076	477	369	4450	3445	3138	2894	(1,312)	(551)	17,439,558	9,838,282	(7,601,276)



EKPC Generation and Load - Expansion Plan (PSC 2010-00238)



## Residential/Commercial DSM Plan East Kentucky Power

Estimated demand and energy impacts as well as descriptions of the programs are shown below:

### Program Descriptions

Electric Thermal Storage Incentive Program: Provides retail members with a cost-efficient means of using electricity for space heating. A discounted rate for ETS energy encourages retail members to use electricity for heating during off peak hours. This improves the utility's load factor, reduces energy costs for the retail member, and delays the need for new peak load capacity expenses.

Tune-Up HVAC Maintenance Program: This program offers the cleaning of indoor and outdoor heat exchanger coils, checking filters, measuring the temperature differential across the indoor coil to determine proper compressor operation, checking the thermostat to verify operation and proper staging, measuring air flow to ensure proper conditioned air distribution, and sealing the ductwork, either through traditional mastic sealers or with the *Aeroseal* duct-sealing program. Duct losses are to be reduced to 10% or less.

Button-Up Weatherization/Button-Up Weatherization with Air Sealing Program: The program requires the installation of insulation materials or the use of other weatherization techniques to reduce heat loss in the home. Any retail member who resides in a stick-built or manufactured home that is at least two years old and uses electricity as the primary source for space heat is eligible. In addition to the current program, EKPC is adding an option to also seal the envelope of the home.

### Touchstone Energy New Construction Program (Heat Pump and Geothermal):

This program builds upon the existing Touchstone Energy Home program by introducing new measures and approaches. If implemented, this program would replace the existing Touchstone Energy Home program. The enhancements include thermal sealing/thermal bypass, and R-38 attic insulation. The program is designed to encourage new homes to be built to higher standards for thermal integrity and equipment efficiency, as well as to choose geothermal or an air source heat pump (SEER 13 HSPF 8.0) rather than less efficient forms of heating. The program is modeled after the ENERGY STAR for New Homes program. Homes built to Touchstone Energy Home Standards typically use 30% less energy than the same home built to typical construction standards.

Touchstone Energy Manufactured Home: The Touchstone Energy Manufactured Home is an all-electric manufactured home that is built to Energy Star® specifications. A manufactured home that is built to these standards typically uses 30% less energy, saving money and reducing greenhouse emissions. The Touchstone Energy Home includes a sealed duct system, energy efficient double-pane windows, added insulation in the roof and wall, and an improved gasket that seals the halves of the home together.

Compact Fluorescent Lighting Program: This program provides compact fluorescent bulbs to retail members at the annual meetings held by the distribution cooperatives every year. Each

registered member receives a two-pack of compact fluorescent bulbs that replace 2 incandescent light bulbs.

Commercial Advanced Lighting including LED Program: This program offers incentives to commercial and industrial customers to install high efficiency lamps and ballasts in their facilities. LED exit signs, T-5 fluorescent fixtures, and advanced controls are examples of eligible technologies. This program is designed as an enhanced version of the existing commercial lighting program and will replace that program when implemented. This advanced lighting program is expected to produce higher levels of savings in each facility.

Interruptible Rates for Industrial Customers: Industrial customers may agree to accept a lesser rate upon agreement to allow EKPC to interrupt load during peak hours.

Air Source Heat Pump Program (Replacing resistance heat -10 years or older):

This program provides incentives for residential customers to install a high efficiency air source heat pump instead of an electric resistance furnace and/or central air conditioner in the home. The existing furnace must be 10 years or older to qualify for incentives.

Dual Fuel: This program will provide incentives for residential customers to replace an existing resistance heat furnace with a combination heat pump/gas heat furnace (Dual Fuel). This program will provide added energy savings while allowing fuel switching to gas at temperatures less than 30 degrees.

Industrial Compressed Air Program: This program is designed to reduce electricity consumption through a comprehensive approach to efficient production and delivery of compressed air in industrial facilities. The program includes (1) training of plant staff; (2) a detailed system assessment of the plant's compressed air system including written findings and recommendations, and (3) incentives for capital-intensive improvements.

Direct Load Control of Residential Air Conditioners and Water Heaters Program: This program is currently being implemented. The objective of the program is to reduce peak demand and energy usage through the installation of load control devices on residential air conditioners and electric water heaters. Peak demand reduction is accomplished by cycling equipment on and off according to a predetermined control strategy. Central air conditioning and heat pump units are cycled on and off, while water heater loads are curtailed. Participating customers receive an annual bill credit incentive.

## DSM for 2010 Load Forecast

	EXISTING			DLC			NEW			GRAND TOTAL		
	Annual	Summer	Winter	Annual	Summer	Winter	Annual	Summer	Winter	Annual	Summer	Winter
	MWh	Peak kW	Peak kW	MWh	Peak kW	Peak kW	MWh	Peak kW	Peak kW	MWh	Peak kW	Peak kW
2010	51,638	137,146	138,603	158	7,714	1,989	6,164	492	676	57,960	145,352	141,268
2011	63,147	138,805	141,757	316	15,427	3,978	14,733	1,144	2,331	78,196	155,376	148,066
2012	74,318	140,465	144,910	475	23,141	5,967	23,303	1,795	3,986	98,096	165,401	154,863
2013	89,501	142,679	149,115	630	30,856	7,957	34,777	2,669	6,195	124,908	176,204	163,267
2014	103,963	144,894	153,320	789	38,569	9,946	46,252	3,544	8,403	151,004	187,007	171,669
2015	119,804	147,108	157,526	946	46,284	11,934	57,728	4,419	10,611	178,478	197,811	180,071
2016	134,872	149,321	161,730	1,105	53,998	13,923	69,202	5,294	12,820	205,179	208,613	188,473
2017	146,115	151,096	165,321	1,151	56,371	14,536	78,879	5,971	14,887	226,145	213,438	194,744
2018	155,853	152,702	168,683	1,151	56,371	14,536	87,085	6,491	16,836	244,089	215,564	200,055
2019	165,516	154,309	172,042	1,151	56,371	14,536	95,290	7,012	18,787	261,957	217,692	205,365
2020	162,298	154,317	173,580	1,151	56,371	14,536	96,227	7,289	19,499	259,676	217,977	207,615
2021	158,503	154,228	175,046	1,151	56,371	14,536	97,164	7,566	20,210	256,818	218,165	209,792
2022	154,520	154,071	176,345	1,151	56,371	14,536	98,101	7,842	20,922	253,772	218,284	211,803
2023	148,846	153,684	177,481	1,151	56,371	14,536	99,038	8,119	21,634	249,035	218,174	213,651
2024	143,098	153,298	178,617	1,151	56,371	14,536	99,975	8,396	22,345	244,224	218,065	215,498
2025	137,175	152,775	179,399	1,151	56,371	14,536	100,210	8,465	22,523	238,536	217,611	216,458
2026	131,086	152,251	180,180	1,151	56,371	14,536	100,444	8,534	22,701	232,681	217,156	217,417
2027	132,224	152,535	182,088	1,151	56,371	14,536	100,678	8,603	22,879	234,053	217,509	219,503
2028	133,147	152,781	183,896	1,151	56,371	14,536	100,678	8,603	22,879	234,976	217,755	221,311
2029	134,201	153,028	185,703	1,151	56,371	14,536	100,678	8,603	22,879	236,030	218,002	223,118
2030	123,768	151,685	183,076	995	48,658	12,547	91,665	7,669	21,819	216,428	208,012	217,442

Winter Ratings	1 Base	2 2 yr delay	3 4-yr delay	4 CC	5 Green	6 PPA, Build	Sell, PPA
Smith 1 278 MW	2015	2017	2019				
CC 268 MW	2021	2021	2021	2017 2021	2026	2021 2022	2021
CT 98 MW	2027 2028	2027 2028	2027 2028	2027 2028		2027 2028	2027 2028
PPA Peaking	2010 (200) 2011 (100) 2014 (98)	2010 (200) 2011 (100) 2014 (98)	2010 (200) 2011 (100) 2014 (98)	2010 (200) 2011 (100) 2014 (98)	2010 (200)	2010 (200) 2011 (100) 2014 (98)	2010 (200) 2011 (100) 2014 (98)
PPA Baseload (5 Years)						2017 (300)	
PPA CFB							2015 (250)
PPA Nuclear 200 MW	2024	2024	2024	2024	2024	2024	2024
Renew. LFG .8 MW	2010 2011 2012	2010 2011 2012	2010 2011 2012	2010 2011 2012	2010 2011 2012	2010 2011 2012	2010 2011 2012
PPA Wind					2011 (149) 2019 (99) 2021 (70) 2022 (50)		
PPA Biomass					2025 (56)		
DSM Win Max	Base 223 MW max	Base 223 MW	Base 223 MW	Base 223 MW	Increased 400 MW	Base 223 MW	Base 223 MW



































































**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**AN INVESTIGATION OF EAST KENTUCKY ) PSC CASE NO.**  
**POWER COOPERATIVE, INC.'S NEED FOR ) 2010-00238**  
**THE SMITH 1 GENERATING FACILITY )**

**TESTIMONY OF**  
**GARY G. STANSBERRY**  
**MANAGER OF PERFORMANCE AND IMPROVEMENT**  
**EAST KENTUCKY POWER COOPERATIVE, INC.**

**Filed: November 18, 2010**



1 **Q. Are you sponsoring any exhibits in this proceeding?**

2 A. Yes. I am sponsoring the following exhibits: Exhibit GGS-1—Net Present Value of  
3 Cost of Each Scenario; Exhibit GGS-2—Comparison PV Total Revenue Requirements  
4 from Members for each case, and Statements of Operations for each case; Exhibit GGS-  
5 3—Annual Revenue Requirements and Percentage of Existing Revenue Requirements -  
6 Case 1 - Total Dollars and as a Percentage of Existing Revenue; Exhibit GGS-4, Member  
7 Cost Summary and Rate Detail for each case, and Exhibit GGS-5, Financial Assumptions  
8 for the PSC Smith Investigation Study.

9 **Q. Can you explain the financial forecasting process?**

10 A. The long-term financial forecasting process is integrated with the overall planning  
11 process. The planning process begins with the load forecast, identifying the generation  
12 resources and capital investment necessary to meet peak, energy, and load reserve  
13 requirements. These additional resources, commonly referred to as an “expansion plan”,  
14 along with EKPC’s existing resources, are dispatched in an hourly production costing  
15 model to determine variable costs (fuel, purchased power, emissions) associated with  
16 meeting EKPC’s load. These variable costs, along with fixed costs and the investments  
17 directly related to the expansion plan, are input into the financial model. The financial  
18 model incorporates all the financial parameters and projections of revenue, expenses,  
19 margins, assets, etc., which in turn develop the revenue requirements necessary for  
20 meeting proper financial objectives. These revenue requirements then translate into rates  
21 to our member systems. These rates then become an input into future load forecasts. The  
22 planning process with its related financial forecasting process is an interactive and  
23 circular process.

1 **Q. How do the results of the production costing model, described in Ms. Tucker's**  
2 **testimony, flow to the financial forecasting model?**

3 A. The output of the production costing model is summarized in spreadsheet form and  
4 includes fuel cost, generation levels (MWh), emission levels, power purchases and off-  
5 system sales. This data is entered into the financial model in its appropriate place.

6 **Q. Can you explain more about the financial forecasting portion of the planning**  
7 **process?**

8 A. The process incorporates the use of financial statements, including a statement of  
9 operations, cash flow, and balance sheet. Actual, budgeted, and forecasted data is used to  
10 project future financial positions. For example, an investment in future plant will show  
11 the need for increased debt with related interest, depreciation, taxes, insurance, and  
12 operation and maintenance (O&M) expense. This future plant example will then set into  
13 motion the cash flow aspects of principal payments increasing over time, recovery of  
14 depreciation, and the margin effect created by the above expenses. The balance sheet  
15 will reflect the increase in assets and corresponding funding by debt and equity. General  
16 expenses and capital costs are escalated over time based on the assumptions. Please refer  
17 to Exhibit GGS-5 "Financial Assumptions for PSC Smith Investigation Study" for  
18 additional assumptions.

19 **Q. How does the need for rates enter into the forecasting process?**

20 A. The financial situation produced by the forecasted financial statements referred to above,  
21 will change from year to year. These changes in financial positions are evaluated in light  
22 of creditor standards, company goals, and general business standards to determine the  
23 financial viability of the organization in that year. For example, a Times Interest Earned

1 Ratio (TIER), a Debt Service Coverage (DSC), and Equity to Asset ratio (Equity Ratio)  
2 are ratios to help evaluate the current year status. The recognition of revenue shortfall is  
3 addressed by the need for additional revenue requirements. These revenue requirements  
4 are then translated into future rates in order to recover the proper revenue for financial  
5 stability.

6 **Q. How has the financial model been used to address the requirements of this order?**

7 A. The financial model has been used with all seven cases, as described in Ms. Tucker's  
8 testimony, in addressing the requirements of this order. The revenue requirements have  
9 been determined in each case on a year by year basis, accumulated on a present value  
10 basis, and rates each year from the seven cases have been determined as shown in Exhibit  
11 GGS-1, Exhibit GGS-2, and Exhibit GGS-4. These exhibits also show the income  
12 statements for 20 years and the detailed rates by rate class for each case. A calculation of  
13 percentage increase in revenue requirements from the initial year is also contained in  
14 Exhibit GGS-3. These exhibits from the financial model address items 5-8 on pages 9  
15 and 10 of the Commission's Order dated June 22, 2010.

16 **Q. What level of TIER was used to determine the revenue requirements?**

17 A. A TIER level of 1.50 was used to determine the revenue requirements. The revenue  
18 requirements are determined by the revenue generated from member rates to meet the  
19 expenses and margin requirements in a given year, plus any additional revenue needed  
20 through rate increases to achieve the financial stability required. This TIER level is  
21 consistent with the level used in Case No. 2010-00167.

22 **Q. What assumptions are used in the financial model?**

23 A. Assumptions include TIER, discount rate, CO<sub>2</sub> legislation, and residual values. I will

1 expand on each of these assumptions.

2 **Q. What was the basis for determining the rate increases?**

3 A. As mentioned previously, a TIER of 1.50 was used as the basis of the earnings  
4 mechanism or margin level in each of the cases. This level reflects EKPC's management  
5 philosophy for its equity management and growth position. This value was used as a  
6 constant across all years and in all cases for determining the revenue requirements. By  
7 using this assumption, EKPC eliminates the timing differences which may occur from  
8 working within a bandwidth of minimum and maximum TIER levels. In this way  
9 revenue requirements are given equal treatment from the earnings mechanism in each  
10 year throughout all cases.

11 **Q. How was possible CO2 legislation handled?**

12 A. One of the assumptions used by EKPC considered the passing of some type of CO2  
13 legislation. This is introduced into the model beginning in 2014 with a cap and trade  
14 arrangement. This is modeled after House Bill H.R. 2454: *American Clean Energy and*  
15 *Security Act of 2009* presented by Rep. Henry Waxman (D-CA). The total tons of CO2  
16 produced by the generating units are captured from the production costing model. An  
17 EKPC tonnage allotment from EPA of approximately 57% of EKPC's usage is assumed  
18 beginning in 2014. This initial allotment of 6.8M tons decreases over time resulting in  
19 increasing cost for EKPC. The excess tonnage over the allotment amount results in  
20 EKPC's responsibility at forecast prices. The emission price forecast is provided by  
21 ACES Power Marketing and contained in the assumptions, provided with Ms. Tucker's  
22 testimony.

23 **Q. What discount rate was used in the present value calculations?**



1 A. The rate used was 7.52% and was based on EKPC’s cost of capital. This was computed  
2 from EKPC’s current rate case with a 2011 forecasted test year interest expense of 5.01%  
3 times 1.50 TIER. (Case No. 2010-00167, Application Volume 5, Tab 55).

4 **Q. Were residual values of related plant investment considered in these cases?**

5 A. Yes. Residual values of all new plant investment during the twenty year window were  
6 considered at net book value. These amounts are shown on Exhibit GGS-2 along with  
7 their related present value amount. This present value amount reduces the net present  
8 value revenue requirements in each calculation in arriving at the total. This applies to  
9 only new plant investment during the forecast period in order to give proper recognition  
10 of asset value at the end of the analysis period.

11 **Q. Is there anything unique that you would like to explain about the financial model  
12 used in this analysis?**

13 A. Yes. Normally, the first two years of this financial model encompass the Two-year  
14 Budget (2010-2011). In EKPC’s current model, the “test year” from EKPC’s current rate  
15 case (Case 2010-00167) has been substituted for the 2011 budget year. For accuracy  
16 reasons, this should be noted when the reference in the following discussion on  
17 “procedure and programming” speaks to this 2<sup>nd</sup> year budget as the 2011 budget year.  
18 The procedure and programming of the model requires the first two years to be  
19 hardcoded into the model. Forecasting amounts start thereafter beginning in 2012. The  
20 new 2010 load forecast has been incorporated into the analysis and affects years 2012 and  
21 beyond. Due to the timing of this Order, a new budget has not been completed in order to  
22 synchronize with the 2010 load forecast. Therefore, the first two budget years of the  
23 forecast are based on the modified 2008 load forecast. We recognize differences due to

1 the slower-growth 2010 load forecast for those two years. The revenue downturn has  
2 been estimated at \$164M with estimated margin reduction of \$29M. The transition from  
3 2011 budget year to 2012 forecast year therefore may produce results which seem  
4 disproportionate on the income statement and needs to be understood by this situation.

5 **Q. Will this affect the results of this analysis?**

6 A. The comparison results will not be affected. Each case includes the same assumptions  
7 relative to the two budget years of 2010-2011, and therefore, the measurement of  
8 differences between cases is preserved.

9 **Q. How were the Cases 1-3 handled in regards to Smith 1?**

10 A. Cases 1-3 retained Smith 1 in EKPC's portfolio for analysis purposes, yet in two-year  
11 delays to distinguish the cases. Therefore, Case 1 (base case) includes Smith 1 for 2014  
12 and Cases 2 & 3 follow with 2016 and 2018 dates respectively.

13 **Q. How were the cases handled which removed Smith 1 from EKPC's books?**

14 A. Cases 4, 5 and 6 incorporated the recovery of a regulatory asset in the amount of the  
15 Smith 1 net investment. This amount was \$151 million as of 2009. The budgeted  
16 amount of Smith 1 through 2011 was \$171 million, and was used as the proxy for the  
17 total amount of investment, including contract cancellation costs. Salvage was  
18 determined at \$20 million, thereby reducing the net amount to \$151 million. Since EKPC  
19 cannot write off this amount to expense in one year without defaulting on its loan  
20 covenants, EKPC assumed that a regulatory asset was established in order to properly  
21 account for this situation. This regulatory asset was established assuming a 10 year  
22 recovery/amortization period.

23 Case 7 involved the sale of Smith 1 at book value to an independent power producer

1 beginning in 2012. Smith 1 was removed from EKPC's books by reducing Construction  
2 Work in Progress (CWIP) and reducing the related debt.

3 **Q. Can you explain more of how you handled the regulatory asset?**

4 A. Yes. The regulatory asset was established by transferring the net CWIP balance (\$171M  
5 less \$20M salvage) of \$151 million. As noted in the testimony of Mr. Mitchell, the most  
6 recent estimate of contract unwinding costs and asset disposal costs is \$10M, which is  
7 \$10M less than was used in the forecasting model. This reduction in estimate would not  
8 alter the outcome of the analysis. The related CWIP loan amounts were reduced and a  
9 new 10 year loan was created in order to finance the regulatory asset. The regulatory  
10 asset was amortized on a straight-line basis for 10 years and interest expense from the 10  
11 year loan was charged to the statement of operations.

12 **Q. What were the results from these cases?**

13 A. Please refer to Exhibit GGS-1 and GGS-4. Case 1 assumed the initial Smith 1 investment  
14 to be \$819 million, which is the most recent estimate prepared jointly by Stanley  
15 Consultants and EKPC. The Smith 1 investment cost increased 15% for Case 2 (2016)  
16 and a total of 24% for Case 3 (2018) over this base amount. Cases 1, 2, 3 ("Smith cases")  
17 were shown to be less costly as the in-service time was delayed from 2-years to 4-years.  
18 The extent of cost savings was \$139M or 1.09%. The savings in member rates can be  
19 seen in the early years by the delayed investment, and then followed by slightly higher  
20 rates once the escalated investment cost was realized in rates. The present value effect  
21 valued the early-year savings as greater than the increased cost after in-service.

22 **Q. How did the other cases compare and what were their results?**

23 A. Cases 4 and 6 showed the greatest savings from the base case at \$380M and \$404M

1 respectively, or 3.17% maximum savings. These cases involved a gas combined cycle  
2 and additionally a 5 yr purchase agreement for Case 6, instead of the Smith 1 investment.

3 One key factor to these cases is the assumption that \$906/kW (in 2010 dollars) is the  
4 combined cycle investment cost, which is one-third of Smith 1. The resulting cost to  
5 members starts lower and stays lower than the Smith cases for all 20 years.

6 Case 5 involved a portfolio of renewable energy, energy efficiency, and demand-side  
7 management (DSM) resources. The amount of DSM was increased in this case from 223  
8 MW (base case) to 400 MW, along with known wind and biomass projects to fill the  
9 resources. These projects came in the form of purchases including any firm-up charges.  
10 Renewable energy credits were applied and transmission charges were included on all of  
11 these purchases, as with all purchases in all cases. Case 5 saved \$78M over the base case  
12 or 0.61%.

13 Case 7 involved a long-term purchase and sale of Smith 1. The sale is a possible  
14 alternative to the need for a regulatory asset. This case showed a savings of \$168M or  
15 1.32%.

16 **Q. Is there anything else about Case 5 that is unique?**

17 A. Yes, Case 5 required an adjustment to billing units due to its increased DSM and energy  
18 efficiency. This increased DSM caused a shift in load and therefore recalculation and  
19 development of new billing units had to occur. This is the only case requiring such  
20 treatment.

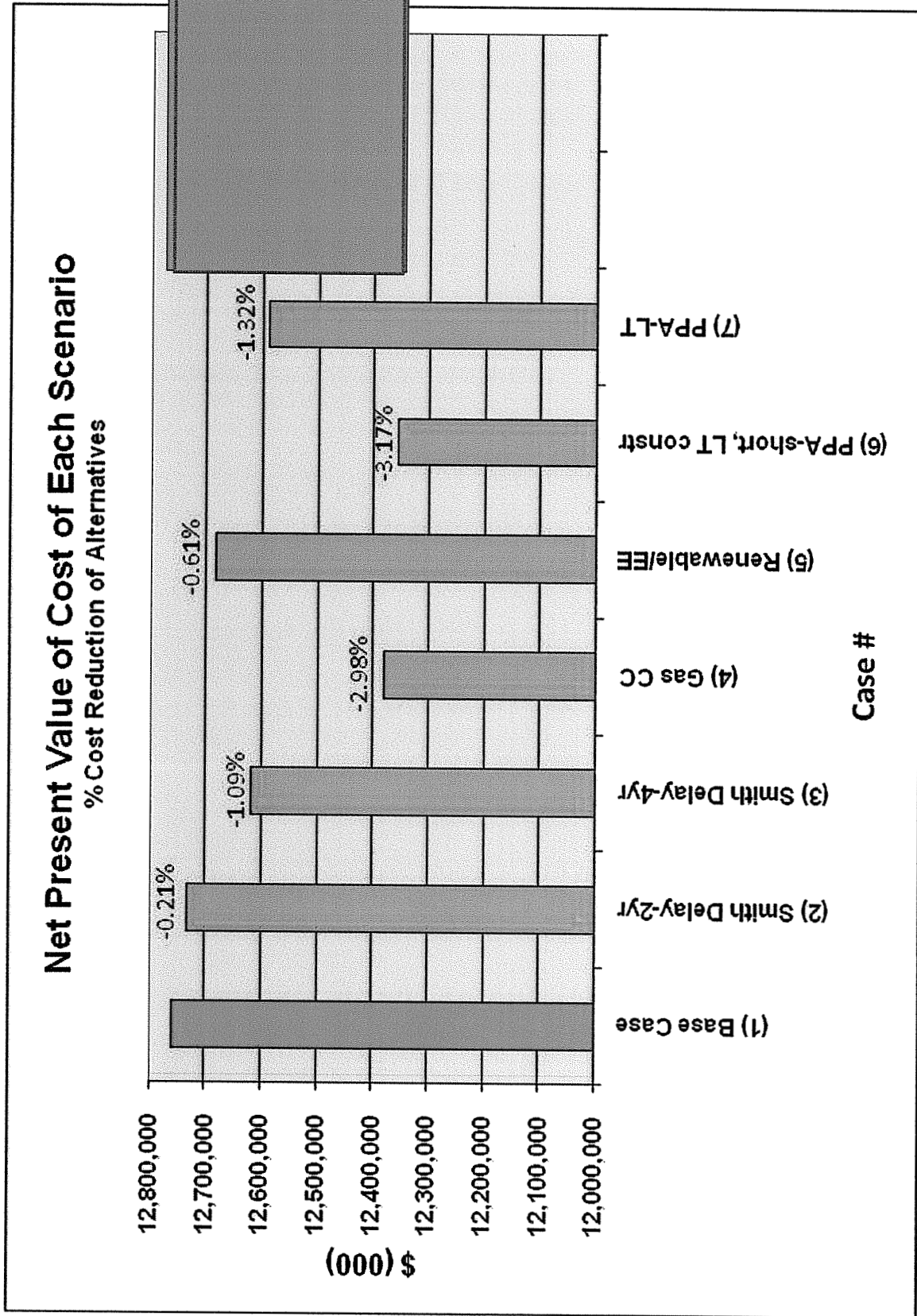
21 **Q. From your analysis, were you able to obtain an overall conclusion?**

22 A. Yes. Exhibit GGS-1 summarizes the net present value of each case. Based on these  
23 results, Smith 1 is no longer the least cost option.

1 Q. **Does this conclude your testimony?**

2 A. Yes it does.





REDACTED

**COMPARISON PV TOTAL REVENUE REQUIREMENTS FROM MEMBERS**  
**PSC - SMITH 1 INVESTIGATION - CASE NO. 2010-00238**  
**BASED ON 1.50 TIER**  
**(\$ 000)**

Discount Rate	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Case 1 - Base - Smith 2014											
Case 2 - Smith 2016											
Case 3 - Smith 2018 (Optimal)											
Case 4 - Cancel Smith - Gas CC (2)											
Case 5 - Green sources											
Case 6 - PPA-Short, LT Constr											
Case 7 - PPA - LT											

	RESIDUAL/ NBV NEW PLANT 12/31/2029	PV 2010 \$ RESIDUAL VALUE NEW PLANT
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		

Net Present Value (2010 - 2029)	Variance to Base
Case 1 - Base - Smith 2014	
Case 2 - Smith 2016	
Case 3 - Smith 2018 (Optimal)	
Case 4 - Cancel Smith - Gas CC (2)	
Case 5 - Green sources	
Case 6 - PPA-Short, LT Constr	
Case 7 - PPA - LT	

\* NPV Equals Summation of Years 2010 - 2029, Plus Residual Value of New Plant



EAST KENTUCKY POWER COOPERATIVE  
PSC - SMITH INVESTIGATION STUDY - CASE NO. 2010-00238  
CASE 1 - BASE - SMITH 2014 - TIER 1.50

STATEMENT OF OPERATIONS

ADJUSTED TEST YEAR

	ACTUAL 2008	ACTUAL 2009	BUDGET 2010	2011	2012	2013	2014	2015	2016	2017	2018
OPERATING REVENUE											
MEMBER COOPERATIVES											
BASE RATES											
FUEL ADJUSTMENT											
ENVIRONMENTAL SURCHARGE											
BASE RATE CHANGE											
TOTAL FROM MEMBERS											
OFF SYSTEM SALES											
TOTAL OPERATING REVENUE											
EXPENSES											
PRODUCTION											
FUEL											
O AND M											
OTHER POWER SUPPLY											
TRANSMISSION O AND M											
ADMINISTRATIVE & GENERAL											
DEPRECIATION											
TAXES											
INTEREST ON LONG TERM DEBT											
INTEREST CHARGED TO CONSTR											
OTHER DEBT COST											
TOTAL EXPENSES											
OPERATING MARGINS											
OTHER REVENUE											
NET MARGIN											

1.25      1.27      1.22      1.41      1.50      1.50      1.50      1.50      1.50      1.50      1.50      1.50

TIMES INTEREST EARNED RATIO



EAST KENTUCKY POWER COOPERATIVE  
PSC - SMITH INVESTIGATION STUDY - CASE NO. 2010-00238  
CASE 2 - SMITH 2016 - TWO-YEAR DELAY - TIER 1.50

STATEMENT OF OPERATIONS

ADJUSTED  
TEST  
YEAR

	ACTUAL 2008	ACTUAL 2009	BUDGET 2010	2011	2012	2013	2014	2015	2016	2017	2018
<u>OPERATING REVENUE</u>											
MEMBER COOPERATIVES											
BASE RATES											
FUEL ADJUSTMENT											
ENVIRONMENTAL SURCHARGE											
BASE RATE CHANGE											
TOTAL FROM MEMBERS											
OFF SYSTEM SALES											
TOTAL OPERATING REVENUE											
<u>EXPENSES</u>											
PRODUCTION											
FUEL											
O AND M											
OTHER POWER SUPPLY											
TRANSMISSION O AND M											
ADMINISTRATIVE & GENERAL											
DEPRECIATION											
TAXES											
INTEREST ON LONG TERM DEBT											
INTEREST CHARGED TO CONSTR											
OTHER DEBT COST											
TOTAL EXPENSES											
OPERATING MARGINS											
OTHER REVENUE											
NET MARGIN											

TIMES INTEREST EARNED RATIO

1.25    1.27    1.22    1.41    1.50    1.50    1.50    1.50    1.50    1.50    1.50





















EAST KENTUCKY POWER COOPERATIVE  
PSC - SMITH INVESTIGATION STUDY - CASE NO. 2010-00238  
CASE 7 - CANCEL SMITH - EQUIPMENT SOLD - LONG-TERM PPA - TIER 1.50

STATEMENT OF OPERATIONS

ADJUSTED  
TEST  
YEAR

	ACTUAL 2008	ACTUAL 2009	BUDGET 2010	2011	2012	2013	2014	2015	2016	2017	2018
<u>OPERATING REVENUE</u>											
MEMBER COOPERATIVES											
BASE RATES											
FUEL ADJUSTMENT											
ENVIRONMENTAL SURCHARGE											
BASE RATE CHANGE											
TOTAL FROM MEMBERS											
OFF SYSTEM SALES											
TOTAL OPERATING REVENUE											
<u>EXPENSES</u>											
<u>PRODUCTION</u>											
FUEL											
O AND M											
OTHER POWER SUPPLY											
TRANSMISSION O AND M											
ADMINISTRATIVE & GENERAL											
DEPRECIATION											
TAXES											
INTEREST ON LONG TERM DEBT											
INTEREST CHARGED TO CONSTR											
OTHER DEBT COST											
TOTAL EXPENSES											
OPERATING MARGINS											
OTHER REVENUE											
NET MARGIN											

TIMES INTEREST EARNED RATIO

1.25    1.27    1.22    1.41    1.50    1.50    1.50    1.50    1.50    1.50    1.50    1.50



PSC - SMITH 1 INVESTIGATION - CASE NO. 2010-00238  
ANNUAL REVENUE REQUIREMENTS AND PERCENTAGE OF EXISTING REVENUE REQUIREMENTS - CASE 1 - BASE - SMITH 2014  
(\$ 000) & PERCENT

2010      2011      2012      2013      2014      2015      2016      2017      2018      2019

Total From Members (\$000)

Percent of Existing (2010)

Total From Members (\$000)

Percent of Existing (2010)

[REDACTED]

[REDACTED]


[REDACTED]

[REDACTED]

2020      2021      2022      2023      2024      2025      2026      2027      2028      2029

### Member Cost Summary

(\$MWH)

	Year	<u>Case 1 Smith Base</u>	<u>Case 2 Smith Delay (2)</u>	<u>Case 3 Smith Delay (4)</u>	<u>Case 4 Gas CC</u>	<u>Case 5 Renew- able/EE</u>	<u>Case 6 PPA - short w/LT const</u>	<u>Case 7 PPA - LT</u>
Actual	2008							
Actual	2009							
Budget	2010							
Budget	2011							
	2012							
	2013							
	2014							
	2015							
	2016							
	2017							
	2018							
	2019							
	2020							
	2021							
	2022							
	2023							
	2024							
	2025							
	2026							
	2027							
	2028							
	2029							



PSC - SMITH 1 INVESTIGATION, JUDY - CASE NO. 2010-00238

CASE 1 - BASE - SMITH 2014 - TIER 1.50  
RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>TGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
 Note: All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy



PSC - SMITH 1 INVESTIGATION, JUDY - CASE NO. 2010-00238

CASE 2 - TWO-YEAR DELAY - SMITH 2016 - TIER 1.50

RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>TGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
 Note: All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy



PSC - SMITH 1 INVESTIGATION, JUDY - CASE NO. 2010-00238

CASE 3 - FOUR-YEAR DELAY - SMITH 2018 (OPTIMAL) - TIER 1.50

RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>TGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
 Note: All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy





PSC - SMITH 1 INVESTIGATION, JUDY - CASE NO. 2010-00238

CASE 4 - CANCEL SMITH - GAS (COMBINED CYCLE) - TIER 1.50

RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>TGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
**Note:** All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy





PSC - SMITH 1 INVESTIGATION, JUDY - CASE NO. 2010-00238

CASE 5 - CANCEL SMITH - GREEN SOURCES - TIER 1.50

RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>TGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
**Note:** All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy



PSC - SMITH 1 INVESTIGATION STUDY - CASE NO. 2010-00238

CASE 6 - CANCEL SMITH - SHORT-TERM PPA/LONG-TERM CONSTR W/CCGT - TIER 1.50

RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>TGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
 Note: All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy



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CASE 7 - CANCEL SMITH/EQUIPMENT SOLD - LONG-TERM PPA - TIER 1.50  
RATE DETAIL

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Schedule E-1</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule E-2</b>										
Total Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>Schedule B &amp; C (2)</b>										
Total Demand Rate (\$/kW) - B & C										
Total Energy Rate - Schedule B (\$.00/kWh)										
Total Energy Rate - Schedule C (\$.00/kWh)										
<b>Excess Schedule B</b>										
Total Demand Rate (\$/kW)										
<b>Inland Electric (2)</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Inland Steam</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>Gallatin</b>										
Total Firm Demand Rate (\$/kW)										
Total Interrupt 1 Demand Rate (\$/kW)										
Total Interrupt 2 Demand Rate (\$/kW)										
Total On-Peak Energy Rate (\$.00/kWh)										
Total Off-Peak Energy Rate (\$.00/kWh)										
<b>AGC</b>										
Total Demand Rate (\$/kW)										
Total Energy Rate (\$.00/kWh)										
<b>IGP (1)</b>										
Total Demand Rate (\$/kW)										
Average Energy Rate (\$.00/kWh)										

(1) 2010 and 2011 On-Peak Energy Rate is Based on Forward Price (Cinergy Hub)  
 2010 and 2011 Off-Peak Energy Rate is Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 2012 through 2029 On-Peak and Off-Peak Energy Rates are Based on EKPC System Avg Incremental Cost Plus O & M Plus 3 Mill Adder  
 (2) Schedules B, C & Inland Electric - Rate Increase Calculated Proportionally on Total Revenue But Applied to Demand Rate Only  
**Note:** All Rate Increases, Except Those Listed in (1) & (2), are Calculated Proportionally on Demand and Energy





**FINANCIAL ASSUMPTIONS for PSC Smith Investigation Study - Redacted**  
**Budget Data Used for 2010 - 2011**

**Fixed O & M Rate**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Dale																			
Cooper 1																			
Cooper 2 FGD																			
Spur 1 FGD																			
Spur 2 FGD																			
Spur CFB																			
Smith CFB																			
Combined Cycle																			
CT's ABB																			
CT's EA																			
CT's LMS 100																			
Landfill Gas																			

**Variable O & M Rate**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Dale																			
Cooper 1																			
Cooper 2 FGD																			
Spur 1 FGD																			
Spur 2 FGD																			
Spur CFB																			
Smith CFB																			
Combined Cycle																			
Landfill Gas																			

**Transmission O & M Rate (A)**  
**Distribution O & M Rate (A)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	

**Interest Rates**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Short-term Debt																		
Long-term Debt																		
Short-term Investment Rate																		
Smith Financing																		

**Escalation Rates**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
O & M Production																		
Capital Costs																		
General Escalation Rate																		
Benefits Escalator																		

**Capital Cost for New Units (\$/kW)**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Combined Cycle																		
Combustion Turbines - GE 7 EA's																		
Circulating Fluidized Bed																		

**FAC Base Rate = 36.53 Mills/kWh**

(A) Does not include benefits, property taxes and property insurance