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DEC 07 2007

PUBLIC SERVICE
COMMISSION

Elizabeth O'Donnell
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40602-0615

E.ON U.S. LLC
State Regulation and Rates
220 West Main Street
PO Box 32010
Louisville, Kentucky 40232
www.eon-us.com

Rick E. Lovekamp
Manager - Regulatory Affairs
T 502-627-3780
F 502-627-3213
rick.lovekamp@eon-us.com

December 7, 2007

**RE: AN INVESTIGATION OF THE ENERGY AND REGULATORY
ISSUES IN SECTION 50 OF KENTUCKY'S 2007 ENERGY ACT**
Adm Case 2007-00477

Dear Ms. O'Donnell:

Enclosed please find an original and six (6) copies of Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E") Response to the Information Requested in Appendix B of Commission Staff's Order dated November 20, 2007, in the above-referenced docket.

Should you have any questions concerning the enclosed, please do not hesitate to contact me.

Sincerely,

Rick E. Lovekamp

cc: Parties of Record

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

DEC 07 2007

PUBLIC SERVICE
COMMISSION

In the Matter of:

AN INVESTIGATION OF THE)
ENERGY AND REGULATORY)
ISSUES IN SECTION 50 OF) CASE NO. 2007-00477
KENTUCKY'S 2007 ENERGY ACT)

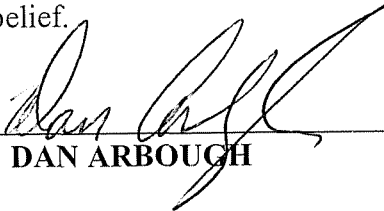
Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007

FILED: DECEMBER 7, 2007

VERIFICATION

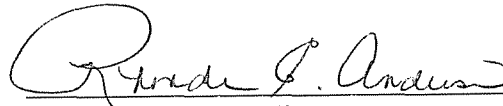
STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Dan Arbough**, being duly sworn, deposes and says that he is Treasurer for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



DAN ARBOUGH

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of December, 2007.


_____(SEAL)
Notary Public

My Commission Expires:

August 31, 2011

VERIFICATION

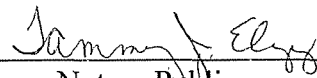
STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **David Sinclair**, being duly sworn, deposes and says that he is Director, Energy Planning, Analysis, and Forecasting for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



DAVID SINCLAIR

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of December, 2007.



Notary Public (SEAL)

My Commission Expires:

November 9, 2010

VERIFICATION

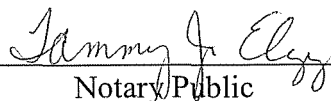
STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **John Wolfram**, being duly sworn, deposes and says that he is Director, Customer Service & Marketing for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



JOHN WOLFRAM

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of December, 2007.

 (SEAL)

Notary Public

My Commission Expires:

November 9, 2010

VERIFICATION

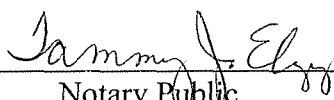
STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Vice President, State Regulation and Rates for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.



LONNIE E. BELLAR

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of December, 2007.



Notary Public (SEAL)

My Commission Expires:

November 9, 2010

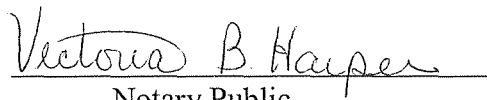
VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Doug Schetzel**, being duly sworn, deposes and says that he is Director, Business Development for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the foregoing testimony, and the answers contained therein are true and correct to the best of his information, knowledge and belief.


DOUG SCHETZEL

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6th day of December, 2007.

 (SEAL)
Notary Public

My Commission Expires:

Sept. 20, 2010

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 1

Responding Witness: Kent W. Blake/Counsel

Q-1. Provide a copy of the most recent strategic plans and financial forecasts approved by the Board of Directors.

A-1. On November 29, 2007, Kentucky Utilities Company ("KU") and Louisville Gas and Electric Company ("LG&E") (collectively, the "Companies") filed a response to the Commission's Orders of November 20th and 27th, 2007, stating that they objected to this request on the grounds of relevancy, scope and privilege. The Companies acknowledged the Commission's determination that time is of the essence for its Consultant to prepare the report and requested the opportunity to seek clarification from the Commission's Consultant on the information the Consultant reasonably needs to conduct the investigation and prepare its report on a timely basis. Since that time, the Consultant has clarified this request and the information it believes is needed to prepare the report. Without wavier of their objections or other legal defenses they may have, the Companies are providing the information in this response and will endeavor to supplement this response going forward with information that is responsive to the request, as clarified by the Consultant.

The Companies no longer have any secured debt and are no longer subject to periodic reporting under the Securities Exchange Act of 1934, but attached in Volume II are the unaudited Financial Statements and Notes to Financial Statements as of September 30, 2007 for both KU and LG&E. These documents provide the Companies' current financial position along with information on Rates and Regulatory Matters, Environmental Matters, and other Company matters.

The Companies obtain financing through numerous sources of capital and do not assign specific financing to any particular project or use, and do not project finance capital projects. The overall rate of return established based on Capitalization for the month ending September 2007 is as follows:

- KU 11.42%
- LG&E 10.90%

Each year the Companies file their current 3-year capital budgets, including an explanation for any reduction in capital budget items greater than 10 percent. This filing is in accordance with filing requirements prescribed in the order approving the PowerGen merger in Case No. 2000-00095. The latest filing that includes budget years 2007-2009 is included in Volume II. The Companies currently have a proposed capital budget plan for years 2008-2010. Once the Board approves this capital budget plan, the Companies will file an updated copy of the merger commitment in response to this question.

The Companies' resource planning process encompasses: 1) establishment of a reserve margin criterion, 2) assessment of the adequacy of existing generating units and purchase power agreements, 3) assessment of potential purchased power market agreements, 4) assessment of demand-side options, 5) assessment of supply-side options, and 6) development of an economic plan from the available resource options. While the Integrated Resource Plan ("IRP") represents the Companies analysis of the best options to meet customer needs at a given point in time, the Companies review the planning alternatives and decisions annually as part of the ongoing resource planning process. Further details of the resource planning process can be found in the latest IRP filing, Case No. 2005-00162. This case can be found at the following website:

<http://psc.ky.gov/pscscf/2005%20cases/2005-00162/>

KU and LG&E subscribes to and designs its transmission system to conform to the fundamental characteristics of a reliable interconnected bulk electric system recommended by the North American Reliability Corporation (NERC). A copy of the E.ON U.S. Transmission System Planning Guidelines is included in Volume II.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 2

Responding Witness: Dan Arbough

- Q-2. Provide a copy of the most recent utility level and parent company rating agency reports from Moody's, Fitch's, and Standard & Poor's.
- A-2. Included in Volume II are the latest Moody's and Standard & Poor's reports for E.ON U.S. LLC, KU and LG&E.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 3

Responding Witness: David Sinclair

- Q-3. Provide copies of any internal reports or utility-commissioned studies on renewable capabilities in Kentucky, including capacity for development of integrated gasification combined cycle facilities.
- A-3. The Companies 2005 Joint Integrated Resource Plan (IRP) contained the following section that provides a review of renewable capabilities in Kentucky and capacity for development of integrated gasification combined cycle facilities.
- Volume III – Analysis of Supply-Side Technology Alternatives (A hard copy is included in the response (Volume II) to the Commission and Consultant. The parties of record can access this document on the enclosed CD.)

The Companies are in the process of developing the 2008 IRP with plans of filing this report in April 2008. A copy will be provided to the consultant at that time.

In October 2006, E.ON U.S., parent of KU and LG&E, announced that it had committed \$25 million to join the FutureGen Alliance, the non-profit consortium of global electric utilities and coal companies working with the U.S. Department of Energy to site and develop FutureGen, the world's first coal-fired, near "zero emissions" power plant. Included in Volume II is a presentation that was provided to members of the Commission staff on August 24, 2007.

In addition, E.ON U.S. made a three-year, \$1.5 million commitment to the University of Kentucky's Center for Applied Energy Research for research into the reduction of greenhouse gases. Specifically, researchers will examine technologies to separate, capture and store carbon dioxide emitted by coal-fired power plants.

In July 2007, LG&E and KU announced a Request for Proposal (RFP) for a long-term supply of capacity and energy powered by renewable fuel resources. A copy of the RFP is included in Volume II. An analysis of the responses received is ongoing.

Currently the Companies are analyzing internal developed options for renewables and IGCC facilities. The analysis should be complete in February 2008 and the Companies at that time will provide copies to the Commission, Consultant, and parties of record.

The Companies have put forth a reasonable effort to locate any internal reports or utility-commissioned studies on these topics. If other documents are located during this proceeding the Companies will provide copies to the Commission, Consultant, and parties of record.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 4

Responding Witness: John Wolfram

- Q-4. Provide a review of existing demand-side management programs, with description which includes, at a minimum, the rate classification of customers eligible for each program, the date each program commenced, the current number of customers on each program, the technology being deployed, whether any third-party vendors are involved, the measurement and verification protocols being utilized, and the estimated annual energy savings.
- A-4. Attached is a review of the existing DSM programs as approved in Case No. 2000-00459.

1) Residential Conservation

This is an energy audit/consumer education program for residential customers for only \$15. This program has operated in the LG&E service territory since the late 1970's. It became a DSM program in 1998. The program was initiated in the KU territory in 2001.

- Audits are conducted by a 3rd party vendor
- Energy savings are verified by an independent evaluation contractor utilizing sampling surveys to determine energy saving measures installed by customers

Evaluated Program Goals and Results through January 2001 through December 2005

	Goal	Achieved	Achieved vs. Goal
Participation	6,000	7,334	122%
Electric Energy Savings (MWh)	4,980	2,698	54%
Gas Energy Savings (CCF)	192,120	449,665	234%

2) Commercial Conservation

This is an energy audit/consumer education program for commercial customers. This program has operated in the LG&E service territory since 1994. The program was initiated in the KU territory in 2001.

- Audits are conducted by a 3rd party vendor
- Energy savings are verified by an independent evaluation contractor utilizing sampling surveys to determine energy saving measures installed by customers

Summary of Evaluated Program Savings (through 7/31/2006)

	Recommended Measures	Actual Measures Implemented	Goal
Demand Savings (KW)	27,536	3,375	3,493
Energy Savings (MWh)	103,241	14,052	14,015
Gas Savings (ccf)	4,213,327	501,279	22,950

- 4,300 Audits were conducted through the evaluation period

3) WeCare

This is a weatherization program/consumer education program for low-income residential customers which was initiated at both LG&E and KU in 2001. LG&E operated a similar program 1994-1998.

- Weatherization work is performed by a 3rd party vendor
- Energy savings are verified by an independent evaluation contractor utilizing a sample based billing analysis to verify savings of measures actually installed by the implementation contractor

Evaluated Electric Percentage Savings Compared to Goal – LG&E

Tier	No. of Customers	Average Bill (kWh)	Average Savings (kWh)	Percent Savings (%)	Savings Goals (%)	Percent Goal Achieved (%)
A	607	7,841.7	1,061.5	13.5%	2%	677%
B	941	13,448.6	1,078.0	8.0%	5%	160%
C	1,549	20,468.0	2,331.0	11.4%	13%	88%
Total	3,097	15,861	1,702	10.7%	10%	107%

Evaluated Electric Percentage Savings Compared to Goal – KU

Tier	No. of Customers	Average Bill (kWh)	Average Savings (kWh)	Percent Savings (%)	Savings Goals (%)	Percent Goal Achieved (%)
A	209	7,695	779	10.1%	2%	506%
B	243	13,882	1,942	14.0%	5%	280%
C	286	23,090	3,277	14.2%	13%	109%
Total	738	15,698	2,130	13.6%	10%	136%

Evaluated Gas Percentage Savings Compared to Goal – LG&E

Tier	No. of Customers	Average Bill (CCF)	Average Savings (CCF)	Percent Savings (%)	Savings Goals (%)	Percent Goal Achieved (%)
A	1,900	808.8	273.8	33.9%	3%	1129%
B	540	1,511.0	369.9	24.5%	13%	188%
C	285	2,204.4	515.1	23.4%	29%	81%
No Gas	372					
Total	3,097	926.5	279.9	30.2%	22%	137%

Evaluated Gas Percentage Savings (No Goal) – KU

Tier	No. of Customers	Average Bill (CCF)	Average Savings (CCF)	Percent Savings (%)
A	214	672.4	132.7	19.7%
B	22	1,472.0	263.1	17.9%
C	7	2,085.9	367.7	17.6%
No Gas	495			
Total	738	258.6	49.8	19.3%

4) Demand Conservation

This is a load management program that cycles residential and commercial air conditioners, electric water heaters and pool pumps. This program was initiated at both LG&E and KU in 2001.

- Devices are cycled through a radio activated relay switch that turns the appliance off and on or in some cases by a radio controlled programmable thermostat
- Equipment is installed and operated through a 3rd party vendor
- Energy savings are verified by an independent evaluation contractor utilizing load recorders on a statistical sample of participating households

As of June 1, 2007 over 98,000 devices have been installed on air conditioners, electric water heaters, and pool pumps. Because these devices often control multiple appliances, there are over 114,000 air conditioners, water heaters and pool pumps under control. The current electric system summer peak demand reduction is in excess of 107 MW.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 5

Responding Witness: John Wolfram

- Q-5. Provide copies of any internal reports or utility-commissioned studies on the extent of untapped opportunities for additional demand-side management programs in Kentucky.
- A-5. In early 2007, the Companies engaged a global consulting firm, ICF International, to assist with a broad review of existing and proposed energy efficiency programs as well as industry best practice and strategic planning for energy efficiency at E.ON U.S. They prepared a report entitled *Evaluation of Energy Efficiency at E.ON U.S.* This report was filed in Case No. 2007-00319, Volume II, Appendix A. (A hard copy is included (Volume II) in the response to the Commission and Consultant. The parties of record can access this document on the enclosed CD.)

The Companies' Application in the aforementioned proceeding also serves to document the opportunities that the Companies believe exist for additional programs in Kentucky. In that Application, KU and LG&E seek approval to continue the existing programs described herein in response to Question No. 4 and to establish new programs for the 2008 - 2014 period. Please see details in the response to Question No. 11.

Finally, as noted in the responses to Question Nos. 1 and 3, the Companies evaluate demand-side options in the IRP and are in the process of developing the 2008 IRP with plans of filing this report in April 2008. The IRP includes an analysis of the expected viability of numerous energy efficiency / DSM programs for KU and LG&E and typically includes recommendations for addressing additional opportunities.

The Companies have put forth a reasonable effort to locate any internal reports or utility-commissioned studies on untapped opportunities for additional DSM programs in Kentucky. If other documents are located during this proceeding the Companies will provide copies to the Commission, Consultant, and parties or record.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 6

Responding Witness: John Wolfram/David Sinclair/Lonnie E. Bellar

- Q-6. Provide copies of any research materials, industry publications, investment banking or rating agency reports, in your possession, that relate to the following issues under review in this investigation:
- a. Considerations for utility adoption of cost-effective demand-management strategies.
 - b. Diversification of utility energy portfolios through the use of renewables and distributed generation.
 - c. Variables and methodologies to consider full-cost accounting of strategies for consideration of alternatives in meeting future energy demand.
 - d. Rate structure and cost recovery options to mitigate adverse financial impacts of alternative energy option.
 - e. The need for and type of financial incentives for a utility to provide energy efficiency and lowest alternative generation/DSM options to customers.
- A-6. a. Below is a listing of the research materials, industry publications, investment banking or rating agency reports in the Companies possession regarding cost-effective demand-side management strategies. (A hard copy is included (Volume III) in the response to the Commission and Consultant. The parties of record can access these documents on the enclosed CD.)
- "Highlights of EEI Member and Non-Member Residential/Commercial/Industrial Efficiency and Demand Response Programs for 2007/2008," Edison Electric Institute, October 10, 2007
 - Proposed Energy Efficiency Program Filing for the Companies – Case No. 2007-00319 (A copy of the application will be provided to the consultant.)

- b. Below is a listing of the research materials, industry publications, investment banking or rating agency reports in the Companies possession regarding diversification of utility energy portfolios through the use of renewables and distributed generation. (A hard copy is included (Volume III) in the response to the Commission and Consultant. The parties of record can access these documents on the enclosed CD.)
- Ryan Wiser and Mark Bolinger, “Annual Report on U.S. Wind Power Installation, Cost and Performance Trends: 2006”; U.S. Department of Energy Efficiency and Renewable Energy, May 2007
- c. The Companies do not have any documents that consider the full-cost accounting (as defined in HB1) for consideration of alternatives in meeting future energy demand.
- d. Below is a listing of the research materials, industry publications, investment banking or rating agency reports in the Companies possession regarding rate structure and cost recovery options to mitigate adverse financial impacts of alternative energy options. (A hard copy is included (Volume III) in the response to the Commission and Consultant. The parties of record can access these documents on the enclosed CD.)
- The National Association of Regulatory Utility Commissioners, “Decoupling for Electric & Gas Utilities: Frequently Asked Questions (FAQ),” September 2007
 - Gregroy Basheda, Marc W. Chupka, Peter Fox-Penner, Johannes P. Pfeifenberger, and Adam Schumacher, “Why Are Electricity Prices Increasing? An Industry-Wide Perspective,” The Edison Foundation, June 2006
 - Wayne Shirley, “Decoupling Utility Profits From Sales,” September 18, 2006
 - Joseph Eto, Steven Stoft, and Timothy Belden, “The Theory and Practice of Decoupling,” U.S. Department of Energy, January 1994
- e. Below is a listing of the research materials, industry publications, investment banking or rating agency reports in the Companies possession regarding the need for and type of financial incentives for a utility to provide energy efficiency and lowest alternative generation/DSM options to customers. (A hard copy is included (Volume III) in the response to the Commission and Consultant. The parties of record can access these documents on the enclosed CD.)
- National Action Plan for Energy Efficiency, “Vision for 2025: Developing a Framework for Change,” November 2007
 - National Action Plan for Energy Efficiency, “Aligning Utility Incentives with Investment in Energy Efficiency,” November 2007

- Sri Iyer, Sieglinde Kinne, and Don Douglass. “An Overview of Kentucky’s Energy Consumption and Energy Efficiency Potential,” Governor’s Office of Energy Policy, August 2007
- National Action Plan for Energy Efficiency, July 2006
- Cheryl Harrington and Jim Lazar, “Regulatory Barriers to Energy Efficiency Eliminating Disincentives, Creating the Right Incentives,” Energy Foundation, U.S. Department of Energy, and U.S. Environmental Protection Agency, May 24, 2006
- Bill Prindle, “Writing A New Story for Kentucky’s 21st Century Economy,” November 2007

In addition to these publications, Kentucky’s DSM statute (KRS 278.285) states the following:

(c) A utility's proposal to recover in rates the full costs of demand-side management programs, any net revenues lost due to reduced sales resulting from demand-side management programs, and incentives designed to provide positive financial rewards to a utility to encourage implementation of cost-effective demand-side management programs;

The Companies have put forth a reasonable effort to locate any research materials, industry publications, investment banking or rating agency reports, in the Companies possession on the related topics. If other documents are located during this proceeding the Companies will provide copies to the Commission, Consultant, and parties or record.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 7

Responding Witness: David Sinclair

Q-7. Identify the person having primary responsibility for the utility resource plan.

A-7. The person having primary responsibility for the KU and LG&E utility resource plan is David Sinclair, Director, Energy Planning, Analysis, and Forecasting.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 8

Responding Witness: Kent W. Blake

- Q-8. Identify the person or persons having primary responsibility for the utility financial forecasts and strategic plan or strategic planning documents.
- A-8. The person having primary responsibility for the KU and LG&E financial forecasts and strategic plan is Kent W. Blake, VP Corporate Planning and Development.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 9

Responding Witness: Doug Schetzel

- Q-9. Identify the person or persons within the utility having primary responsibilities for siting new generation.
- A-9. The person having primary responsibility for siting new KU and LG&E generation is Doug Schetzel, Director Business Development.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 10

Responding Witness: John Wolfram

- Q-10. Identify the person or persons within the utility having the primary responsibility for conservation, energy efficiency, and demand-side management programs.
- A-10. The person having primary responsibility for conservation, energy efficiency, and demand-side management programs for KU and LG&E is John Wolfram, Director Customer Service and Marketing.

**KENTUCKY UTILITIES COMPANY
LOUISVILLE GAS AND ELECTRIC COMPANY**

ADMINISTRATIVE CASE NO. 2007-00477

**Response to Information Requested
In Appendix B of Commission's Order
Dated November 20, 2007**

Question No. 11

Responding Witness: John Wolfram/David Sinclair

Q-11. Identify and discuss all portions of the utility's current integrated resource plan which discuss future plans for implementation of demand-side management, renewable energy resources, and energy efficiency.

A-11. The Companies latest IRP was filed with the Commission on April 21, 2005 (Case No. 2005-00162). As a part of the IRP, the Companies reviewed Supply-Side Technology Alternatives that included renewable energy resources. Attached are summaries from the IRP regarding the different renewable energy resources that were reviewed.

On July 19, 2007, the Companies filed an application with the Commission requesting an Order approving their proposed Energy Efficiency Program Plan and the proposed Demand-Side Management (DSM) cost recovery tariffs. An order has not been issued as of this response. Also attached is a summary of the proposed programs filed in Case No. 2007-00319.

2005 IRP Supply-Side Technology Alternatives

1. Wind Energy

Wind is converted to power via a rotating turbine and generator. Utility-scale wind systems consist of multiple wind turbines ranging in size from 100 kW to 2 MW. A complete wind energy system contains several wind turbines and has a total rating between 5 MW and 300 MW. Capacity factors range from 25 to 40 percent and depend upon the wind regime in the area. Therefore, wind energy is considered an intermediate load technology that cannot be relied upon as firm capacity. Wind power is rated on a scale of Class 1 to Class 7, with Class 7 representing an area with substantial wind speeds (20 to 27 mph). A Class 3 rating or above is needed in order for it to be considered economically feasible. The Companies' service area experiences wind ratings of Class 1 and 2, which restricts the economic feasibility of this technology.

2. Solar

Solar energy conversion technologies capture the sun's energy and convert it to thermal energy (solar thermal) or electrical energy (solar photovoltaic), which drives the device (turbine, generator, or heat engine) for electrical generation. Sunlight is concentrated with mirrors or lenses to achieve the high temperatures needed for solar thermal power systems. Solar thermal technologies currently in use include the following: parabolic trough, parabolic dish, solar chimney, and central receiver. Parabolic trough represents the vast majority of systems installed although most of these installations are less than 50 kW. Current grid-connected solar photovoltaic systems are generally below 200 kW with capacity factors of around 20 percent.

Solar photovoltaic power generation differs from solar thermal technology because it converts solar energy directly to DC electricity by the use of photovoltaic cells. These cells allow photons and electrons to interact with a semi-conductor material (usually silicon). Inverters are then required to convert the DC power to AC. In order of increasing efficiencies, the main solar photovoltaic cells consist of thin film, polycrystalline silicon, single-crystal silicon, and gallium arsenide. Several support structures (which improve cells' efficiency) are also available such as fixed-tilt, one-axis tracking, and two-axis tracking. The advantages of solar photovoltaic technologies are that they require no fuel, produce no emissions, are highly reliable, and have low O&M cost. The main disadvantages of solar photovoltaic technologies are high capital cost, low production capacity, and large amounts of required land.

To achieve desirable economic returns, high capacity factors must be attainable. According to research reported by Black & Veatch, the Companies are located in an area where solar thermal systems would not be considered viable so the likelihood of achieving high capacity factors is not great.

3. Biomass

Electrical generation via biomass is the second most prolific source of renewable energy generation, next to hydro. Currently, wood and its by-products are the primary biomass resource used for energy production, but agricultural residues and yard wastes are also utilized. Biomass power plant sizes are typically less than 50 MW, due to the dispersed nature of the feedstock and the large quantities of fuel required. These facilities have capacity factors between 70 and 90 percent. Efficiencies of biomass plants are lower when compared to modern coal units due to lower heating values and higher moisture contents in the fuel. Resources economically located within a deliverable area limit the plant size. The most efficient and economically attractive options for electrical generation from biomass resources include co-fired projects which would only offset fossil fuel consumption. Additionally, there are several concerns about the negative impact of co-firing on plant operations, including impacts on capacity, boiler performance, and premature poisoning of air pollution control equipment.

4. Geothermal

Geothermal power plants use heat from the earth to generate steam and drive turbine generators for the production of electricity. The production of geothermal energy in the US currently ranks third in renewable energy sources, following hydroelectric and biomass. There are three types of geothermal power conversion systems in common use, including dry steam, flash steam, and binary cycle steam. Capital costs of geothermal facilities can vary widely as the drilling of individual wells can cost as much as four million dollars, and the number of wells drilled depends on the success of finding the resource. Variable O&M costs include the replacement of production wells.

Geothermal power is limited to locations where geothermal pressure reserves are found. Most geothermal reserves can be found in the western portion of the United States, but virtually no geothermal resources exist in this area. However, the Companies' service territory has a sufficient amount of low-temperature resources to be suitable for heat pump.

5. Hydroelectric

Hydroelectric generation is considered a mature technology with several factors, such as unit sizing and capital costs that can vary significantly. New large hydroelectric plant installation can be complicated by environmental concerns and long construction periods. However, a smaller hydro project could be developed in the range of 100 kW to 30 MW.

6. Waste to Energy

Waste-to-energy (WTE) technologies can utilize a variety of refuse types to produce electricity. The technologies considered in this evaluation consist of municipal solid waste (MSW), refuse-derived fuel (RDF), landfill gas (LFG), and tire-derived fuel (TDF). The economics associated with WTE facilities are

difficult to determine, as costs are dependent upon transportation, processing, and tipping fees for the particular site. Values contained within this analysis are representative of technologies at generic sites.

Converting MSW to energy was developed as a means of reducing the quantity of municipal and agricultural solid wastes with the avoidance of disposal costs being the primary component of determining economic feasibility. Unprocessed refuse is fed to the reciprocating grate in the boiler where it is combusted in a waterwall furnace (mass burning) only after limited processing of the refuse to remove non-combustible and large items. Other types of mass burning utilize refractory furnaces or rotary kiln furnaces. Smaller units utilize two-stage burning for higher efficiency via controlled-air furnaces. Large MSW facilities process 500 to 3,000 tons of waste per day, which is produced by 200,000 to 1,200,000 residents respectively. Plant capacities are generally less than 50 MW with a capacity factor between 60 and 80 percent. Mass burning of MSW was once seen as an environmentally and economically sound alternative for dealing with the shrinking landfill space in the United States. However, environmental concerns over pollutants, high capital costs, and public opposition make it doubtful that new WTE facilities utilizing MSW will be constructed in the near future.

RDF is an evolution of MSW technology in which the waste is sorted and processed into fluff or pellets. It is preferred in many refuse-to-energy applications due to its ability to be combusted with technologies traditionally used for coal. Combustion temperatures for MSW and RDF must be kept lower than 800oF to minimize boiler tube degradation caused by chlorine compounds in the flue gas. Unit size, capacity factors, and environmental concerns for RDF are similar to MSW characteristics.

LFG is a valuable energy source that can be utilized in several applications, including power production, and is considered to be a mature WTE technology. LFG is produced by the decomposition of wastes stored in landfills where it is collected and piped from wells, filtered, and then compressed. Although gas is produced when decomposition begins within a landfill, it may be several years before there is an adequate supply of gas to fuel an electric generator. Later, as the site ages, gas production (as well as the quality of the gas) declines to the point at which power generation is no longer economic. In the case of a typical well-engineered and well-operated landfill, gas may be produced for as many as 50 to 100 years, but electricity production may be economically feasible for only 10 to 15 years. Power can be generated via a combustion turbine, but internal combustion engines are most commonly used and, even then, such facilities are generally sized at less than 10 MWs.

Black & Veatch indicated Kentucky has several new landfills with long life span expectancy, making it possible to locate a landfill with gas collection in place that would need only the prime movers and gas treatment equipment added for power generation.

TDFs are attractive due to the high heating value, low ash and sulfur content, and low fuel cost. Two options exist concerning TDF: cogeneration and dedicated tire combustion. Co-firing of TDFs with coal or other fuels can be accomplished in some boiler types including cyclonic, fluidized bed, and stoker-fired units with minimal amounts of boiler modification.

Dedicated tire combustion systems are commercially available and are operating today. These operations have experienced several problems, largely resulting from the unique nature of tire based fuels and potential design issues. One such incident involved a massive, toxic tire pile fire in California in 1999. As a result of the fire, a dedicated tire burner has been forced out of business and the industry faces detailed scrutiny.

Additional points of concern complicate the potential use of TDF including the need to set up ancillary operations to process the tires and remove the steel belts and wire prior to combustion. Finally, the use of TDF could result in potential environmental complications related to emissions permitting and ash disposal.

Although new technologies are under development, commercial systems are not yet offered. Moreover, given the negative perception of the aforementioned fire and the uncertainties associated with TDF ash and emissions, securing the necessary permitting for either a dedicated tire burning facility or a co-fired system is expected to be very difficult. A final complicating factor is that the Companies have no boilers in their system that would be similar to any of the styles required to use TDFs.

Also enclosed in Volume III, in accordance with Ordering Paragraph (2) of the Commission's Order in Administrative Case 387, dated October 7, 2005, are the 2006 Annual Resource Assessment Filings for KU and LG&E.

LG&E and KU Energy Efficiency 2008-2014 Program Plan

Program Overview

1. Residential Conservation Program (Energy Audit)
2. Residential & Commercial Load Management Programs (Load Control)
3. Commercial Conservation Program (Energy Audit)
4. Residential Low Income Weatherization Program (WeCare)
5. Responsive Metering & Smart Metering Pilot Program
6. Residential High Efficiency Lighting Program
7. Residential New Construction Program (ENERGY STAR)
8. Residential & Commercial HVAC Diagnostics & Tune-Up Programs
9. Education & Public Information Program
10. Dealer Referral Network Program
11. Program Development and Administration

Residential Conservation Program

The Residential Conservation Program is being expanded to offer residential customers two options for a home energy analysis. Customers may complete an online (or telephone assisted) audit at no charge or may choose a more comprehensive onsite audit by a qualified energy audit professional for a nominal charge.

The online audit will be targeted for customers who are interested in energy information regarding their home but may not be interested in investing the time or money to have an onsite audit performed. The information gathered from the customers is compared to the customer's historical energy usage to develop a set of energy saving recommendations. The recommendations will be delivered to the customer in a formal audit report detailing each recommendation and providing potential energy and cost savings. Customers participating in online audits may be provided up to six compact fluorescent bulbs (CFLs).

The onsite audit is a more comprehensive walk-through inspection including appliance data along with measurements and testing of energy related attributes of the home. The information gathered from the audit is compared to the customer's historical energy usage to develop a set of energy saving recommendations. The customer receives personal energy counseling from the auditor along with a comprehensive audit report detailing each recommendation and providing potential energy and cost savings. In addition to CFLs, customers participating in onsite audits may also receive programmable thermostats, air sealing services, energy-saving showerheads, water heater wraps, and faucet aerators. The customer pays \$25.00 which will be used to offset a portion of the cost of performing the service.

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$642,432	\$698,339	\$741,895	\$770,249	\$777,624	\$796,276	\$815,473

Energy Impacts:

	2008	2009	2010	2011	2012	2013	2014
MWH	1,495	3,491	5,738	7,984	10,231	12,478	14,725
MW	0.6	1	2	3	4	5	6
CCF	118,454	214,245	315,587	416,929	518,271	619,613	720,955

Residential and Commercial Load Management

The objective of this program is to reduce peak demand and energy usage through the installation of load control devices on residential and commercial customer equipment, emphasizing central air conditioners and heat pumps, but also including electric water heaters and pool pumps. During 2005, the Company added the option of a programmable thermostat with load control built in. Customers are offered the option of a load control “switch” with a bill credit during the summer months *or* a load control programmable thermostat without the bill credit.

Load reduction is accomplished by cycling equipment on and off according to a predetermined control strategy. For example, if an air conditioner is turned off for 15 minutes during a 30-minute period, it is “cycled” on a 50 percent control strategy. The Company’s strategy has been to control between 30% and 45% depending on temperature and customer equipment, resulting in an average demand reduction of over 1 Kw per switch. Additional energy savings come from the use of the setback features of a programmable thermostat, which also cycles the unit during peak periods exactly as does the switch.

Program Budget Residential:

2008	2009	2010	2011	2012	2013	2014
\$9,991,125	\$10,247,157	\$10,793,803	\$9,782,181	\$10,241,082	\$9,091,041	\$8,661,803

Energy Impacts Residential:

	2008	2009	2010	2011	2012	2013	2014
MWH	4,802	9,605	14,407	18,142	21,877	24,545	26,679
MW	20	39.9	59.9	75.4	90.9	102	110.9
CCF	284,000	576,000	851,000	1,071,000	1,292,000	1,449,000	1,575,000

Program Budget Commercial:

2008	2009	2010	2011	2012	2013	2014
\$436,110	\$398,688	\$450,564	\$438,750	\$431,397	\$447,948	\$432,350

Energy Impacts Commercial:

	2008	2009	2010	2011	2012	2013	2014
MWH	213	427	640	854	1,040	1,201	1,334
MW	1.2	2.3	3.5	4.7	5.7	6.5	7.3
CCF	13,000	25,000	38,000	50,000	61,000	71,000	79,000

Residential Low Income Weatherization Program

This program (known as WeCare) is an education and weatherization program designed to reduce energy consumption of LG&E and KU's low-income and payment-troubled customers. The program is designed to provide energy audits, energy education, perform blower door tests, and install weatherization and energy conservation measures on qualified houses.

The WeCare Program is targeted for customers that meet federal LIHEAP eligibility requirements. The marketing and recruitment process identifies low-income households through LIHEAP programs at Community Action Agencies in our service territory. Potential participants are pro-actively contacted for participation in the program. Alternatively, customers who feel they qualify for the program who have not applied for LIHEAP may request to go through an intake process to be qualified.

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$1,728,665	\$1,738,166	\$1,788,208	\$1,868,463	\$1,892,711	\$1,947,260	\$2,003,401

Energy Impacts:

	2008	2009	2010	2011	2012	2013	2014
MWH	2,297	4,593	6,890	9,187	11,484	13,780	16,077
MW	0.262	0.524	0.787	1	1	2	2
CCF	213,441	426,882	640,323	853,764	1,067,205	1,280,646	1,494,087

Commercial Conservation/Rebate Program

The objectives of the Commercial Conservation/Rebate program is to identify energy efficiency opportunities for the Companies' commercial class customers through no-cost energy audits and to increase implementation rates of effective measures by offering rebate incentives for replacement of specific types of equipment with newer energy efficient technology. These commercial rebates will be administered through the Commercial Conservation Program. An audit will not be required for rebate eligibility however; all rebates will require verification of what is being replaced along with proof of purchase and installation of the new measures.

The energy audit services provided through the Commercial Conservation program is being modified and expanded from three to five levels of audits. Simpler, walk through and light commercial audits are being added for small commercial customers that will benefit from an energy analysis but do not have enough energy usage to make a comprehensive audit cost effective. The primary emphasis of these audits will be prescriptive measures such as lighting, water heating, air conditioning, HVAC tune-up and other measures that are cost effective and can be identified are analyzed relatively easily.

The three existing levels of more comprehensive full service audits will remain in place. The focus of these audits will differ according to the customer's facility and the annual energy consumption of the facility.

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$3,177,328	\$3,149,081	\$3,170,021	\$3,214,230	\$3,213,256	\$3,235,571	\$3,258,365

Energy Impacts:

	2008	2009	2010	2011	2012	2013	2014
MWH	54,988	109,976	164,964	219,952	274,940	329,928	384,916
MW	21	41	62	83	103	124	145
CCF*	(152,882)	(305,763)	(458,645)	(611,527)	(764,409)	(917,290)	(1,070,172)

* Loss of heating effect of lighting in winter will result in increased gas usage

Responsive Pricing Pilot Program

The Responsive Pricing Pilot program was approved by the Commission on July 12, 2007. A brief overview is contained below. For complete information and detail, see Commission Case No. 2007-00117.

The goal of the program is to determine customers' ability and willingness to shift usage from higher production cost hours (peak periods) to lower cost periods. The program will test a combination of a rate structure to encourage this shift in usage with enabling equipment, as well as various combinations of equipment without the rate incentive.

The Responsive Pricing Pilot program (RRP) couples critical peak pricing with DSM technology. More particularly, the RRP pilot will utilize smart metering, information displays (displaying usage and energy cost information), programmable thermostats, load control switches, and a variable rate structure that includes a time of use ("TOU") component and a real-time, critical peak price component. Critical peak hours will be during times of high system demand and pricing, generally the same time periods that load control devices are activated (approximately one percent of all hours will be critical peak hours).

Customers will know in advance the prices that will be in effect during different periods of a given day; customers will receive notice at least a half-hour in advance of a Critical Peak Pricing (CPP). CPP pilot customers will also be provided programmable thermostats equipped with a radio receiver to receive critical peak pricing signals, as well as other pricing tier signals and load control switches for electric water heaters and other larger loads. Automation of the usage of these loads will allow the customer to shift usage without manual intervention on a daily basis. LG&E expects that some customers will choose to find ways to reduce their overall usage of energy, as well as to shift additional energy uses from peak to off-peak periods.

Residential High Efficiency Lighting Program

The objective of this program is to facilitate market transformation by creating a shift in LG&E and KU consumer purchasing from incandescent light bulbs to Compact Fluorescent Light bulbs (CFLs). The Companies intend to utilize this program to increase customer awareness of environmental and financial benefits of CFLs and as a result, change their buying habits. In order to facilitate the introduction of CFLs into customers' homes, the Companies' plan to partner with retail outlets to provide incentives for 5.8 million Energy Star rated CFLs over the next seven years.

The retail partners will award discounts according to terms stated upon coupons provided to residential customers by the companies. Retail partners will capture and report to the companies' specific data including number and type of CFLs sold, invoicing for discounts provided to customers and bar coded customer information pre-printed on coupons. Additionally, retail partners will be expected to include recognition of the program in their local market advertising and to work with the companies to jointly develop and maintain point of sale informational and educational materials.

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$3,434,829	\$3,388,963	\$3,396,569	\$3,416,046	\$3,447,148	\$3,489,677	\$3,543,481

Energy Impacts:

	2008	2009	2010	2011	2012	2013	2014
MWH	60,603	116,782	168,860	217,137	261,889	303,374	341,831
MW	4.1	7.9	11.4	14.7	17.7	20.5	23.1

Residential New Construction Program (Energy Star)

The objective of this program is to reduce residential energy usage and facilitate market transformation by creating a shift in LG&E and KU builders' new home energy efficient construction practices. The Companies intend to utilize this program to educate builders, contractors and customers to increase awareness of environmental and financial benefits of whole-house energy efficient building practices. To facilitate this introduction into customers' homes, the program will partner with Homebuilders Associations within the state of Kentucky to adopt and implement the Department of Energy's ENERGY STAR[®] new homes energy efficiency program.

Despite the potential energy savings and the fact that many energy saving opportunities are lost once a home is complete, builder penetration and customer participation in the Energy Star program is low. According to Energy Star statistics, Kentucky-based Energy Star homes for 2006 totaled less than 80 units among 20 builders (this excludes the Cincinnati and military residential housing market).

Achieving Energy Star standards will require changes in building practices however; it is not an expensive proposition for the builder or ultimate buyer of the home. The University of Kentucky's College of Agriculture and the Kentucky Office of Energy Policy recently completed analysis of a typical 2,000 sq. ft. new home built to state code and compared its cost to the same home built to the Energy Star standard. Their finding was that the additional cost to build an Energy Star certified home to be \$1,763. Their report goes on to illustrate that a homeowner would actually save money by building an Energy Star home because the additional cost, spread over the life of the mortgage, is offset by the energy savings each month.

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$859,994	\$864,292	\$1,064,054	\$1,102,635	\$1,204,469	\$1,281,140	\$1,401,685

Energy Impacts:

	2008	2009	2010	2011	2012	2013	2014
MWH	409	792	1592	1,830	2,105	2,421	2,784
MW	0.262	0.524	0.787	1	1	2	2
CCF	14087	27265	54760	62974	72420	83283	95776

Residential and Commercial HVAC Diagnostic and Tune-Up Program

The objective of this program is to reduce peak demand and energy use by performing a diagnostic check of the performance of residential and small commercial unitary air conditioning and heat pump units, concentrating on the most common causes, dirty, air restricted indoor and outdoor coils, and over and under refrigerant charge. Units that are determined to have these problems will be eligible for corrective action through a HVAC company which is part of the Authorized Dealer Network.

The program will target customers with probable operational issues with their HVAC systems, not the market as a whole. It is anticipated that a large number of participants will be referred from the Company's other energy efficiency programs, most especially the Demand Conservation and Residential Conservation programs.

Residential customers on rate RS and small commercial customers on rate GS with unitary central air conditioning or heat pump systems are eligible. The program is not designed for customers with non-operational units.

Program Budget Residential:

2008	2009	2010	2011	2012	2013	2014
\$204,825	\$339,747	\$392,391	\$487,332	\$482,994	\$492,092	\$537,642

Energy Impacts Residential:

	2008	2009	2010	2011	2012	2013	2014
MWH	286	939	1,755	2,734	3,714	4,693	5,672
MW	0.13	0.4	0.8	1.2	1.7	2.1	2.6

Program Budget Commercial:

2008	2009	2010	2011	2012	2013	2014
\$190,077	\$268,122	\$328,117	\$411,778	\$455,180	\$466,894	\$512,048

Energy Impacts Commercial:

	2008	2009	2010	2011	2012	2013	2014
MWH	528	1,451	2,769	4,352	6,189	8,045	9,891
MW	0.13	0.35	0.67	1.04	1.49	1.93	2.37

Customer Education and Public Information

The objective of this program is to increase public awareness and understanding of both the urgent need for more efficient use of energy and the environmental and financial impacts created by climate change issues. Additionally, this program will also increase customer awareness and encourage utilization of the energy efficiency products and services made available through this filing. One important component of this program is educational programming for elementary and middle school students.

Public awareness and acceptance of the fact that inefficient use of electricity and natural gas are adversely impacting climate change and the environment are essential drivers for behavioral changes in energy usage. Additionally, consumers should understand the cost advantage of addressing load growth by embracing energy efficiency programs relative to the higher costs associated with adding generating assets and/or environmental compliance.

This program will inform consumers that energy efficiency initiatives can provide opportunities for them to improve their comfort and level of service while reducing energy bills. These programs can help customers make sound energy use decisions, increase control over energy bills, and empower them to actively manage their energy usage.

The Companies believe that it is important to specifically reach out to school children with these messages, as they are not only our future customers, but also may significantly influence the consumption behavior of their parents and families.

The Companies also believe that if our customers have a higher level of understanding about our energy efficiency offerings, they will participate in greater numbers, resulting in greater acceptance and significantly higher utilization and effectiveness of our services.

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$3,025,115	\$3,087,575	\$3,179,009	\$3,296,660	\$3,445,256	\$3,631,762	\$3,866,156

Dealer Referral Network

The Companies' plan to establish and maintain a web based Dealer Referral Network to deliver the following services to program constituents:

- Assisting customers in finding qualified and reliable personnel to install energy efficiency measures recommended and/or subsidized by the various energy efficiency programs
- Identifying energy raters and energy related subcontractors for builders seeking to build energy efficient homes
- Fulfillment of incentives and rebates

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$157,388	\$144,983	\$148,476	\$152,056	\$155,726	\$159,488	\$163,346

Program Development and Administration

Program Development and Administration is established to capture costs incurred in the development and administration of the Energy Efficiency programs where it is difficult to assign costs specifically to an individual program. These costs include

- Consultant costs for new program concept and initial design
- Market research related to new programming
- Research and technical evaluation of new technologies and programs
- Databases for maintaining customer marketing information and overall program tracking
- Attendance at Energy Efficiency/DSM conferences and workshops
- Training and personnel development
- Membership in associated trade organizations
- Subscriptions to educational and trade and publications
- Office supplies and equipment related to general management of the organization

Program Budget:

2008	2009	2010	2011	2012	2013	2014
\$736,320	\$758,671	\$777,926	\$797,688	\$817,972	\$838,791	\$860,160