COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

JOINT APPLICATION OF LOUISVILLE GAS	)	
AND ELECTRIC COMPANY AND KENTUCKY	)	
UTILITIES COMPANY FOR A CERTIFICATE	)	
OF PUBLIC CONVENIENCE AND NECESSITY,	)	**CASE NO: 2004-______**
AND A SITE COMPATIBILITY CERTIFICATE,	)	
FOR THE EXPANSION OF THE TRIMBLE	)	
COUNTY GENERATING STATION	)	

DIRECT TESTIMONY OF
DAVID S. SINCLAIR
DIRECTOR -- MARKET ANALYSIS AND VALUATION
LG&E ENERGY SERVICES INC.

Filed: December 9, 2004

Q. Please state your name, business address and position.

A. My name is David S. Sinclair. My business address is 220 West Main Street, Louisville Kentucky 40202. I am Director, Market Analysis and Valuation for LG&E Energy Services Inc. on behalf of Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively "the Companies"). In my position, I supervise two departments consisting of 17 professionals. One of these departments, Economic Analysis, is responsible for preparing the Companies' energy and peak demand forecasts. A complete statement of my education and work experience is attached to my testimony as Appendix A.

Q. Are you sponsoring any exhibits?

A. Yes. I will be sponsoring the following exhibits:

Exhibit DSS-1, 2004-2033 Joint Company Energy and Peak Demand Forecast

Exhibit DSS-2, 2004-2033 LG&E and KU Energy and Peak Demand Forecast

Exhibit DSS-3, 1999-2004 Joint Company Historical Energy and Peak Demand

Exhibit DSS-4, 1999-2004 Historical Energy and Peak Demand by Company

Chart 1, Historical and Forecast Energy (GWH)

Chart 2, Historical and Forecast Summer Peak Demand (MW)

Exhibit DSS-5, Load Forecast Process

Exhibit DSS-6, Variables Employed in Load Forecast Models

Q. What is the purpose of your testimony?

A. I will present the Companies' 2004 Joint Load Forecast, discuss the forecast methodology used to prepare it, and explain the enhancements made to the forecast methodology since the 2002 Integrated Resource Plan ("IRP") filing.

Q. Please summarize the forecasted energy requirements from the 2004 Joint Load Forecast.

A. Exhibits DSS-1 and DSS-2 show the energy forecasts for the Companies and KU and LG&E collectively and separately. From 2004 to 2010, the Companies' annual energy requirements are expected to grow by 13 percent or 4,248 GWh to 38,121 GWh. In the decade beginning in 2010, the Companies' annual energy requirements are forecasted to grow by an additional 8,061 GWh or 21 percent. Overall, between 2005 and 2020, the Companies' energy requirements are forecasted to grow at a compound average rate of 2.0 percent which is slightly lower than the average annual growth experienced by the Companies from 1990 to 2004 of 2.4 percent.

The annual energy requirements of LG&E and KU are forecasted to grow at 1.5 percent and 2.2 percent, respectively, between 2004 and 2010. In addition to higher annual growth rates, KU's larger size means that its forecasted energy needs will be greater in absolute terms than LG&E's. Of the 8,061 GWh of additional forecasted energy requirements between 2010 and 2020, approximately 63 percent of this (5,097 GWh) is expected to be at KU. KU's annual energy requirements are expected to increase by 35 percent from 2005 to 2020 to 29,496 GWh, a 2.0 percent compound average growth rate. This growth rate is slightly lower than the average annual growth rate experienced from 1990 to 2004 of 2.6 percent.

LG&E's annual energy requirements are forecasted to grow by 10 percent (1,208 GWh) to 13,722 GWh from 2004 to 2010. From 2010 to 2020, LG&E's annual energy requirements are forecasted to grow by an additional 2,964 GWh. LG&E's annual energy requirements are expected to increase by 32 percent from 2005 to 2020 to 16,686

GWh, a 1.9 percent compound average growth rate. This growth rate is about the same as that experienced from 1990 to 2004 (2.0 percent).

Q. Please summarize the forecasted peak demand from the 2004 Joint Load Forecast.

A. Exhibits DSS-1 and DSS-2 contain peak demand forecasts for both LG&E and KU as well as the combined Company. The combined Companies' annual peak demand is expected to continue to occur in the summer. By 2020, the winter peak is expected to remain approximately 84 percent of the summer peak.

The Companies' annual peak demand is forecasted to be 7,383 MW in 2010, an increase of 1,160 MW from the 2004 actual peak demand. The Companies' annual peak demand is forecasted to grow by an additional 1,582 MW from 2010 to 2020 to 8,965 MW. From 2005 to 2020, the annual peak demand is forecasted to grow at an average annual rate of 2.0 percent.

Q. How does peak demand differ for LG&E and KU?

A. LG&E's peak demand is forecasted to increase by 365 MW from 2004 to 2010, a 15 percent increase. From 2010 to 2020, LG&E's peak demand is forecasted to increase to 3,466 MW, an increase of 616 MW or 22 percent. Peak demand growth for LG&E over the 2005 to 2020 period is forecasted to increase at an average annual rate of 1.9 percent. For KU, from 2004 to 2010 summer peak demand is forecasted to grow by 805 MW (22 percent) from 3,744 MW to 4,549 MW. From 2010 to 2020, KU's peak demand is forecasted to increase by 950 MW to 5,499 MW. KU's peak demand over the 2005 to 2020 period is forecasted to grow at an average annual rate of 2.0 percent while LG&E's peak demand is expected to grow at 1.9 percent annually.

Q. How does the 2004 Joint Load Forecast compare to growth experienced by the Companies historically?

A. As discussed above, the Companies' average forecasted annual energy growth rate of 2.0 percent is slightly lower than the 2.4 percent experienced from 1990 to 2004. It is important to note that the historical year-to-year energy growth ranged from a low of -1.4 percent to a high of 7.5 percent (see Exhibits DSS-3 and DSS-4 and Charts 1 & 2).

The lower forecasted energy growth rate from 2005 to 2020, in part, reflects slower forecasted growth in the number of new households in Kentucky. The number of households impacts the forecasted sales for both residential and commercial customers. The growth in the number of new households has been trending down from 1.7 percent annually in the 1990s to 1.3 percent in 2003. This demographic trend is expected to continue, and the 2004 Joint Load Forecast assumes that the number of new households will grow at 1.1 percent annually.

The forecasted 2.0 percent annual growth in the Companies' peak demand from 2005 to 2010 is about the same as that experienced from 1990 to 2004. From 1990 to 2004, the year-to-year change in peak demand ranged from -4.7 percent to 9.1 percent; peak is far more volatile year-to-year than annual energy. The higher annual volatility of peak demand is primarily due to the extreme influence that short-term (1 to 2 days) weather events have on system peak. Obviously, there can be significantly different weather from one year to the next at time of peak. That is why it can be important to try to weather-normalize the peak. This allows for easier comparison of the yearly changes.

Table 1 shows the Companies' actual peak and the corresponding weather normalized peak. In some years, such as 2000, the actual weather at time of peak was very close to normal so the weather normalized peak is virtually the same as the actual peak. In other years, the actual weather was much different from normal so the weather normalized peak is quite different from the actual peak. For example, the 2004 peak would have been 133 MW higher had weather been closer to normal at the time of peak.

Table 1
Combined Company System Peak
(MW)

Year	Actual Peak	Percent Change	Weather Normalized Peak	Percent Change
1999	6357	6.2	6317	5.5
2000	6317	(0.6)	6314	0.0
2001	6221	(1.5)	6239	(1.2)
2002	6513	4.7	6429	3.0
2003	6393	(1.8)	6448	0.3
2004	6223	(2.7)	6356	(1.4)

Even with weather normalization, actual peak demand has been quite volatile. This makes forecasting the peak very challenging. For example, the Companies' peak load was forecasted to be 6,532 MW in 2004, a 1.3 percent and 2.2 percent increase, respectively, from the 2003 weather normalized and actual peak. Instead, both the actual and weather normalized peak declined from 2003 to 2004. However, because the year-to-year changes in peak are so volatile, the fact that the actual peak was lower than forecasted does not mean that this will continue. One year does not make a trend. The Companies' peak is forecasted to be 6,696 in 2005 or 5.3 percent more than the 2004 weather normalized peak. This year-to-year change is similar to that experienced between 1998 and 1999 (see Table 1).

Q. Please describe how LG&E and KU prepared their energy sales forecasts.

A. In general, the forecasting methodology used to prepare the 2004 Joint Load Forecast is the same for both Companies and is similar to that used to prepare the load forecast for the 2002 IRP which was reviewed by the Commission in Case No. 2002-00367.[1] Naturally, there are differences in models between LG&E and KU that result from applying specific service territory economic and demographic information to the load forecast variable.

Exhibit DSS-5 outlines the process for forecasting energy sales. Key inputs to the load forecast include historical data on sales and customers, historical and projected macroeconomic and demographic indicators at national, state and local levels (from Global Insight and other commercial vendors, and from the Kentucky Bureau of Economic Analysis), and historical weather data. Exhibit DSS-6 provides a general list of the variables used to prepare the load forecast.

The forecast process starts with an outlook of national macroeconomic trends from a major national economic forecasting service (Global Insight). The information includes forecasts for U.S. GDP growth, inflation, real interest rates and population growth rates. Beginning with a forecast of national economic trends is important because Kentucky's economy does not function in isolation. However, it is important to translate these national trends into service territory projections of economic activity. To perform this task, the Companies engaged the University of Kentucky's Gatton Center for Business and Economic Research to develop a Service Territory Economic Model ("STEM") which provides detailed economic and demographic projections specific to the service territories of LG&E and KU. This service territory specific information is then

[1] A detailed description of the methodologies employed in the creation of energy forecasts can be found in Volume II, Technical Appendices 1 & 2 of the Companies' 2002 IRP. While the structures of some models remain the same from forecast to forecast, other load forecast variables and their relationship to economic events tend to change over time. Even when the model structure does not change, updating the model for history results in changes in the model coefficients. Therefore, the models employed in preparing the 2004 Joint Load Forecast will not be exactly the same as those found in the 2002 IRP even though the methodology utilized in both forecasts is generally the same.

utilized to develop the load forecast. By doing this, the forecast process captures the local impact of broader national and international economic trends.

The output of STEM is used as an input into the econometric models that are developed for each main customer class (residential, commercial, industrial, etc.) within each company (LG&E, KU, and Old Dominion Power ("ODP")). Econometric models seek to capture – in statistical terms – the causal relationship between the "dependent" variable being forecasted (e.g., energy sales) and the underlying economic or technical "drivers" shaping that forecast ("independent" economic variables such as employment and prices, or non-economic variables such as weather and appliance saturation). In the case of the residential sales forecast, this econometric approach complements an analysis which identifies the specific end-use applications for electricity in households within the service territory. Each of the sector models undergoes rigorous testing to ensure that statistically significant independent variables are utilized.

The energy forecast is the product of two forecasts: the number of customers and the use-per-customer. Both of these utilize STEM outputs such as forecasts of population, households and real total personal income ("RTPI"). More specifically, the number of customers in the respective Companies' service territory is a function of the number of households, which is one of the outputs generated from STEM. Among other things, the use-per-customer forecasts employ STEM forecasts of persons-per-household, commercial employment, and RTPI. These, along with forecasted weather (heating and cooling degree days), and prices comprise the variables used to forecast monthly use-per-customer.

The resulting forecasts are then evaluated by comparing them to historical monthly patterns and growth rates. Furthermore, year-to-year growth rates of the forecasts themselves are evaluated to ensure reasonableness. In the event that a forecasted year appears to be unreasonable, the models are reevaluated and, if required, re-specified until a reasonable forecast is obtained. Once accepted, the use-per-customer forecast is then multiplied by the forecasted number of customers to obtain the energy forecast for a particular class.

Q. Are all energy forecasts prepared using econometric or end-use models?

A. No. Twenty-five large LG&E commercial and industrial customers and nine of KU's large commercial and industrial customers are individually forecasted – they represent approximately 11 percent of total energy sales. The forecasts are developed based on both recent sales history (applying historical growth rates) and discussions with each customer to provide a more specific energy outlook. In other words, their views of future energy requirements are incorporated in the forecast.

Q. Please describe how LG&E and KU prepared their joint forecast of hourly system demand and annual peak load.

A. Exhibit DSS-7 illustrates how the Companies' monthly energy forecast is converted into a chronological projection of hourly system loads which determines the Companies' annual peak demand. The system peak demand is measured at the generator bus bar so the forecast of energy sales to customers must be adjusted for transmission and distribution system losses. Because losses vary according to line loading, the loss adjustment varies by month based on historical experience. The forecasted monthly energy requirement (including losses) is then converted into an hourly load duration curve using a representative curve reflecting the historical average hourly load pattern for the same month. The resultant monthly load duration curves are converted to chronological load curves (*i.e.*, the hourly loads are re-arranged in chronological order rather than by order of magnitude) by application of an appropriate historical load curve which captures the calendar attributes of the forecast month in question (*i.e.,* the pattern of weekdays and weekends over the month). At this point the chronological load curves of KU and LG&E are combined to create the total coincident load for the combined system. The hourly load forecast reflects the impact of interruptible loads.

Q. Has the load forecast methodology been enhanced since the Companies' 2002 IRP?

A. Yes. A regular and important part of the forecasting process involves continual integration, updating and enhancing the models and methodology. For example, an end-use model was developed to forecast residential usage for LG&E. This approach, known as a Statistically-Adjusted End-Use Model, was developed for use in forecasting residential usage by KU and ODP consumers for the 2002 IRP (see the Technical Appendix 2 of the 2002 IRP). Because that approach was successful, it was applied to LG&E in this forecast. This enhancement was made because it improved the quality of the forecast and it satisfied two of the Commission's previous suggestions concerning the 2002 IRP: it is part of our efforts to integrate the Companies' load forecast processes; and it incorporates end-use impacts (specifically changes in appliance saturations and efficiencies) into the residential forecast models.

Another enhancement is related to the process of converting the monthly energy forecast into an hourly load curve. In the 2002 IRP, the load shape for each month of the forecast was determined by reference to the pattern of a particular historical month. In the 2004 Joint Load Forecast an "average" normalized load duration curve based on ten years of history was used to distribute monthly energy across individual hours in the month. The use of an average load duration curve removes the risk – inherent in the application of any single historical year – of replicating an anomalous pattern over the forecast period and results in a more consistent relationship between monthly peak demands. As previously discussed, a calendar-matched particular month was used only to sort the hourly loads chronologically.

Q. How do the Companies help ensure that the load forecast is reasonable?

A. The preparation of a load forecast, like many forecasting efforts, is part art and part science. The key is blending the two appropriately. To achieve this, the Companies go to great lengths to ensure that the load forecast is prepared using sound methods by people who are qualified professionals. Three of the practices that the Companies employ to help produce the most reasonable forecast possible are:

1. Build and rigorously test statistically and economically sound mathematical models of the load forecast variable;

2. Use quality forecasts of future macroeconomic events, both nationally and in the service territory, that influence the load forecast variable; and

3. Thoroughly review and analyze the model output to ensure that the results make sense based on historical trends and the forecaster's own sense and understanding of long-term trends in electricity usage.

Experienced professionals employing reasonable methods, models, and data result in the production of a reasonable forecast.

Q. In your professional opinion, are the methods and results of the forecasts reasonable?

A. Yes. The methods and models employed to develop the forecasts are widely used in the industry and are similar to what was presented in the 2002 IRP which was reviewed by this Commission. The information and assumptions utilized by the models are reasonable because they are derived from reliable and reputable sources. The combination of sound methods and models with quality data produced a forecast of energy and peak demand growth that is consistent with the historical growth experienced by LG&E and KU. Therefore, based upon my experience and my review of the models, assumptions and the resulting forecasts, it is my opinion that the forecasts are reasonable.

Q. What is your recommendation to the Commission in this case?

A. The Commission should accept the 2004 Joint Load Forecast as evidence of expected load requirements that LG&E and KU will need to serve from 2005 through 2033.

Q. Does this conclude your testimony?

A. Yes, it does.

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **David S. Sinclair**, being duly sworn, deposes and says that he is the Director of Market Analysis and Valuation for LG&E Energy 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 S. Sinclair

David S. Sinclair

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 1st day of December, 2004.

Victoria B. Harper (SEAL)
Notary Public

My Commission Expires:

VICTORIA B. HARPER
NOTARY PUBLIC
STATE AT LARGE
KENTUCKY
My Commission Expires Sept. 20, 2006

Appendix A

David S. Sinclair

Director – Market Analysis and Valuation
LG&E Energy Service Inc.
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Louisville, Kentucky 40202
(502) 627-4653

Education

Arizona State University, M.B.A. - 1991
Arizona State University, M.S. in Economics - 1984
University of Missouri, Kansas City, B.A. in Economics - 1982

Previous Positions

LG&E Energy Marketing, Louisville, Kentucky
1997-1999 – Director, Product Management
1997-1997 (4th Quarter) – Product Development Manager
1996-1996 – Risk Manager

LG&E Power Development, Fairfax, Virginia
1994-1995 – Business Developer

Salt River Project, Tempe, Arizona
1992-1994 – Analyst, Corporate Planning Department

Arizona Public Service, Phoenix, Arizona
1989-1992 – Analyst, Financial Planning Department
1986-1989 – Analyst, Forecasts Department

State of Arizona, Phoenix, Arizona
1983-1986 – Economist, Arizona Department of Economic Security

EXHIBIT DSS-1

2004-2033 JOINT COMPANY ENERGY AND PEAK DEMAND FORECAST

Joint Company						
Year	Energy (GWh)	Growth Rate	Summer Peak (MW)	Growth Rate	Winter Peak (MW)	Growth Rate
2004	33,689	(0.5)	6,532	2.8	5,513	1.1
2005	34,468	2.3	6,696	2.5	5,647	2.4
2006	35,143	2.0	6,811	1.7	5,754	1.9
2007	35,954	2.3	6,951	2.1	5,896	2.5
2008	36,797	2.3	7,125	2.5	5,974	1.3
2009	37,462	1.8	7,272	2.1	6,142	2.8
2010	38,121	1.8	7,383	1.5	6,223	1.3
2011	38,931	2.1	7,556	2.3	6,388	2.7
2012	39,644	1.8	7,662	1.4	6,500	1.8
2013	40,493	2.1	7,859	2.6	6,574	1.1
2014	41,285	2.0	7,993	1.7	6,768	3.0
2015	42,033	1.8	8,159	2.1	6,890	1.8
2016	42,719	1.6	8,292	1.6	6,972	1.2
2017	43,524	1.9	8,430	1.7	7,134	2.3
2018	44,424	2.1	8,587	1.9	7,287	2.1
2019	45,306	2.0	8,794	2.4	7,355	0.9
2020	46,182	1.9	8,965	1.9	7,569	2.9
2021	46,906	1.6	9,087	1.4	7,654	1.1
2022	47,925	2.2	9,303	2.4	7,860	2.7
2023	48,769	1.8	9,447	1.5	7,992	1.7
2024	49,862	2.2	9,680	2.5	8,176	2.3
2025	50,797	1.9	9,837	1.6	8,324	1.8
2026	51,815	2.0	10,061	2.3	8,489	2.0
2027	52,735	1.8	10,218	1.6	8,602	1.3
2028	53,893	2.2	10,441	2.2	8,836	2.7
2029	55,077	2.2	10,649	2.0	9,029	2.2
2030	56,258	2.1	10,923	2.6	9,126	1.1
2031	57,434	2.1	11,124	1.8	9,408	3.1
2032	58,487	1.8	11,334	1.9	9,578	1.8
2033	60,078	2.7	11,669	3.0	9,841	2.7

EXHIBIT DSS-2

2004-2033 LG&E AND KU ENERGY AND PEAK DEMAND FORECAST

	LG&E						KU					
Year	Energy (GWh)	Growth Rate (%)	Summer Peak (MW)	Growth Rate (%)	Winter Peak (MW)	Growth Rate (%)	Energy (GWh)	Growth Rate (%)	Summer Peak (MW)	Growth Rate (%)	Winter Peak (MW)	Growth Rate (%)
2004	12,417	(0.8)	2,579	0.9	1,770	5.2	21,273	(0.4)	3,967	4.4	3,747	(0.6)
2005	12,657	1.9	2,629	1.9	1,805	2.0	21,812	2.5	4,067	2.5	3,842	2.5
2006	12,870	1.7	2,673	1.7	1,835	1.7	22,273	2.1	4,153	2.1	3,923	2.1
2007	13,024	1.2	2,705	1.2	1,857	1.2	22,930	2.9	4,275	2.9	4,039	3.0
2008	13,266	1.9	2,756	1.9	1,892	1.9	23,530	2.6	4,387	2.6	4,145	2.6
2009	13,478	1.6	2,800	1.6	1,922	1.6	23,983	1.9	4,472	1.9	4,225	1.9
2010	13,722	1.8	2,850	1.8	1,957	1.8	24,399	1.7	4,549	1.7	4,297	1.7
2011	14,011	2.1	2,910	2.1	1,998	2.1	24,920	2.1	4,646	2.1	4,390	2.2
2012	14,269	1.8	2,964	1.9	2,035	1.9	25,376	1.8	4,731	1.8	4,470	1.8
2013	14,584	2.2	3,029	2.2	2,079	2.2	25,909	2.1	4,830	2.1	4,564	2.1
2014	14,865	1.9	3,088	1.9	2,120	2.0	26,420	2.0	4,925	2.0	4,654	2.0
2015	15,151	1.9	3,147	1.9	2,160	1.9	26,883	1.8	5,012	1.8	4,735	1.7
2016	15,421	1.8	3,203	1.8	2,199	1.8	27,298	1.5	5,089	1.5	4,808	1.5
2017	15,713	1.9	3,264	1.9	2,241	1.9	27,810	1.9	5,184	1.9	4,899	1.9
2018	16,047	2.1	3,333	2.1	2,288	2.1	28,377	2.0	5,290	2.0	4,999	2.0
2019	16,374	2.0	3,401	2.0	2,335	2.1	28,933	2.0	5,393	1.9	5,097	2.0
2020	16,686	1.9	3,466	1.9	2,379	1.9	29,496	1.9	5,499	2.0	5,196	1.9
2021	16,983	1.8	3,528	1.8	2,422	1.8	29,923	1.4	5,579	1.5	5,271	1.4
2022	17,362	2.2	3,606	2.2	2,476	2.2	30,564	2.1	5,697	2.1	5,384	2.1
2023	17,687	1.9	3,674	1.9	2,522	1.9	31,082	1.7	5,794	1.7	5,476	1.7
2024	18,110	2.4	3,762	2.4	2,582	2.4	31,752	2.2	5,918	2.1	5,594	2.2
2025	18,440	1.8	3,830	1.8	2,630	1.9	32,357	1.9	6,031	1.9	5,701	1.9
2026	18,841	2.2	3,914	2.2	2,687	2.2	32,974	1.9	6,147	1.9	5,809	1.9
2027	19,209	2.0	3,990	1.9	2,739	1.9	33,526	1.7	6,250	1.7	5,906	1.7
2028	19,641	2.2	4,080	2.3	2,801	2.3	34,252	2.2	6,384	2.1	6,035	2.2
2029	20,086	2.3	4,172	2.3	2,864	2.2	34,991	2.2	6,521	2.1	6,165	2.2
2030	20,553	2.3	4,269	2.3	2,931	2.3	35,706	2.0	6,654	2.0	6,291	2.0
2031	21,001	2.2	4,362	2.2	2,995	2.2	36,432	2.0	6,790	2.0	6,420	2.1
2032	21,439	2.1	4,453	2.1	3,057	2.1	37,048	1.7	6,905	1.7	6,528	1.7
2033	22,186	3.5	4,608	3.5	3,164	3.5	37,891	2.3	7,061	2.3	6,677	2.3

EXHIBIT DSS-3

1990-2004 JOINT COMPANY HISTORICAL ENERGY AND PEAK DEMAND

Joint Company						
Year	Energy (GWh)	Growth Rate (%)	Summer Peak (MW)	Growth Rate (%)	Winter Peak (MW)	Growth Rate (%)
1990	24,382		4,960		4,519	
1991	24,922	2.2%	5,005	0.9%	4,103	-9.2%
1992	24,606	-1.3%	4,947	-1.2%	4,366	6.4%
1993	26,461	7.5%	5,398	9.1%	4,345	-0.5%
1994	26,878	1.6%	5,260	-2.6%	4,488	3.3%
1995	28,210	5.0%	5,692	8.2%	4,668	4.0%
1996	28,805	2.1%	5,425	-4.7%	5,082	8.9%
1997	28,969	0.6%	5,900	8.8%	5,082	0.0%
1998	30,285	4.5%	5,986	1.5%	4,603	-9.4%
1999	31,041	2.5%	6,357	6.2%	5,110	11.0%
2000	32,058	3.3%	6,317	-0.6%	5,335	4.4%
2001	31,749	-1.1%	6,221	-1.5%	5,449	2.1%
2002	33,254	5.4%	6,513	4.7%	5,103	-6.3%
2003	32,777	-1.4%	6,393	-1.8%	5,706	11.8%
2004	33,873	3.3%	6,223	-2.7%	5,446	-4.6%

Notes

1. Values represent actual energy and peak demand and are not weather normalized.

2. Winter Peak period includes January through March of the current year and November through December of the prior year.

3. 2004 includes 10 months of actual energy and 2 months of forecast energy.

EXHIBIT DSS-4

1990-2004 HISTORICAL ENERGY AND PEAK DEMAND BY COMPANY

	LG&E						KU					
Year	Energy (GWh)	Growth Rate (%)	Summer Peak (MW)	Growth Rate (%)	Winter Peak (MW)	Growth Rate (%)	Energy (GWh)	Growth Rate (%)	Summer Peak (MW)	Growth Rate (%)	Winter Peak (MW)	Growth Rate (%)
1990	9,548		2,149		1,616		14,834		2,835		2,919	
1991	10,085	5.6%	2,125	-1.1%	1,493	-7.6%	14,837	0.0%	2,894	2.1%	2,621	-10.2%
1992	9,756	-3.3%	2,107	-0.8%	1,525	2.1%	14,850	0.1%	2,845	-1.7%	2,842	8.4%
1993	10,371	6.3%	2,239	6.3%	1,549	1.6%	16,090	8.4%	3,176	11.6%	2,797	-1.6%
1994	10,498	1.2%	2,219	-0.9%	1,538	-0.7%	16,380	1.8%	3,127	-1.5%	3,092	10.5%
1995	11,019	5.0%	2,357	6.2%	1,593	3.6%	17,191	5.0%	3,341	6.8%	3,077	-0.5%
1996	11,154	1.2%	2,283	-3.1%	1,696	6.5%	17,651	2.7%	3,192	-4.5%	3,391	10.2%
1997	11,059	-0.9%	2,414	5.7%	1,720	1.4%	17,910	1.5%	3,510	10.0%	3,377	-0.4%
1998	11,558	4.5%	2,427	0.5%	1,586	-7.8%	18,727	4.6%	3,559	1.4%	3,072	-9.0%
1999	11,765	1.8%	2,612	7.6%	1,665	5.0%	19,276	2.9%	3,764	5.8%	3,453	12.4%
2000	12,003	1.8%	2,542	-2.7%	1,670	0.3%	20,055	4.0%	3,775	0.3%	3,665	6.1%
2001	12,038	0.3%	2,522	-0.8%	1,818	8.9%	19,711	-1.7%	3,699	-2.0%	3,748	2.3%
2002	12,503	5.6%	2,623	4.0%	1,660	-8.7%	20,751	5.3%	3,899	5.4%	3,491	-6.9%
2003	12,123	-3.0%	2,583	-1.5%	1,824	9.9%	20,654	-0.5%	3,810	-2.3%	3,944	13.0%
2004	12,514	3.2%	2,485	-3.8%	1,750	-4.1%	21,359	3.4%	3,744	-1.7%	3,768	-4.5%

Notes

1. Values represent actual energy and peak demand and are not weather normalized.
2. Winter Peak period includes January through March of the current year and November through December of the prior year.
3. KU experienced winter peaks in 1990, 1996, 2001, 2003 & 2004. Unlike KU, the peak for LG&E and the Joint Company occurred in the summer for all years.
4. 2004 includes 10 months of actual energy and 2 months of forecast energy.

Chart 1

Historical and Forecast Energy (GWh)

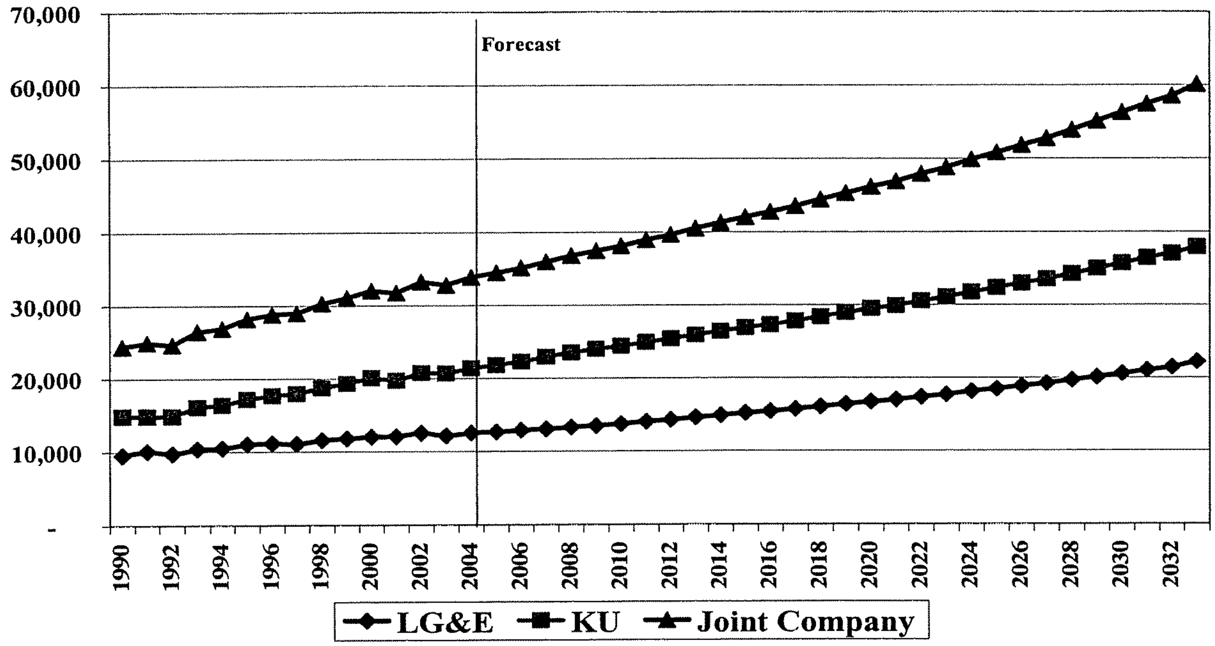


Chart 2

Historical and Forecast Summer Peak Demand (MW)

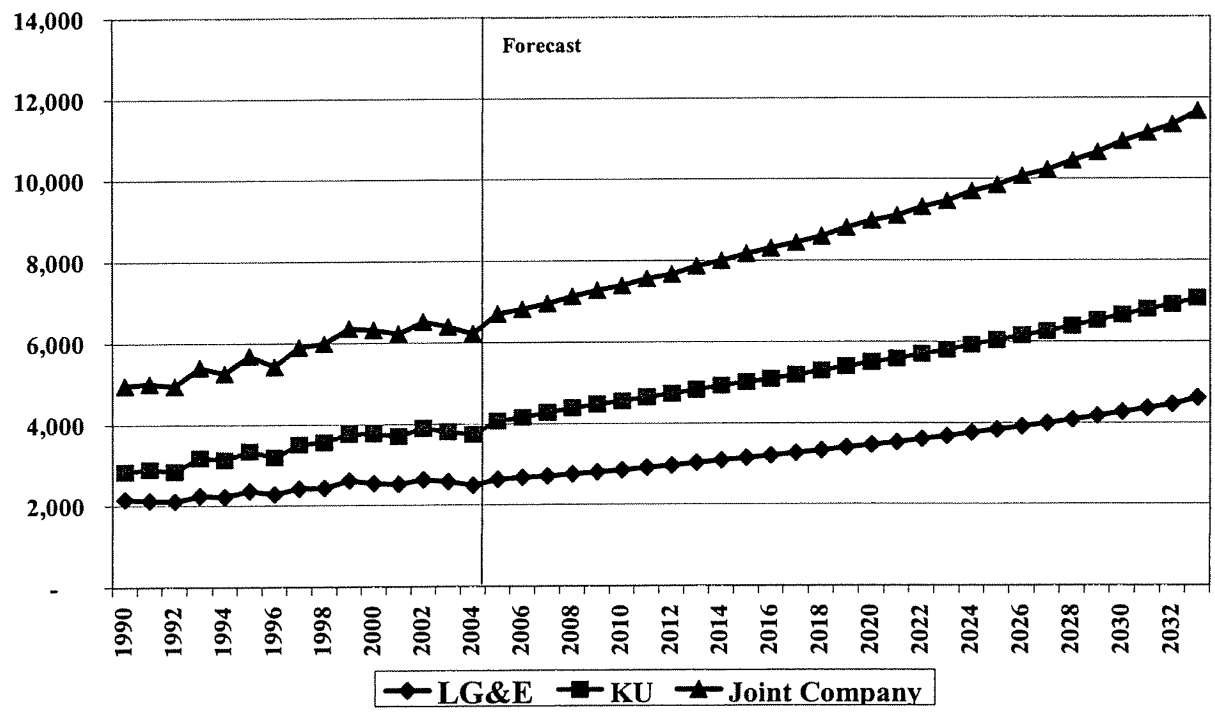


EXHIBIT DSS-5

LOAD FORECAST PROCESS

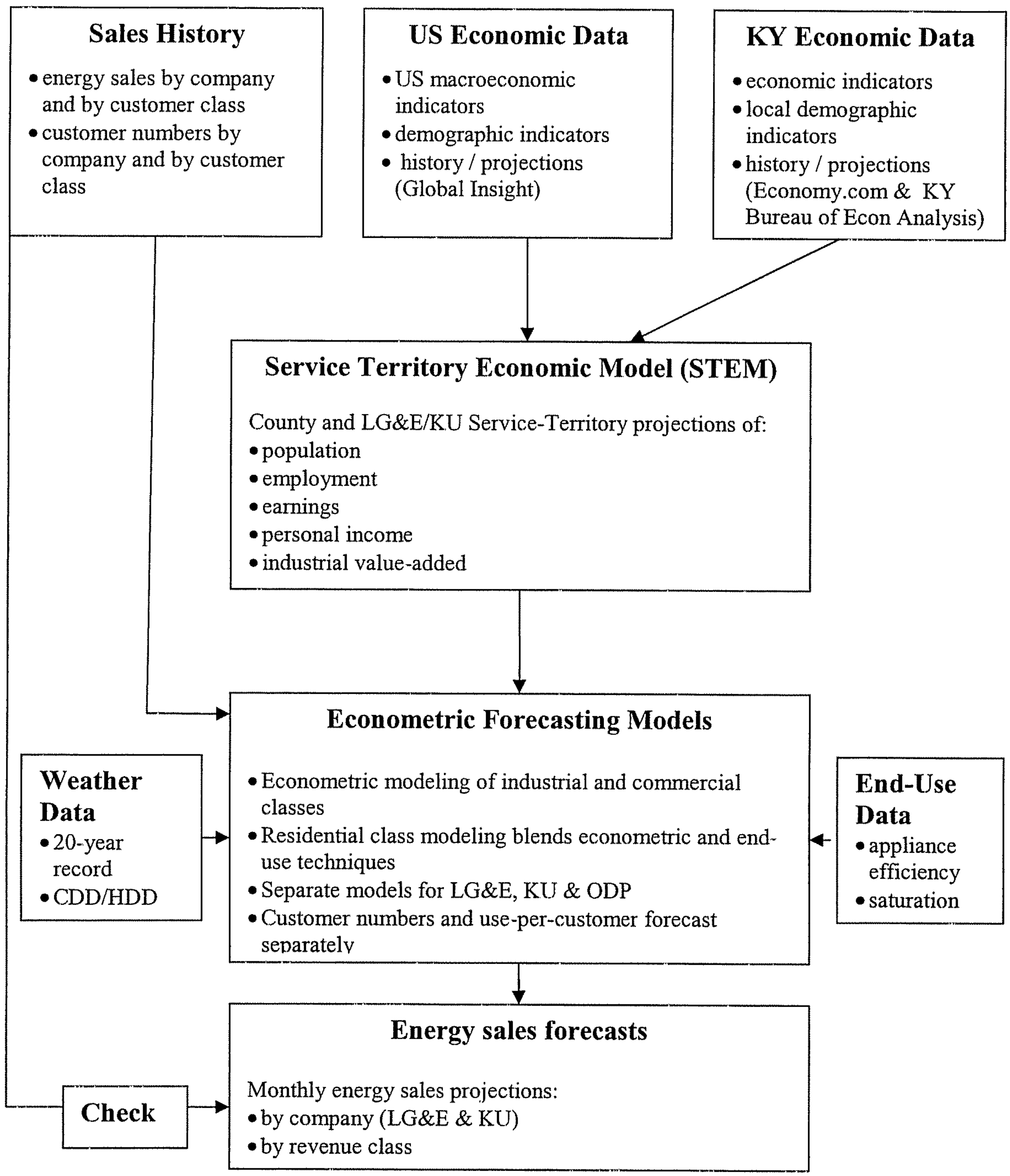


EXHIBIT DSS-6

VARIABLES EMPLOYED IN LOAD FORECAST MODELS

Variable Categories Included in Load Forecast Models	Specific Variables Included in Load Forecast Models
Weather-related:	Heating Degree Days, Cooling Degree Days Monthly (or seasonal) Binary Variables
Economic:	Service - Territory Personal Income Service - Territory Commercial Employment Real Gross State Product U.S. Industrial Production Index Real Electric Prices
Demographic:	Service - Territory Households Service - Territory Population Service - Territory Customers (Forecast)
Technology-related:	Appliance Unit Energy Consumption Values Appliance Efficiencies Appliance Saturations Building Shell Integrity

EXHIBIT DSS-7

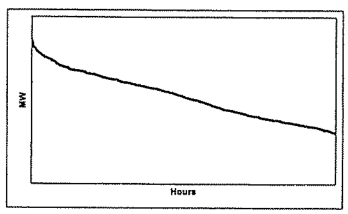
PEAK LOAD FORECAST PROCESS

Energy Sales Forecast
Monthly aggregate energy sales, by company

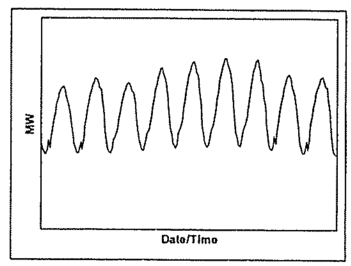
System Energy Requirements
Monthly aggregate sales + losses

Load Duration Curve

For each utility (separately), apply representative monthly load shapes (load duration curves) to monthly energy data to derive hourly loads



Chronological Load Curve
Rearrange hourly loads in chronological order by application of appropriate historical load curve for each month of forecast



Combined System Load Curve
KU and LG&E load curves added to produce coincident load curve for combined system