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 CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF A COMBINED CYCLE COMBUSTION TURBINE AT THE GREEN RIVER GENERATING STATION AND A SOLAR PHOTOVOLTAIC FACILITY AT THE E.W. BROWN GENERATING STATION	))))))))))	CASE NO. 2014-00002

<u>COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION
TO LOUISVILLE GAS AND ELECTRIC COMPANY AND
KENTUCKY UTILITIES COMPANY</u>

Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company

("KU") (collectively "the Companies"), pursuant to 807 KAR 5:001, are to file with the

Commission an original paper copy and an electronic copy of the following information.

The information requested herein is due no later than March 27, 2014. Responses to

requests for information shall be appropriately bound, tabbed and indexed. Each

response shall include the name of the witness responsible for responding to the

questions related to the information provided.

Each response shall be answered under oath or, for representatives of a public

or private corporation or a partnership or association or a governmental agency, be

accompanied by a signed certification of the preparer or person supervising the

preparation of the response on behalf of the entity that the response is true and

accurate to the best of that person's knowledge, information, and belief formed after a

reasonable inquiry.

The Companies shall make timely amendment to any prior response if they obtain information which indicates that the response was incorrect when made or, though correct when made, is now incorrect in any material respect. For any request to which the Companies fail or refuse to furnish all or part of the requested information, they shall provide a written explanation of the specific grounds for their failure to completely and precisely respond.

Careful attention should be given to copied material to ensure that it is legible. When the requested information has been previously provided in this proceeding in the requested format, reference may be made to the specific location of that information in responding to this request.

1.   Refer to the table on page 4 of the Joint Application.

a.   Confirm that the forecasted peak load is projected to grow at an average annual rate of approximately 1.026 percent for the five-year period 2015 through 2020. If this cannot be confirmed, provide the approximate average annual percentage increase, along with the formula used in calculating the average annual percent increase.

b.   Confirm that the forecasted peak load is projected to grow at an average annual rate of approximately 0.93 percent for the ten-year period 2015 through 2025. If this cannot be confirmed, provide the approximate average annual percentage increase, along with the formula used in calculating the average annual percentage increase.

c.   Confirm that the forecasted peak load is projected to grow at an average annual rate of approximately 0.92 percent for the 15-year period 2015 through

2030. If this cannot be confirmed, provide the approximate average annual percentage increase, along with the formula used in calculating the average annual percent increase.

d.   Confirm that the forecasted peak load is projected to grow at an average annual rate of approximately 0.90 percent for the 20-year period 2015 through 2035. If this cannot be confirmed, provide the approximate average annual percentage increase, along with the formula used in calculating the average annual percentage increase.

e.   Provide the reasons for the change in the average annual peak load forecast between the first five years of the forecast and the remaining 15 years of the forecast and indicate which customer classes are responsible for the changes.

f.   Confirm that the Energy Efficiency/DSM forecasted peak load reduction is projected to grow at an average annual rate of approximately 3.8 percent for the five-year period 2015 through 2020. If this cannot be confirmed, provide the approximate average annual percentage reduction increase, along with the formula used in calculating the average annual percentage increase.

g.   Confirm that the Energy Efficiency/DSM forecasted peak load reduction is projected to grow at an average annual rate of approximately 2.1 percent for the 10-year period 2015 through 2025. If this cannot be confirmed, provide the approximate average annual percentage reduction increase, along with the formula used in calculating the average annual percentage increase.

h.   Confirm that the Energy Efficiency/DSM forecasted peak load reduction is projected to grow at an average annual rate of approximately 1.5 percent

for the 15-year period 2015 through 2030. If this cannot be confirmed, provide the approximate average annual percentage reduction increase, along with the formula used in calculating the average annual percentage increase.

i.   Confirm that the Energy Efficiency/DSM forecasted peak load reduction is projected to grow at an average annual rate of approximately 1.2 percent for the 20-year period 2015 through 2035. If this cannot be confirmed, provide the average annual percentage reduction increase, along with the formula used in calculating the average annual percentage increase.

j.   Provide the reasons for the change in the Energy Efficiency/DSM average annual peak load reductions forecast between the first five years of the Energy Efficiency/DSM forecast reductions and the remaining 15 years of the Energy Efficiency/DSM forecast reductions, and indicate which customer classes are responsible for the changes.

2.   Refer to page 5, lines 16-18, of the Direct Testimony of Paul W. Thompson ("Thompson Testimony"). Reference is made to the Companies' ability "to add a renewable resource with relatively minor impact on the customer revenue requirements in coming years." Explain how the proposed addition of the E. W. Brown Generating Station ("Brown Station") 10-MW solar photovoltaic facility will benefit the Companies' customers.

3.   Refer to page 5, line 23 to page 6, line 6, of the Thompson Testimony. Confirm that the Companies' best estimated installed cost for the natural gas combined cycle ("NGCC") facility is $1,000 per kW ($700,000,000 / 700,000 kW) and for the solar photovoltaic facility is $3,600 per kW ($36,000,000 / 10,000 kW).

4.   Explain why the Companies believe that it would not be less costly to install a 710-MW NGCC generating facility at a total cost of $710 million, or an average cost of $1,000 per kW, versus a 700-MW NGCC facility and a 10-MW solar photovoltaic facility at a combined estimated cost of $736 million, or an average cost of $1,037 per kW.

5.   Refer to page 6 of the Thompson testimony, lines 12-15, wherein Mr. Thompson states, "Additionally, the Companies have identified land they already own at Brown (it was acquired to provide a supply of cover soil for landfill purposes) which is suitable for solar panel installation after obtaining the cover soil."

      a.   Provide the cost of the land and the date it was acquired.

      b.   Provide KU's plans for the land (once the cover soil was removed) before it was decided that the land would be suitable for the solar project.

6.   Refer to page 8 of the Thompson Testimony, lines 10-16. Mr. Thompson states that the Companies developed a number of self-build options that were considered in the Request for Proposal ("RFP") process and that the self-build proposal at Green River Generating Station ("Green River") was the "least reasonable cost option." Explain in detail how employees within the Companies who were generating the self-build proposals were separated from employees evaluating the RFP submissions in order to ensure the integrity of the selection process.

7.   Refer to page 9 of the Thompson Testimony, lines 12-18, wherein Mr. Thompson states that there are currently 41 employees at Green River and that 45-50 employees are expected to be needed when the proposed Green River NGCC

becomes operational. He also states that the solar facility is expected to be staffed by the current employees at the Brown Station.

        a.   Provide the incremental labor costs that will be incurred when the NGCC becomes operational and state whether these costs are included in the estimated costs for the project.

        b. Provide the number of current employees at the Brown Station.

      8.   Refer to the Direct Testimony of Gregory J. Meiman. Explain in detail the eligible tax credits and their impact on the Companies for solar installations which go online prior to 2016. Include in your response the net benefits that will flow through to the customer.

      9.   Refer to the table below, which consists of Table 1, Peak Demand and Energy Requirements (Before DSM Programs), on page 7 of the Direct Testimony of David S. Sinclair ("Sinclair Testimony") with the lines "I – Annual Percentage Increase" for both Peak Demand and Energy Reduction calculated by Commission Staff.

	2012	2015	2020	2025	2030	2035	2040
Peak Demand (MW)	6,970	7,426	7,815	8,147	8,517	8,891	9,261
Energy (GWh)	35,076	36,748	38,184	39,847	41,768	43,657	45,683
Peak Demand (MW)							
PV - Present Value		6,970	7,426	7,815	8,147	8,517	8,891
FV - Future Value		7,426	7,815	8,147	8,517	8,891	9,261
N - Number of Periods		3	5	5	5	5	5
I – Annual Percentage Increase		2.13%	1.03%	0.84%	0.89%	0.86%	0.82%
Energy (GWh)							
PV - Present Value		35,076	36,748	38,184	39,847	41,768	43,657
FV - Future Value		36,748	38,184	39,847	41,768	43,657	45,683
N - Number of Periods		3	5	5	5	5	5
I – Annual Percentage Increase		1.56%	0.77%	0.86%	0.95%	0.89%	0.91%

Provide the following:

a. The reasons for, and which customer sectors were the cause of, the growth in peak demand at an annual percentage increases of approximately 2.13 percent for the period 2012 through 2015, approximately 1.03 percent for the period 2015 through 2020, approximately 0.84 percent for the period 2020 through 2025, and approximately 0.89 percent for the period 2025 through 2030.

b. The reasons for, and which customer sectors were the cause of, the growth in energy requirements at an annual percentage increase of approximately 1.56 percent for the period 2012 through 2015, approximately 0.77 percent for the period 2015 through 2020, approximately 0.86 percent for the period 2020 through 2025, and approximately 0.95 percent for the period 2025 through 2030.

10. Refer to the table below, which consists of Table 2 – 2013 LF – Peak Demand and Energy Reduction from DSM Programs, on page 9 of the Sinclair Testimony with the lines "I – Annual Percentage Increase" for both Peak Demand and Energy Reduction calculated by Commission Staff.

	2012	2015	2020	2025	2030	2035	2040
Peak Demand (MW)	114	386	466	475	484	493	502
Energy (GWh)	139	585	764	764	764	764	764
Peak Demand (MW)							
PV - Present Value		(114)	(386)	(466)	(475)	(484)	(493)
FV - Future Value		386	466	475	484	493	502
N - Number of Periods		3	5	5	5	5	5
I – Annual Percentage Increase		50.16%	3.84%	0.38%	0.38%	0.37%	0.36%
Energy (GWh)							
PV - Present Value		(139)	(585)	(764)	(475)	(484)	(493)
FV - Future Value		585	764	764	764	764	764
N - Number of Periods		3	5	5	5	5	5
I – Annual Percentage Increase		61.43%	5.48%	0.00%	0.00%	0.00%	0.00%

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Provide the following:

     a.   The reasons for, and which customer sectors were the cause of, the growth in peak demand reduction associated with DSM programs at an annual percentage increase of approximately 50.0 percent for the period 2012 through 2015, approximately 3.8 percent for the period 2015 through 2020, and approximately 0.38 percent for each of the five year periods 2020 through 2025 and 2025 through 2030.

     b.   The reasons for, and which customer sectors were the cause of, the growth in energy requirement reduction associated with DSM Programs at an annual percentage reduction increase of approximately 61.0 percent for the period 2012 through 2015, approximately 5.48 percent for the period 2015 through 2020, and approximately 0.0 percent for the period 2020 through 2025 and 2025 through 2030.

     11.   Refer to page 9, lines 12-14, of the Sinclair Testimony which state, "Prior to the end of 2018, programs will be revaluated and renewed where appropriate, taking market potentials, building codes, customer expectations, and energy efficient technologies into consideration."

     a.   State the number of years the Companies have offered DSM programs to their customer bases.

     b.   During the time frame in which the Companies offered DSM programs to their customer bases, state the number of times the Companies' DSM filings with the Commission resulted in no increase in peak demand reduction and/or energy reduction as a result of the DSM filing.

12.   Refer to the table included in question 10, which consists of Table 2 – 2013 LF – Peak Demand and Energy Reduction from DSM Programs on page 9 of the Sinclair Testimony, with the lines "I – Annual Percentage Increase" for both Peak Demand and Energy Reduction calculated by Commission Staff. Assume an annual average increase of 3.84 percent in peak demand reduction from DSM programs between 2020 through 2040, as the Companies forecasted between 2015 through 2020, along with an annual average increase of 5.48 percent in energy reduction from DSM programs between 2020 through 2040, as the Companies forecasted between 2015 through 2020.

a.   Provide a revised Table 3 – 2013 LF – Peak Demand and Energy Requirements (After DSM Programs) as shown on page 10, lines 14-16, of the Sinclair Testimony.

b.   How would the revised Table 3 results impact the need for the proposed construction of the 700-MW NGCC and the 10-MW solar photovoltaic facility?

13.   Refer to page 9, Table 2 – 2013 LF – Peak Demand and Energy Reduction from DSM Programs of the Sinclair Testimony. If one were to assume an annual average 3.8 percent reduction in peak demand from DSM programs between 2020 through 2040, as the Companies did between 2015 through 2020, along with the Companies' 2014 Load Forecast ("LF"), what would be the impact on the Reserve Margin line for the 2013 Resource Assessment as shown on Table 6 – Resource Summary Comparison, 2013 on page 19 of the Sinclair Testimony?

14.   Refer to page 13, Table 4 – 2014 LF compared to the 2013 LF – Peak Demand and Energy Requirements (After DSM Programs) of the Sinclair Testimony.

a.   Confirm that the change in the 2013 LF and the 2014 LF in peak demand for 2040 is a reduction of approximately 3.2 percent ((284)/8,760).

b.   Confirm that the change in the 2013 LF and the 2014 LF in energy requirements for 2040 is a reduction of approximately 5.8 percent [(2,586)/44,920)].

c.   If one were to assume an annual average 3.8 percent reduction in peak demand from DSM programs between 2020 through 2035, as the Companies did between 2015 through 2020, along with the Companies' 2014 LF, what would the Reserve Margin line show on page 4 of the Joint Application?

15.   Refer to page 17 of the Sinclair Testimony. Explain why the Federal Energy Regulatory Commission's ("FERC") conditional approval of the Companies' request to purchase the Bluegrass Generation facilities rendered that transaction not economical.

16.   Refer to page 17 of the Sinclair Testimony. Table 5 – LG&E/KU Resource Summary (MW Summer 2013 LF) displays the Companies' forecasted reserve margin. Recalculate and provide the forecasted reserve margin table assuming the proposed 710 MW of resource capacity is approved as requested

17.   Refer to page 22 of the Sinclair Testimony. In discussing the process to select the best resources to meet customer needs over the next 30 years, the term "economically robust under a range of possible conditions" is utilized. Define the meaning of the phrase "economically robust under a range of possible conditions."

18.   Refer to page 22 of the Sinclair Testimony, lines 19-21, which state ". . . having excess capacity and energy is often viewed as more costly than adding additional capacity should load turn out to be greater." Explain why having excess

capacity and energy is often viewed as being more costly than adding capacity to meet greater than anticipated load.

19.   Refer to page 27 of the Sinclair Testimony. It is stated that the estimated cost of building the solar project at the Brown Station in September 2013 was $2,400/kW which includes an available existing company site, effectively removing the land cost from the overall project cost. On page 28 of the Sinclair Testimony, the December 2013 cost estimate escalates to $3,600/kW. Explain in detail why the cost estimate in December 2013 was 33 percent higher than the cost estimate in September 2013.

20.   Refer to page 34, lines 7-9, of the Sinclair Testimony, which state, "If the Companies continue to achieve annual savings at the planned rate, achievable discretionary electric efficiency potential will be exhausted in 2020."

a.   Provide a definition of the phrase "achievable discretionary electric energy efficiency potential."

b.   Is it the Companies' testimony that all mobile homes connected to their distribution system will no longer have resistance heating systems operational in the mobile homes after 2020?

c.   Is it the Companies' testimony that all residential customers connected to their distribution system will have only Energy Star appliances installed in their homes after 2020?

21.   Refer to page 35 of the Sinclair Testimony, lines 6-8, wherein Mr. Sinclair states that, to address capacity and energy needs in 2016 and 2017, the Companies are pursing negotiations for a short term purchase power agreement ("PPA"). State

whether the Companies intend to make a selection for this PPA from the responses to its September 2012 RFP, or if the Companies intend to issue a new RFP.

22.   Refer to Exhibit DSS-1 of the Sinclair Testimony.   Provide the initial analysis of the bids received in response to the RFP, as well all analyses performed for each phase of the Resource Analysis, in electronic format.

23.   Refer to page 3, Section 2 of Exhibit DSS-1.   Explain in detail what is meant by FERC's finding of significant screen failures in the horizontal market power analysis of the Bluegrass Generation decision.

24.   Refer to page 7 of Exhibit DSS-1.   It is stated in the paragraph above Table 3, "The DSM programs in Table 3 are the most competitive programs that will not be included in the DSM filing." Explain why the programs in Table 3 were not included in the Companies' most recent Demand-Side Management ("DSM") filing.

25.   Refer to page 9 of Exhibit DSS-1, Section 4.1.1 Load Forecast, which states, "According to the Energy Information Administration's ("EIA") Annual Energy Outlook ("AEO") issued in 2013, annual electricity consumption on a national level is expected to grow at an average rate, from 2010 to 2040, of 0.7%, 0.8% and 0.6% for the Residential, Commercial and Industrial sectors, respectively."

        a.   Would the Companies agree that if the national annual electricity consumption were consumed equally among all three electric sectors, Residential, Commercial and Industrial, one would expect the annual electricity consumption on a national level to grow at an average rate between 2010 to 2040 of approximately 0.7 percent, using the information from the EIA AEO above [(.007 X .3333) + (.008 X .333) + .006 X .3334)]?

b.   Refer to Table 6 – Native Load Scenarios on page 10 of Exhibit DSS-1. What is the average annual increase percentage forecasted for the 29 years between 2013 and 2042 for the 2013 LF column?

c.   Explain why the average annual increase used on Table 6, column "2013 LF" is approximately 5 percent greater than the EIA's AEO highest sector's forecast for the similar time period.

d.   Provide the Companies' 2009 load forecasts, for both energy requirements and peak demand, for each year 2010 through 2039.

e.   Provide the Companies' actual energy requirement and peak demand for each year 2010 through 2013.

f.   Provide the percentage difference between the Companies' 2009 load forecast for years 2010 through 2013 and the Companies' actual energy requirements and peak demand for the same years, along with the reasons for the differences and the customer sector(s) causing the difference.

26.   Refer to Section 4.1.1. on page 11 of Exhibit DSS-1. Explain why the Companies did not consider off-system sales in evaluating mitigating short-term costs associated with excess capacity.

27.   Refer to Section 4.5.1 on page 32 of Exhibit DSS-1. The last sentence of the section states, "At this price level, justification for solar projects is difficult." State whether there are implicit ratepayer benefits which justify the cost. Explain in detail.

28.   State whether Kentucky is geographically situated for a solar facility based upon the solar power resource available expressed in $kWh/m^2/day$.

a. What average daily output do the Companies project for the Brown Station Solar Facility?

b. State whether the Brown Station solar output projections will vary monthly/seasonally.

c. Since concentrating solar power (CSP) generation can be coupled with fossil-fired boiler capacity to provide base load and cover periods of peak demand, were any CSP technology options considered as an alternative to using photovoltaic solar technology at the Brown generating station facility?

29. Refer to page 56 of Exhibit DSS-1. Section 6.4.1.2 states that the costs of decommissioning Green River units 3 and 4 are not included in the cost estimate.

a. Provide the date that Green River units 3 and 4 will be retired.

b. Provide the costs of decommissioning Green River units 3 and 4.

c. Describe the physical process of decommissioning Green River units 3 and 4. Include in your response whether the units will be removed from the site.

d. State whether some or all of the steps to decommission Green River units 3 and 4 would be required prior to starting construction of the proposed Green River NGCC project.

e. This section also states, "Major market shifts, such as an increased demand for natural gas or labor shortage due to environmental compliance projects, could cause the cost estimate to be exceeded." Explain why an increase in the demand for natural gas could cause construction costs to increase.

30. Provide a detailed cost breakdown and construction timeline for the proposed Green River NGCC project.

31. Provide a detailed cost breakdown and construction timeline for the proposed Brown Station solar project.

32. Confirm that no costs to operate the proposed Brown Station solar facility would be recoverable through the fuel adjustment clause of the Companies. If this cannot be confirmed, explain.
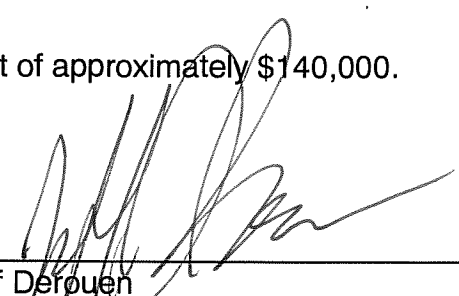
33. Refer to page 5 of the Direct Testimony of John N. Voyles, Jr. ("Voyles Testimony"), lines 11-15, wherein Mr. Voyles states that 120 acres will need to be purchased for siting setback requirements for the proposed Green River NGCC project. Provide the cost of the additional acreage and state whether the cost has been included in the estimated cost of the project.

34. Refer to page 11, lines 8-10, of the Voyles Testimony which state, "The Green River NGCC is expected to generate approximately 4,900 GWh per year beginning in 2018, resulting in an annual total fixed and non-fuel operating cost of approximately $14.5 million." Using a 700-MW NGCC generating facility, provide the following:

    a. The expected annual generating capacity factor.

    b. The calculations supporting the annual total fixed and non-fuel operating cost of approximately $14.5 million.

35. Refer to page 14, lines 18-2,1 of the Voyles Testimony which state that "conceptual fixed and variable operating and maintenance costs for the proposed Brown Station Solar Facility are assumed to be $12.50/kW-year and $0.80/MWh, respectively." Provide the calculations supporting the following:

a.   The annual capacity factor for the proposed Brown Station 10-MW
solar facility.

b.   The annual total operating cost of approximately $140,000.

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DATED   **MAR 1 3 2014**

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Service List for Case 2014-00002