

Joint Application of Louisville Gas & Electric Co. & Kentucky Utilities Co. for Certificates of Public
Convenience & Necessity to Construct New Generation Facilities
Case No. 2014-00002
Attorney General's Initial Data Requests

1. Provide a copy of the application, including all testimonies, in Word version.
2. If not already provided, provide a copy of all Excel spreadsheets, with all formulae and cells intact and unprotected, referenced or contained within the application.
3. Reference the application at page 4. Provide a copy of the Request for Proposals (RFP) that were sent in September 2012.
 - a. Explain in detail how the 165 potential suppliers were decided.
 - b. If any potential energy providers were not included as recipients for the RFP, please detail which ones and the reason(s) why each one was not included.
4. Reference the application at page 5 at paragraph numbered 5. Explain in detail what is meant by the statement that "it is not anticipated that Green River NGCC will compete with any other public utilities, corporations or persons."
5. Reference the application at page 6. Explain in detail how the engineering firm was selected to "perform engineering services, optimize design for the Companies' needs, support environmental permitting, and to assist the Companies in their procurement practices".
 - a. Was an RFP process used? If not, why not? If yes, provide a copy of the RFP.
 - b. Is the engineering firm associated in any way with either of the companies? If so: (i) which one(s)?; and (ii) describe in detail.
6. Provide the following information regarding the engineering firm:
 - a. Names and qualifications for each individual providing services to the Companies;
 - b. Total amount paid to date to the firm;
 - c. Total projected amount to be paid to the firm; and
 - d. If possible, provide the amount to be paid, or that has been paid, to the firm broken down by type of service provided or will be provided.

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7. Reference the application at page 7. Provide a copy of the Companies' Power Supply Agreement dated October 9, 1997.
8. Reference the testimony of Thompson at page 6 regarding the solar facility wherein he states that the Companies will "gain the valuable experience that will result from constructing and operating that source." Provide the following:
 - a. List each and every individual, by name and title, presently employed by each company that has actual, hands-on experience in operating a solar unit;
 - b. For each and every person listed in the above answer, provide in detail the experience; and
 - c. For each and every person listed in the above answer, provide any and all credentials, certifications, etc. that relate to the operation and/or maintenance of a solar facility.
9. Reference the testimony of Thompson regarding the solar facility at page 6. Explain in detail the "\$7 million for owner's costs."
10. Reference the application and testimony of Thompson in general. Provide a map illustrating the name, location, size (in WH) and ownership (e.g., 100% for KU, etc.) for every generator that the companies own in the Commonwealth.
11. Reference the testimony of Thompson at page 9 wherein he states: "For those employees that are not reassigned, the Companies believe that they will either retire or be offered severance packages." Can the Companies state when the decision will be made regarding the effected employees?
12. Reference the testimony of Thompson at page 9 wherein he states: "The operation of the Brown Solar facility is expected to be staffed by current employees already located at Brown." For each individual presently employed at the Brown location, provide the following:
 - a. Name and title;
 - b. Whether the person has hands-on experience in operating a solar unit;
 - c. The details of the experience; and

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- d. Any and all credentials, certifications, etc. that relate to the operation and/or maintenance of a solar facility.
13. Reference the testimony of Mr. Sinclair at p. 2. In regard to the Sales Analysis and Forecasting group, provide the following:
- a. The names and titles of each member who were on the group who provided the load forecast noted in the application;
 - b. The level of education, training and experience of each individual noted in the above answer; and
 - c. The information, whether in document form or otherwise (if electronic data was used this should be provided in Excel format with all formulae and cells intact), reviewed or considered by the group in making their recommendation or decision.
14. Reference the testimony of Mr. Sinclair at p. 2. With regard to the Generation Planning group, provide the following:
- a. The names and titles of each member who were on the group who provided the alternative generation options noted in the application;
 - b. The level of education, training and experience of each individual noted in the above answer; and
 - c. The information, whether in document form or otherwise (if electronic data was used this should be provided in Excel format with all formulae and cells intact), reviewed or considered by the group in making their recommendation or decision.
15. Reference the testimony of Mr. Sinclair at p. 2, line 17 where the witness discusses the "customers' future capacity and energy needs in a lowest-cost manner."
- a. Does lowest-cost manner mean a pure cost based decision stated in actual, definitive, quantifiable dollars? If not, please explain; and
 - b. Does lowest-cost manner also include any extrapolation of dollar value of other factors? If yes, please identify those factors and the dollar value associated with each one(s).

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16. Reference the application in general (with some emphasis at the table on page 4), the testimony of Mr. Sinclair in general and specifically at p. 4, lines 16 -17. Confirm that the Companies have compiled this application with the assumption that the energy efficiency through its DSM program as listed in Table 5 of Sinclair's testimony is essential to the company's application. If confirmation cannot be provided, state the reason(s) why not.
17. Confirm that the energy efficiency through the DSM program as contained in the application is the same of energy efficiency as filed in Case No. 2014-00003. If confirmation cannot be provided, state the reason(s) why not.
18. Reference the testimony of Mr. Sinclair at p. 5. Provide all data, in Excel format (with formulae and cells intact if possible) relative to the inputs listed:
 - a. Macroeconomic data;
 - b. Historical energy and customer data;
 - c. Weather data (20-year normal degree-day series); and
 - d. Other data including billing cycle forecasts, class-level electricity price series, and residential appliance shares and efficiencies.
19. Reference the testimony of Mr. Sinclair at p. 5. If the "Companies prepare a 30 year demand and energy forecast" each year, why did the Companies not use 30 year weather data?
20. Reference the testimony of Mr. Sinclair at p. 5 where the witness states that the forecasting approach "incorporates specific intelligence on the prospective energy needs of the Companies' largest customers" and "[t]his process allows for market intelligence to be directly incorporated into the sales forecast."
 - a. Explain in laymen's terms what information is considered; and
 - b. Provide all data, in both .pdf and Excel format with all formulae and cells intact, pertaining to the "intelligence" referenced.
21. Reference the testimony of Mr. Sinclair at p. 5, lines 15 - 17. Provide all information pertaining to the "recent history and information provided by the customers to the Companies regarding their outlook."

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22. Confirm that both Companies have experienced new record demand and energy levels during the 2013 -2014 winter. If confirmation cannot be provided, explain why not.
23. Reference the testimony of Mr. Sinclair on p. 6 at lines 16 - 17, and pp. 12 -16. Should the "2013 LF" forecast continue to be used in this application given the 2013 - 2014 winter? If yes, please explain. If not, explain why not.
24. Reference the testimony of Mr. Sinclair at p. 7. Provide all data and forecasts that the Companies obtained from HIS Global Insight.
25. Reference the testimony of Mr. Sinclair at pp. 7 - 8. Provide all data and forecasts that the Companies obtained from the Kentucky State Data Center.
26. Reference the testimony of Mr. Sinclair at p. 8. Please explain in quantitative terms the "effect of improving appliance efficiency and their adoption by customers."
27. Reference the testimony of Mr. Sinclair at p. 9. Confirm that the Companies have filed a new DSM case, Case No. 2014-00003.
 - a. Confirm or deny that the Companies have incorporated the potential energy savings from Case No. 2014-00003 into this filing;
 - b. Explain the basis for either the denial or the confirmation; and
 - c. If the Companies deny that the potential energy savings have been incorporated into this filing, please explain why the application is not premature to file until the Commission renders a decision on Case No. 2014-00003.
28. Reference the testimony of Mr. Sinclair at p. 12, line 24 regarding "climate change." What is meant by climate change?
 - a. Do the Companies believe that climate change is a phrase that denotes a change in the earth's weather conditions that is exclusively attributable to mankind's behavior? If yes, please explain. If not, explain why not.

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- b. Do the Companies believe that the climate is changing as an exclusive result of mankind's behavior? Please explain the answer.

29. Reference the testimony of Mr. Sinclair at p. 15 whereat the witness states: "The Companies seek to ensure their load forecast is prepared using sound methods by people who are qualified professionals."
 - a. Explain in detail the sound methods used; and
 - b. Provide the following with regard to the qualified professionals: (i) the names and titles of each person; and (ii) the level of education, training and experience of each individual noted in the above answer.

30. Reference the testimony of Mr. Sinclair at p. 16. Provide the necessary model(s), data, etc. that would enable a third party to replicate the Companies' results on the 2013 LF forecast.

31. Reference the testimony of Mr. Sinclair at p. 20. Describe in detail the "broad spectrum of technology" that the Companies explored.

32. Reference the testimony of Mr. Sinclair at p. 21, line 1. Provide the name of the engineering firm engaged to "help identify potential self-build alternatives and the costs for each."
 - a. Is the engineering firm associated in any way with the either of the Companies? If so: (i) which one(s)? and (ii) describe in detail.
 - b. Provide the following information regarding the engineering firm:
 - (i) Names and qualifications for each individual providing services to the Companies;
 - (ii) Total amount paid to date to the firm;
 - (iii) Total projected amount to be paid to the firm; and
 - (iv) If possible, provide the amount to be paid, or has been paid, to the firm broken down by type of service provided or will be provided.

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33. Reference the testimony of Mr. Sinclair at p. 21, at lines 12-15. Provide a detailed explanation of the statement that “replacing the retiring generation at the Green River Station will reduce the need to rely more heavily on the transmission grid in the western part of the Companies’ service area.”
34. Reference the testimony of Mr. Sinclair at p. 21, lines 18 – 22 whereat the witness states that the Companies “assumed that a commercial new construction program might be a viable future DSM program. Therefore, the load forecast was reduced accordingly.”
 - a. Is the commercial new construction program referenced in the testimony the same program requested in Case No. 2014-00003? If not, explain how it is different.
 - b. If the commercial new construction program referenced in the testimony is the same program requested in Case No. 2014-00003, is it not premature to proceed with this application until the Commission decides Case No. 2014-00003? If not, explain why not.
35. Reference the testimony of Mr. Sinclair at p. 23 where the witness states that “natural gas prices have tended to be more volatile than coal prices” and also refers to the “low volatility associated with coal prices.” Provide all analyses, reports, studies, etc. that the Companies used in reviewing the volatility of coal prices.
36. Reference the testimony of Mr. Sinclair at p. 24 whereat the witness references the CO₂ prices and the timing for CO₂ regulation as prepared by Synapse Energy Economics, Inc. Provide all information that Synapse used in the determination of the data upon which the Companies relied in their modeling.
37. Reference the testimony of Mr. Sinclair at p. 25 at lines 3 – 6 where the witness states: “However, the Companies feel that enough is known that the risk of future CO₂ regulations should be part of a 30-year analysis related to the next generation resource and that a resource should be economically robust with or without future CO₂ regulations.” Is the witness aware that the Commission previously held in Case No. 2009-00545 that possible legislation is not to be

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considered as determinative of the Commission's consideration of the least cost option in determining purchased power agreements?

38. Reference the testimony of Mr. Sinclair at p. 25 at lines 6–8 where the witness states: "I would add, however, that there is not enough known about the potential for CO₂ regulations to evaluate material changes to the Companies' existing generation fleet." Is this statement not inconsistent for planning purposes for existing generation versus the new, planned generation determination? If not, why not?
39. Reference the testimony of Mr. Sinclair at p. 27 at lines 6–13 where the witness states: "While the Brown Solar Facility is not a lowest reasonable cost resource absent REC prices greater than \$57/REC, as can be seen in Tables 35, 36, and 37 in the Resource Assessment, the Companies are proposing to move forward with the project because (i) it is a prudent hedge against both GHG regulations and natural gas price risk; (ii) it will reduce the Companies' GHG emissions; (iii) it affords the Companies the opportunity gain operational experience with an intermittent renewable resource; and (iv) it does not materially add to revenue requirements over the next 30 years." Based on what definitive data do the Companies opine that the REC will reach \$57? Provide that data or information.
- a. Provide the exact amount that the revenue requirement will increase based on the Companies' assumptions; and
 - b. Provide the assumptions the Companies used in answering the question above.
40. Reference the testimony of Mr. Sinclair at page 27, lines 15-17 where the witness states: "Given the potential for CO₂ regulations in the future and the declining cost of solar panels, the Companies believed it made sense to fully evaluate a utility scale solar project in the Resource Assessment." Does the witness believe that generation planning should be based on potential CO₂ regulations?
41. Reference the testimony of Mr. Sinclair at page 27, lines 22-23. Is the existing property referenced therein property already owned? If not, from whom did the Companies purchase the property?

42. Reference the testimony of Mr. Sinclair at page 29, lines 3-20.
- a. Identify the entity which did the due diligence on the financial strength;
 - b. Provide all the information that the entity reviewed;
 - c. Identify the entity which reviewed the reliability of the operations of the company under review; and
 - d. Provide all the information that the entity reviewed.
43. Reference the testimony of Mr. Sinclair at page 31 at lines 7-8 and 22-23. Provide all data upon which the Companies relied in deciding that the "increasing risk of CO₂ regulations and the potential for lower future natural gas prices" have changed since the prior Cane Run Unit 7 CPCN case.
44. Reference the testimony of Mr. Sinclair at page 34 whereat the witness states: "The Companies recently filed an energy efficiency potential study¹ with the Commission and are filing concurrently with this CPCN application a Demand Side Management and Energy Efficiency Program Plan for new programs for the 2015-2018 time period. The study showed that a small amount of additional energy and demand savings can be achieved beyond the Companies' planned activity currently scheduled through 2018." Have those energy and demand savings been incorporated into the load forecast in this application? If not, why not?
45. Reference page 1, bullet 3, of DSS-1, the Resource Assessment (hereinafter the "RA", "DSS-1," or "Resource Assessment").
- a. Do the Companies agree that it is prudent industry practice to use an RFP in order to obtain the necessary information to determine generation needs of an electric utility? Explain the answer in detail with examples.
46. Reference DSS-1 at page 1 at bullet 4 where the document reads in part that: "the analysis of RFP responses and self-build alternatives focused on (i) finding the lowest reasonable cost long-term resource(s); and (ii) whether a short-term PPA could cost-effectively and reliably defer the need for the long-term resource(s). Is

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there a distinction between a standard that employs a least cost option versus one that uses a least reasonable cost approach? Explain the answer.

47. Reference DSS-1 in general. Are the Companies requesting authorization to construct a 700MW NGCC or a 670MW NGCC? Explain the answer in detail.
48. Reference DSS-1 in general at page 6 whereat the document reads in part: "The Companies requested proposals from parties with resources that would qualify as a Designated Network Resource for transmission purposes." Provide a list of the parties noted in the sentence.
49. Reference DSS-1 in general at page 6 whereat the document reads in part: "Over the last year, the cost of solar panels has decreased substantially." Provide all information upon which the Companies relied in making this assertion.
50. Reference DSS-1 at page 7 whereat the document reads in part: "The DSM programs that were considered in this analysis are summarized in Table 3. The Companies will be filing a DSM application in January 2014 that considered numerous DSM programs. The DSM programs in Table 3 are the most competitive programs that will not be included in the DSM filing." Please explain what DSM programs, and the associated capacity impact, are included in Table 1, page 4, of DSS-1, and which ones are not included but requested in Case No. 2014 - 00003.
 - a. If the DSM programs are different, explain in detail how, including the impact on capacity requirements going forward?
 - b. If Case No. 2014 -00003 includes an additional capacity impact on the Companies' generation requirement going forward, should it not be included in this application?
51. Reference DSS-1 at page 9. Provide any and all information that the Companies received from HIS Global Insight.

52. Reference DSS-1 in general and at page 11 in particular which has the following paragraph:

“Because of EPA’s proposed New Source Performance Standards (“NSPS”) for GHG, natural gas has become the fuel of choice for new fossil generation. An abundance of natural gas supply resulting from advancements in natural gas drilling technologies has put downward pressure on prices and greatly improved the economics of NGCC technology. On the other hand, the impending nationwide retirement of coal units and the shift to NGCC units will increase the demand for natural gas and put upward pressure on prices. Additional upside price risk is associated with the possibility of regulations limiting the extraction of shale gas. To address this long-term natural gas price uncertainty, the Resource Assessment analysis considered three natural gas price scenarios.”

Answer the following questions regarding this paragraph.

- a. Confirm that Cane Run 7 is not expected to be fully operational until 2015. Explain in detail any denial;
- b. Confirm that the capacity factor of Cane Run will be largely influenced by the price of natural gas, and thus could vary in the range of 65-95%. Explain in detail any denial;
- c. Confirm that on a daily basis Cane Run 7 could consume in excess of 100,000 Mcf of gas. Explain in detail any denial;
- d. Confirm that during the 12 months ending June 30, 2013, the highest day sendout for LG&E’s local distribution company operations occurred on January 22, 2013, when the average temperature was about 21 degrees F (much colder weather would result in significantly higher usage). On that day total system gas sendout to all customers was about 396,000 Mcf. Explain in detail any denial;
- e. Confirm that generally, gas sendout to residential customers can be estimated at about half of that amount. Explain in detail any denial;
- f. Confirm that for the 12 months ending June 30, 2013, sales to residential customers totaled about 19,000,000 Mcf, or an average of

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- about 52,000 Mcf/per day over the course of a year. Explain in detail any denial;
- g. Provide the average sendout for LG&E's local distribution company operations from 1 January 2014 to date;
 - h. Provide the sales to residential customers from 1 January 2014 to date;
 - i. Confirm that the capacity factor of the proposed Green River NGCC will be largely influenced by the price of natural gas. Explain in detail any denial;
 - j. Provide, on a daily basis, the consumption in Mcf of the proposed Green River NGCC;
 - k. State whether the Companies can definitively assert that firm capacity for the proposed Green River NGCC can be guaranteed barring force majeure during its operation; and
 - l. State whether the United States conversion of its electric generation from coal to natural gas can be guaranteed to be met with currently planned infrastructure build-out.
53. Reference DSS-1 at page 17. Confirm that the Companies imputed a 10.5% ROE for 2013-2042 when running its modeling.
54. Reference DSS-1 at page 17. Did the Companies conduct an RFP for the proposed Brown solar facility? If not, why not?
55. Reference DSS-1 at page 12. Confirm that Table 7 contains the price inputs for the modeling process used by the Companies. Explain in detail any denial.
56. Reference DSS-1 at page 12. State whether the low, mid, high prices at the Henry Hub for any year are based on any particular date during the year. If not, explain the answer in detail.
57. Confirm that the price for natural gas rose at the Henry Hub to \$6.41 in January 2014. Explain in detail any denial.
58. Confirm that Table 7 does not indicate a price under the low, mid, or high price scenario of \$6.41 until after the year 2020. Explain in detail any denial.

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59. Reference DSS-1 at page 30 whereat the document reads: "As mentioned previously, the Green River 2x1 alternative is more expensive than other alternatives only if there is never a GHG limitation on existing coal units and gas prices are at or above the Mid gas scenario." Confirm this statement remains true as of the date when the company provides its answer.
60. Reference DSS-1 at page 33 whereat the document reads: "The Iteration 2 alternatives are listed in Table 26. The year the Green River 2x1 NGCC unit is commissioned is listed in the alternative's long and short name. All alternatives include the DSM Commercial New Construction ("CNC") program because Iteration 1 demonstrated that it reduced the cost of the Green River 2x1 alternative." Is the CNC included in Case No. 2014-00002? If not, please state why not.
61. Reference DSS-1 at page 1 whereat the document indicates that the RFP was issued in September 2012. Reference also DSS-1 at page 44 whereat the Companies state: "Based on publicly available information in this filing, the implied installed costs of these solar facilities were much lower than either of the projects the Companies' were evaluating. A report from Electric Power Research Institute ("EPRI") also supported the view that solar panel costs were decreasing." Provide all information upon which the Companies relied that details the "much lower" installed costs.
62. Reference DSS-1 at page 57. Provide a Table for the 10MW Solar PV Facility similar to that which was provided in Table 39 for the Green River 2x1 NGCC Unit Capital Costs (Nominal Dollars, \$M).
63. Reference the testimony of Mr. Voyles at page 4. Explain why the Resource Assessment models an NGCC of 640 MW whereas the company requests authorization to build a 700 MW facility.
64. Through the RFP process, did PPL receive any proposals for a nuclear power option?
- a. If so, why was it removed from consideration during the phase screening process?

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65. Did PPL Consider building a nuclear facility?
 - a. If so, provide all analysis and data associated with the consideration of building a nuclear facility; and
 - b. If not, why was a nuclear facility not considered?
66. Provide long-term weather forecasts used to predict annual MW output from the Brown facility.
67. Provide data supporting any estimations regarding annual days of sunlight at the Brown facility location.
68. Based on daily actual weather since January 1, 2004, provide:
 - a. MW per month that could have been generated if the Brown facility had been operational at the time;
 - b. The number of days when power could not be generated due to lack of sunlight;
 - c. The number of days that power could have been generated along with estimated output for each day; and
 - d. Annual energy output of the Brown facility, had it been operating normally.
69. Provide the maintenance plans for the Brown facility, including:
 - a. Number of employees necessary for regular maintenance;
 - b. Number of hours employees will spend on regular maintenance both daily and annually; and
 - c. Descriptions for maintenance that will be specific to the operation of a solar facility as opposed to a coal-fired or Natural Gas facility.
70. Does PPL or LG&E, KU separately have a goal of reducing its carbon footprint? If so, what is the goal and how is this goal expected to be achieved?
71. Reference Sinclair testimony page 7, lines 14-20. Are there alternative, respected indicators of the Kentucky Economy?
 - a. Do any of those indicators show a shrinking or stagnate Kentucky economy and if so, why were these indicators not given more weight?
72. Reference Sinclair testimony page 7, line 20 – page 8, line 4. Are there alternative, respected indicators of the Kentucky population?

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- a. Do any of those indicators show a shrinking or stagnate Kentucky population and if so, why were these indicators not given more weight?
73. Has the currently sitting President of the United States ever announced his intention to implement environmental regulations through EPA, but failed to promulgate those regulations?
- a. If so, how many times; and
 - b. If so, please list all of the environmental regulations that were announced, but never proposed by EPA.
74. Has the currently sitting President of the United States ever proposed environmental regulations from EPA that were not finalized?
- a. If so, how many times; and
 - b. If so, please list all the environmental regulations that were proposed but not finalized by EPA.
75. Has the currently sitting President of the United States ever rescinded a proposed air regulation due to pressure from the business community?
- a. If so, how many times; and
 - b. If so, please list all the rescinded proposed air regulations.
76. Did PPL consider the implications of potential legislation instituting a cap and trade program for carbon?
- a. If so, what were the results; and
 - b. If not, why not?
77. What evidence does the Company have that RECs will continue to be offered for the life of the proposed facilities?
78. Did the Company analyze any other estimates of price per ton of CO₂ besides that of a firm closely associated with environmental groups?
- a. If so, what were the results; and
 - b. If not, why did the company rely on information from a group closely affiliated with national environmental organizations?

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79. Reference Resource Assessment page 44 stating "The price for solar RECs... was assumed to escalate at 2% per year." Please provide the analysis, data and reason for assuming this 2% annual increase.
80. Reference Mr. Voyles' testimony page 5, lines 10-15. Provide the citation for the "setback requirements."
81. Reference Mr. Voyles' testimony page 5, lines 5-11. What assumptions and evidence were used to reach the conclusion that the Companies will be allowed to "net out" the PSD requirements?
- Provide all relevant documentation and citations supporting the Companies claim.
82. Reference Mr. Meiman's testimony, page 4, lines 13-16. What changes in the currently proposed CPCN would need to be made in order to take full advantage of the Kentucky tax incentives, and what are the possible implications of those changes.
83. Will the temperature of the water currently discharged from the Green River site be more than 5 degrees different than the water to be discharged if the facility proposed is constructed? If so, what will the proposed temperature of the water from the facility be?
84. Reference the testimony of Mr. Voyles at page 5, lines 1-3, whereat the witness states: "At this time, the Companies do not expect circumstances that would require new high voltage electric transmission lines for which transmission CPCNs from the Commission would be required, **but this issue is being studied.**" (Emphasis added.)
- When do the companies anticipate concluding this study? and
 - If the study finds that upgrades are needed, can the companies currently provide an estimate on the projected costs?
85. Reference the testimony of Mr. Voyles at page 5, lines 12-13 whereat the witness states that: "approximately 120 acres will need to be purchased for siting setback requirements."
- From whom will this land be purchased?
 - Have the Companies secured contractual agreement(s) to purchase the land?, and

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c. If so, has that cost been included in the application?

86. Reference the testimony of Mr. Voyles at page 5, lines 21-23, whereat the witness states: "Construction of the Green River NGCC (which will be a designated resource for the Companies) at the current Green River site reduces the need to rely more heavily on the transmission grid." Explain this statement in detail.

87. Reference the testimony of Mr. Voyles at page 10, lines 9 -10, whereat the witness states: "The Companies anticipate an approximately 11-mile route mostly along existing electric transmission rights-of-way as depicted in Exhibit 4 to the Joint Application."

- a. Is part of the land along the possible route for the gas transmission line owned by non-Companies' entities?
- b. If so, who owns the land?
- c. Have the Companies secured contractual agreement(s) to purchase the land?, and
- d. If so, has that cost been included in the application?

88. Reference the testimony of Mr. Voyles at page 10, lines 13-16, whereat the witness states: " Additionally, the Companies have had discussions with Texas Gas and ANR Pipeline Company about providing the interstate gas transportation necessary to supply the Green River NGCC and the meter station that will be necessary at the delivery point. Those discussions are ongoing."

- a. When do the Companies contemplate reaching an agreement?
- b. What are the costs upon which the Companies anticipate agreeing? (Specify each type of cost and the amount.)
- c. Have the companies provided this information in the record? If so, where?

89. Reference the testimony of Mr. Voyles at page 11, lines 8-10, whereat the witness states: "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." Provide a detailed breakdown of each and every fixed and non-fuel operating cost by type and cost.

90. Reference the testimony of Mr. Voyles at page 12, lines 4-9, whereat the witness states: "The estimated electric transmission cost of all projects which may be required in 2018 or earlier to support the Green River NGCC is approximately \$100 million. It is important to note that this cost estimate continues to be refined as new information becomes available and further engineering is performed. Of course, to the extent Commission approval is required for any electric transmission work, timely application will be made."
- a. On what do the Companies base their estimate of \$100 million?
 - b. When do the Companies anticipate concluding its cost estimate?
91. Reference the testimony of Mr. Voyles at page 13, lines 16-22, whereat the witness states: "The transmission and distribution infrastructure already in place at Brown means that the Companies do not anticipate any significant modifications or upgrades will be necessary to transmit power produced by the 10 MW solar facility. As with the Green River NGCC, the Companies will file as appropriate, an interconnect request with TranServ to identify what modifications, if any, will be required. However, at this time, the Companies expect that the existing transmission and distribution infrastructure at Brown will be adequate to handle the additional power."
- a. When will the Companies know whether any significant modifications or upgrades will be necessary?
 - b. Could there be additional costs not included in the application with the modifications or upgrades?
 - c. When will the Companies know what modifications to the interconnect will be necessary?
 - d. Could there be additional costs not included in the application with the interconnect?
92. Reference the testimony of Mr. Voyles at page 14, lines 4-11, whereat the witness states: "With that deadline in place, the Companies have contracted with HDR to develop a conceptual design. An OE for the project will be selected in early 2014 to develop detailed specifications for the site preparation requirements, solar panel systems and associated electrical inverter connections. We expect to take those specifications to the EPC marketplace thereafter. The total project cost is estimated to be approximately \$36 million pending final site sizing and preparation, consisting of approximately \$26 million for solar

generating system equipment, \$3 million for site preparation work, and \$7 million for owner's costs."

93. Provide a detailed overview of HDR, including its history with the solar industry (with all projects listed in which it has participated whether financially profitable or not).
- When will an actual design be developed rather than one that is merely conceptual in nature?
 - Upon what do the Companies "estimate" the total project costs?
 - When do the Companies project the total costs will be known?
 - Provide a detailed breakdown by type and cost for the solar generating system equipment.
 - Provide a detailed breakdown by type of work and cost for the \$3 million for site preparation work.
 - Describe in detail the costs associated with the \$7 million in owner's costs.
94. Reference the testimony of Mr. Voyles at page 14, lines 18-21, whereat the witness states: "In the Resource Assessment, conceptual fixed and variable operating and maintenance costs for the Brown Solar Facility are assumed to be \$12.50/kW-year and \$0.80/MWh, respectively. Based on these numbers, the annual total operating cost will be approximately \$140,000."
- When will the Companies have actual costs versus conceptual costs?
 - Provide a detailed breakdown for each and every fixed and variable cost.
95. Reference the testimony of Mr. Revlett at page 4, lines 10-16, whereat the witness states: "The newest rule that affected the Companies' analysis is the Proposed Greenhouse Gas Rule, which will impose the first carbon-dioxide emissions restrictions on electric generating units in the United States. It applies only to new, not existing, electric generating units. As I describe further below, the proposed restrictions will effectively eliminate utilities' ability to build economical coal units in the foreseeable future, making NGCC the fossil-fuel technology of choice in situations where other non-coal-fired alternatives are not more economical." Stated in other terms, is the witness testifying that, going forward, new coal-fired generation is simply uneconomical and will not be built under the current regulations?

96. With reference the testimony of Mr. Staton, pages 3 and 4, and Table 11, page 17 of the application. Please provide the following:
- a. The workpapers (in hard copy and Microsoft Excel) used to develop the proposed capital structure percentages of 45.7% long-term debt and 54.3% equity;
 - b. The proposed percentage of short-term and long-term debt included in the debt portion of the capital structure;
 - c. What is the timeline of the proposed of debt and equity financings that will be required to finance the project;
 - d. How the Companies determined that a return on equity of 10.5% was appropriate for the proposed project.
97. With reference the testimony of Mr. Staton, pages 3 and 4, and Table 11, page 17 of the application, how it was determined that the proposed capital structure is required to “ ... allow the Companies to maintain their strong investment-grade credit ratings.”

Peak Demand and Energy Forecast

98. Provide the combined Companies' annual long-term peak and energy forecasts as prepared in each year since 2011.
99. Provide the combined Companies' actual coincident summer peak demand for each of the last 10 calendar years along with associated weather adjusted peak demands for each year if available.
100. Provide the combined Companies' actual annual native system energy sales for each of the last 10 calendar years along with associated weather adjusted peak demands for each year if available.
101. Provide the combined Companies' actual monthly native system coincident peak demand and native system energy sales for each month since January of 2012.
102. Compare the 2013 base case peak demand forecast in this case to the base case peak demand forecast from the Companies 2011 IRP for years 2015 through 2025

and explain the major reasons why the 2013 forecast is significantly lower than the 2011 IRP forecast.

Existing Supply Resources

103. Provide the following information for each generating unit owned by the Companies:

- a. Commercial operation date,
- b. Maximum Net Dependable Capacity Rating during summer,
- c. Primary fuel type,
- d. Annual net MWh generation for each of the last five years,
- e. Annual average fuel cost (\$/MWh) for each of the last five years
- f. Scheduled retirement date,
- g. Annual equivalent availability factor for each of the last five years,
and
- h. Annual average net heat rate (Btu/kWh) for each of the last five years.

104. Provide the current normal dispatch order of the Companies' supply resources assuming each resource is available and indicate where the Cane Run and proposed Green River NGCC project will likely fit within the dispatch order.

105. Identify any must-run generating resources and provide operating policies that address the specific operating constraints applied to such units.

106. Provide firm transmission import limits into the Companies' system and discuss the extent to which transmission constraints presently impact reliability of service to Kentucky ratepayers.

107. Provide the Companies' most recent long-term transmission planning study and identify major transmission projects which are planned to be constructed within the Companies' Kentucky service area over the next seven years.

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108. Provide the total combined system energy supply mix by primary fuel type and including renewable resources and market energy purchases for each of the last three calendar years
109. Provide summaries of each existing long-term (one-year or more) firm purchased power contracts, including:
- a. Counterparty,
 - b. Term,
 - c. Annual capacity (MW) and energy purchased,
 - d. Capacity prices for remaining term of contract, and
 - e. Energy prices for remaining term of contract.
110. Provide summaries of each short-term (less than one-year) firm capacity purchase, for each of the last three calendar years and for 2014, including:
- a. Counterparty,
 - b. Term,
 - c. Monthly capacity (MW) and energy purchased,
 - d. Capacity prices (\$/kW-mo), and
 - e. Energy prices for (\$/MWh).
111. Provide the volume (MWh) and average price (\$/MWh) of market energy purchases for the combined Companies during on-peak hours for each month since January of 2012.
112. Provide the volume (MWh) and average price (\$/MWh) of market energy purchases for the combined Companies during off-peak hours for each month since January of 2012.
113. Provide the volume (MWh) and average price (\$/MWh) of off-system sales for the combined Companies for each month since January of 2012.

Need for Capacity

114. Provide the basis for the assumed reserve margin levels used to assess the Companies forecasted need for capacity.

115. Provide the planning reserve margin level (%) used for the Companies' 2011 IRP and Cane Run NGCC analysis.

116. Provide the current long-term forecast of peak demand and capacity reserve levels for MISO.

CO₂ Price Forecast

117. Reference Exhibit DSS-1, page 14, provide the Synapse Energy Economics report from which the referenced Mid CO₂ price forecast was derived.

118. Explain why Synapse Energy Economics forecast was selected as the basis for the Companies' Mid CO₂ price forecast.

119. Provide any other CO₂ price forecasts that were reviewed by the Companies in an effort to assess the reasonableness of the 2012 Synapse Energy Economics CO₂ forecast.

120. Provide any independent analysis conducted by the Companies to assess the reasonableness of the underlying assumptions and results of the Synapse Energy Economics CO₂ forecast.

121. Provide the CO₂ forecasts used for the Companies' most recent IRP analysis and for the analysis of the new Cane Run NGCC facility.

122. Reference Mr. Sinclair's direct testimony, page 25, explain the basis for the assumed 0.5 likelihood assigned to the Mid CO₂ price forecast and provide any analysis supporting this assumption.

123. Reference Mr. Sinclair's direct testimony, page 25, explain why CO₂ prices were included in the Companies' economic evaluation of the Green River NGCC project when there is not enough known about the potential for CO₂ regulations to evaluate material changes to the Companies' existing generating fleet.

124. Provide the Companies' testimony from the Cane Run CCN case addressing forecasted CO₂ prices used for the analysis supporting the Can Run NGCC facility.

Evaluation of Supply Alternatives

125. Reference Exhibit DSS-1, page 6, identify each of the 72 proposals which remain valid and which could still be selected as alternatives to the proposed Green River NGCC project. For proposals which are no longer valid, explain why they are no longer valid.

126. Reference Exhibit DSS-1, page 16, provide a sample calculation illustrating the referenced imputed debt adjustment used for PPAs.

127. Reference Exhibit DSS-1, page 16, provide the specific Commission findings from the Companies' last rate case that address imputed debt adjustments for PPAs.

128. Reference Exhibit DSS-1, page 27, provide the PVRR of the imputed debt cost included for each PPA evaluated for each of the alternatives presented in Table 21.

129. Explain why no self-build simple cycle combustion turbine alternatives were evaluated as a potential alternative to the proposed Green River NGCC facility.

130. Reference Exhibit DSS-1, page 16, provide capital and operating cost assumptions used for the analysis of the Green River NGCC and Cane Run NGCC facilities comparable to the figures presented in Table 10, and explain the basis for any differences between the LGR assumptions and the Green River and Cane Run assumptions.

131. Reference Exhibit DSS-1, Appendix B, provide electronic models with underlying assumptions and calculations supporting the Phase 1 Screening Analysis results presented for each alternative.

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132. Reference Exhibit DSS-1, page 6, provide the specific regulations and analysis supporting the assumption that the Green River NGCC unit would be subject to operating constraints (120 starts per year) if it is commissioned after 2018, indicate whether this constraint was applied to all NGCC resources evaluated that were commissioned after 2018, and provide the estimated PVRR impact of this assumed constraint for each NGCC alternative evaluated.
133. Reference Exhibit DSS-1, page 18, provide each of the referenced costs for each proposal evaluated in the Phase 1 screening analysis.
134. Reference Exhibit DSS-1, page 19, explain why coal resources were evaluated using a maximum 65% capacity factor and provide any analysis or historical basis for this assumption.
135. Reference Exhibit DSS-1, page 19, explain why NGCC resources were evaluated using a maximum 85% capacity factor and provide any analysis or historical basis for this assumption.
136. Reference Mr. Sinclair's direct testimony, pages 17-18, identify the specific conditions which the FERC placed on the acquisition of the Bluegrass Generation project and provide analysis which supports the Companies' conclusion that such conditions made the acquisition uneconomical.
137. Reference Mr. Sinclair's direct testimony, page 28, provide the referenced study and resultant cost estimate for the Brown Solar Facility.
138. Reference Mr. Sinclair's direct testimony, page 31, explain why the potential for lower future natural gas prices reduces the cost advantage of the [REDACTED] over NGCC alternatives given the fact that lower gas prices reduce the fuel cost advantage arising from the higher efficiency of NGCC when compared to SCCT resources.
139. Provide a detailed capital cost estimate for the Green River NGCC facility including transmission, gas pipeline and plant costs, along with construction interest costs.

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140. Provide the status of the analysis of electric transmission system upgrades required for the Green River NGCC project along with details supporting the estimated transmission costs included for the project in the Phase 1 and Phase 2 analysis of the project.
141. Reference Exhibit DSS-1, page 21, explain why the Companies believe it was reasonable or realistic to assume no access to market energy purchases or off-system sales in the Phase 2 modeling of long-term resource alternatives.
142. Reference Exhibit DSS-1, page 24, provide workpapers supporting the costs of the [REDACTED] and Green River projects presented in Table 18 and explain whether both projects reflect 785 MW NGCC units.
143. Reference Exhibit DSS-1, page 24, explain why the [REDACTED] facility has transmission networking costs while the Green River project does not have such costs as presented in Table 18.
144. Reference Exhibit DSS-1, page 24, explain why the [REDACTED] NGCC proposal was not evaluated in the Phase 2 Strategist analysis in order to identify potential operating cost benefits arising from owning a NGCC that is somewhat larger than the proposed Green River NGCC facility.
145. Provide analysis of the [REDACTED] proposal paired with short-term PPAs for each of the 12 scenarios evaluated consistent with the analysis presented in Table 23 on page 24 of Exhibit DSS-1.
146. Explain how the Companies' Phase 2 analysis accounted for the value of any fixed or indexed capital and operating costs or performance guarantees reflected in proposals for long-term power supply alternatives when compared to non-binding cost estimates and performance levels of the Green River NGCC project.
147. Provide electronic files supporting the weighted average results presented in Tables 19, 20, 21 and 22 of Exhibit DSS-1.

148. Reference Exhibit DSS-1, page 29, provide electronic files including the annual total nominal revenue requirements for each year, and cumulative PVRR calculation, for each of the 12 scenarios evaluated for each alternative as presented in Table 23.
149. Reference Exhibit DSS-1, page 29, provide the cumulative PVRR of imputed debt for each of the 12 scenarios evaluated for each PPA alternative presented in Table 23.
150. Reference Exhibit DSS-1, page 22, for each component of total revenue requirements modeled in the Phase 2 analysis as presented in Table 14, provide the annual nominal amount and cumulative PVRR calculation, for each year of each of the 12 scenarios evaluated for each alternative as presented in Table 23 on page 29 of Exhibit DSS-1.

Brown Solar Facility

151. Provide capital and operating cost assumptions used for the analysis of the Brown Solar Facility, along with the basis for such assumptions.
152. Provide capital and operating costs and annual energy production levels reported for other existing solar facilities which were reviewed in the course of evaluating costs of the Brown Solar Facility.
153. Provide forecasted annual energy (MWh) supplied from the Brown Solar Facility for each scenario evaluated including this project, along with the basis for such energy production forecasts.
154. Provide the firm capacity credit associated with the Brown Solar Facility that will be reflected in the Companies' system reserve margin calculation.
155. Provide the percentage of the Companies total energy supply and percentage of total system firm capacity that will be supplied from the Brown Solar Facility.

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156. Provide the Companies' existing green energy tariffs and the total annual customers and energy sales made pursuant to these tariffs during the last four calendar years.
157. Identify any Kentucky renewable energy goals or policies that were considered in the Companies' decision to construct the Brown Solar Facility.
158. Provide forecasted monthly on-peak and off-peak energy production levels as reflected in the Companies' economic analysis of the Brown Solar Facility.
159. Provide the results of economic modeling that was prepared to quantify the PVRR impact of constructing the Brown Solar Facility when compared to other available alternatives considered under a range of scenarios.
160. Provide a detailed capital cost estimate for the Brown Solar Facility, including any related transmission costs, construction interest costs.
161. Provide the Companies' quantification of the forecasted economic benefits attributable to increased fuel diversity and solar operating experience arising from ownership of the Brown Solar Facility.
162. Provide the forecasted annual revenue requirement for the Brown Solar Facility expressed on a nominal dollars per year and \$/MWh basis for each year of the forecasted life of the facility.
163. Reference Mr. Voyle's direct testimony, page 13, provide any analysis of the transmission modifications or upgrades necessary to support the Brown Solar Facility and indicate when the Companies plan to file an interconnect request with TransServ for this facility.
164. Provide the current schedule for the Brown Solar Facility with all major milestones identified.

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165. Reference Exhibit DSS-1, page 44, provide documentation regarding the referenced Public Service of Colorado solar facilities purchase.
166. Reference Exhibit DSS-1, page 44, provide documentation supporting the referenced market prices for solar RECs and explain why solar RECs from Kentucky cannot be sold in New Jersey, Maryland and Massachusetts markets.
167. Reference Exhibit DSS-1, page 45, provide the referenced updated HDR solar cost study.
168. Provide the estimated percentage reduction in total system annual carbon emissions attributable to the Brown Solar Facility.

Green River NGCC

169. Provide the current schedule for the Green River NGCC project with all major milestones identified.
170. Provide the current schedule for the Cane Run NGCC project with all major milestones identified.
171. Provide any analysis by the Companies of the extent to which the existing regional natural gas pipeline infrastructure will be adequate to reliably deliver firm fuel supply requirements of the Green River and Cane Run NGCC projects over the 30-year study period addressed in the 2013 Resource Assessment.
172. Provide the timeframe in which the Phase 2 economic modeling presented in the 2013 Resource Assessment was performed.
173. Reference Mr. Voyle's direct testimony, page 5, discuss circumstances under which a transmission CPCN might be needed for the Green River NGCC project and explain how the need for a transmission CPCN would be expected to impact the planned in-service date for the plant.

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174. Reference Mr. Voyle's direct testimony, page 5, explain the referenced net out of PSD air permitting process; provide regulations that address this net out provisions; and identify the estimated cost increase that would be incurred if Green River was delayed such that it could not take advantage of this net out provision.
175. Reference Mr. Voyle's direct testimony, page 5, provide any analysis that was conducted to quantify the increase in reliability of energy supply to Western Kentucky arising from the construction of the proposed Green River NGCC when compared to the alternative of relying more heavily on the transmission grid to transmit power to that area.
176. Provide the amount of replacement capacity that would have to be procured by the Companies in 2018 and 2019 if the in-service date of the Green River NGCC was delayed by two years.
177. Reference Mr. Voyle's direct testimony, page 10, provide the referenced Combined Cycle Feasibility Study Life Cycle Cost Analysis prepared by HDR.
178. Reference Mr. Voyle's direct testimony, page 11, provide any analysis conducted by the Companies' to confirm the reasonableness of HDR's forecasted fixed and variable O&M costs for the Green River NGCC facility.
179. Reference Mr. Voyle's direct testimony, page 11, provide the referenced analysis by the Companies' Transmission staff of possible transmission modifications and related costs to support the Green River NGCC.
180. Provide the estimated percentage uncertainty in the capital cost estimate for the Green River NGCC which was used for the Phase 2 economic analyses of the project in comparison to alternatives.
181. Reference Mr. Revlett's direct testimony, page 5, provide the annual CO2 emissions and average annual CO2 emission rate (lbs CO2/MWh) for the Green

River NGCC project and each other NGCC alternative evaluated for each year of each scenario evaluated in the Phase 2 Resource Assessment analysis.

182. Reference Mr. Revlett's direct testimony, page 10, identify any proposed or anticipated regulations of power plant cooling water intake and discharge facilities that may apply to the Green River NGCC project and provide the estimated cost impact of such future regulations on the project.

183. Fleet Dispatch:

- a. Please confirm that both LG&E and KU dispatch their fleets on a joint basis.
- b. If you confirm the question in subpart (a), above, please confirm that the Companies continue to dispatch their fleet in economic order of dispatch.
- c. If you confirm the questions in subparts (a) and (b), above, please state whether the Cane Run 7 combined cycle unit ("CR 7"), once on-line and ready for dispatch, will cause the Companies to no longer dispatch in economic order.
- d. Please state whether CR 7, once on-line and ready for dispatch, will cause the Companies to in any manner alter their combined fleets' order of economic dispatch. Include in your response: (i) a list of all generating units in rank-order depicting the most frequently dispatched unit first, concluding with the least-dispatched unit at the end of the list; (ii) hours of operation for each unit for each of the last five (5) years; and (iii) any and all estimates or projections of any type or sort depicting where CR 7 will fall within the order of economic dispatch.
- e. If you confirm the questions in subparts (a) and (b), above, please state whether the proposed Green River NGCC unit, once on-line and ready for dispatch, will cause the Companies to no longer dispatch in economic order.
- f. Please state whether the proposed Green River NGCC unit, if approved, constructed, and once on-line and ready for dispatch, will cause the Companies to in any manner alter the their combined fleets' order of economic dispatch. Based on your response to subpart (d), above, provide any and all estimates or projections of any type or sort depicting where the Green River combined cycle unit will fall within the order of the Companies' order of economic dispatch.
- g. As between CR 7 and the proposed Green River NGCC unit, provide any and all information, studies, reports, or analyses of any type or

sort indicating the number of projected hours of dispatched operation per year for each plant over the projected life span of each plant.

- h. Based on the Companies' responses to subparts (d) and (f), above, explain how the Companies' responses to those subparts would differ based on each of the following natural gas price sensitivities [per mmBtu] of: (i) \$5.00; (ii) \$5.50; (iii) \$6.00; (iv) \$6.50; (v) \$7.00; (vi) \$7.50; (vii) \$8.00; (viii) \$8.50; (ix) \$9.00; (x) \$9.50; (xi) \$10.00; (xi) \$10.50 and (xii) \$11.00.
- i. Based on to your response to subpart (h), above, provide an explanation of how the differing price sensitivities could or would affect the economic order of dispatch of both the proposed Green River NGCC and CR 7.
- j. Please provide an explanation of whether or how the economic order of dispatch for both CR 7 and the proposed Green River NGCC will or could change if the Companies join an RTO.
- k. Please provide copies of any and all sensitivity analyses prepared by or for the Companies regarding natural gas prices, including any and all input and output files, workpapers and source documents. Where this information was inputted into Excel spreadsheets, please provide electronic versions of those spreadsheets with formulae intact and cells unprotected.

184. Fuel Supply:

- a. Please state when the Companies expect to obtain a contract for firm transportation for the proposed Green River NGCC.
- b. Please state whether the Companies will issue an RFP for the firm transportation of gas supply needed to supply the proposed Green River NGCC unit. If not: (i) why not?; and (ii) assuming Texas Gas is the entity with which the Companies expect to contract, how can the Companies be certain Texas Gas will not exact a premium price?
- c. With regard to CR 7, please identify: (i) the pipeline owner for the gas that will be used to supply the unit; (ii) any and all gas suppliers; (iii) whether the pipeline owner places any restrictions of any type or sort on the access gas suppliers have or may have to the pipeline; (iv) whether the pipeline owner gives any price preference to gas suppliers in any manner affiliated with the pipeline owner.
- d. Provide an explanation of the measures and actions the Companies take with regard to procurement of coal contracts, including the RFP process. Explain how this process will or could differ from the process

- in which the Companies will engage to obtain contracts for the supply of natural gas.
- e. Provide a detailed explanation and breakdown of all costs the Companies expect to incur with regard to fuel supply for both CR 7 and the proposed Green River NGCC unit. Include an explanation of how the Companies intend to recover each such cost.
 - f. Provide an explanation of how the Companies intend to pass along the costs for fuel supply for both CR 7 and the proposed Green River NGCC unit through the Fuel Adjustment Charge. Include in your explanation a discussion of regulatory filings with the Kentucky Public Service Commission, and any changes to how those costs will be reported in customer bills.
 - g. With regard to CR 7, please identify and provide copies of any and all hedging contracts the Companies have procured. If none, please identify any and all plans the Companies have or may have to procure any such contracts, and the process(es) by which such contracts will be procured.
 - h. With regard to your response to subpart (g), above, do any or all of those contracts identified therein differ from any hedging contracts LG&E has in place regarding the supply of gas used for its LDC operations? Please explain in detail.
 - i. With regard to the proposed Green River NGCC unit, please identify and discuss any and all plans the Companies have or may have to procure any gas hedging contracts, and the process(es) by which such contracts will be procured.
 - j. Please provide copies of any and all reports, studies, analyses or projections regarding the use of hedging of gas fuel supplies for both the proposed Green River NGCC unit and CR 7.
 - k. Please provide copies of any and all studies regarding risk analysis the Companies either conducted, or which any external consultants or other entities conducted on the Companies' behalf, pertaining to the use of natural gas as a fuel stock.

185. Proposed Transmission Upgrades:

- a. Explain whether the proposed transmission improvements will in any manner enhance the Companies' interconnections with any other utilities, transmission owners, ITOs, electric generation providers, or RTOs, including TVA. Explain in complete detail.

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- b. Provide a discussion of what role, if any, the Companies' OATT will have on the costs of the proposed upgrades.
186. Provide a detailed description of the assumptions and inputs used in the Companies' most recent IRP filing, and compare them with the assumptions and inputs utilized in the joint load forecasts for 2012, 2013, and the most recent joint load forecast.
 - a. Based on the Companies' response to AG 1-20 in Case No. 2014-00003, the Companies will in the next few business days be filing their most-recent IRP. Will the Companies agree to supplement their response with the latest information available from this forth-coming IRP? If not, why not?
187. Provide copies of any and all studies, projections or analyses regarding how the construction of both the proposed Green River NGCC and the proposed Brown Solar Facility will affect price elasticities of demand regarding residential, commercial and industrial classes.
188. Explain whether the colder-than-normal temperatures experienced in the Winter of 2013-2014 will or may cause one or both the Companies to become either a winter-peaking or dual-peaking utility, and if so, for how long into the future.
189. Provide separate estimates of the rate impacts if both the proposed Green River NGCC and the Brown Solar Facility are approved and constructed, broken down by ratepayer class. Please provide these estimates based on an average level of monthly consumption.
 - a. Provide the estimated impact on the average residential customer bill if the application is approved as filed.
190. Provide the retirement dates for each of the following: Cane Run 4, 5 and 6; Green River 3 and 4; and Tyrone 3.
 - a. Describe: (i) how these plants' net book value have been addressed, including any specific citations to other cases; and (ii) whether they will be addressed in the Companies' next base rate case, and if so, how.

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191. Reference the petition, numerical paragraph 5, wherein it is stated "There are no like facilities in the vicinity of Green River NGCC and it is not anticipated that [it] will compete with any other public utilities, corporations, or persons." Please state whether the Companies are aware that TVA has announced plans to construct a combined cycle gas-fired generation unit in Muhlenberg County having a similar generation output to the Companies' proposed Green River NGCC. Please discuss whether this will in any manner change the statement as quoted above.
192. With regard to the proposed Brown Solar Facility, state whether the Companies anticipate that, if constructed, the power generated from this facility will constantly be sent into the Companies' transmission system. If not, do Joint Applicants anticipate any future filings in which they seek permission to construct energy storage facilities for the specific purpose of storing the solar-generated power for later distribution?
193. State whether as a result of the current filing, the Companies anticipate any change with regard to how they handle net metering, and/or in distributed generation, and in particular solar generation provided in which the Companies' own customers participate. Please explain in detail.
194. Refer to the Thompson testimony at p. 8, lines 18-21. In the event costs for solar panels, and/or any other plant and equipment necessary to serve the proposed Brown Solar Facility should increase, will the Companies withdraw that portion of its application regarding the Brown Solar Facility? At what point could or would any price escalations make the proposed Brown Solar Facility no longer viable?
195. Reference the Sinclair testimony at pp. 12-13. Will the load forecast to be provided in the Companies' next IRP filing, which according to the Companies' response to AG 1-20 in Case No. 2014-00003 will occur in the next few weeks, utilize a different load forecast than either of the forecasts discussed by Mr. Sinclair? If so, will the Companies agree to provide that forecast in the instant case, once it is available?
196. Reference the Sinclair testimony, Exhibit DSS-1 (2013 Resource Assessment), Executive Summary, p. 2.

- a. Identify and describe the four scenarios in which the proposed Green River NGCC is not the least-cost alternative;
- b. Provide a projection of amounts to be earned from the sale of RECs associated with the Brown Solar Facility, if approved and constructed, over the projected lifespan of that facility.

197. Reference Exhibit DSS-1, Table 7 on p. 12. Confirm that:

- a. The three price scenarios provided therein are assumed to be equally likely [as stated on p. 6, § 4.1.2];
- b. Under the mid-price scenario, gas prices do not surpass \$6.00 until 2022;
- c. Under the high-price scenario, gas prices do not surpass \$6.00 until 2020; and
- d. According to the U.S. Energy Information Administration, natural gas spot prices on March 5, 2014 traded at \$6.41/MMBTu, and peaked at \$7.90/MMBTu on March 4, 2014. ²

198. With regard to [REDACTED] proposal to sell its [REDACTED] plant, did the Companies' analyses included in the instant filing take into consideration the fact that [REDACTED] will not [REDACTED]? ³

- a. If so, please state where this can be found in the analyses.
- b. If not, please state how this would or could affect the Companies' analyses in the instant filing.
- c. If the Companies purchased the [REDACTED] plant instead of constructing the proposed Green River NGCC, and proceeds with the plan to retire the Green River 3 and 4 units, would the company be able to offset [REDACTED] SO₂, NO_x, and particulate emissions with the retirement of the two remaining Green River coal units? If not, why not?
- d. If the Companies respond in the affirmative to subpart (c), above, did the Companies take this into consideration in their decision making process? If not, why not?
- e. If the Companies were to purchase the [REDACTED] plant, state the savings that would be achieved by not having to obtain an air permit as they would have to do for the proposed Green River NGCC.

² Source: <http://www.eia.gov/naturalgas/weekly/>

³ [REDACTED]

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- f. With regard to the Companies' response to subpart (e), above, did their analysis take any such savings into consideration? If not, why not?
 - g. Reference Exhibit DSS-1, p. 21 wherein it is stated, "The information presented here reflects each party's best-and-final proposals." State whether the Companies have had any further communications with [REDACTED] regarding any of its proposals since the filing of the application in the instant proceeding.
 - h. Please provide any counter-offer(s) the Companies may have made to [REDACTED] regarding any potential purchase of the [REDACTED] and/or plants.
199. Are the Companies aware of any studies regarding the usage of coal combined with iron ore pellets as a fuel for utility generating plants, in an oxidation process? If so, please discuss whether such a process could be used in a coal-fired unit.
200. Reference the following statements in Exhibit DSS-1: (i) "[REDACTED] unfavorable to the Green River 2x1 alternative (over all scenarios)" [at p. 25]; and (ii) "In a CO2 constrained world, the efficiency of gas technologies is important. The improved heat rate of the Green River 2x1 alternative (compared to the [REDACTED] alternative) more than offsets the higher capital cost for the Green River 2x1 alternative" [at p. 26].
- a. Did the Companies' modeling consider any scenarios in which an [REDACTED] was modeled on the basis of converting the facilities to a combination of 2x1 and/or 3x1 units to be scaled-up to an output that would approximate that of the proposed Green River NGCC? If so, state where in the filing this information can be found. If not, why not?
 - b. Describe how any such conversion of the [REDACTED] would compare to the proposed Green River NGCC, and any other alternative.
 - c. Discuss whether any such conversion of the [REDACTED] would reduce the heat rate of that facility. If not, why not? If so, describe how this would compare to the proposed Green River NGCC.
 - d. Discuss the ways in which any such conversion of the [REDACTED] would change each of the 12 scenarios set forth in the application.

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- e. Provide any estimates the Companies prepared, or which were prepared under their direction or supervision, regarding cost estimates for a conversion of the [REDACTED] sufficient to meet the Companies' power needs.
201. In Case No. 2011-00375, the Companies chose to pursue a purchase of the LS Power Bluegrass Facility. Provide a detailed explanation of what has changed since the completion of that case to cause the Companies to now assert that a purchase of those facilities (whether with or without a conversion of those facilities to either 2x1 and/or to 3x1) is not the best option.
 202. In the event the U.S. Supreme Court voids the EPA's proposed GHG Rule governing existing power plants, would the Companies be willing to submit an amended application to reflect the changes the absence of any such rule would have on the 12 scenarios set forth in the application? If not, why not? Explain in complete detail.
 203. Provide a discussion of the extent to which Joint Applicants have studied, or are willing to study, options to share ownership of power generation plants and/or related infrastructure, including transmission projects, with other utilities based in Kentucky. For example, East Kentucky Power Cooperative will in the next few years require additional capacity, generation or both.