

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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PUBLIC SERVICE
COMMISSION

In the Matter of:

THE 2011 JOINT INTEGRATED RESOURCE)
PLAN OF LOUISVILLE GAS AND ELECTRIC) CASE NO. 2011-00140
COMPANY AND KENTUCKY UTILITIES)
COMPANY)

INTERVENORS RICK CLEWETT, DREW FOLEY, JANET OVERMAN, GREGG WAGNER, THE NATURAL RESOURCES DEFENSE COUNCIL, AND THE SIERRA CLUB SECOND SET OF INTERROGATORIES AND REQUESTS FOR PRODCUTION OF DOCUMENTS TO LOUISVILLE GAS AND ELECTRIC COMPANY AND KENTUCKY UTILITIES COMPANY

Intervenors Rick Clewett, Drew Foley, Janet Overman, Gregg Wagner, Natural Resources Defense Council, and Sierra Club (collectively, "Intervenors") propound the following interrogatories and requests for production of documents on Louisville Gas and Electric Company and Kentucky Utilities Company (collectively, "Companies") regarding the Companies' 2011 Joint Integrated Resource Plan that is the subject of the above-captioned proceeding.

These interrogatories and requests shall be answered in the manner set forth in the Kentucky Public Service Commission's ("Commission") May 16, 2011 Order by September 7, 2011. Please produce the requested documents in electronic format at the offices of the Natural Resources Defense Council, 2 N. Riverside Plaza, Suite 2250, Chicago, Illinois 60606 or at such other location as may be mutually agreed upon between counsel of record.

Wherever the response to an interrogatory or request consists of a statement that the requested information is already available to the Intervenors, provide a detailed citation to the document where the information can be found. This citation shall include the title of the document, relevant page number(s), and to the extent possible paragraph number(s) and/or chart/table/figure number(s).

In the event that any document referred to in response to any interrogatory or request has been destroyed, specify the date and the manner of such destruction, the reason for such destruction, the person authorizing the destruction and the custodian of the document at the time of its destruction.

The Intervenors reserve the right to serve supplemental, revised, or additional discovery requests as permitted in this proceeding.

DEFINITIONS

Unless otherwise specified in each individual interrogatory or request, “you,” “your,” or “Companies” refers to Louisville Gas & Electric and Kentucky Utility Company, and their affiliates, employees, and authorized agents.

“And” and “or” shall be construed either conjunctively or disjunctively as required by the context to bring within the scope of these interrogatories and requests for production of documents any information which might be deemed outside their scope by another construction.

“Any” means all or each and every example of the requested information.

“Communication” means any transmission or exchange of information between two or more persons, whether orally or in writing, and includes, without limitation, any conversation or discussion by means of letter, telephone, note, memorandum, telegraph, telex, telecopy, cable, email, or any other electronic or other medium.

“CO2” means carbon dioxide.

“Document” refers to written matter of any kind, regardless of its form, and to information recorded on any storage medium, whether in electrical, optical or electromagnetic form, and capable of reduction to writing by the use of computer hardware and software, and includes all copies, drafts, proofs, both originals and copies either (1) in the possession, custody or control of the Companies regardless of where located, or (2) produced or generated by, known to or seen by the Companies, but not now in their possession, custody or control, regardless of where located whether or not still in existence.

Such “documents” shall include, but are not limited to, applications, permits, monitoring reports, computer printouts, contracts, leases, agreements, papers, photographs, tape recordings, transcripts, letters or other forms of correspondence, folders or similar containers, programs, telex, TWX and other teletype communications, memoranda, reports, studies, summaries, minutes, minute books, circulars, notes (whether typewritten, handwritten or otherwise), agenda, bulletins, notices, announcements, instructions, charts, tables, manuals, brochures, magazines, pamphlets, lists, logs, telegrams, drawings, sketches, plans, specifications, diagrams, drafts, books and records, formal records, notebooks, diaries, registers, analyses, projections, email correspondence or communications and other data compilations from which information can be obtained (including matter used in data processing) or translated, and any other printed, written, recorded, stenographic, computer-generated, computer-stored, or electronically stored matter, however and by whomever produced, prepared, reproduced, disseminated or made.

Without limitation, the term “control” as used in the preceding paragraphs means that a document is deemed to be in your control if you have the right to secure the document or a copy thereof from another person or public or private entity having actual possession thereof. If a document is responsive to a request, but is not in your possession or custody, identify the person with possession or custody. If any document was in your possession or subject to your control,

and is no longer, state what disposition was made of it, by whom, the date on which such disposition was made, and why such disposition was made.

In the interest of efficiency during discovery and the hearing process, bates stamp all documents produced in response to these interrogatories and requests for production.

For purposes of the production of “documents,” the term shall include copies of all documents being produced, to the extent the copies are not identical to the original, thus requiring the production of copies that contain any markings, additions or deletions that make them different in any way from the original

“Identify” means:

(a) With respect to a person, to state the person’s name, address and business relationship (e.g., “employee”) to the Companies;

(b) With respect to a document, to state the nature of the document in sufficient detail for identification in a request for production, its date, its author, and to identify its custodian. If the information or document identified is recorded in electrical, optical or electromagnetic form, identification includes a description of the computer hardware or software required to reduce it to readable form.

“kWh” means kilowatt-hours.

“MISO” means the Midwest Independent Transmission System Operator.

“MW” means megawatt.

“MWh” means megawatt-hours.

“Relating to” or “concerning” means and includes pertaining to, referring to, or having as a subject matter, directly or indirectly, expressly or implied, the subject matter of the specific request

“Resource Plan” means the Companies’ April 21, 2011 filing with the Commission entitled The 2011 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utility Company, and any amendments, supplements, or revisions to that filing.

PRIVILEGE

If you claim a privilege including, but not limited to, the attorney-client privilege or the work product doctrine, as grounds for not fully and completely responding to any interrogatory or request for production, describe the basis for your claim of privilege in sufficient detail so as to permit the Commission to adjudicate the validity of the claim if called upon to do so. With respect to documents for which a privilege is claimed, produce a “privilege log” that identifies

the author, recipient, date and subject matter of the documents or interrogatory answers for which you are asserting a claim of privilege and any other information pertinent to the claim that would enable the Intervenor or the Commission to evaluate the validity of such claims.

TIME

Unless otherwise provided, the applicable time period for each of these interrogatories and requests for production is January 1, 2009 to present.

INTERROGATORIES AND REQUESTS FOR PRODUCTION

1. Refer to the Companies' response to Question No. 16 of the Intervenor's first set of discovery requests. Please provide the following:
 - a. KU's actual electric energy sales in MWh by customer class for each of the years 2000 through 2010,
 - b. KU's actual peak loads in MW by customer class for each of the years 2000 through 2010,
 - c. KU's forecast peak loads in MW by customer class for each of the years 2011 to 2025,
 - d. LG&E's actual electric energy sales in MWh by customer class for each of the years 2000 through 2010,
 - e. LG&E's actual peak loads in MW by customer class for each of the years 2000 through 2010, and
 - f. LG&E's forecast peak loads in MW by customer class for each of the years 2011 to 2025.

2. Please answer the following questions concerning curtailable load:
 - a. Why do the Companies include only 51 MW of curtailable load in the forecast of summer peak, per the note below Table 5.(3)-8 on p. 5-26 of the IRP, when on page 5-25, the IRP states that KU's curtailable load is estimated to be 66 MW?
 - b. Is the curtailable load expected to increase over the period of the IRP? Why or why not?

3. Please answer the following questions concerning sales and load forecasts.
 - a. Refer to Volume I, Table 5.(3)-2 of the IRP. Please state whether these sales forecasts weather normalized.
 - b. Refer to Table 1 on p. 20 of Appendix A to the Optimal Expansion Plan, Volume III of the IRP. Please state whether these load forecasts weather normalized.
 - c. Please provide an electronic spreadsheet, with links intact, that reconciles the sales forecasts referenced in part (a) of this question with the load forecasts referenced in part (b).

4. Refer to the Companies' response to Question No. 4 of Commission Staff's First Information Request. Please explain why the Commercial Conservation program's performance in 2008 and 2009 was so far below projections.

5. Refer to the projected and actual energy and demand savings provided in the Companies' response to Question No. 4 of the Commission Staff's first information request.
 - a. For each company and each program, please provide the proposed demand side management ("DSM") budget for the years 2008, 2009, and 2010.
 - b. For each company and each program, please provide actual DSM expenditures for the years 2008, 2009, and 2010.

6. Refer to the Companies' response to Question No. 25 of the Intervenor's first set of discovery requests. The Companies state that the current portfolio of DSM/EE programs through the end of 2010 has achieved a demand reduction of 182 MW and an energy reduction of 207,900 MWh.
 - a. For each historical year starting in the first year of the Companies' DSM programs, please provide annual incremental energy, lifetime energy, and demand reduction by company and by program.
 - b. Please provide projected annual incremental energy, lifetime energy, and demand reduction by company for each current DSM program.

7. Refer to the Companies' response to Question No. 3 of the Commission Staff's 2nd Information Request. Please indicate the status of the approval of the Demand Side Management/Energy Efficiency Program Plan. For each such program, please indicate the proposed and approved (if different from proposed) duration, budget, projected annual incremental energy savings, projected lifetime energy savings, and projected demand reduction.

8. Please state whether the Companies reviewed the 2007 report titled "An Overview of Kentucky's Energy Consumption and Energy Efficiency Potential" prepared by the Kentucky Pollution Prevention Center, University of Louisville and the American Council for an Energy-Efficient Economy.
 - a. If so, please explain whether and how the information provided in the report was used to develop the Companies' DSM programs.
 - b. If not, please state why not.

- a. Please provide the cost of the projects to reduce SO₂ emissions, including FGDs for each of the electric generating units mentioned above. Please provide the data in terms of the total cost and the cost per ton of SO₂ reduction.
 - b. Please explain if any other existing power plants also need to add FGDs, and if so, when.

14. Refer to Table 8.(3)(b) on page 8-18 of Volume I of the IRP. Please provide the capital, operating, and maintenance cost of SCRs and Baghouses assumed for each power plant unit in terms of the total cost and the cost per ton of emissions reduction for nitrous oxides (NO_x) and particulate matter (PM).

15. Please state whether any costs for complying with pending regulations on disposal of coal combustion residuals, water intake structures, or effluent limitation guidelines been included in the modeling.
 - a. If so, please identify the specific costs that were assumed for each electric generating unit for each of the pending regulations noted above.
 - b. If not, please explain why.

16. For each electric generating unit, please indicate whether the unit is controlled for NO_x, SO₂, and hazardous air pollutants, whether each unit needs or is expected to need additional controls, and how such controls will impact the unit's forward-going costs and operating characteristics.

17. Refer to the levelized costs, provided in \$/kW-yr, in Table 8.(5)(c)-2 on page 8-114 of Volume I of the IRP. Please provide the levelized cost of power from each unit in terms of \$/kWh.

18. Refer to the Companies' response to Question No. 6 of Commission Staff's First Information Request.
 - a. Please describe the objective of the Request for Proposals (RFP).
 - b. Please provide the RFP document.
 - c. For each bid, please describe how much capacity was offered, the prime mover, fuel(s), and cost.
 - d. Please state whether the Companies incorporate any information that was obtained from the responses to this RFP into their IRP analysis. If so, please describe what information was incorporated and how. If not, why not?

19. Refer to the Supply-Side Analysis in Volume III of the IRP. Please state whether the high and low scenarios for capital costs include risks of high and low capital costs for retrofitting existing coal power plants.
 - a. If so, please describe how high and low capital costs for retrofitting existing coal power plants were incorporated into the analysis, the input assumptions used, and the sources of those assumptions.
 - b. If not, please explain why not.

20. Refer to the Companies' response to Question No. 9 of the Commission Staff's second information request. Please provide detailed documentation, including but not limited to cost and performance penalties, for the recently constructed FGD system at E.W. Brown.

21. Please state whether market purchases were incorporated into the Strategist modeling analysis.
 - a. If so, please describe how they were incorporated, the input assumptions used, and the sources of those assumptions.
 - b. If not, please explain why not.

22. Refer to the Supply-Side Analysis in Volume III of the IRP. Please describe the solar photovoltaic (PV) technology that was considered in the Companies' IRP resource analysis, including the PV system size(s) in MW, the type(s) of PV technology, and whether distributed (commercial and residential) and large utility scale PV systems were considered.
 - a. If both distributed and utility scale PV systems were not considered, please explain why not.

23. Please state whether the Companies consider the possibility of 2011 HB 239 becoming law, and how its enactment would impact the Companies' future plans.
 - a. If so, please explain how the Companies' plans would be changed were 2011 HB 239 to be signed into law in 2011 or 2012, including how this legislation would change the Companies' plans for new and existing electric generating units, and please provide all work papers, memos, reports, or other documents providing details on this analysis

- b. If the Companies did not consider the possibility of the passage of 2011 HB 239, please explain why not.

- 24. The Governor has called for the establishment of an Energy Efficiency Resource Standard with a goal of reducing energy consumption by at least 16 percent below projected 2025 energy consumption, for a savings rate of 1.13% per year. Based on the data provided in Table 8.(3)(e)(3), the Companies' DSM proposal falls short of meeting the 2025 goal by over 10% and by almost three quarters of a percent on an annual basis. Please state whether the Companies intend to improve and accelerate the current DSM programs in the near future to meet the Governor's energy efficiency goal.
 - a. If so, please explain the Companies' plans for doing so.
 - b. If not, please explain why not.

- 25. The Companies' March 2011 "Analysis of Supply-Side Technology Alternatives," (2011 IRP Volume III) includes base, low, and high natural gas fuel costs for the period 2010 through 2025. KU/LG&E's April 2011 "2011 Optimal Expansion Plan Analysis," (2011 IRP Volume III) appears to use the same natural gas price forecasts as listed in the March 2011 document's base case. However, the companies' "2011 Air Compliance Plan Sensitivity Analysis," (July 2011) and provided in response to Staff Question 10 of their Second Information Request (June 29, 2011) shows lower natural gas prices on page 4 of the report.
 - a. Identify the sources used to create the natural gas price forecasts published in each of the three documents listed above.
 - b. Provide all workpapers and source documents used to create the natural gas price forecasts published in each of the three documents listed above.
 - c. Explain how the company chose to use the natural gas price forecasts published in each of the three documents listed above.
 - d. Explain the discrepancy between the gas prices in the Sensitivity Analysis and the gas prices used in the Optimal Expansion Plan Analysis.
 - e. Please state whether the company's gas price forecast changed since the publication of these three documents. If so, what is the current company gas price forecast?

26. Refer to pages 9-10 of the Direct Testimony of John N. Voyles, Jr. in Case Nos. 2011-00161, which was provided as an electronic attachment (“Attachment to Question No. 38a – KU ECR Testimony of John N Voyles”) to the Companies’ response to Question 38 of the Commission Staff’s first set of information requests in the IRP proceeding (Case No. 2011-00140). The testimony states that "the Companies' Generating Planning Group performed an analysis to determine if all of the unit-by-unit compliance equipment would be necessary to achieve compliance with the applicable air regulations. The results of that analysis were used to pare down and refine the compliance equipment to be included in each project (for example, we were able to eliminate SCRs for certain units from the 2011 Plan." Provide the analysis “used to pare down and refine the compliance equipment” referenced in Voyles testimony as quoted above, and any workpapers or source documents that support this analysis.

27. Refer to Direct Testimony of John N. Voyles, Jr. in Case Nos. 2011-00161, provided as attachment to Staff Question 38. The Voyles testimony in Case 2011-00161 contains Exhibit JNV-2, with Appendix F “Phase II: Air Quality Control Study LG&E/KU Mill Creek Station. – Addendum 1 – Without SCR.” In the cover material, Black & Veatch noted that “on March 28, 2011 LG&E/KU determined that the installation of an SCR will not be required on Units 1 and 2 and requested revisions to the estimated overnight capital costs to reflect this change in scope.”

- a. Provide all documents, excepting those protected by attorney-client privilege, relating to the decision to direct Black & Veatch to revise their study.
- b. State each and every reason that SCR was determined not to be required on Mill Creek Units 1 and 2.
- c. Provide explanations for each reason responsive to (b), above.
- d. Name the individuals who were involved in the making of this decision, and provide their titles and work locations.

28. Refer to Direct Testimony of John N. Voyles, Jr. in Case Nos. 2011-00161, provided as attachment to Staff Question 38. The Voyles testimony in Case 2011-00161 contains Exhibit JNV-2, with Appendix G “Phase II: Air Quality Control Study LG&E/KU Ghent Station. – Addendum 1 – Without SCR.” In the cover material, Black & Veatch notes that “on March 28, 2011 LG&E/KU determined that the installation of an SCR will not be required on Unit 2 and requested revisions to the estimated overnight capital costs to reflect this change in scope. ”

- a. Provide all documents, excepting those protected by attorney-client privilege, relating to the decision to direct Black & Veatch to revise their study.
- b. State each and every reason that SCR was determined not to be required on the Ghent unit.
- c. Provide explanations for each reason responsive to (b), above

- d. Name the individuals who were involved in the making of this decision, and provide their titles and work locations.
29. Refer to Direct Testimony of John N. Voyles, Jr. in Case Nos. 2011-00161, provided as attachment to Staff Question 38. The Voyles testimony in Case 2011-00161 contains Exhibit JNV-2, with Appendix G “Phase II: Air Quality Control Study LG&E/KU E.W. Brown Station. – Addendum 1 – Without SCR.” In the cover material, Black & Veatch notes that “on March 28, 2011 LG&E/KU determined that the installation of an SCR will not be required on Units 1 and 2 and requested revisions to the estimated overnight capital costs to reflect this change in scope.”
- Provide all documents, excepting those protected by attorney-client privilege, relating to the decision to direct Black & Veatch to revise their study.
 - State each and every reason that SCR was determined not to be required on Brown Units 1 & 2.
 - Provide explanations for each reason responsive to (b), above.
 - Name the individuals who were involved in the making of this decision, and provide their titles and work locations.
30. Reference the document “Analysis of Supply-Side Technology Alternatives” (March 2011) in the 2011 IRP Volume III. Page 22 of this document states that “However, due to anticipated environmental regulations, allowance price forecasts for NO_x and SO₂ are significantly lower in 2011 through 2013 compared to recent years and then are assumed to be zero after 2013.” This document appears to pre-date the final promulgated Cross State Air Pollution Rule (CSAPR), finalized in July of 2011.
- Does the final form of the CSAPR rule, as written, change the company’s forecast of NO_x and SO₂ prices? If yes, explain and please provide amended NO_x and SO₂ prices.
 - Are the companies aware of assessments which show that trading prices for NO_x and SO₂ will be greater than zero under the final CSAPR rule? If so, please provide the citations to such sources, and source documents if relied upon by the company for assessment in this case.
 - The EPA’s assessment of the CSAPR rule suggests that trading prices for Group 1 states, including Kentucky, will be approximately \$1,000 per ton SO₂ in 2014 and around \$1,500 per ton NO_x during the ozone season in 2014 (<http://www.epa.gov/airtransport/pdfs/CSAPRPresentation.pdf>). How would such prices change any elements of the company’s 2011 Plan?
31. Reference page 8-133 of the 2011 IRP Volume I, section entitled “Clean Water Act – Section 316(b)”. The section states that “In July 2004, EPA’s [sic] issued a rule for the utility industry which included two “performance standards” requiring facilities to reduce deaths of aquatic life...” The “performance standards” appear to refer to the thresholds

set by the EPA as to which units would have to comply with entrainment and impingement criteria, given as a gallons per day threshold. Please provide the annual average water intake of each steam fossil unit in the companies' fleet in gallons per day for the last five years.

32. Reference page 8-133 of the 2011 IRP Volume I, section entitled "Clean Water Act – Section 316(b)". The section states that "possible requirements within the rule include: cooling towers on all active units, "helper" towers on once-thru [sic] cooling units for use during spawning season and low-flow periods, fine mesh screens, [etc]..."
- a. Has the company performed any analysis of the steam units which might trigger the rule under the proposed EPA rule, including but not limited to the mitigation measures which could be required or the costs of mitigating cooling water intake structures?
 - b. If the answer to (a) is yes, please provide any such studies and supporting workpapers or source documents.
33. On page 20 of KU and LG&E's "2011 Optimal Expansion Plan Analysis," dated 2011 and provided in the KU and LG&E IRP Volume III, KU and LG&E provides forecasted load (MW) and annual energy (GWh).
- a. Are these data are weather normalized?
 - b. Provide the past 15 years of actual summer coincident peaks (MW) and annual energy (GWh).
 - c. Provide all work papers, analyses, calculations, and documents used to forecast the low, base, and high forecasts for both load and energy.

Respectfully submitted,



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Dated: August 23, 2011

CERTIFICATE OF SERVICE

I certify that served a copy of this Second Set of Interrogatories and Requests for Production of Documents via first class mail on August 23, 2011 on the following:

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