



correct when made, is now incorrect in any material respect. For any request to which LG&E/KU fails or refuses to furnish all or part of the requested information, they shall provide a written explanation of the specific grounds for their failure to completely and precisely respond.

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

1. Refer to Volume 1, page 5-28, Table 5.(3)-9, of the 2011 Joint Integrated Resource Plan (“IRP”) of LG&E/KU.

a. Refer to the column headed “2010” and the row titled “Utility Use.” Confirm that 2 GigaWatt-hours is the correct amount of Utility Use. If yes, explain the reduction in utility use compared to the prior years.

b. The amounts in the row titled “Energy Requirements” in all columns appear to be in error. Confirm whether the amounts are correct. If they are incorrect, provide a corrected Table 5.(3)-9. *Any changes will also be applicable to Table 7.(2)(b).*

2. Refer to Volume 1, page 5-32, Table 5.(3)-11, of the IRP. Explain why the “% Growth in Energy Sales” for 2011 is so much greater than in later years.

3. Refer to Volume 1, page 5-36, Table 5.(4), of the IRP. Explain the first note regarding the one program with annual savings that do not accumulate.

4. Refer to Volume 1, page 5-37, of the IRP. Provide a comparison of each company’s actual energy and peak reductions with the projected energy and peak

reductions provided in Case No. 2007-00319<sup>1</sup> since the time of the Commission's approval of LG&E/KU's existing Demand-Side Management ("DSM") programs in that case.

5. Refer to Volume 1, page 5-40, of the IRP. Identify and describe the challenges and obstacles encountered in implementing the DSM programs approved in Case No. 2007-00319 and the lessons learned that will be used in implementing programs proposed in Case No. 2011-00134.<sup>2</sup>

6. Refer to Volume 1, page 5-41, of the IRP. Provide the current status of the Request For Proposal ("RFP") process described therein and the remaining steps, as well as the time frames, involved in determining the least-cost resources proposed to meet LG&E/KU's next generation need.

7. Refer to Volume 1, page 5-45, of the IRP. Describe the term "phased approach" and explain how it will be applied in implementing the DSM programs proposed in Case No. 2011-00134.

8. Refer to Volume 1, page 6-21, of the IRP. Describe the general scope of the home appliance saturation surveys of the LG&E/KU customers, how the surveys were conducted (mail, phone, etc.), number of customers surveyed, and the response rates for each company.

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<sup>1</sup> Case No. 2007-00319, Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company Demand-Side Management for the Review, Modification, and Continuation of Energy Efficiency Programs and DSM Cost Recovery Mechanisms (Ky. PSC Apr. 17, 2008).

<sup>2</sup> Case No. 2011-00134, Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Existing, and Addition of New Demand-Side Management and Energy Efficiency Programs, filed April 14, 2011.

9. Refer to Volume 1, page 6-25, of the IRP. Explain whether changes in rates, for whatever reason, affect participation levels in the Green Energy program.

10. Refer to Volume 1, page 6-30, of the IRP. Describe the reserve sharing group formed by LG&E/KU along with the Tennessee Valley Authority and East Kentucky Power Cooperative, Inc.

11. Refer to Volume 1, page 6-31, of the IRP. Describe the current status of Dix Dam and identify any inspections or evaluations of the dam that have occurred since the issuance of the ARCADIS report in the fall of 2009.

12. Refer to Volume 1, page 6-32, of the IRP. Provide the current status of the RFP process described therein and the remaining steps, as well as the time frames, involved in obtaining a new Independent Transmission Operator.

13. Refer to Volume 1, page 6-33, of the IRP. LG&E/KU's expected monetary contribution to the FutureGen Industrial Alliance has been reduced to approximately 10 percent of the formerly anticipated level of contributions. Explain whether expected contributions of the other members of the consortium have been similarly reduced.

14. Refer to Volume 1, pages 7-5, 7-6 and 7-29, of the IRP.

a. Provide a copy of the end-use survey questions administered to customers.

b. Provide a further explanation of the Energy Forecaster's Group which is managed by Itron. Specifically, discuss the development of regional end-use saturation and efficiency data, what data is developed, and how LG&E/KU use that data.

15. Refer to Volume 1, pages 7-10 and 7-39, of the IRP, which, respectively, are Section 7(4)(d) for KU and LG&E.

a. Explain why the referenced energy sales forecasts do not include the impacts of existing DSM programs as called for in 807 KAR 5:058, Section 7(3).

b. Refer to the last sentence of the Section on page 7-39. Verify that the referenced statement and numbers are correct.

16. Refer to Volume 1, page 7-16, of the IRP. Explain the methodology used to convert energy forecasts from a billed basis to a calendar basis.

17. Refer to Volume 1, page 7-18, of the IRP, which indicates that Volunteer Fire Departments (“VFD”) are included along with residential service customers in the residential forecast. Explain whether the meters placed at VFD premises are the same as the meters placed at residential premises.

18. Refer to Volume 1, page 7-19, of the IRP. Provide further explanation of how the Time-of-Day-Secondary forecast was derived from the PS-Secondary forecast.

19. Refer to Volume 1, page 7-20, of the IRP. KU states that, “KU AES sales were modeled as a function of the number of KY residential customers and weather in all months except for May, June, July, August, October and November.” Since AES customer usage is not zero in these months, explain how these months are treated in the forecast.

20. Refer to Volume 1, page 7-32, Table 7.(2)(f), of the IRP. Explain the reduction in the percent of annual energy loss from 2006 through 2010.

21. Refer to Volume, page 7-33, Table 7.(2)(h)-1, of the IRP. Explain the increase in the average annual “Utility Use and Other” class in 2010.

22. Refer to Volume 1, page 8-4 of the IRP, specifically, the discussion of maintenance outages.

a. Explain whether the three-to-four week biennial boiler outages, the one week outages in off-setting years, and the major maintenance outages performed on seven-to-eight year cycles constitute all of the planned maintenance outages for LG&E/KU's base load generating units.

b. Describe, generally, the type of work that is typically performed only during a seven-to-eight year maintenance outage.

23. Refer to Volume 1, page 8-76, Table 8.(3)(e)-4, of the IRP.

a. Provide, by program, for the period 2011-2017, a breakdown of the \$9.5 million in development and administrative costs.

b. Provide, by program, for the period 2011-2017, a breakdown of the \$17.3 million in residential incentive costs.

c. Provide for LG&E and KU separately, the percentage of planned annual DSM expenditures relative to projected annual electric sales revenue for each of the years 2011-2017.

d. Provide for LG&E and KU separately, the percentage of projected annual energy-efficiency savings relative to projected annual electric sales for each of the years 2011 through 2017.

24. Refer to Volume 1, page 8-76, Section 8.(3)(e)(5), of the IRP. Provide, along with a narrative description, the calculation of the net present-value savings of \$864 million expected to be achieved over the lives of the existing/unchanged and enhanced, new, DSM programs.

25. Refer to Volume 1, page 8-87, of the IRP.
- a. Describe in detail the nature of the “[a]dditional quantitative screening of the initial 80 DSM/EE programs that were assessed for inclusion in the 2008 IRP.”
  - b. Explain whether any analysis was performed for enhancing demand response opportunities.
26. Refer to Volume 1, page 8-88, of the IRP.
- a. Describe the manner in which ICF International (“ICF”) was chosen to review LG&E/KU's proposed portfolio of DSM programs.
  - b. Provide any written analysis provided to LG&E/KU by ICF concerning the proposed programs and program enhancements.
27. Refer to Volume 1, page 8-98, of the IRP. Provide the 2007 report titled E.ON US Generation Technology Options.
28. Refer to Volume 1, page 8-107, Table 8.(5)(b)-2, of the IRP. Of the generating units listed, explain whether any are currently out of service pending a decision on the future of the unit. If yes, identify the unit(s) and when a decision on its future is expected.
29. Refer to Volume 1, page 8-108, of the IRP.
- a. LG&E/KU state that DSMore replaced DSManager to perform benefit/cost calculations for the DSM programs.
    - (1) Describe the decision process that led to the replacement of DSManager with DSMore and explain whether DSMore is a refinement of DSManager and whether both are products of Integral Analytics.

(2) Explain whether calculations were performed for any of the programs using both DSManager and DSMore. If yes, provide the results of both calculations. Include all workpapers.

b. Explain how environmental costs were factored into the four benefit/cost tests used in assessing the initial and enhanced DSM programs.

30. Refer to Volume II, Residential Use-Per-Customer Forecast, pages 3 to 5. Explain how the exponents in the HeatUse variable, CoolUse variable, and the OtherUse variable were obtained.

31. Refer to Volume II, Commercial Use-Per-Customer Forecast, pages 16, 18, and 19. Explain how the exponents in the HeatUse variable, CoolUse variable, and the OtherUse variable were obtained.

32. According to recent published reports, the Toyota plant KU serves in Scott County has cut back its workforce and production and two industrial customers served by LG&E in Louisville have been affected by explosions at their operating facilities.

a. Describe the impact of these events on LG&E/KU's demand.

b. Explain when each of these three industrial loads is expected to return to its pre-event level.

33. Refer to Volume III of the IRP, the Supply-Side Analysis, pages 28 to 31 and Exhibit 6.

a. Explain how LG&E/KU determined that the technologies to be given further consideration should be only the first, second, and third lowest-cost technologies.



b. Exhibit 6 reflects a number of combined cycle, pulverized coal, and fluidized bed technologies that are not the first, second, or third lowest-cost technology but which have minimal “\$/kW-yr” differences at various capacity factors compared to the three lowest-cost technologies at those capacity factors. Explain why it would not enhance the results of the analysis to give further consideration to such fourth, fifth, and sixth lowest-cost technologies.

34. Refer to Volume III of the IRP at Exhibit 6 to the Supply-Side Analysis. Provide the coal and gas base fuel costs in dollars per ton and per Mcf, respectively.

35. Refer to Volume III of the IRP, specifically, the 2011 Reserve Margin Study (“Study”). LG&E/KU have included reserve margin studies prepared in-house in previous IRPs. Explain why the 2011 Study was prepared by an outside firm rather than in-house by the Generation Planning group as was done in prior IRPs.

36. Refer to Volume III, page 2, of the 2011 Study and Volume 1, page 8-118, of the IRP. Footnote 1 on page 2 of the Study indicates that Astrape (“Astrape”) Consulting’s Strategic Energy and Risk Valuation Model has been used extensively by “[l]arge utilities in the south-eastern U.S.” Page 8-118 indicates that Astrape “[h]as conducted similar studies for other utilities in the southeastern United States.”

a. Explain how LG&E/KU chose Astrape to conduct the 2011 Study.

b. Provide a list of southeastern U.S. utilities for which Astrape has performed reserve margins studies.

c. Of the utilities for which Astrape has performed reserve margins studies, identify those for which hurricanes are a potential reliability issue.

37. Refer to Volume III, page 5, of the 2011 Study and Volume 1, page 5-35, of the IRP.

a. Page 5-35 of Volume 1 reflects that a target reserve margin of 16 percent was used by LG&E/KU in developing the optimal expansion plan. Page 5 of the Study indicates that total reliability costs are minimized at a 15.5 percent reserve margin. Explain LG&E/KU's use of a 16 percent target reserve margin and describe the significance of the difference between the two percentages on the amount of total reliability costs.

b. In recent IRPs, LG&E/KU used a 14 percent target reserve margin. In the 1999 IRP, LG&E/KU used a 12 percent target reserve margin. Describe, generally, the factors that are primarily responsible for the larger target reserve margin indicated in the 2011 Study.

38. Refer to Volume III of the IRP, at pages 9 to 13, of the 2011 Optimal Expansion Plan Analysis.

a. Describe the emission control equipment assumed in the analysis which would be required for the Cane Run, Green River, and Tyrone coal units under the scenario in which they are not retired.

(1) Identify all sources relied upon, and explain how the estimates were determined, to develop the capital costs of the above-described emission control equipment.

(2) Identify all sources relied upon, and explain how the estimates were determined, to develop the operating costs of the above-described emission control equipment.

b. Explain why no sensitivity analysis was performed on the capital and operating costs for the emission control equipment required for the Cane Run, Green River, and Tyrone coal units in the scenario in which they are not retired.

39. Refer to Volume III of the IRP, at pages 13 to 16, of the 2011 Optimal Expansion Plan Analysis. Provide a table showing, in comparative form, the Present Value Revenue Requirements of the four expansion plans evaluated.

  
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