

## Recommendations in PSC Staff Report on the Last IRP Filing

### Load Forecasting

- **LG&E/KU should continue to examine and report on the potential impact of increasing competition and future environmental requirements and how these issues are incorporated into future load forecasts.**

Since the 2002 IRP there has been no movement within the Commonwealth of Kentucky toward the implementation of retail competition, nor has there been significant public discussion of the issue. As members of the Midwest Independent Transmission System Operator ("MISO") organization, the Utilities are actively involved in discussions on the possible impact of MISO wholesale market initiatives on the retail business; however, the nature of the Utilities' concerns relates to the costs of implementation – and of exposure to transmission constraints – rather than to impacts on load growth.

Regarding the potential impact of future environmental requirements, to the extent that that consumption levels are sensitive to changes in electricity prices – and a price term is included in the regression equations defining the forecast of sales for most classes of customer – the forecast methodology captures the impact of any significant shifts in supply costs of whatever origin. In the 2005 IRP forecast, the underlying assumption on the trend in retail electricity prices reflects compliance only with standards that are presently legislated.

- **LG&E/KU should continue to pursue efforts to integrate their forecasting processes and report on these efforts in their next IRP filing.**

Since the 2002 IRP, the Utilities have adopted the same methodology to forecast use-per-customer for the Residential classes. In the 2002 IRP, only KU and ODP employed end-use modeling for their residential class forecasts; now the LG&E residential use-per-customer forecast also uses the statistically-adjusted end-use model (SAE). This approach combines the advantages of econometric modeling of the relationship between consumption and weather, economic and demographic conditions with the accessibility of end-use modeling of household appliance saturation and efficiency trends.

- **LG&E/KU should continue to refine their load forecasting models, perhaps to rely less on national macroeconomic forecasts.**

The LG&E/KU energy sales forecast models have never relied solely on national macroeconomic forecasts, except indirectly as inputs into the macroeconomic forecasts for each of the Company's service territories prepared in a territory-specific model. The one exception to this is the LG&E Industrial forecast which uses the national Industrial Production series.

## Demand Side Management (DSM)

- **Prior to the next IRP filing, LG&E/KU should consider and evaluate a variety of DSM technologies, including those applicable to industrial customers, to determine if they would be cost effective. If any DSM technology applicable to industrial customers passes the qualitative and quantitative screening, LG&E/KU should approach their industrial customers to determine if there is any interest in developing the program. However, if there is no interest by the industrial customers, LG&E/KU will not be obligated to pursue the particular program.**

LG&E Energy's DSM Group discussed the possibility of implementing industrial based DSM programs with the KIUC and conducted a survey of industrial customers. The KIUC indicated that they were opposed to any type of DSM program for industrial customers and that they would oppose any attempt to establish a program impacting their members.

Additionally, our survey of industrial customers indicated that they were overwhelmingly opposed to DSM programs. Industrial customers responding to our query indicated that they have or can obtain needed expertise to save energy and reduce demand on their own, and that they were not interested in the possibility of subsidizing potential competitors.

Based not only upon lack of interest but also upon vigorous opposition, LG&E Energy has elected not to pursue any DSM offerings for industrial customers.

- **In their next IRP filing, if LG&E/KU have implemented the proposed Residential New Construction program, they should provide a discussion of the marketing and status of the program for each utility.**

The Companies agree that a Residential New Construction Program will benefit our customers by reducing usage and demand and that a program should be implemented. The DSM Department is in the process of investigating and evaluating several alternative approaches to a Residential Construction Program and anticipates filing a proposed program with the Commission in 2005.

- **In their next IRP filing, LG&E/KU should include for quantitative evaluation some of the promising DSM technologies that fail to pass the qualitative screening process.**

LG&E Energy's DSM Department evaluates and analyzes many potential DSM technologies for possible inclusion in our programs. Our first level review is a qualitative screening where each technology is assigned a rating for Customer Acceptance, Technical Reliability, Cost Effectiveness of Energy Conservation, and Cost Effectiveness of Peak Demand Reduction. Technologies passing the qualitative screening benchmark are then subjected to more detailed quantitative tests and those not passing are dropped from consideration. There are an unlimited number of

potential technologies that become available for review. Passing on the cost of performing a detailed analysis on technologies that do not fit our customers' or company's profile is unnecessary and inappropriate.

- **LG&E/KU's next IRP filing should include thorough evaluations of both the possibility of offering a green power alternative to their customers and the potential for co-firing biomass with coal.**

Several renewable source alternatives were evaluated as part of the supply-side screening analysis which includes the following: hydro power alternatives; solar-based sources; a wind driven source; a geothermal setup; waste-to-energy alternatives; and, a co-fired biomass alternative for electrical power generation. While two of the hydro power options were competitive and received additional consideration, the majority of the renewable source alternatives evaluated was not competitive. Furthermore, because of climatological and other considerations in the Companies' service territory, the wind and solar based alternatives are not feasible. Further details on renewable source alternatives are addressed in Volume III in the *Analysis of Supply-Side Technology Alternatives* (November 2004) report.

- **If and when they file a CPCN application for new base load generation, LG&E/KU should include a detailed written explanation of why they believe their avoided cost calculations should not be revised to include a capacity cost component.**

As shown in the Avoided Cost Filings (Case Nos. 2004-00200 and 2004-00201 for KU and LG&E respectively), a smaller-sized generator should not have the benefit of moving a multi-million dollar baseload unit.

Small power production facilities of less than one MW would not delay the installation of future capacity. Therefore, such facilities would not provide any capacity benefit to existing customers. It is also assumed that this power would be non-firm and non-dispatchable in nature and not a reliable resource upon which the Companies would be able to call in a time of need.

If a small power production facility were to provide the Companies with a firm product (including liquidated damages for failure to deliver) then a capacity component could be considered.

Moreover, all future CCN applications for additional base load generation will include this justification (such as the application for Trimble County Unit 2, Case No. 2004-00507). However, these applications are not included, per se, as part of this IRP filing.

## **Supply-Side Resource Assessment**

- **In the next IRP, a decision to retire any generating unit(s) should be supported by a feasibility study regarding the decision to retire the unit(s).**

Since the 2002 IRP filing, the only units which have been retired are Green River Units 1 and 2. Green River Units 1-2 were operationally retired December 31, 2003 for economic reasons. The challenges facing the units, the necessary actions to remedy those situations as well as their associated cost were explained in detail in the evaluation titled *Phase II Evaluation of the Economic Viability of Green River Units 1 and 2*, which was provided in Case No. 2003-00434, Response 15.b(1) in the Second Data request of the Commission Staff.

- **In the next IRP, LG&E/KU should ensure that their planning adequately reflects the impact of future CO<sub>2</sub> emission restrictions.**

Although not currently regulated, CO<sub>2</sub> emissions present an area with significant potential for future regulatory oversight. For the most recent evaluation of power generation alternatives, LG&E/KU evaluated the incursion of a flat fee associated with each ton of currently unregulated CO<sub>2</sub> emissions at three different cost scenarios: \$10, \$20, and \$40 per ton. The iterations generally resulted in a slight shuffling of the order of the top ten alternatives for power generation with virtually no new members introduced to the least-cost set. None of the permutations resulted in a change of the least cost option of the 732 MW coal-fired unit at Trimble County. Further details of this are covered in Volume III in the *Analysis of Supply-Side Technology Alternatives* (November 2004) report.