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PUBLIC SERVICE  
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**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE**  
**PUBLIC SERVICE COMMISSION OF KENTUCKY**

**IN THE MATTER OF**

**CONSIDERATION OF THE REQUIREMENTS )**  
**FOR THE FEDERAL ENERGY POLICY ACT OF )**  
**2005 REGARDING TIME-BASED METERING, ) CASE NO. 2006-00045**  
**DEMAND RESPONSE AND INTERCONNECTION )**  
**SERVICE )**

**KENTUCKY POWER COMPANY RESPONSES TO**  
**METRO HUMAN NEEDS ALLIANCE FIRST SET DATA REQUEST**

**April 27, 2006**



**Kentucky Power Company**

**REQUEST**

Under a critical peak pricing and real time pricing program, as described in the Commission's order of February 24, 2006, how would you notify customers of pricing changes so that they could make adjustments in their usage?

**RESPONSE**

Kentucky Power Company does not currently offer its customers critical peak pricing or real-time pricing. Either of these time-based offerings would usually require the use of a two-way communication system between the customer and the Company. However, some form of critical peak pricing could be done with one-way communication. Two-way communications can generally be accomplished through the use of telephone lines, cellular networks, or power line carrier. The type of system and associated costs would depend on a number of factors, including the potential number of participants and whether the program was optional or mandatory.

**WITNESS:** David M Roush



**Kentucky Power Company**

**REQUEST**

Provide a general discussion of what you perceive to be the pros and cons with respect to low-income utility customers of implementing a smart metering stand in Kentucky.

**RESPONSE**

The imposition of additional costs related to a mandated smart metering standard on low-income utility customers would be an undue additional burden on those customers. Correspondingly, neither the utility nor the utility's other customers should be required to bear those costs. However, low-income customers should not be precluded from any service offering that is available to other similarly situated customers.

The Company would not propose a smart metering standard specific to low-income utility customers. Any time-of-use tariff offering should be optional for all customers. Not all customers are willing and/or able to change their usage patterns enough to take advantage of time-of-use pricing. Any customer requesting service under a time-differentiated tariff schedule or provision should be required to pay for any difference in the cost of metering and implementation of such a service. Costs should be borne by those customers benefiting from such programs.

**WITNESS:** David M Roush



**Kentucky Power Company**

**REQUEST**

Please describe any anticipated barriers to participation in time-based rate schedules and/or smart metering programs low-income customers might face.

**RESPONSE**

As mentioned in response to the previous question, participation in time-based rate schedules should be voluntary on the part of the customer. The customer can choose to participate in such a program, if such participation makes economic sense for that customer. Since technology is usually an important tool, which enables customers to respond to time-based rate schedules, the cost of such equipment could limit participation by low-income customers.

**WITNESS:** David M Roush





**Kentucky Power Company**

**REQUEST**

Provide a description of any formal or informal analysis, discussion or study of the impact of any time based rate schedules and/or smart metering programs on low-income customers you have conducted or of which you are aware. Please describe any conclusions reached and provide copies of any documentation or results of such analysis, discussion or studies.

**RESPONSE**

The Company has not conducted, nor is the Company aware of any formal or informal analysis, discussion or study of the impact of any time-based rate schedules and/or smart metering programs on low income customers.

**WITNESS:** David M Roush



**Kentucky Power Company**

**REQUEST**

Would implementation of smart metering result in higher costs or rates to nonparticipating customers? Please describe any projected costs by category and amount, including any costs of installing, maintaining or reading new meters or other technology, and any systemic or program changes, such as software and billing changes, that you expect to be charged directly (or indirectly by higher rates) to nonparticipating customers.

**RESPONSE**

As discussed in the Company's responses to questions 2 and 3, the Company would propose that any time-of-use or smart metering tariff offering be optional for customers. Any costs of such programs should be borne by those customers benefiting from those programs, and not by nonparticipating customers either directly or indirectly.

If implemented in this manner, there should be no cost or rate impact on non-participating customers. The Company has not prepared an analysis of projected costs. These costs depend upon a number of factors, including the type of metering devices and type of program instituted. As recognized in the question, practical issues such as the capability of the Company's billing system, and cost of any modifications, are an important factor in the development of any program.

**WITNESS:** David M Roush



## Kentucky Power Company

### REQUEST

Describe in general the availability of the technology for smart meters, including:

- a. How many suppliers provide smart meters and related technology;
- b. The price range for smart meters.

### RESPONSE

a. The functionality of smart meters can vary based on how a smart meter is defined (e.g. is it interval data only and/or two way communications capable?). There are approximately 5- 8 manufacturers of meters with interval data capabilities only. There are also 'advanced meter reading (AMR)' modules that are supplied to host meter manufacturers for additional capabilities primarily with communications. This allows the host meter to communicate over various communication channels to retrieve data. There are between 10 -20 AMR vendors that supply add-on AMR modules to host meters.

b. The price range varies based on capability. Time-of-day meters or interval data only meters without communications range in price from \$100 to \$140. These time-of-day or interval meters with communication capability would increase this price range by approximately \$50.

If ordered in large quantities, smart meters with communication capability could be in the range of \$100 - \$150 per meter.

**WITNESS:** Errol K Wagner



**Kentucky Power Company**

**REQUEST**

How accurate are the available smart meters? Have these meters been sufficiently tested for accuracy both prior to installation and in actual use?

**RESPONSE**

Smart meters are very accurate and have been sufficiently tested for accuracy prior to use and after installation. Electronic polyphase meters have been the norm for most utilities for over 10 years. Their performance has been good. They are very accurate - less than 0.5% error, do not change accuracy, and they have a low failure rate.

Single-phase electronic meters are also the norm in most utilities using meters for AMR. These meters have been available since 1998 and have been deployed throughout the electric utility industry. AEP has approximately 800,000 of these meters deployed with a small failure rate (Also see the Company's response to Item No. 8).

**WITNESS:** Errol K Wagner





**Kentucky Power Company**

**REQUEST**

How reliable are smart meters? Have any specific maintenance problems been identified?

**RESPONSE**

AEP's experience is that the failure rates of these smart meters are approaching the historic failure rates for electromechanical meters. Thus far, the failure rate for singlephase electronic meters has been less than 0.2% and the failure rate for polyphase meters is less than 1.0%.

AEP cannot identify any specific maintenance problem associated with these smart meters at this time.

**WITNESS:** Errol K Wagner



## Kentucky Power Company

### REQUEST

Low-income customers are often considered unable to lower energy use because of poor housing stock and/or use of older, inefficient appliances. Would you assist in enhancing or enlarging weatherization programs to help make smart meters an advantage to low-income customers?

### RESPONSE

Smart meters in conjunction with time-based pricing allow customers to adjust their usage and reduce their electric bills by responding to the varying prices of electricity throughout a billing period without regard to the nature of their housing stock or the efficiency of their appliances. As such, there does not appear to be any link between the use of smart meters and the extension of weatherization programs.

For example, a customer with an older, inefficient appliance would actually achieve a greater savings by operating that appliance in low-cost times instead of high-cost times due to the higher level of consumption of inefficient appliances. However, as discussed earlier it may be more difficult for low-income customers to accomplish such a shift because they may not have access to enabling technology that would make such a shift easier.

Any time-of-use tariff offering should be optional for customers. As stated earlier, not all customers are willing and/or able to change their usage patterns enough to take advantage of the benefits that time-of-use pricing offers. Kentucky Power evaluates all proposed programs, including weatherization programs, on their own merits, including any costs and benefits of the program.

**WITNESS:** Errol K Wagner



**Kentucky Power Company**

**REQUEST**

If you implement time based rate schedules and/or smart metering, would you make any attempt to target any particular types of customers for participation?

**RESPONSE**

No. Please see the Company's responses to questions 2, 3 and 5. Participation in time-of-use or smart metering programs should be strictly voluntary on the part of the customer.

**WITNESS:** David M Roush