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## PARTIES OF RECORD

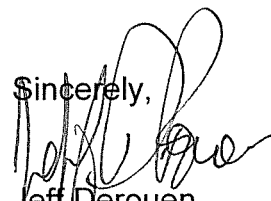
RE: Case No. 2008-00408  
CONSIDERATION OF THE NEW FEDERAL STANDARDS OF THE ENERGY  
INDEPENDENCE AND SECURITY ACT OF 2007

On October 21, 2009, an Informal Conference ("IC") was held at the Commission's offices. The purpose of the IC was to discuss the interest of the jurisdictional electrical utilities and the non-utility parties to work collaboratively toward the deployment of Smart Meter technology and time-of-use rates.

At the IC, the parties expressed a willingness to work collaboratively but requested that Commission Staff provide guidance to the parties regarding issues it believed should be addressed. Commission Staff agreed to this request. The document titled "Commission Staff Smart Meter and Smart Grid Guidance" attached to this letter identifies a number of issues and questions that the Commission Staff believes the parties should address.

While the ultimate goal is the deployment of Smart Meters and the offering of time of use rates to allow utility consumers to more effectively manage energy use, the implementation of broader Smart Grid technology that provides for greater automation of the distribution and transmission of electricity are also goals which the parties should try to achieve.

Staff recognizes that it is not practical to immediately address all the issues set forth in the guidance document; therefore, by April 30, 2010, the parties should submit a report that identifies a schedule and describes a plan for addressing the issues in the guidance document.

Sincerely,  
  
Jeff Derouen  
Executive Director

Attachment

## Smart Grid Guidance

The definitions and other issues discussed below should be based on the parties' current understanding of Smart Meter and Smart Grid applications, technology and the currently available equipment. However, any information regarding expectations of future capabilities should also be provided.

### 1. Define "Smart Meter".

For the purposes of initial discussion, start with the definition referenced in the Commission Staff notice of the informal conference in Case No. 2008-00408, issued on October 7, 2009. The following definition appears at footnote three on page three of the notice: "Smart Meter technology is defined as including metering technology capable of bidirectional communication that records electricity usage on at least an hourly basis, including related electric distribution system upgrades to enable the technology. Smart Meter technology must provide customers with direct access to and use of price and consumption information, to include (1) direct information on their hourly consumption; (2) enable time of use rates and real-time price programs; and (3) effectively support the automatic control of electricity consumption by the customer, the serving utility, or a third-party, at the customer's request."

### 2. Define "Smart Grid".

For the purposes of initial discussion, in the definition, identify and describe Smart Grid applications that have as their primary benefit:

- a. Reduced transmission and distribution losses
- b. Improved outage management
- c. More effective customer load control
- d. More effective distribution monitoring and load control
- e. More effective transmission monitoring and load control
- f. Increased system reliability

The discussion should identify and describe Smart Grid applications that can be effective with and without implementing time of use rates.

Note: If not specifically set forth in Item Nos. 1 and 2, what consideration should be given to the following:

- Bidirectional data communications
- Recording usage data on at least an hourly basis once per day
- Providing customers with direct access to and use of price and consumption information
- Providing customers with information on their hourly consumption
- Enabling time of use rates and real-time price programs

- Supporting the automatic control of the customer's electric consumption

In addition, identify the individual incremental costs for deploying and operating the following Smart Meter technology capabilities:

- Ability to remotely disconnect and reconnect
- Ability to provide 15-minute or shorter interval data
- On-board meter storage of meter data
- Ability to upgrade these minimum Smart Meter capabilities as technology advances and becomes economically feasible
- Ability to monitor voltage at each meter and report data in a manner that allows the utility to react to the information
- Ability to remotely reprogram the meter
- Ability to communicate outages and restorations
- Ability to support net metering of customer-generators

3. Based on your definitions of "Smart Meter" and "Smart Grid" in response to Item Nos. 1 and 2, identify the essential functions of Smart Meter and Smart Grid systems.

4. Based on your definitions, identify the essential components of Smart Meter and Smart Grid systems necessary to allow those functions identified in Item No. 3 to be utilized.

5. Identify the benefits to the utilities and to consumers of the Smart Meter functions previously identified. Identify other public or indirect benefits.

6. Identify the benefits to the utilities and to consumers of the Smart Grid functions previously identified. Identify other public or indirect benefits.

7. Identify and describe those benefits of Smart Grid and Smart Meters that can be quantified within the context of a cost/benefit analysis and those benefits that cannot be so quantified.

8. Identify and describe the ways that utilities and regulators can ensure that Smart Grid and Smart Meter investments avoid premature obsolescence.

9. The U.S. D.O.E. has identified the following five technologies that will "drive" the Smart Grid: (1) integrated communications; (2) sensing and measurement technology; (3) advanced components (superconductivity, storage, power electronics and diagnostics); (4) advanced control methods; and (5) improved interfaces and decision support. Which of these will be the most cost-effective components of a Smart Grid and why?

10. What is your understanding of consumer attitudes and preferences regarding key applications such as Energy Information Displays and Demand Response?

11. Which consumer-oriented applications are the simplest for consumers to understand and use?
12. Identify and discuss cost recovery issues and mechanisms from a base rate perspective or through the use of an automatic adjustment mechanism or surcharge mechanism.
13. Identify and address Cyber security issues that may result from the deployment of Smart Meters and Smart Grid.
14. The following questions are adapted from the Pennsylvania Public Utility Commission's Smart Meter Procurement and Installation Program at Docket No. M-2009-2092655. The Staff proposal and questions were issued on March 30, 2009 (<http://www.puc.state.pa.us/pcdocs/1037241.doc>). For purposes of responding to these questions, assume that some customers may contract with third parties ("authorized third parties") to monitor and manage their energy consumption under a Smart Meter program.

**1. Overall Adaptability:**

- a. Should there be some common "plug and play" format and/or hardware on the meter to accommodate future technology changes? If so, provide suggestions to address this capability.

**2. Home Area Network (HAN) Protocols:**

- a. What HAN protocol may be appropriate from the meter to the customer? What HAN protocols are most readily available and accessible to customers? Should the Commission standardize a protocol? Should there be more than one protocol?
- b. Should Smart Meter information be available through a HAN or an Internet browser? If through an Internet browser, should this come from a Web site, or directly from the meter, or both? Through which browsers should this be made available?
- c. Should there be other interconnectivity between the meter and other equipment in the home? If so, how much? [read capability vs. two way communication]

**3. Utility usage data and meter access:**

- a. What usage data should the utility acquire through the smart metering system?
- b. Should the Commission establish minimum requirements on how often the utility should acquire the usage data from the meter?

- c. Should the Commission establish minimum data intervals? If so, what should that be? [Examples: 15 minutes, 30 minutes, one hour]
- d. Should this usage data be validated?
- e. Should the Commission establish a common validation or error detection protocol? If so, what should that be?
- f. How should customers be provided direct access to usage information? [examples: Web site access, HAN to an in-home display or other devices]
- g. Should the Commission establish standard protocols and communication media for providing direct access to usage information from the meter to the HAN? If so, what should those be?
- h. How should this Commission provide direct access to the meter to authorized third parties? What policies or regulations should this Commission promulgate to ensure that these third parties are provided timely access under reasonable terms and conditions to the customer metering facilities?
- i. What communications, software or hardware can facilitate this direct access to the meter for customers or authorized third parties, and should the Commission establish requirements and or standards to facilitate this access?
- j. What electronic access to customer meter data would authorized third parties need?

#### **4. Meter to EDC Communications:**

- a. Should the Commission set requirements for public protocols from the meter to the grid?
- b. If certain protocols are not effective in certain geographic or rural regions, should the Commission adopt a list of protocols that can accommodate all of Kentucky customers' communication requirements? If so, what additional protocols should be adopted?
- c. What bidirectional communication media [example: broadband over powerline, cellular, phone lines, RF] are least cost? What are the pros and cons of each?

#### **5. Access to Price information:**

- a. How should customers be provided direct access to pricing information? [examples: Web site access, HAN to an in-home display or other devices]

- b. Should the Commission require the meter to communicate price information, or should this information be provided over another communication medium?
- c. What pricing information should the Commission require to be provided?
- d. Should the Commission establish minimum requirements on how frequently price information should be provided? If so, what should be the minimum requirement?
- e. Should the Commission establish standard formats for presentation of price information? If so, suggest a format.

**6. Automatic Control:**

- a. How can Smart Meters “effectively support” automatic control of electricity consumption by customers, utilities or other parties?
- b. How is the smart metering system engaged in the initiation, maintenance, relinquishment, and verification of the automatic control of customer consumption?
- c. What smart metering protocols and communication media are needed to implement these automated controls? Should the Commission establish any requirements or standards for this purpose?
- d. What energy consuming customer assets can be controlled by these Smart Meter systems for each of the customer segments, and how is control of these assets impacted by the choice of communication medium and protocol?

**7. Smart Metering Acceleration:**

- a. To the extent permissible under the law, should the Commission or another entity of the Commonwealth provide an incentive to utilities to accelerate their Smart Meter deployment? If so, identify possible incentives and the entity that should provide such incentives.

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