CLARK ENERGY

A Touchstone Energy Cooperative

PUBLIC SERVICE COMMISSION

COMMONWEALTH OF KENTUCKY BEFORE THE PUBLIC SERVICE COMMISSION

In re the Matter of:

CONSIDERATION OF THE IMPLEMENTATION OF SMART GRID AND SMART METER TECHNOLOGIES	)))	**CASE NO. 2012-00428** PSC Staff Questions

Clark Energy Cooperative, Inc. ("Clark Energy"), pursuant to the Public Service Commission's (PSC) information request dated February 27, 2013, hereby submits the following response dated March 20, 2013 regarding Case No. 2012-00428

DATE: March 20, 2013

ATTEST:

Paul G. Embs
President & CEO

CERTIFICATE OF PREPARATION

STATE OF KENTUCKY)

COUNTY OF CLARK)

This letter is to certify that I, Scott Sidwell, Sr. V.P. of Engineering & Operations for Clark Energy Cooperative in Winchester, Kentucky, completed this report and do attest the information contained within this response is true, accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

This 19 day of March, 2013

Scott Sidwell

Witnessed by

Notary Public, KY State at Large

My Commission Expires 9/7/2016

My Commission Expires Notary ID 471829

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In re the Matter of:

CONSIDERATION OF THE IMPLEMENTATION	)	
OF SMART GRID AND SMART METER	)	CASE NO.
TECHNOLOGIES	)	2012-00428

RESPONSES TO COMMISSION STAFF'S
FIRST REQUEST FOR INFORMATION
DATED FEBRUARY 27, 2013

Request 98. With regard to calendar years 2007 through 2012, identify and discuss what Smart Grid and/or Smart Meter initiatives the utility implemented. The discussion should include but not be limited to the reasons why each initiative qualifies as a Smart Grid and/or Smart Metering initiative; the date of installation; the total cost of installation; and any benefits resulting from the initiatives, quantifiable or otherwise, received by both the utility and the customers.

Response to 98: In 2008 Clark Energy in conjunction with East Kentucky Power (EKP) started the process of having SCADA equipment installed at the substation distribution level. Since EKP derives vital load information from SCADA just as Clark Energy does the costs of the project is shared by both utilities. EKP retains ownership of all substations and supports SCADA for Clark Energy with a master station located at EKP headquarters that communicates via radio with our SCADA computer. EKP shoulders the responsibility for any NERC regulations pertaining to SCADA operations and/or cyber security measures.
Currently we have 12 of the 23 substations that make up Clark Energy's distribution system completed and work continues on the remaining 11. Completion of the project is slated for later in 2013.
Some of the reasons why we are installing SCADA are as follows:

- Provides immediate knowledge of system performance
- Improves system efficiency and performance
- Reduces costly repairs on voltage regulators and other substation equipment
- Remote control of OCR's allows more manpower in the field to trouble shoot.
- Frees up personnel for other important tasks
- Provides real time system load analysis for system planning and upgrades
- Improves reliability and shortens outage times

Prior to 2007 Clark Energy had installed an AMR system to read our meters called "Turtle 1" which was only capable of one way communication. Starting in 2010 and included in our four year work plan approved by the commission we began an upgrade of the "Turtle 1" system to a "Turtle 2" system which allows for two way communication. The infrastructure for this system is scheduled to be completed in 2013. Some of the benefits of a two way communications are as follows:

- Ability to deploy Demand Side Management
- Use of different rate tariffs
- Remote disconnects
- Possible outage reporting and reliability information
- Actuate meter reads without manual reading

Costs for SCADA and AMI:

SCADA	AMI/AMR
$225,000	$1,559,000

Request 99. With regard to calendar years 2013 through 2018, identify and discuss what additional Smart Grid and/or Smart Meter initiatives the utility has forecasted to be implemented. The discussion should include but not be limited to why each forecasted initiative qualifies as a Smart Grid and/or Smart Metering initiative; the forecasted date of installation; the forecasted total cost of installation; and any forecasted benefits to result from the initiatives, quantifiable or otherwise, received by both the utility and the customers.

Response to 99: As discussed in request 98, both our SCADA system and AMR/AMI projects are scheduled to reach completion sometime in 2013. No other Smart Grid projects are currently planned for 2014 thru 2018.

Request 100. With regard to DA Smart Grid Initiatives provide the following:

a. the number of DA systems installed as of December 31, 2012, along with the associated benefits realized.

Response to 100 a: Response 98 outlines the installation of SCADA at the substation distribution level in conjunction with East Kentucky Power and lists the known benefits to the system. The completion of SCADA is scheduled for some time in late 2013.

b. the number of DA systems to be installed in the next five years.

Response to 100 b: Clark Energy currently has no plans to implement any new DA projects in the next five years.

c. the total number of DA systems to be installed when the DA system is completely deployed.

Response to 100 c: Not available

Request 101. With regard to Volt/VAR Optimization, provide the following:

a. the number of Volt/VAR Optimization systems installed as of December 31, 2012, along with the associated benefits realized.

Response to 101 a: Clark Energy did not have any Volt/VAR Optimization systems installed as of December 31, 2012. We do not currently have plans to install any in the future.

b. the number of Volt/VAR Optimization systems to be installed in the next five years, along with the forecasted in-service date.

Response to 101 b: Not available

c. the total number of Volt/VAR Optimization systems to be installed when the Volt/VAR Optimization system is completely deployed.

Response to 101 c: Not available

Request 102. With regard to Supervisory Control and Data Acquisition ("SCADA") Smart Grid Initiatives, provide the following:

a. the number of SCADA systems installed as of December 31, 2012, along with the associated benefits realized.

Response to 102 a: As discussed in Response 98, Clark Energy has had SCADA installed in 12 of our jointly owned 23 substations with completion of the single SCADA system expected sometime in 12/2013. Associated benefits are listed in Response 98.

b. the number of SCADA systems to be installed in the next five years, along with the forecasted in service date.

Response to 102 b: Clark Energy has no plans to expand our SCADA system beyond the substation level at this time.

c. the total number of SCADA systems to be installed when the SCADA system is completely deployed.

Response 102 c: Not available

Request 103. As it relates to Dynamic Pricing (where rates are established hourly throughout the day) Tariffs or TOU Tariffs, provide the following:

a. the number of customers the utility has or had on these types of tariffs, identified separately by specific tariff.

Response to 103 a: Clark Energy does not have any TOU Tariffs at this time.

b. whether these customers shifted load from high-price times periods to lower-priced time periods.

Response to 103 b: Not applicable

c. whether these customers consumed more, less or the same number of kWh.

Response to 103 c: Not applicable

d. whether the utility reached any findings or conclusions based on its experience with customers on Dynamic Pricing and/or TOU Tariffs.

Response to 103 d: Not applicable

Request 104. Describe precautions taken and/or standards developed by the utility to address concerns regarding cybersecurity and privacy issues.

Response to 104: Clark Energy installs and maintains anti-virus software and equipment to protect our member's information and our internal software and hardware. East Kentucky Power assumes the responsibility of cyber security on our SCADA system and our customer information system (CIS) is protect by NISC's robust security system.

Request 105. Provide a discussion and details of progress made regarding the concern raised by the utilities as it relates to the interoperability standards for Smart Grid equipment and software.

Response to 105: Since Clark Energy has a limited amount of DA on our distribution system we cannot provide a viable discussion or give details as to the concerns or standards needed to insure interoperability of Smart Grid equipment and software. Certainly any future deployment of DA would need to be planned with this in mind.

Request 106. Provide a discussion concerning how the costs (investment and operating and maintenance costs) associated with the installation of Smart Grid facilities should be recovered from the ratepayers.

Response to 106: Clark Energy Cooperative references the response to PSC Request # 106 submitted by EKPC and adopts that response as its own.

Request 107. State whether the utility would favor a requirement that it report to the Commission so that the Commission is aware of the jurisdictional Smart Grid and/or Smart Meter activities within the Commonwealth. As a specific example, the requirement could order that a report be provided each September regarding the Smart Grid and/or Smart Meter activities the utility is planning to perform during the upcoming calendar year, followed by an April report of the Smart Grid and/or Smart Meter activities the utility completed the preceding calendar year.

Response to 107: Clark Energy Cooperative references the response to PSC Request # 107 submitted by EKPC and adopts that response as its own.

Request 108. State whether the utility believes KRS 278.285 is an appropriate approach to recovering the costs (investment and operation and maintenance) associated with Smart Grid investments.

Response to 108: Clark Energy Cooperative references the response to PSC Request # 108 submitted by EKPC and adopts that response as its own.

Request 109. State whether the utility believes a tracking mechanism as described beginning on page 3 of the Wathen Testimony on behalf of Duke Kentucky is an appropriate approach to recovering the costs associated with Smart Grid investments.

Response 109: Clark Energy Cooperative references the response to PSC Request # 109 submitted by EKPC and adopts that response as its own.

Request 110. State whether the utility has commissioned a thorough DSM and Energy Efficiency ("DSM-EE") potential study for its service territory. If the response is yes, provide the results of the study. If no, explain why not.

Response to 110: Clark Energy Cooperative references the response to PSC Request # 110 submitted by EKPC and adopts that response as its own.

Request 111. Refer to the Munsey Testimony on behalf of Kentucky Power, page 10, lines 11-19 regarding the Green Button initiative. Describe the extent of your utility's participation in this industry-led effort.

Response to 111: Clark Energy has not been involved with the Green Button initiative to date due to the lack of AMR/AMI capability.

Request 112. Refer to the Roush Testimony on behalf of Kentucky Power, DMR Exhibit 1. Provide a similar exhibit containing a list of time-differentiated rates available to your customers.

Response to 112: Clark Energy does not have any rate tariffs similar to this due to the lack of AMR/AMI capability.

Request 113. Provide a description of the type of meters (mechanical, electro-mechanical, AMR [one-way communication], AMI [two-way communication]) currently used by the utility. Include in the description the reasons the current meters were chosen and any plans to move to a different type of metering configuration.

Response to 113: Most of Clark Energy's meters are electro-mechanical and fitted with an AMR module to communicate with our billing system. Clark Energy has started using the new focus meters, which are electronic meters in our meter change program. All new meters are fitted with the new AMR/AMI two way communications module.

Request 114. If either AMR or AMI metering is in use, state whether the utility has received any customer complaints concerning those meters. If the response is yes, provide the following:

Response to 114: Yes, Clark Energy has received a small number of complaints.

a. the number of complaints, separated by gas and electric if a combination utility, along with the total number of customers served.

Response to 114 a: No record has been kept of the number of members that called and questioned AMR/AMI but we believe the numbers to be very small. Clark Energy currently serves 25,023 members.

b. how the complaints were addressed by the utility.

Response to 114 b: Our office personnel or supervisors explained why and how we use an AMR/AMI system.

c. detailed explanation as to whether customers should have the ability to opt out of using either AMR or AMI metering.

Response114 c: It is Clark Energy's belief that to get the full benefit of an AMR/AMI system all members need to participate. There are expenses associated with sending a meter reader and vehicle to a residence or place of business to read a meter, and in our opinion it's not fair to ask the rest of the members to bear that cost.

d. If customers were to be given the opportunity to opt out of using either AMR or AMI metering, provide:

i. an explanation as to whether the utility should establish a monthly manual metering reading tariff or charge applied to the opt-out customers to recover the costs associated with manually reading the non-AMR or -AMI accounts.

Response to 114 d ,i: Clark Energy believes that it is justified for a member who wants their meter read manually to bear the cost of attaining that read.

ii. an explanation as to whether these opt-out customers could still receive benefit from the utility using either AMR or AMI metering.

Response to 114 d, ii: It is reasonable to believe that members who opt-out would still receive benefits from the AMR/AMI metering. There could be instances when these members would benefit from outage restoration efforts which were enhanced by the technology.

iii. an explanation addressing the point at which opt-out customers, either in terms of number of customers or a percent of customers, affect the benefits of the utility using either the AMR or AMI metering.

Response to 114 d, iii: Small numbers of members opting out would not adversely affect the AMR/AMI program but it would seem reasonable that large numbers of member opting out of the program could negatively affect it. No research has been done by Clark Energy to determine what percentage of members leaving the program would adversely affect it.

Request 115. In testimony, each utility cited cybersecurity as an area of concern related to the implementation of Smart Grid technologies. Provide and describe your company's policy regarding cybersecurity or the standard your company has adopted governing cybersecurity. If your company has not adopted any policy or standard, identify and describe any industry or nationally recognized standards or guidelines that you may be aware of that the Commission should consider relating to cybersecurity issues and concerns.

Response to 115: Listed below are some of the policies and standards that Clark Energy uses to protect our assets and information from cyber theft and/or cyber terrorist:

Clark Energy has an internal operational policy (Operations Policy 303.9) that deals with internal email, internet, hardware and software guidelines.
National Information Solutions Cooperative (NISC) is a billing software company that services many of the cooperatives across the nation maintains our in-house member information and meter data. Some of the standards and practices that NISC uses is listed here:

Configuration standards for operating systems, web servers and database servers are consistent with those established by The Center for Internet Security (CIS.) General Linux server configuration is based upon the CIS SuSE Linux Enterprise Server Benchmark 10 v2.0. Web server configuration is based upon the CIS Apache HTTP Server Benchmark 2.4 v1.0.0. Database server configuration is based upon the CIS Oracle Benchmark v2.01.

- Services, applications, scripts and drivers that will not be used must be disabled/removed (where practical)
- Implement only one primary function per server
- Privileged access must be performed over secure channels, (e.g., encrypted network connections using SSH or IPSec)
- Access to services should be logged and/or protected through access-control

- Critical security patches should be installed on the system within 90 days of release, the only exception being when immediate application would interfere with business requirements. In the event that a patch breaks the system, it can be rolled back using:
    - The Install Server for the original RPMs (and)
    - The Distribution Server for any additional patches that may need to be applied
- Trust relationships between systems are a security risk, and their use should be avoided. Do not use a trust relationship when some other method of communication will do
- Always use standard security principles of least required access to perform a function
- Anti-virus must be installed, active and automatically updated on all systems commonly affected by viruses (e.g., Microsoft Windows)
- System clocks must be synchronized with central time server via NTP
- Sensitive data at rest must be encrypted with Triple DES (TDES) at a minimum

Clark Energy observes and/or implements the following protocols in maintaining system reliability. NERC(North American Electric Reliability Corp) CIP-002-1 through CIP 009-2 and NIST as they pertain to our segment of the electrical supply chain. They are listed below:

CIP-002 Cybersecurity – Critical Cyber Asset Identification
CIP-003 Cyber CIP-002 Cyber Security – Critical Cyber Asset Identification
CIP-003 Cyber Security – Security Management Controls
CIP-004 Cyber Security – Personnel and Training
CIP-005 Cyber Security – Electronic Security Perimeters
CIP-006 Cyber Security – Physical Security of Critical Cyber Assets
CIP-007 Cyber Security – System Security Management
CIP-008 Cyber Security - Incident Reporting and Response Planning
CIP-009 Cyber Security – Recovery Plans for Critical Cyber Assets

Request 116. If not previously addressed, provide a detailed discussion of whether deployment of smart meters should allow for an opt-out provision.

Response to 116: Request 114 details Clark Energy's stance on members opting out of the deployment of a smart meter system; but to reiterate, we believe that installing an AMR/AMI system is in the best interest of all our members. If they chose to opt-out, we feel that a meter read charge should be added to their bill to cover the cost of reading their meter.