

**PURPA 2009  
STANDARD #19 CONSIDERATION  
OF SMART GRID INFORMATION  
FINAL STAFF RECOMMENDATIONS  
CASS COUNTY ELECTRIC COOPERATIVE INC.**

1. Requirement of the proposed standard.

Section 1308a of the Energy Independence and Security Act of 2007 amends PURPA 110-140 (19) by adding a new standard entitled Consideration of Smart Grid Investments. There are three subsections in the new standard as follows:

**A. Standard:** Requires that all electricity purchasers shall be provided direct access, in written or electronic machine-readable form as appropriate, to information from their electricity provider as provided in subparagraph (B).

**B. Information:** Information provided under this section, to the extent practicable, shall include:

- (i) Prices: Purchasers and other interested persons shall be provided with information on:
  - I. Time-based electricity prices in the wholesale electricity market
  - II. Time-based electricity retail prices or rates that are available to the purchasers
- (ii) Usage: Purchasers shall be provided with the number of electricity units, expressed in kWh, purchased by them.
- (iii) Intervals and projections: Updates of information on prices and usage shall be offered on not less than a daily basis; shall include hourly price and use information, where available; and shall include a day-ahead projection of such price information to the extent available.
- (iv) Sources: Purchasers and other interested persons shall be provided annually with written information on the sources of the power provided by the utility, to the extent it can be determined; by type of generation, including greenhouse gas emissions associated with each type of generation, for intervals during which such information is available on a cost-effective basis.

**C. Access:** Purchasers shall be able to access their own information at any time through the Internet and on other means of communication elected by that utility for Smart Grid applications. Other interested persons shall be able to access information not specific to any purchaser through the Internet. Information specific to any purchaser shall be provided solely to that purchaser.

2. Current policies and practices of Cass County Electric Cooperative (Cass) relative to the proposed standard.

Cass has offered retail time-of-use rates providing lower energy costs to certain qualified members that shed demand during peak periods for over two decades. Approximately 11% of the members eligible for this rate are now participating in this rate option. Additionally, Cass provides a time-of-use rate option that is directly related to a time-of-

use rate function administered by Cass' wholesale power supplier, Minnkota Power Cooperative (MPC). The rate is a three-tiered time-of-use option modeled after a traditional street signal light as follows:

**A. Green zone:** Use of power during green zone provides the lowest cost rate option available for use by Cass members

**B. Yellow zone:** Energy used during yellow zone is charged at a premium rate that varies with the real-time wholesale power market, but is always higher than the green zone rate. Members in a qualifying rate class receive warnings that the system is in yellow zone and can elect to either pay for energy used during this real-time price period in which the posting is made, or to discontinue their energy usage to the extent possible/practical. This rate could also be termed a 'buy-through' rate option for the Cass membership

**C. Red zone:** During red zone, Cass members on the rate are alerted to the existence of a high-priced wholesale power market. Members have the option of controlling their electric loads or buying energy during this peak load situation with the understanding they will incur significant demand charges for the remainder of the billable year timeframe if they fail to shed load.

Cass does not presently offer a time-of-use rate for its residential class of members as the time-of-use rates in effect are largely based on billable demand and Cass' residential member class is not billed for power demands.

Presently Cass members have access to their account information on a 24x7 basis through Cass' internet web site, relating to energy usage, billing and rate information. Account information is updated in conjunction with regular billing intervals, presently on a monthly time period. This information is also accumulated for historical comparisons, and is available on a 24x7 basis through the Internet.

Cass has installed almost 20,000 meters capable of providing daily energy usage. In addition over 11,500 of these meters provide hourly energy usage on a real-time basis. Cass' billing information software provider is anticipated to have the necessary software required to post this information on the Internet for members available in 2012.

Presently 57% of these meters can also be retrofitted with an in-home module to provide this same usage information to the member directly in their home. While Cass continues to strive for a real-time energy portfolio to all its members, these in-home modules have not yet been made available to the membership. It is estimated these optional modules would cost each member approximately \$150. Additionally Cass would be required to install a separate software module to enable this technology.

It is estimated the Cooperative will complete the installation of AMI technology for this goal within six to eight years at which time the interval for usage review would be on a true real-time basis. Pending the appropriate software technology applications within Cass to harvest, process, and post this data for review, the goals of this standard would be fully realized by the Cooperative.

Apart from the time-of-use pricing available to certain commercial members, Cass does not currently provide information regarding time-based wholesale or retail pricing to be considered under subpart 1(B)(i) of the standard.

Cass does provide a real-time snapshot and historical data information on its Internet web site relating to the amount of renewable energy being produced and purchased by Cass' wholesale power supplier, MPC. At the present time it is not possible to differentiate how much of any one member's energy needs are being provided by a renewable generation resource except where the member themselves owns the distributed generation resource.

### 3. Proposed factual findings

#### **A. Effect of Standard on Conservation of Energy Supplied by CCEC**

Cass has undertaken no studies to determine whether providing its members with the information required by this standard will affect the amount of energy consumed by members, their peak demand, or their time-of-use of electrical power. Members now have the ability to review their energy usage on a monthly basis, both via hard copy reports in the mail and electronically via the Internet. Cass assumes that some of the Members using the existing technology will incorporate energy conservation practices into their usage. The current time-of-use rate programs offered does enhance energy conservation by shedding load during periods where wholesale prices are peaking. Some, but not all members, may use time-of-use pricing information to adjust electrical usage during periods of peak usage. However, unless time-of-use pricing of energy is implemented, providing time-of-use wholesale pricing information may not significantly impact electrical usage patterns. Making information concerning the source of electricity provided by Cass may result in certain members reducing their usage of electricity, but probably will not have a material effect on usage overall.

#### **B. Optimal Efficiency of Electrical Utility Facilities and Resources**

Existing and enhanced time-of-use information and pricing programs should improve the system load factor and reduce the need for future new generation. As a result, complete implementation of this standard coupled with time-of-use rates would enhance the optimal efficiency of utility resources and facilities.

#### **C. Equitable Rates for Consumers**

By spreading over a number of years the relatively small capital costs of providing smart grid information to members and minimizing operational costs of providing information to members, adoption of this standard will not significantly increase rates. Moreover, to the extent energy efficiency and conservation achieved through the provision of smart grid information can reduce need for additional generation and enhance the system load factor, it may help to decrease future increases in power costs. However, until Minnkota provides time-of-use wholesale rates, implementation of time-of-use rates at the distribution level will result in an inequitable reallocation of costs based on wholesale market prices that have no direct bearing on what Cass must pay for wholesale power. As a result, the benefit of enhanced technology to provide members with real-time pricing information is not cost-justified at this time. Information relating to sources of

generation can be provided on an annual basis for the Minnkota system overall without substantial cost.

**D. Legal and Contractual Requirements Which Bind CCEC**

Cass is required to purchase substantially all of its electrical power from Minnkota Power Cooperative. Except to the extent Minnkota (a) provides time-of-use wholesale rate information; and (b) incorporates time-of-use rates into its pricing, Cass is unable to adopt this standard in full.

4. Staff Recommendations Concerning the Standard:

**A.** Cass should continue to offer the existing time-of-use rates to commercial customers. However, until Minnkota provides time-of-use wholesale rate information and pricing to members, Cass will not adopt the portions of the standard in subparts (B)(i) or (B)(iii).

**B.** Cass should continue to provide those members selecting the time-of-use rates with time-of-use pricing information made available by its wholesale power supplier.

**C.** Cass should continue to provide members with information regarding their usage over time of electricity, and, over time acquire the technology which will allow Cass to provide daily usage information to members.

**D.** Cass will provide, on an annual basis, information concerning the sources of the electrical power acquired by its wholesale power supplier and to the extent reasonably available, the estimated quantity of greenhouse gases associated with each source.