STATE OF IOWA

DEPARTMENT OF COMMERCE

UTILITIES BOARD

FILED WITH
Executive Secretary
November 17, 2011
IOWA UTILITIES BOARD

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| IN RE: | ) | |
| PURPA STANDARDS IN THE ENERGY INDEPENDENCE AND SECURITY ACT OF 2007 | ) ) ) ) | DOCKET NO. NOI-2008-0003 |

Comes Now, the Iowa Association of Municipal Utilities (IAMU), and on behalf of its members, submits the following Comments on the above-captioned Notice of Inquiry pursuant to the Iowa Utility Board's Order issued on October 14, 2011. The Order requested Additional Comments in an Inquiry which was originally opened on December 5, 2008. In response to a Board Order issued on March 9, 2010 which expanded the initial inquiry, IAMU filed Comments on April 1, 2010 and participated in the accompanying Workshop on April 16, 2010. In the October 14, 2011 Order, the Board specifically asked for an update on IAMU's grants relating to Smart Grid and dynamic pricing. IAMU's comments focus on that request.

**Update on IAMU grants**. In our April 1, 2010 comments, IAMU described two significant grant-funded projects. The first of these is a $5 million Smart Grid Investment Grant from the U.S. Department of Energy. The original proposal included 75 municipal utilities (65 Iowa utilities and 10 others located in Wisconsin and Minnesota). These utilities had provided letters of interest in deploying smart

thermostats with communications modules that would allow the utility to increase the air-conditioning temperature during critical peak-use periods by 1 or 2 degrees. Customers get access to control history and other information through an internet portal that also allows them to remotely change temperature settings and to automate response to time-of-use pricing. As it turned out, only 5 Iowa municipal utilities are participating in the grant (Algona, Atlantic, Cedar Falls, Rockford, and West Point). Kansas City Board of Public Utilities in Kansas is also a participant.

In implementing the grant, IAMU developed training materials for equipment installers, customer service representatives, and utility operators. We developed a marketing program with the logo "*2 DEGREES 2 Save,*" which highlighted benefits to the customer, the community, and the environment. A customer video describes cost trends in the industry, the benefits from controlling peak demands, the operating instructions for the thermostat and web portal, and a variety of energy efficiency measures the customer can utilize to reduce energy costs.

IAMU also developed sophisticated analytical tools to evaluate the ten-year costs and benefits of avoiding a kW of peak demand. Depending on the size of the utility, that cost is between $2 and $6 per kW per month over the four summer months when air conditioning control would be used. By comparison, some utilities pay combined costs for capacity, transmission, and direct assignment facilities (rents for sub-stations and other sub-transmission facilities) that exceed $20 per kW in each of those same summer months.

There are three primary reasons this project fell short in terms of participants:

1. For this grant, the biggest problem we had in attracting participants was our inability to get power supply entities to support the project on behalf of their members, though we note that Missouri River Energy Services is conducting its own demand response programs. The specific issues differed from one supply entity to another. Most municipal power supply agencies and rural electric G&Ts "socialize" energy, capacity, and transmission costs. An individual member utility can reduce its peak demand through technology like the smart thermostat or through time-of-use rates, but the result might be to shift costs to other agency members. Under other circumstances, the investing utility may bear the cost of demand response, but end up sharing the benefits with other members. Most of these supply organizations are aware of the need to make changes, but it will not be an easy task.
2. A second barrier is related to product development and supply. For example, many IAMU members have fat broadband pipes at their customers' premises – either coaxial cable connecting to neighborhood fiber nodes or, in some cases, fiber to the premise. We anticipated action on a new local area network standard by the ZigBee Alliance, which did not occur. That effectively limited participants in our project to a one-way communication system using commercial paging technology. It is tough to commit to an aging communication technology, when a robust fiber network is already in place.

   We hear claims by many manufacturers about the interoperability of their smart grid technology with that of other manufacturers, but too many of the claims are

misleading. It is not too far off the mark to conclude that the smart grid world tends to over-promise and under-deliver.

3. A third and less significant barrier is customer resistance. In the mid-1980s, some municipal utilities installing air conditioning load controls had saturation levels above 90 percent with no rate incentives. They were effectively over-subscribed, because customers expressed a desire to participate in a project that was good for the community as a whole and that would help to avoid rate increases, even where there was no direct benefit. That is much less likely to be the customer response today. Some difference in those reactions can be attributed to the fact that the user-end of the smart-grid often takes utilities beyond the meter. In addition, there are conspiracy theories about the perceived evils of the smart grid. Some claim that the smart grid is a government conspiracy to track how each citizen uses electricity and eventually to control appliance use. Others spread unfounded fear about radio frequency pollution.

**Dynamic Pricing.** The second grant-funded project we described included development of time-of-use rates for three utilities, based on the relevant MISO pricing history at the nearest commercial node. The project also includes an analysis of the impact of those rates on the utility's budget. These analyses were completed for Algona, Spencer, and Waverly. The rate structures utilize four time-of-use rates (for off/off peak, off peak, on peak, and critical peak periods), with seasonal variations. The

new rates have not been implemented and the timing and extent of their use has not yet been determined by the utilities.

Adoption of dynamic pricing or time-of-use rates are subject to the same barriers described for the thermostat grant. Utilities that purchase power from municipal power supply agencies or rural electric G&Ts cannot easily move to time sensitive rates, because they do not receive time-of-use price signals. This is especially unfortunate in a state with so much wind capacity and relatively tight transmission capacity. On windy nights and weekends, we regularly see negative locational marginal prices for energy, with concurrent penalties caused by curtailing base load plants to inefficient operating levels. Shifting load off peak through time of use pricing could alleviate this problem and could potentially reduce the need for some of the new transmission capacity whose costs customers will have to bear.

The two grants noted above are also providing funding for deployment of smart meters and data collection systems in Algona, Atlantic, Cedar Falls, and Waverly. For Algona, the grants are helping to fund system-wide deployment of smart meters. In the other municipal utilities, the grants support pilot projects of varying sizes. In addition, it should be noted that Spencer has completed a system-wide conversion to AMI, without grant funds.

**Cyber-security Safeguards.** With respect to the SGIG smart thermostat grant, participants are not collecting consumer data. Nevertheless, we developed a comprehensive cyber security plan that was approved by the Department of Energy.

We addressed what we considered to be potentially onerous security obligations for small utilities by using a control system hosted at a secure third-party facility.

Dated this 17st day of November 2011

Respectfully submitted,

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