



November 1, 2010

U.S. Department of Energy
Office of Electricity Delivery and Energy Reliability
1000 Independence Avenue, SW, Room 8H033
Washington, DC 20585

SUBJECT: "Smart Grid RFI: Addressing Policy and Logistical Challenges"

Thank you for the opportunity to submit information about the Smart Grid implementation at Dairyland Power Cooperative. Dairyland strongly supports the Department of Energy's (DOE) effort to encourage the development of an interoperable Smart Grid. We see significant benefits for our consumer members, the economy and the environment. The request for information indicates "The Department of Energy is seeking comments on policy and logistical challenges that confront smart grid implementation, as well as recommendations on how to best overcome those challenges." We trust that our response will assist the DOE in this initiative. In this response, we will refer to the important role of demand response in smart grid implementation as upheld by Federal Government and how recent rulings by the U.S. Environmental Protection Agency (EPA) that will effectively prohibit the use of small emergency generating units for peak shaving programs and demand reduction services starting May 2013, will have a significant impact on implementation of smart grid capabilities.

Who We Are

With headquarters in La Crosse, Wis., Dairyland Power Cooperative is a generation and transmission cooperative (G&T) that provides the wholesale electrical requirements and other services for 25 electric distribution cooperatives and 16 municipal utilities in the Upper Midwest. In turn, these cooperatives and municipals deliver the electricity to consumers--meeting the energy needs of more than half a million people.

Dairyland was formed in December 1941. Today, Dairyland's generating resources include coal, natural gas, hydro, wind, landfill gas, animal waste and solar. Dairyland delivers electricity via more than 3,100 miles of transmission lines and nearly 300 substations located throughout the system's 44,500 square mile service area.

Dairyland's service area encompasses 62 counties in four states (Wisconsin, Minnesota, Iowa and Illinois). Dairyland, a Touchstone Energy Cooperative, has provided low-cost, reliable electrical energy and related services for nearly 69 years.

A Touchstone Energy® Cooperative 

Please visit our Web site at www.dairynet.com for more information on Dairyland Power Cooperative. For a map of our service territory, see Attachment 1.

Dairyland Power has had a robust load management program for 30 years. This program has been used for the traditional seasonal peak shaving that most load management programs have been used for. Among the loads controlled by Dairyland are small emergency generating units owned and located at residential, commercial, institutional and agricultural facilities. These units represent a significant share of Dairyland's demand response capability and serve as a critical resource for maintaining system reliability and avoiding high cost purchases of energy. In some cases, these generators also provide necessary backup capability for the facility being served, ensuring service reliability during emergencies.

The Importance of Consumer-Owned Backup Generators to Smart Grid Development

The Energy Independence and Security Act of 2007 (EISA) directed the Federal Energy Regulatory Commission (FERC) to perform a national assessment of demand response potential and to develop a national action plan on demand response. This mandate recognized the important relationship between smart grid and demand response, including the common benefit of improved consumer management of electricity usage. FERC described this relationship in its proposed Smart Grid Policy Statement and Action Plan issued in March 2009:

Smart Grid advancements will apply digital technologies to the grid, and enable real-time coordination of information from generation supply resources, demand resources, and distributed energy resources (DER). This will bring new efficiencies to the electric system through improved communication and coordination between utilities and with the grid, which will translate into savings in the provision of electric service. Ultimately, the smart grid will facilitate consumer transactions and allow consumers to better manage their electric energy costs.

When FERC published its National Action Plan on Demand Response (Docket No. AD09-10) on June 17, 2010, it further acknowledged this relationship between demand response and smart grid. FERC specifically recognized the value of demand response resources for meeting the nation's energy needs and for reducing the need to construct new, expensive generation units. It also stated that action needs to be taken to either create new programs or expand existing programs where cost-effective. These actions, according to FERC, should be consistent and coordinated with smart grid policies and efforts.

Consumer-owned backup generators represent a large and diversified source of capacity for the electric system and play an important role in demand response programs across the nation. According to a report published on April 15, 2010, by the DOE's National Energy Technology Laboratory (NETL), entitled "BUGS: The Next Smart Grid Peak Resource" (DOE/NETL-2010/1406), consumer-owned backup generators represent 170 GW of capacity which is about 22 percent of the peak and 36 percent of the average load in 2009. These generators, if used for

demand response and/or distributed generation, could be a significant benefit to consumers, utilities and the entire electric grid.

Studies referenced in the NETL report showed that consumer-owned generators can have an environmental as well as economic benefit as compared to traditional, large peaking generation units. This benefit derives from the fact they are quick to startup and shutdown, close to the load, and more responsive than large power sources. Large, central-station peakers require longer ramp periods and idling conditions, typically at less favorable heat rates, which can result in actual total emissions associated with managing the peak being greater than the emissions from consumer-owned generators.

Dairyland, like many utilities across the nation, currently relies on consumer-owned backup generators as a significant part of its demand reduction capability. Dairyland has nearly 400 consumer-owned generators participating in its load management program which represent a combined 79 MW of nameplate capacity. When called upon, these units typically provide up to 40 MW of demand reduction, or approximately 4.5 percent of Dairyland's system peak. In addition to providing valuable reliability and economic benefit to Dairyland, these generators also provide necessary backup capability for the facility they are serving, ensuring continuity of electric service for critical functions.

Over the years, these consumer-owned generators, coupled with Dairyland's other demand response resources, have helped Dairyland manage generation, transmission and distribution of power. As a result, Dairyland has been able to defer the need for construction of new generation and other infrastructure because of the successful demand response programs it has implemented.

Federal recognition that encourages utilities to implement Demand Response and Peak-Shaving programs would be very beneficial to the smart grid.

Identification and Lowering of Unreasonable or Unnecessary Barriers to Adoption of Smart Grid Technologies, Practices and Services

The EPA has promulgated a variety of rules in recent years governing the operation of stationary reciprocating internal combustion engines (RICE). Most recently, the EPA issued the following rulings on National Emission Standards for Hazardous Air Pollutants (NESHAP):

- NESHAPs for compression ignition RICE, 75 Fed. Reg. 9,648 (Mar. 3, 2010) (Subpart ZZZZ of 40 C.F.R. Part 63), and
- NESHAPs for spark ignition RICE, 75 Fed. Reg. 51,570 (Aug. 20, 2010) (Subpart ZZZZ of 40 C.F.R. Part 63).

These rules define, among other things, how emergency stationary RICE can be used. These provisions prohibit the use of emergency units for peak-shaving programs and allows very

limited use for other demand reduction purposes. Beginning in 2013, existing emergency units larger than a specified size will not be able to continue to be used in peak shaving programs without being reclassified as “non-emergency” units and adding expensive emission reduction technology in order to meet stringent emission limits. The additional costs of the new requirements will make it economically prohibitive for their continued use in these programs. The result will be increased costs for Dairyland’s distribution cooperatives and their consumer-owners.

EPA’s RICE NESHAP rules allow emergency units to operate up to 100 hours-per-year (or more upon petition) for testing, maintenance, etc., including 50 hours-per-year for non-emergency situations – but specifically not for peak shaving purposes. Peak shaving programs involve minimal hours of operation, thereby potentially not adding to the allowed 100 annual hours of operation contained in the rules. For example, for the years 2005 through 2009, Dairyland called upon its consumer-owned generators for peak shaving an average of 40 hours per year. Continuing the use of peak shaving programs, therefore, would not cause additional public health risks or environmental harm beyond that already considered in the final rules. Elimination of peak shaving programs, however, would require the procurement of additional central station capacity and potentially the addition of transmission and distribution line capacity to service the demand increase. As referenced above in the recent NETL report, the use of large, central-station peakers can actually result in greater total emissions associated with reducing the peak.

While peak shaving programs do not generate income for Dairyland’s distribution cooperatives, they do produce economic benefits by reducing the level of demand, resulting in reduced demand costs. These reduced costs, in turn, are shared with the owners of these small emergency generating units that participate in peak shaving programs: a win-win arrangement that helps hold down power costs for the owners of these units, as well as for the cooperatives’ other consumer-owners. Reduced cost of electrical energy is a very important consideration during this time of national economic strain and is of particular importance to rural electric cooperatives as they serve some of the most economically depressed areas in the nation.

It is very important that the EPA reconsider the provisions of the above referenced rulings that restrict the operation of these emergency units for peak-shaving and demand reduction. Dairyland suggests a modification that simply removes the restrictions on peak shaving and demand reduction service, and the 50 hour limitation on non-emergency service. This change would not result in any additional run-time above the 100 hours of operation that is already provided for in the rule. In other words, the change would allow owners/operators of small stationary emergency generating units to use their units without restriction up to 100 hours-per-year for non-emergency operation in ways that best meet their particular needs and circumstances.

Conclusion

The developing smart grid will enable new ways of managing the electric power system. Rather than building large central-station power sources many miles away and new transmission lines

to transport the electricity to consumers, utilities can rely on consumer-owned generators and other distributed demand resources to help balance and support system needs.

Dairyland supports EPA's efforts to protect public health and the environment from harm caused by the presence of toxic air pollutants. Dairyland is very concerned, however, that the EPA has included unnecessary restrictions in these NESHAP rules that will cause economic harm across our region without providing any meaningful environmental benefit.

In light of the minimal environmental effects but significant benefit from having these small stationary emergency units available, Dairyland requests that EPA reconsider the provisions of the NESHAP RICE rules that restrict the operation of these emergency units for peak-shaving and demand reduction programs. The continued use and development of consumer-owned generators as dispatchable utility resources can save consumers money, improve system and local reliability, and potentially provide valuable ancillary services for utilities and regional transmission operators.

However, if current and proposed EPA rules make it uneconomical to purchase, operate and maintain these units, the opportunity to advance a diversified, economical and proven resource in the smart grid will be lost.

Thank you for the opportunity to respond to this Request for Information. I encourage you to contact me for more information or to clarify my response.

Sincerely,

A handwritten signature in black ink, appearing to read 'Greg Flege', written in a cursive style.

Greg Flege, Supervisor
Load Management

GAF:daj

Attachment

Attachment 1

