



State of Michigan
Jennifer M. Granholm, Governor

Michigan Public Service Commission
Orjiakor N. Isiogu, Chairman
Monica Martinez, Commissioner
Steven A. Transeth, Commissioner

MEMORANDUM

Date: 7/7/2008
To: Mary Jo Kunkel, Executive Secretary
From: Rob Ozar, Manager Electric Operations Section
Subject: Staff Report of the Demand Response Collaborative – U-15277

The Commission Staff is resubmitting its Staff Report on the Demand Response Collaborative in Case No. U-15277. The earlier version of this report, which was originally filed on July 1, 2008, failed to incorporate all of the changes that the Staff intended to include in its filing and should have more fully described the nature of the recommendations proffered in the report.

Report on the Demand Response Collaborative U-15277

Prepared by the Staff of the Michigan Public Service Commission

July 7, 2008

Introduction

On June 12, 2007, the Michigan Public Service Commission (MPSC) issued an order in Case No. U-15277 directing the MPSC staff to convene a statewide collaborative on demand response based upon goals described in the order and in the 21st Century Energy Plan. As such, the collaborative was directed to “include pilots programs at more than one utility and should emphasize use of “smart” metering, advanced technology, and time-based or real time rate structures, in particular assessing the impact of time-based rates on customer demand for electricity.”

The collaborative has participation from over 50 industry stakeholders representing utilities, cooperatives, power providers, vendors, and research institutions. Four meetings of the collaborative have been held to date. The first, on [July 26, 2007](#), was an introductory meeting and included presentations from Consumers and DTE on concepts for Demand Response pilots. The second, on [August 8, 2007](#) was an informational meeting, where DTE presented a list of discussion topics for collaborative consideration, as well as a presentation offering a literature review. The third meeting, held [October 11, 2007](#) provided further pilot refinements from DTE, describing kWh potential for residential, and small to medium commercial businesses. Consumers Energy’s presentation provided data on a pricing pilot and proposed rate structure for these pricing pilots. AEP provided an update on their proposal to implement an advanced metering in the Michigan service territory. Finally, the last meeting of 2007 held [October 23, 2007](#), was a discussion with cooperatives on demand response pilot programs.

Overview

Michigan’s statewide electric-peak demand is growing and doing so at a rate faster than the annual average energy use. At the same time, the market cost of peak power is soaring due to unprecedented price increases for natural gas used to fire gas-combustion turbine and combined-cycle power plants that are the predominant technology for generating peak power. As a result, the cost of serving electric demand during only a limited number of hours (50-150) during the year, contributes a disproportionate percentage of the annual cost of generating electricity in the state.

The steadily increasing market saturation of central air conditioning is one of the primary causes of the rising electric peak-demand. It is now generally recognized that the growth in central air conditioning installations is due in part to the discounting effect of the annual-average pricing method used to set utility retail rates. Annual-average pricing stimulates air conditioning market saturation because it discounts the proper price signals associated with high cost combustion turbines needed to serve this peak demand. In effect, the discount is financed by loading the peak generation costs onto off-peak rates. In contrast, time-based pricing creates a nexus between customer consumption decisions and the cost of the generation mix required to serve such electric demand. Demand response pilots conducted across the country have indicated that dynamic pricing has the potential to shift demand off-peak, induce energy efficiency, and reduce electric bills to the majority of customers. However, widespread availability of dynamic pricing

programs is dependant on utility implementation of advanced metering infrastructure (AMI). This cutting edge technology also creates the opportunity for advanced direct load-control programs that can provide emergency reserves more effectively and at lower costs than traditional planning reserves.

Demand response programs will become a critically important means to balance electric load and generation if significant amounts of renewable energy are included in the generation mix, due to enactment of a statewide Renewable Portfolio Standard (RPS) recommended by proposed legislation. It is expected that the introduction of significant wind energy into the generation mix will increase the load following ramping and regulation requirements, since the supply curve from wind tends to be inverse from the daily demand curve (i.e. wind availability increases during the night when load falls off and decreases during the day when load rises)¹.

The upshot is that retail demand response programs can reduce electric demand during peak-periods when wholesale prices are at their highest levels, and thus provide a “demand side resource” alternative to building new generation capacity. Demand response programs help address short-term reliability concerns and provide customers with an opportunity to manage their electricity costs by shifting their consumption patterns to less expensive times of the day.

Because of the potential benefits to customers, demand response pilots should be designed to address the following:

- (a) Assess if advanced metering technology providing a two-way wireless network between the utility and customers can enhance the effectiveness of time-based pricing programs and energy efficiency programs;
- (b) Determine if dynamic pricing using Peak Time Rebates (PTR) is preferable to Critical Peak Pricing (CPP) rate structures that strictly rely on price differentials to induce customer response; and
- (c) Address issues uniquely associated with low-income customers’ participation in demand response programs and in particular those low-income customers not having air conditioning.

State Efforts on Demand Response Pilots

A recently released FERC document² reports “... a number of state legislatures and state public utility commissions have issued new rulemakings, orders, and /or initiatives in support of (Advanced Metering Infrastructure) AMI investments (and time-based rates). These new announced deployments and state activity are important because they will create the necessary infrastructure and capability to support demand response.”

¹ Eto, Joseph. (2008, April 16). *Renewable Generation Integration Challenges*. Presentation at the MISO Annual Stakeholder Meeting, Indianapolis, IN.

² 2007 FERC Assessment of Demand Response and Smart Metering 2007, p.23

While many states are proceeding with pilot programs, Michigan's demand response pilots have been delayed due to regulatory uncertainty about the minimum functionality requirements for AMI. The Staff has recommended that the Commission initiate an investigation into the development of minimum functionality guidelines for utility rate recovery of AMI investments, with a Staff report expected by October 1, 2008. It is expected that these guidelines will provide utilities the regulatory direction needed to proceed with planning and investment in AMI infrastructure critical to launch the demand response pilots. It is Staff's view that until these AMI guidelines are in place, demand response pilot programs will continue to be delayed.