

Guide to the Issues #2: Demand Response for Large Consumers

Reducing Demand for Energy to Help Meet Texas' Energy Needs

ISSUE SUMMARY:

There are a few hours each year when the demand for electricity is especially high, because of extreme weather or unexpected generation outages. To ensure there is enough electricity for everyone, we either need to build expensive power plants to operate for just those few hours, or we can give electricity users incentives to reduce the amount of electricity they consume at these crucial times: this solution is known as Demand Response.

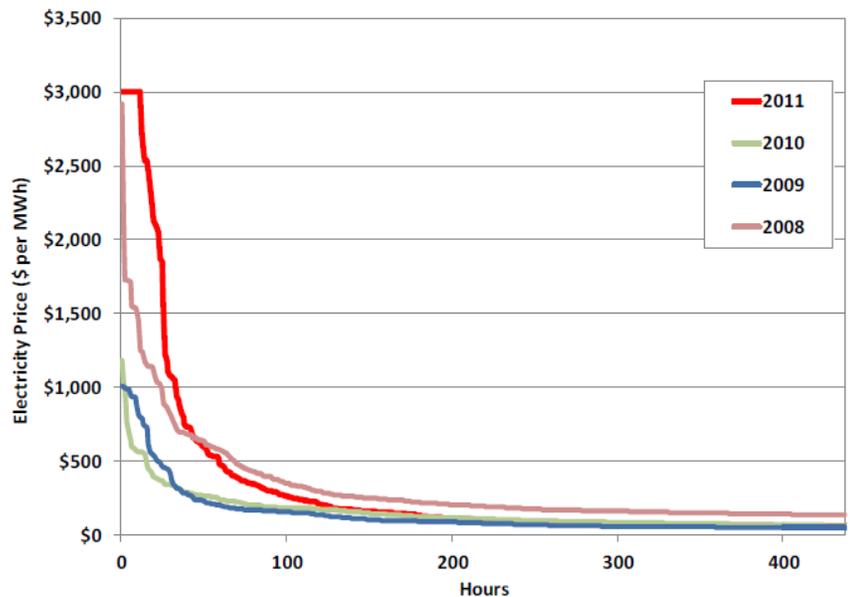
Demand Response programs offer incentives to electricity users to temporarily reduce their electricity usage when demand for electricity could be greater than the supply, or at a time of emergency. Demand Response is a cost-effective way to meet peak demand that occurs for only a few hours each year (see chart at right).

While both generation and Demand Response play an important role in ensuring that the lights stay on, a report commissioned by the Texas Public Utility Commission (PUC) (the “Brattle Report”) determined that the Texas electric market would benefit from more demand response. In fact, **the PUC “regards a robust demand response program as an essential tool for ERCOT in fulfilling its responsibilities to ensure reliable operation of the grid”.** (PUC Project 39948)

It makes economic sense to cover the few hours of extreme need for additional peak generation that occur each year by compensating customers who are willing to reduce their electricity usage

during those hours instead of paying for expensive and rarely used generation. The Brattle Report found that Demand Response could reduce the amount of generation reserves needed to maintain a given level of reliability (Brattle Report, page 88).

Figure 5: ERCOT Price Duration Curve – Top 5% of Hours



Currently, demand response meets about 3% of peak load, which is significant. However, the Brattle Report found that demand response could grow to meet 15% of peak load.

Commercial and industrial customers participate in Demand Response programs in the following ways:

- (1) They can reduce their consumption to save on their retail rate or for compensation as a resource to ERCOT. For example, customers can offer to reduce their demand as a form of

operating reserves for ERCOT to call on when the energy supply is low.

(2) They can voluntarily participate in ERCOT’s Emergency Response Service if they are willing to be called upon to reduce their usage as a step to prevent rolling outages.

(3) Commercial customers also have the option to participate in Demand Response programs offered as part of utility energy efficiency programs.

(4) Market rules allow customers with their own generation resources to use those assets, either to reduce their need for power from the grid, or to sell energy into the grid. More companies are undertaking on-site generation, which will have an impact on the larger market.

POLICY CONSIDERATIONS:

As the PUC explores options to ensure that there are adequate electricity resources for Texas, they have identified Demand Response as a crucial component to ensure that Texas continues to be able to meet its energy needs cost effectively. Yet right now, Texas lags behind other states in terms of the percentage of peak demand that can be met by reducing electricity usage as a form of Demand Response. (See graph below).

Texas should increase opportunities for customers to participate in Demand Response for the benefit of all Texans, including:

- Attract more participation by altering existing programs to be more friendly and responsive to customer needs.
- Require the PUC and ERCOT to create new programs designed to address peak usage specifically allowing demand response to bid directly into the energy market and compete with generation to meet Texas’ energy needs.
- Use utility efficiency programs to pilot new technologies, attract new customer participation, and capture local distribution-level benefits.

CONCLUSION:

As Texas considers market changes to ensure resource adequacy, additional policies should be developed to incorporate additional Demand Response opportunities into ERCOT’s resource mix. Demand Response can help manage electric consumption, lower prices, and increase grid reliability for all consumers.

The next Texas Clean Energy Coalition Guide to the Issues will focus specifically on residential and small commercial customer demand response.

