

Reducing Demand for Energy When It Costs the Most

ISSUE SUMMARY:

There are many factors that contribute to volatile price spikes in the Texas wholesale energy market, but the lack of alternatives to expensive peak generation is often a cause. Demand Response (DR) resources can play a crucial role in alleviating this issue.

Demand Response is a form of **voluntary** load management that can be used to **rapidly** achieve a **temporary** reduction of energy usage in response to a specific event, such as a spike in energy prices or unplanned outages in generation. While DR is often discussed in context of energy efficiency and load management, it has unique features and benefits (see figure below).

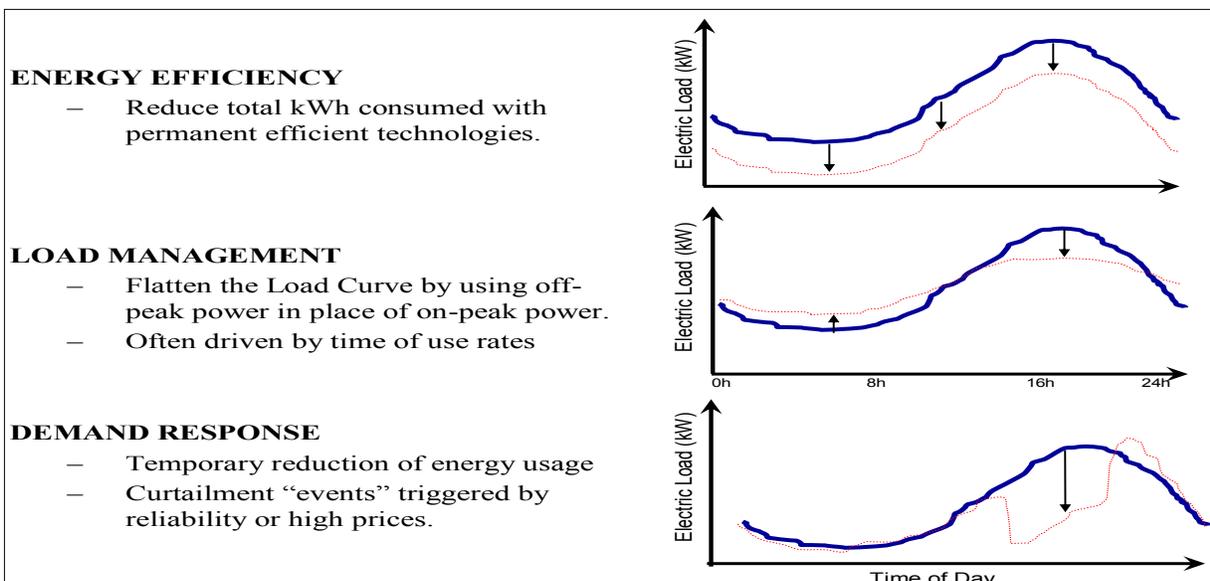
By having Retail Electric Providers or third-party aggregators solicit **voluntary** agreements with consumers to participate in DR programs at sufficient scale, electricity consumption can be reduced as needed and where needed, which can have a material impact on demand —and prices.

EXAMPLES:

- An industrial customer could agree to voluntarily reschedule production processes that are not time-sensitive to later in the day.
- A large retail chain could develop a process to turn off every other light or “cycle” their air conditioners in their stores if needed.
- Residential customers could sign up for voluntary programs with their utility or third-party DR aggregators to reduce demand.

KEY POLICY CONSIDERATIONS:

- The Legislature could direct ERCOT and the PUC to ensure Demand Response resources are allowed to fully participate and compete in Texas markets.
- The Legislature could establish explicit goals for Demand Response resources in particular programs or services (e.g., 5% of peak load).



TALKING POINTS:

- Demand Response helps protect consumers from price spikes during periods of peak demand or resource scarcity by providing alternatives to generation.
- A study by EEI and Oak Ridge National Labs found that each 1% of controlled load participating in the market could reduce peak electricity prices by 10%; therefore having 5% of the peak load in demand response programs could cut peak energy prices in half.
- A Brattle Group report shows that a 5% drop in peak demand would have significant economic benefits and is realistically achievable.
- DR can be used in lieu of the dirtiest, most polluting peak generation sources.
- According to a March 2008 study from Texas A&M, the NOx emissions reduction from one hour of electricity savings at 5% of peak demand would be 2.24 tons.
- DR programs in Texas can be expanded to help ERCOT better manage unplanned outages in generation.

OPPONENTS SAY:

- *“Peak energy prices need to be high in Texas to encourage the private sector to build more power plants.”*

RESPONSE: If consumers can provide the last few megawatts of energy needed during peak times through demand reductions, then they should be allowed to compete and let the market decide the appropriate price.

- *Texas is an “energy-only” market; we don’t pay for capacity.*

RESPONSE: DR resources can play an active and robust role in Texas’ unique energy-only market by providing actual, verified load reductions in lieu of generation. DR resources should be given the chance to fully participate and compete with generation in Texas.

BACKGROUND AND HISTORY:

Historically, utilities in the Electric Reliability Council of Texas (ERCOT) relied on over 4,000 megawatts of interruptible and curtailable load, group load curtailment programs, residential direct load control programs, thermal energy storage systems, and other “demand-side resources” to maintain reliability and meet the system’s resource needs. However after the Texas electric market was restructured, state mandates and incentives for interruptible tariffs were discontinued.

ERCOT has offered a few limited DR programs, such as Load Acting as a Resource (LaaR) and Emergency Interruptible Load Service (EILS), but they have typically been treated as emergency-only programs and were rarely used. Today, qualified Load Resources can participate in certain ERCOT Ancillary Service markets, in EILS, or negotiate an agreement with their qualified scheduling entity, but DR has not flourished in Texas as it has in other energy markets.

Last Session, HB 1604 and SB 1191 were two bills that specifically addressed DR.

RESOURCES AND CITATIONS:

Texas A&M University System Energy Systems Laboratory (March 2008). *NOx Emissions Reduction Potential From a 1% to 5% ERCOT-wide Peak Electric Demand Reduction During Peak Ozone Season Periods.*

<http://www-esl.tamu.edu/terp/about/testimony>

Brattle Group (May 2007). *The Power of Five Percent.*

<http://www.brattle.com/Publications/ReportsPresentations.asp?PublicationID=754>.

EEI/Oak Ridge National Labs: Eric Hirst and Brendan Kirby (January 2001). *Retail-Load Participation in Competitive Wholesale Electricity Markets.*

http://webapp.psc.state.md.us/Intranet/Reports/SU_CM_appendix_A.pdf

ERCOT Information:

<http://www.ercot.com/services/programs/load/>

International Energy Agency’s Demand Side Management Program:

<http://www.ieadsm.org/>