



## Commercial Rebates

### Thermal Energy Storage Fact Sheet #1

#### THERMAL ENERGY STORAGE

Cooling is an important function that must be maintained in a building and can significantly influence a building's demand and monthly costs for electricity. Since the vast majority of buildings are equipped with electric cooling systems, many owners are seeking new strategies to reduce these cooling expenses without compromising comfort. Thermal energy storage can do just that.

#### WHAT IS THERMAL ENERGY STORAGE?

Thermal Energy Storage (TES) is a proven technology that uses conventional refrigeration equipment and storage tanks to shift all or most of the chiller operation from on-peak to off-peak periods. *Chilled water* or *ice* is produced by chillers off-peak and stored for later use by the building during the afternoon on-peak period.

#### WHAT ARE THE BENEFITS?

It is advantageous to shift electric use to the off-peak period since the cost of electric demand is greater during the on-peak period. Thermal energy storage takes advantage of lower off-peak rates to significantly reduce a facility's utility bills in Figure 1. Austin Energy has a special Time-of-Use (TOU) rate rider available for commercial customers who utilize TES systems to reduce on-peak electrical demand. During the summer billing months of May through October, demand charges each month are based on the highest demand during weekdays from 4 p.m. to 8 p.m. In addition, the winter billing demand is the lower of the actual winter demand or 90% of the maximum on-peak summer demand.

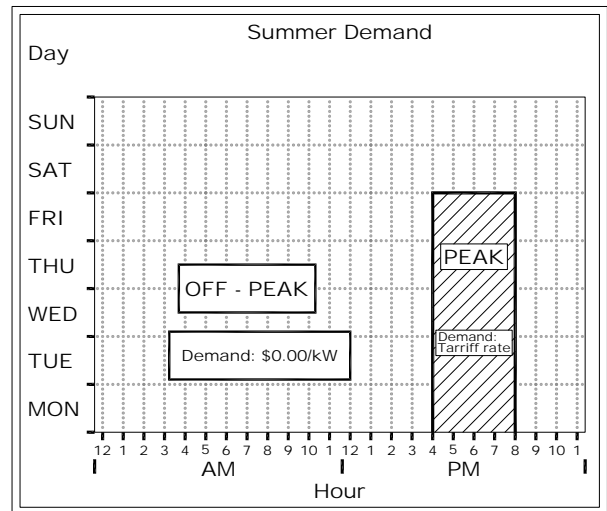


Figure 1: Summer Demand, Time-of-Use

This is a significant benefit for electrically heated buildings that have high winter demand. Another benefit occurs when the TOU is applied to customers on the Large Primary Service. In Figures 2 and 3, kWh energy that is shifted from on-peak to off-peak, summer or winter, results in additional utility cost savings.

Other operational benefits include the ability to schedule equipment maintenance with minimal cooling interruption, back-up or spare cooling capacity, and minimize inefficient equipment part-load runtimes by operating equipment at or near full load during the charge cycle.



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### Thermal Energy Fact Sheet #2

#### NEW TIME-OF-USE CONTRACT STRUCTURE

Austin Energy has modified its Time-of-Use rate structure to increase the incentive for TES systems. The summer on-peak demand period is defined as being from May through October during the weekday hours of 4 p.m. to 8 p.m. The winter demand will be calculated as the actual demand or 90% of the summer on-peak demand. This provides additional savings, for those facilities that have winter demands that are as high as or higher than their summer peak demands. This is particularly true of electrically heated buildings. Specifics of the TOU rider rate structure are detailed as follows:

- **Demand:** The summer on-peak demand period shall be 4 p.m. to 8 p.m. weekdays, May through October. The winter billing on-peak is all hours.
- **Energy:** The Large Primary Service rate will remain as on-peak 1 p.m. to 9 p.m. summer, and 8 a.m. to 10 p.m. winter. Other rates continue to have a flat energy charge.
- The summer-billed demand shift must be 20% to 50% or 2,500 kW minimum.
- The TOU Rider is only applicable for load shifting with thermal energy storage.
- TOU contract is for 5 years.

(TOU = Time of Use Rider)

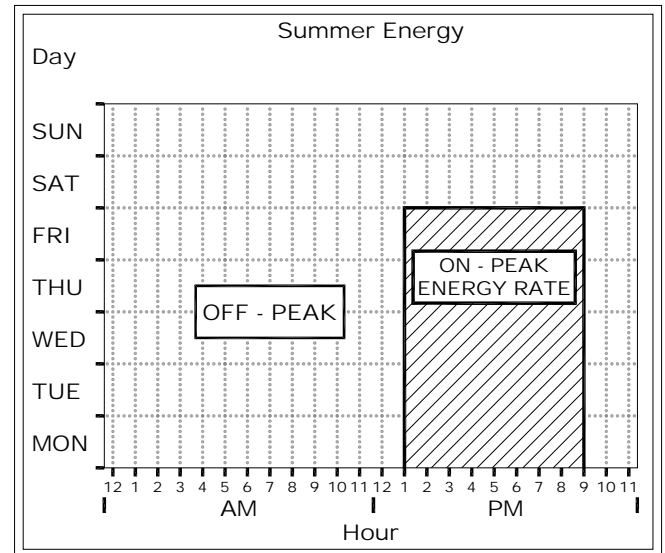


Figure 2: Summer Energy LPS-TOU rate

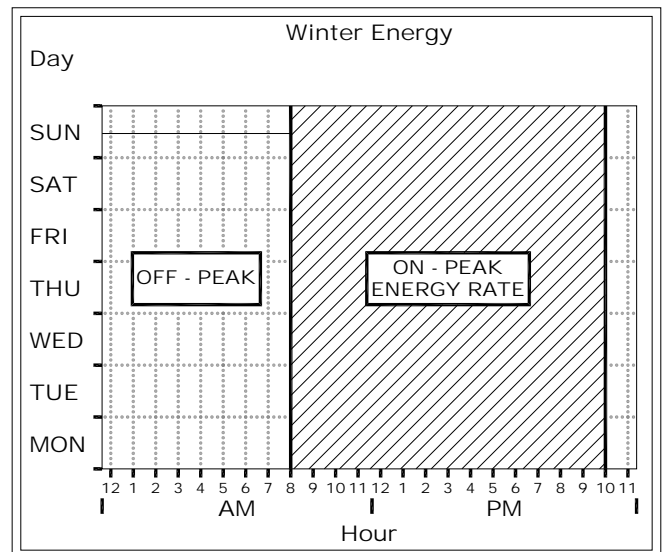


Figure 3: Winter Energy LPS-TOU rate