



## **Demand response empowers customers to reduce electric bills**

Demand response refers to utility programs that encourage customers to shift their electric usage when prices are high or during times of high demand on the electric grid. Even though electricity prices change hourly, end-use customers generally pay one flat rate. Demand response allows customers to react to those changing prices, or allows their utility to react for them, to save money on their bills. Demand response programs are always voluntary, and offer the customer greater control over their energy use and bills.

### **What is demand?**

Demand refers to the overall use of electricity at any single moment. Large amounts of electricity cannot be stored. Power must be generated as it's being used. The more customers need power, the higher demand. Peak demand is the time when users require the most electricity. It typically happens on hot summer weekdays when a large number of air conditioners run at the same time. The peak involves not only how much electricity customers demand, but also when they are using that electricity at the same time.

### **Why is peak demand important?**

Peak demand is important because it affects both how much power costs and its reliability. If customers can reduce their usage during the system peak, then power can be generated using lower cost plants. In the long term, reducing peak demand means that building new power plants can be delayed and bills are more affordable.

High demand conditions put a lot of stress on the electric grid. Older components of the grid are more likely to fail when under stress from high demand, hurting reliability when it matters most.

### **How can customers get paid to change their peak usage?**

Demand response programs can be broken down in two general categories: behavioral and direct control. Both types of programs attempt to shift usage away from peak times, but differ on how the customer is involved.

Behavioral programs encourage customers to use less electricity during peak by charging a lower rate for off-peak usage and a higher rate for on-peak usage. Customers can then move energy-intensive activities to lower cost times of the day. For example, a customer might use the delay function on their dishwasher, so that it runs at night under the lower off-peak rate.

These rates, called time-of-use rates, are designed so the average customer will only see a change in their overall bill if they change how and when they consume energy.

Direct control programs allow a customer to give their utility the ability to cycle a customer's air conditioner, heat pump, pool pump, electric water heater, or thermostat during times of high demand on the grid. The utility will put a device

on the customer's air conditioning unit, for example, that allows the utility to remotely shut off the unit's compressor in 15-minute increments over the course of the peak period. Often, customers are unaware that their appliance has been running at a different time, and the indoor temperature only changes by a few degrees, if at all.

Another way customers can allow the utility to reduce on-peak energy use is to install a communicating thermostat in their home. During periods of high peak demand the utility sends a signal to the thermostat that raises the temperature one or two degrees. Again, often the change is not noticed, but the customer maintains control under this program, by having the ability to opt out of the event.

Direct load control programs are always voluntary and do not affect other appliances such as refrigerators or electric ranges. The utility is limited to how many events can be called per year, and cannot turn off the customer's appliance for more than 30 minutes.

#### **How can customers sign up for these programs?**

For time-of-use rates all energy users have to do is follow some basic tips to shift energy use to off-peak times when prices are lower.

To compensate for participating in a direct control program, the utility will charge a lower rate for energy used by the controlled appliance, or give the customer a monthly bill credit.

Contact your utility to inquire about the demand response programs they offer.

Consumers Energy electric customers, you may visit [www.peakpowersavers.com](http://www.peakpowersavers.com), call 877-789-9883, or email [PeakPowerSaversProgram@Honeywell.com](mailto:PeakPowerSaversProgram@Honeywell.com)

DTE Energy customers, you may visit [www.dteenergy.com](http://www.dteenergy.com) or call 800-477-4747

#### **Demand response examples:**

- Pre-cool your home using a programmable thermostat. Program your thermostat to cool your house to a lower than normal temperature during off-peak hours, such as early afternoon before you get home. Allow the temperature to rise back to normal during on-peak hours.
- Use the delay function on your dishwasher or run it later at night during off-peak hours.
- Do laundry in the evening during off-peak hours, or on the weekend.

**To keep up on demand response activities, please visit the energy legislation web page at [www.michigan.gov/energylegislation](http://www.michigan.gov/energylegislation)**