



## Office of the Ohio Consumers' Counsel

Your Residential Utility Consumer Advocate

# CONSUMERS' FACT SHEET

Office of the Ohio Consumers' Counsel  
10 West Broad Street  
Suite 1800, Columbus, OH  
43215-3485

EMAIL:  
occ@occ.ohio.gov

WEBSITE:  
www.occ.ohio.gov

# SMART GRID: DYNAMIC AND TIME-OF-USE PRICING

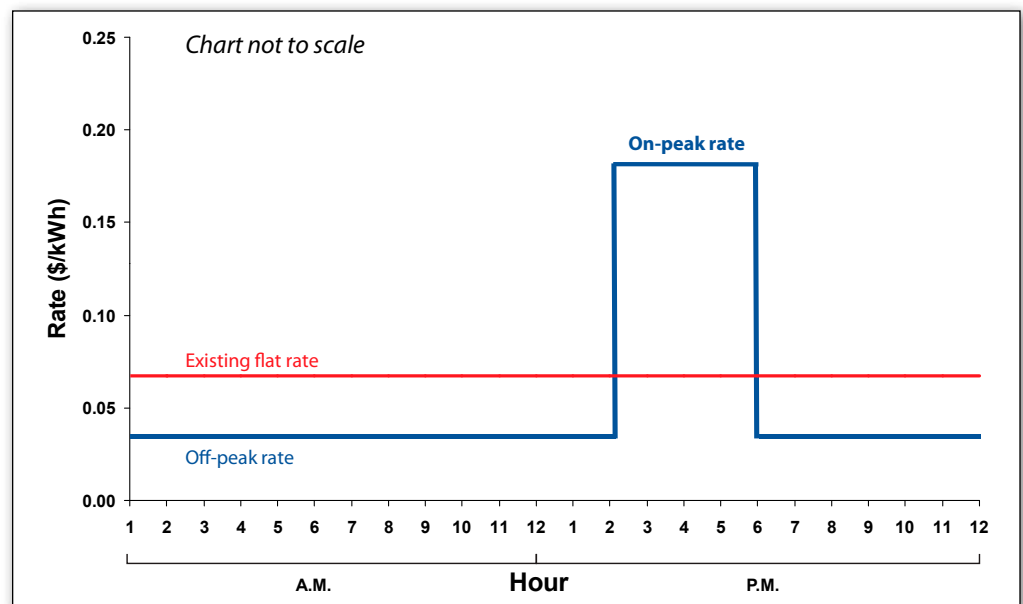
Electric utility companies in Ohio have begun updating their aging infrastructures with new technology. The goal is to develop an improved electric system, or smart grid, that is more efficient and reliable, and allows customers to better control their energy usage.

One feature of the smart grid that can benefit consumers is known as dynamic pricing. As opposed to paying a standard flat rate for electricity, dynamic pricing allows for electricity prices to increase or decrease throughout the day as demand changes. In other words, customers can save money by limiting their usage during times when the demand and price for electricity is high, and instead using electricity when the demand and price is low. To take advantage of dynamic pricing, customers must have an electric meter, sometimes called an advanced or smart meter, capable of reading electricity usage during frequent intervals throughout the day.

Customers with smart meters have the option either to be billed a standard flat rate, or enroll in a dynamic pricing program. There are five types of pricing programs available: time-of-use pricing, critical peak pricing, direct load control, peak time rebates, and real-time pricing. Critical peak pricing, direct load control, peak time rebates and real-time pricing are examples of dynamic pricing programs because the price customers pay is responsive to the price of electricity on the market. Utilities can create variations of these programs to provide customers with additional options.

### Time-of-use pricing

Electricity prices under a time-of-use model are set at predefined rates during different times of the day. The cheapest prices are available when electricity is used the least (off-peak) and most expensive when many customers are using electricity at the same time (average



Time-of-use pricing

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or on-peak). Utilities may even develop rates between on- and off-peak times known as shoulder rates.

Customers know in advance how much they will pay for electricity during different time periods throughout the day. This allows customers to plan the bulk of their energy usage for off-peak periods and save money.

**Critical peak pricing**

A critical peak pricing program allows customers to use electricity at cheaper rates for most of the year; however, when energy is in particularly high demand, the utility can call a critical peak period, where electricity rates increase significantly. Customers can then choose to either reduce their usage during the peak period or pay rates that can be several times higher than the standard flat rate.

A utility usually predetermines the maximum number of times it can call a critical peak event (usually up to 15 times per year) and the number of hours (usually 4-6 hours) each will last. Customers in the program are given advanced notice of when these peak events will occur.

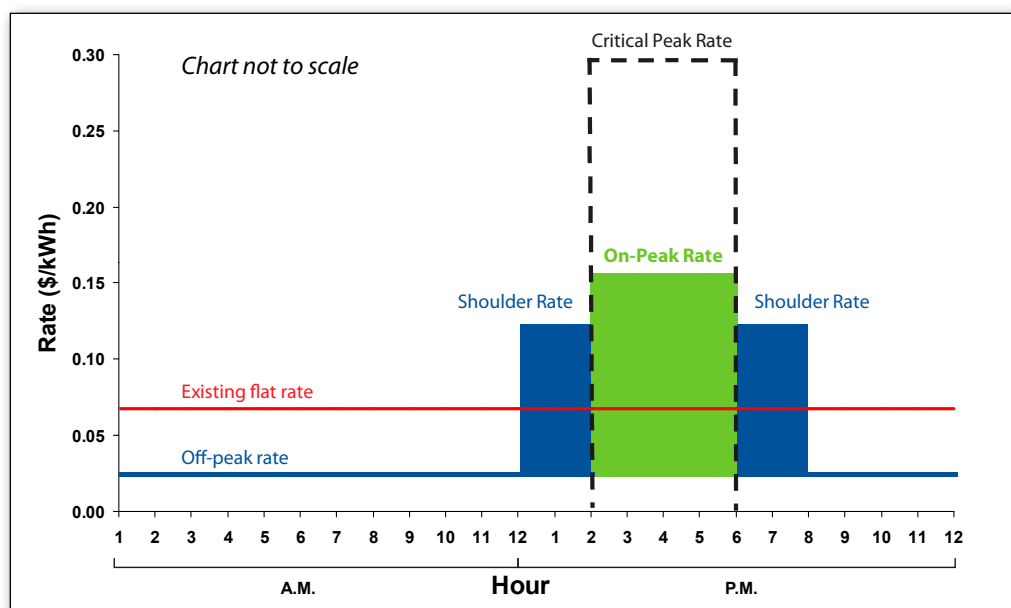
**Direct load control**

This type of dynamic pricing program gives customers monthly credits or rebates during the summer months for allowing the electric utility to remotely increase the temperature of their air conditioners a few degrees when the utility's distribution systems experiences high demand. These credits should be listed on customers' bills and applied automatically.

Customers stay on a flat standard rate throughout the year, and the utility has a set number of times and hours it can remotely increase the air conditioner temperature (usually up to 15 times per year). Customers who participate in direct load control programs have a communicating programmable thermostat installed. They can opt-out or override an event, but any potential credit would be reduced or eliminated for the month. Because electric utilities most frequently experience high-demand during the summer, credits are less likely to be earned during the winter when demand is lower and fewer air conditioners are being run.

**Peak time rebates**

Customers that enroll in a peak time rebate program have a standard flat rate but receive rebates for using less electricity when a utility calls for a peak time event.



Critical peak pricing

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The Office of the Ohio Consumers' Counsel (OCC), the residential utility consumer advocate, represents the interests of 4.5 million households in proceedings before state and federal regulators and in the courts.

The state agency also educates consumers about electric, natural gas, telephone and water issues.

For more information, please visit the OCC website at [www.occ.ohio.gov](http://www.occ.ohio.gov).



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When an event is called, these customers can reduce their usage and receive a utility incentive. Customers will not see their rates increase for maintaining their normal usage pattern should a utility call for a peak time event. In order to enroll in this type of program, the utility must first determine a customer's typical usage pattern, otherwise known as baseline usage, so that it can correctly determine when the customer decreases usage during a peak event.

**Real-time pricing**

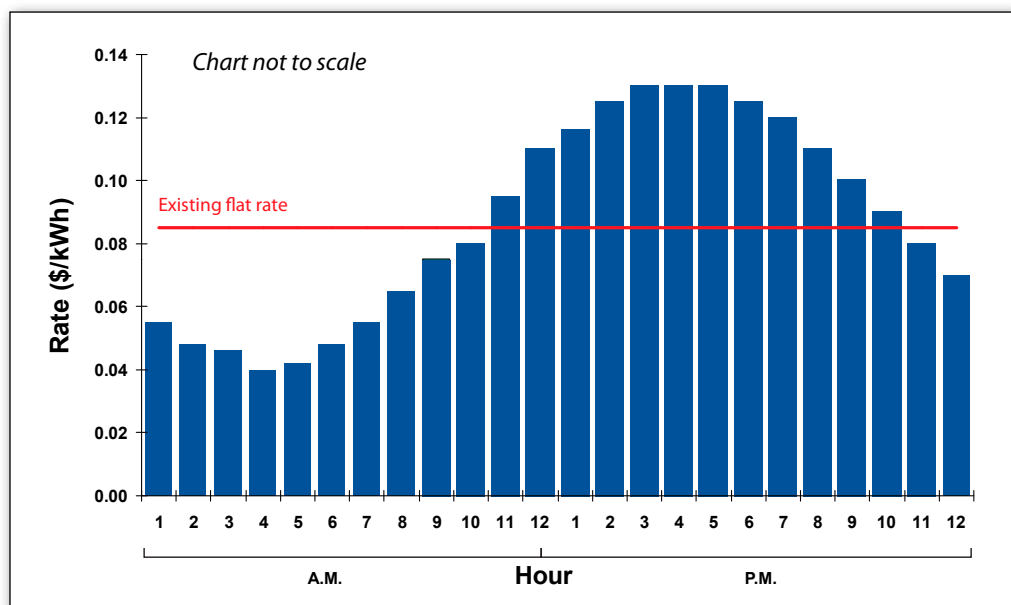
Electricity prices in a real-time pricing model can change as often as every 15 minutes. This program provides customers with the cost of electricity as it changes throughout the day, allowing customers to adjust their energy consumption accordingly. Individual savings in a real-time pricing model will likely vary month to month based on weather, market conditions and personal usage habits.

The summer months are when the cost of electricity in a real-time pricing model will vary the most. Electricity prices in the fall, spring and winter months are typically lower and more stable.

Next-day hourly price estimates, real-time price displays, and other tools may be used to help customers plan for periods when electricity prices are predicted to be high.

Customers may be able to participate in multiple dynamic or time-of-use pricing programs to maximize potential savings.

For more information about the smart grid, look for other smart grid publications produced by the Office of the Ohio Consumers' Counsel on our website: [www.occ.ohio.gov](http://www.occ.ohio.gov).



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**For more information about the smart grid, look for other smart grid publications produced by the Office of the Ohio Consumers' Counsel: *An introduction to smart grid and Ohio's progress to the smart grid.***