



## In-home Peak Indicator Plug

The In-home Peak Indicator Plug is part of a family of Demand Response technology solutions used to inform members when peak conditions occur. Combined with effective mailings and other communications from the power provider (cooperative), this technology enables members to set and maintain their own cost, environmental and reliability goals. With the high cost of electrical energy, electric delivery companies need to educate members on how they can help reduce consumption and keep electric rates low.

### Improving Efficient Energy Use Through Communications

Cooperatives use plug-in technology to quickly and easily communicate energy efficiency messages to members.

The In-home Peak Indicator Plug is an easily deployable technology that addresses crucial demand side management initiatives such as Residential Load Management, Interruptible Key Accounts, and Member Participation.

The In-home Peak Indicator plugs into a standard wall socket, and operates utilizing the existing infrastructure and technology used for load management switches. A light on the indicator notifies members when the electrical system is operating in a peak cost condition. Members can then respond to the notice by reducing the load in their home to a lower level for the peak duration (typically less than four hours).

Using this technology for approximately three days per month to reduce capacity costs and requirements can result in a mutually beneficial and significant cost savings to the cooperative and its members. Encouraging cooperatives, members or customers, and media to focus on peak management issues makes this solution a viable and sustainable program. Participation in a program built around the In-home Peak Indicator Plug can help lower costs to members as the result of reduced generation needs. Additionally, the cooperatives and members are more engaged in the solution, resulting in high participation and ownership of the solution.

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Delaware Electric Cooperative successfully deployed a “Beat-the-Peak” program utilizing the In-home Peak Indicator Plug to achieve results that exceeded the cooperative’s expectations. The “Beat-the-Peak” program trial period improved load factor performance, measuring demand comparisons with other generation and transmission cooperatives. The trial was performed without the use of a notification device from May through December 2008 and resulted in a total cost savings of about \$2,000,000. The program improved the load factor about 4% over 2007 levels and offered a lower cost per kwhr while improving the credibility of the cooperative.

## Improving Efficient Energy Use Through Communication

Cooperatives using technology to inform members about peak energy periods can reduce costs, improve load factor, and improve consumption habits.



### Device Development

When working with Delaware Electric Cooperative, Cooper Power Systems' goal was to develop a device which plugs into a standard wall socket and would notify the member when the electrical system was operating in a peak cost condition. Additionally, the focus was on creating a device that would operate off existing infrastructure and would utilize existing Cooper load management switch technology—and the In-home Peak Indicator Plug was born.

The device is signaled from the distribution cooperative during a peak period and lights an indicator. When members receive the notification they have the option to reduce as much load in their home to comfortably but resourcefully live for the short period of time. Such a targeted peak period is usually less than four hours, three days per month and can provide significant cost savings to the member and cooperative.

Once a member signs up, the device will be supplied for a nominal monthly cost or be provided free by the cooperative. It will be important to identify which members will utilize the device to assure reasonable payback for the cooperative.

#### How an In-home Peak Indicator Plug program works:

- The device is signaled from the distribution cooperative during a peak period, causing a light indicator to glow
- The member manually reduces the electrical load for typically less than four hours per occurrence

#### How the program helps:

- Helps reduce capacity costs and requirements
- Engages members and cooperative to be part of the solution
- Focuses everyone on important peak management issues

#### Program benefits:

- Lower costs
- Engaged cooperative
- Engaged members
- Positive press on how the cooperative is helping to keep rates as low as possible
- Enterprise-wide empowerment

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