

Level Your Peak Demand Charges This Summer

Key Points

- During summer, peak demand charges can comprise as much as 50% of a facility's energy bill.
- Combined with equipment and building system upgrades, operational changes can reduce demand.
- Establishing a facility load profile is a good starting point for managing your peak demand.



Source: www.sxc.hu

In summer, peak demand charges can send your energy costs soaring. In fact, it is not unusual for demand charges to account for up to 50% of a facility's total electric bill. Fortunately, a variety of operational strategies and building retrofits are available to help bring peak demand charges back to reasonable levels.

Measuring Peak Demand

High energy loads strain the electric grid, and customers are asked to share in the cost burden of providing more expensive power. For most facilities, the cost of electricity is made up of two components: consumption in kilowatt-hours (kWh) and demand charges in kilowatts (kW). Demand meters record the rate of energy use over 15- or 30-minute time increments, and one energy intensive interval can result in a high demand charge applied over an entire month's electric bill.

Peak demand charges become a real problem when energy use is at its highest, particularly during the summer when high air-conditioning loads put pressure on the grid. With adequate air conditioning a necessity for building comfort and indoor air quality, many facilities find themselves stuck in an annual cycle of spiraling operating costs.

Leveling Peak Demand

Operational changes, combined with targeted equipment upgrades and building system retrofits, help to reduce peak demand. While air conditioning is a point of focus, it is important to include lighting, processing equipment, and other systems in your demand reduction strategy.

Operational Changes

The energy-saving operational strategies that follow may help to reduce peak demand charges at your facility:

- Reduce overall cooling needs by setting room temperatures as high as 78°F and allowing employees to wear appropriate clothing to ensure their comfort.
- Adjust work schedules to reduce energy use during peak periods; generally between noon and 5:00 PM.
- Turn off printers, fax machines, and any other types of office equipment when not in use. Also, use energy-saving sleep mode on computers and all office equipment.
- Make sure lights are turned off in unoccupied spaces such as restrooms and conference rooms.
- Use an air economizer to pre-cool your facility at night and early in the morning.

Equipment and Building Systems.

The following equipment upgrades or building retrofits can reduce peak demand and provide long-term energy savings:

- Use an energy-management system (EMS) to schedule equipment and building system operations to reduce demand.
- Limit cooling loads to current needs using variable-speed drives for air-conditioning system pumps, motors, and fans.
- Prevent high-energy-use processing equipment from operating at the same time by installing automatic sequencers on the equipment power supply.
- Consider installing an energy storage system, which creates chilled water or ice at night to be used for cooling during the day, when peak demand is at its highest.
- Use backup generators to handle large electrical loads that must operate during peak periods.
- Reduce lighting demand through the use of occupancy sensors and daylighting strategies.
- Incorporate window films, solar screens, or awnings, on south- and west-facing windows to reduce the need for cooling.
- Reduce heat gain—and the need for cooling—with lightly-colored, highly-reflective, cool roofing materials.

Establish a Profile

Each facility has a unique energy-use pattern; start by establishing your *load profile*. A load profile is a timed set of energy-use data taken over a 24-hour period that helps you better understand how your facility uses energy. For more information, see [Understanding Load Profile: Energy Use Patterns](#). Once you understand the key elements affecting your energy bill, you can target high-energy users and take steps to reduce your peak demand.

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