

## Time of Use Rate Design and The Power Factor Impact

The **Burbank City** Council approved two electric commercial Time of Use (TOU) rates – Extra Large Time of Use (XL-TOU) and Large Time of Use (L-TOU) in 2007 and 2009, respectively. The XL-TOU rate has been in effect since January 2008, and applies to customers with a demand over 1,000 Kilovolt-Ampere (kVA). As of January 2010, the L-TOU rate applies to customers with a demand of 250 to 1,000 kVA.

Both the XL-TOU and L-TOU rates have the following rate design elements:

**Time of Use Energy Charges** – TOU rates reflect the fact that the cost to procure electricity varies during different seasons and parts of the day. The most expensive usage occurs during summer afternoons when electrical demand is at the highest; conversely, the least expensive usage occurs in cooler months during off-peak hours, when demand is lower. The TOU energy charges covers baseline electrical generation and all other costs incurred outside of Burbank for power supply and transmission.

**Demand Charges** - The charges for demand have been split into two components to better reflect BWP's operating costs. The Distribution Demand Charge pays for the cost of the poles, wires, transformers, and the people who keep the distribution system running. The Reliability Services Demand Charge pays for the cost of peaking capacity and utility overhead that would be incurred regardless of power consumption.

**Switch to kVA Demand\*** - These demand charges are billed on a kVA basis. kVA is made up of two elements: your kW demand and Power Factor (PF).

\*Electric demand refers to the maximum amount of electrical energy that is being consumed at a given time. Demand varies from hour to hour, day to day and season to season. It is measured in kW or kVA, depending on the rate tariff. The difference between the two terms is power factor.

Please click on this link to review the complete XL-TOU and L-TOU rates:

<http://www.burbankwaterandpower.com/electric/commercial-and-industrial-electric-rates>

What is Power Factor (PF)?

**Power factor** is the percentage of electricity that is delivered to your business and used effectively, compared with what is wasted. Certain types of electrical devices have a power factor percentage of 100% or 1.0 PF. Devices such as an electric stove, an incandescent light bulb, and a toaster operate in such a manner that when the appliance is on, all available power is being used to operate the device, with no energy is wasted. However, most businesses have less than 1.0 PF. Inductive loads use magnetic fields. If it moves, it is probably an inductive load. Some examples of inductive motors are air conditioning units, refrigerators, freezers, washers, dryers, dishwashers, pool pumps, vacuum cleaners, furnace blower motors, non-electronic ballasts, computer fans, ceiling fans, and well pumps. If your power factor is 0.85, it means that 85% (out of the 100% power delivered) is being used effectively. The other 15% that you are still paying for is being wasted by the inductive loads. Since power factor is included in your KVA demand, businesses with low power factors will have higher kVA charges, and businesses with high power factors will have lower kVA charges.

### The Importance of Knowing Your Power Factor

In the past, the City of Burbank municipal utility bill included your power factor percentage. With

the TOU rates, power factor is included within the kVA charge, and power factor information is no longer reflected on your bill. If you would like to find out what your power factor percentage is, please contact BWP at (818) 238-3720 or your Account Representative and request a power factor analysis of your facility.

#### Ways to Increase Power Factor

The usual method to increase power factor is to install switched capacitor banks or add individual matched capacitors at larger loads, like large motors. Depending on size, capacitors can cost \$10,000 - \$60,000, with a typical payback of two to five years.

#### Benefits of Correcting Power Factor:

Reduced electric demand charges on your utility bill.

Increased energy efficiency.

Increased system capacity.

More environmentally responsible by reducing pollution from electric generation and establishing a greener facility.

#### Adjust Power Factor to 98%, not 100

Since the use of equipment and power at your facility varies on monthly basis, so will your power factor. Given this, Burbank Water and Power recommends that your power factor not exceed 98%. This will prevent sensitive electronic equipment from getting damaged as a result of over correcting the power factor (exceeding 100%).

#### Are There Incentives to Install Power Factor Correction Units?

Power Factor correction units do not qualify for Burbank's utility incentives. However, improving your facility's power factor can save your business thousands of dollars.

#### Where to Find Power Factor Correction Vendors?

Search the internet or the phone book for approved local power factor correction vendors.

The Building Owners and Managers Association, International (BOMA), may be a good resource of finding power factor correction vendors.

Check with any energy associations to which your organization may belong.