

Commercial Account Billing

What Exactly is Demand?

How is my Consumption Billed?

Electric rates are categorized by customer classes such as residential, small commercial, general service, industrial and others. Electric rate classes are initially determined by how customers use electricity. Residential customers generally use electricity in the same manner. During the summer the highest usage is in the afternoon hours and then tapers off throughout the evening. It is very much driven by weather conditions. Commercial customers operating hours and usage vary so widely that utilities have several commercial classes. They are grouped more by the amount of electricity required at one time. This is due to the fact that commercial customers' electricity usage is normally dictated more by the equipment in their facility and operating hours than by weather conditions.

Let's talk more specifically about commercial rate components. Electricity consumed over some number of hours is measured in kilowatthours (kWh), which is how residential customers use and are billed for their consumption. This is one component of commercial customers' bills. Another component is **demand** and it is measured in kilowatts (kW). The electric meter actually measures demand separately from kilowatthours because it measures the peak amount of electricity required at any time during the month. Demand is the amount, in kW, of all electrical equipment running simultaneously, such as lighting, HVAC, motors, office

equipment, machinery, etc. Demand is the total kilowatts being required, or used by electrical equipment, in the facility at any one time. The more electrical devices that operate at the same time, the higher the demand. For utilities, a customer's peak demand indicates the very minimum size infrastructure the utility must have in place to supply the necessary amount of power needed at that customer's facility, day or night.

Sizes of commercial businesses vary and how and when they use electricity can be very different. Some business operations use about the same amount of power day after day and are very consistent. Many 24/7 manufacturing operations are examples of this type of consistent load. Other businesses may use a lot of electricity one or two days a week and very little other times. A church is a good example of this load characteristic. Utilities combine similar usage patterns into classes based on kilowatts.

BTU's customer classifications are as follows:

- **Small Commercial** Classification is any commercial customer with a demand of 14.99 kW or less each month. Small commercial customers are billed for kWh consumption, but not demand. All commercial accounts initially begin as small commercial until the demand exceeds 14.99 kW. If, at any time, demand is greater than 14.99 kW, the account will automatically be placed in the General Service class and will begin billing with General Service rates on the next bill. Once the account is General Service, it will remain in the General Service category for a minimum of 12 months and shall be billed for kW demand at no less than 50% of the highest demand reading during the 12 month period. If there are 12 consecutive demand readings of 14.99 kW or less, the account will be placed in the Small Commercial classification.



- **General Service** Classification is for customers who have demand between 15 kW and 999 kW in the city and a demand of 15 kW and higher in the rural.
- **Industrial** Classification in the city is demand greater than 1,000 kW. There is no industrial class in the rural area.



Efficient use of electricity is important in a couple of different ways. The one most people think of is being energy efficient, doing your part to consume less electricity or changing out equipment to more efficient models. Utilities think of efficiency in another way also, how efficient are customers and their use of electricity compared to the utility's generation and distribution of power? This efficiency can be calculated and the result is called **load factor**. Load factor is the ratio of the actual kWh consumption to the possible kWh consumption over a one-year period. The possible kWh consumption is calculated by taking the average monthly demand (kW) for the year and multiplying it by 8,760 (number of hours in a year). For example, an account with an average monthly demand of 100 kW and annual energy consumption of 438,000 kWh will have a load factor of 50%, $(438,000 \text{ kWh} / (100 \text{ kW} * 8,760))$.

Customers with higher load factors are more efficient for utilities to serve because their demand is more consistent over time. BTU has load factor rates available for customers who qualify. All General Service accounts with a calculated load factor of 20% or greater are eligible for load factor

rates. Qualifying accounts are placed in one of four Energy-Only Rate categories, depending on the load factor of the account. There are four ranges of load factors: 20%-29.9%, 30%-39.9%, 40%-59.9% and 60%+. The higher the load factor, the lower the electric rate. Load factor rates only have an energy, or kWh, charge, there is no demand charge on the bill. Each year, after the December bill is mailed out, the load factor of the previous twelve months is calculated on all commercial accounts. If the new load factor percentage is in a different range than the previous year, the applicable rate will apply going forward.

Metering is an important part of every customer's service. Metering a large facility is a little different than a smaller size service. The physical size of cable and wire to a large electric service is too large to bring into the meter can and building. Large commercial and industrial sites typically have electric services with high current ratings. Higher current means larger equipment, wire, and facilities. Conventional metering facilities are not equipped to handle these high currents, so these installations must be metered with special equipment. The special meters at these locations are typically rated for 20 Amps and 120 Volts. Current and voltage transformers must be used to "step down" the high current and voltage values to smaller levels that can be measured by the meters. A "multiplier" must then be applied to the values read at the meters in order to compensate for the lower metered values. This multiplier is typically shown on the meter and is applied to the readings at the time the usage is calculated for billing.

