

Understanding Demand and the Demand Charge

What is a demand charge?

A demand charge applies to commercial members with Kilowatt Demand (kW) of 30kW or greater. The kW Demand measures the amount of electrical power needed during a specified amount of time depending on the type of meter installed. The commercial member is billed a demand charge at the appropriate rate determined by the kW Demand that is based on the greater of; 1) The peak demand value within a one-month billing period, or 2) 85% of the highest monthly peak demand value occurring in the preceding months of June, July, August and September.

How is the demand charge calculated?

Let us review a few examples using the Commercial Service rate that applies to commercial accounts with a kW Demand of 30 kW to 750 kW. The demand charge is \$10.70 per kW and the energy charge is \$0.0557 per kWh. Both examples use 300 kWh's of electricity but have very different kW demand charges.

Examples do not include WPCA (Wholesale Power Cost Adjustment) credit/debits for fuel/Taxes/Etc.

Example 1:

Running a 30 kW load for 10 hours would result in an energy usage of 300 kilowatt hours (kWh) and a demand of 30 kW.

Energy Used = 30 kW x 10 hours = 300 kWh

Demand = 30kW

Billing for Example 1:

Availability Charge		\$185.00
Energy Charge	300kWh x \$0.0557	\$16.71
Demand Charge	30kW x \$10.70	\$321.00

Total Bill **\$522.71**

Example 2:

Running a 300 kW load for 1 hour would result in an energy usage of 300 kilowatt hours (kWh) and a demand of 300 kW.

Energy Used = 300 kW x 1 hour = 300 kWh

Demand = 300 kW

Billing for Example 2:

Availability Charge		\$185.00
Energy Charge	300kWh x \$0.0557	\$16.71
Demand Charge	300kW x \$10.70	\$3,210.00

Total Bill **\$3,411.71**

Why are the demand charges so different?

The difference in the two examples is based entirely on the highest demand. Even though the load in example 1 ran for a longer length of time, the usage in the two examples is the same. The load in example 2 (300 kW) has a higher demand than the load in example 1 (30 kW) and therefore has a higher demand charge.

Why are demand charges used?

Demand charges allow Mid-South Synergy to recover cost associated with generation capacity needed to meet peak demand needs of the membership. Mid-South Synergy is billed a demand charge by the wholesale power supplier every month based on the highest demand interval for the entire cooperative. Managing demand is important because a lower demand for the cooperative saves everyone money.

Are demand charges unique to Mid-South Synergy?

Demand charges are used throughout the electric utility industry as a consistent and effective way to recover demand cost with the wholesale provider.

What is the availability charge?

The availability charge is a monthly base rate that captures the administrative cost associated with providing service. This includes but is not limited to bill generation and system maintenance, general facility and fleet maintenance.

What is the energy charge?

The kilowatt hour (kWh) charge or energy charge measures the amount of energy a member consumes during a billing period. Reducing consumption of kWh's is one way members can reduce their monthly bill and save money.

Are there specific months of the year that demand should be monitored closely?

Yes, commercial members should give extra attention to load management during the peak months of June, July, August and September. These months are the peak season for wholesale power suppliers because of increased air conditioning load across the power grid. Commercial members are billed on a monthly basis at the greater of, the peak demand during a single billing period or 85% of the highest demand reached during June, July, August or September until the next peak season.

Example of 85% of the highest demand reached during the peak season.

BILL DATE	ACTUAL DEMAND	BILLED DEMAND
May-18	36.8	47.6
April-18	33.6	47.6
March-18	38.4	47.6
February-18	45.6	47.6
January-18	43.2	47.6
December-17	42.8	47.6
November-17	45.6	47.6
October-17	52	52
September-17	56	56
August-17	51.6	51.6
July-17	52.4	52.4
June-17	43.6	43.6

In the previous example, a season peak (June – September) was set in September-17 at 56 and was billed based on this demand. The actual demand for October-17 was 52 and since 52 is greater than 85% of the season peak of 56 the billed demand is the actual demand for the month. Now let's take a look at the months of November-17 through May-18. The actual demand for each one of these months is less than 85% of the peak demand of 56 set during the peak season months therefore the billed demand is $0.85 \times 56 = 47.6$.

Wholesale Power Cost Adjustment

The wholesale power cost adjustment or WPCA is a pass through charge associated with the recovery of power supply cost or operational expenses to maintain margins. The WPCA can be a charge or a credit depending on the price of electricity charged by the generation and transmission provider.

How can I manage my demand?

You can manage your demand and in turn reduce your demand charges by doing the following:

- When making improvements, choose energy efficient options.
- Determine what time of day you are likely to trigger your highest demand and then consider making operational changes including:
 - 1) using soft start devices
 - 2) staggering the start-up of equipment
 - 3) creating a schedule where the equipment with the highest demand requirement doesn't all operate at full power simultaneously
 - 4) evaluating what equipment can be run at a lower intensity without adverse effect.
- Stay informed, ask Mid-South Synergy for helpful tips to manage demand. Commercial loads vary from one application to the next and each will need to be reviewed individually to provide the best advice.