

## Understanding Demand and Demand Charge

*For Larger Commercial Members*

### What is demand?

“Demand” is the total amount of electricity being used by a consumer during a defined time period. Demand varies from hour to hour, day to day and season to season. This usage that is expressed in kilowatts (not kilowatt-hours) is called the “demand” on the system. The Energy Cooperative records demand over a 15-minute time period. The member is charged for the highest 15-minute usage recorded on the demand meter. After The Energy Cooperative reads the meter each month, demand is reset to zero and the meter starts over, recording the highest 15-minute usage for the next billing period.

### What is demand charge?

Demand charges are based on each member’s maximum 15-minute demand on the cooperative’s distribution system each month. Demand is measured in kilowatts (kW). Members are billed according to kW of demand for their rate.

To illustrate how demand charge can affect an electric bill, let’s look at two examples:

#### Example 1:

Running a 20 kW load for one hour would result in usage of 20 kilowatt hours (kWh) and accrue a demand charge of 20 kW

$$20 \text{ kW} \times 1 \text{ hour} = 20 \text{ kWh}$$

$$\text{Demand} = 20 \text{ kW}$$

#### Example 2:

Running a 2 kW load for 10 hours would also result in usage of 20 kWh but would only accrue a demand of 2 kW

$$2 \text{ kW} \times 10 \text{ hours} = 20 \text{ kWh}$$

$$\text{Demand} = 2 \text{ kW}$$

Both examples use the exact same amount of energy (20 kWh) and perform the same amount of work. However, the resulting bill will be very different.

Applying The Energy Cooperative’s Medium General Service rate demand charge of 3.09 per kW and an energy charge of 8.59 cents per kWh to both examples produces the following results:

*Bill for Example #1: 20 kW + 20 kWh*

Facilities Charge	\$ 41.25
20 kW x 3.09	61.80
20 kWh x .0859	1.72
Total Bill	\$104.77

*Bill For Example #2: 2 kW + 20 kWh*

Facilities Charge	\$ 41.25
2 kW x 3.09	6.18
20kWh x .0859	1.77
Total Bill	\$ 49.15

**Why are the bills so different?**

The actual energy (kWh) used is the same. The difference between the bills is based entirely on the highest demand recorded during any given 15-minute period that month.

**Why are demand charges used?**

Demand charges are the way your cooperative pays for generation capacity it needs to meet peak demand that occurs from time to time. The demand charge your cooperative pays to its wholesale power supplier is also calculated on the basis of the highest demand during the month. The Energy Cooperative uses the same method to bill demand to its demand-rate members. The higher the demand, the larger the facilities necessary to serve the load. The larger the facilities the greater the cost to The Energy Cooperative.

**Who incurs a demand charge?**

All members that exceed 15 kW for three consecutive months are billed for demand.

This includes:

Members requiring a three-phase service.

Commercial and General Service Single-phase members requiring a transformer over 50 KVA.

**Are demand charges unique to The Energy Cooperative?**

No. Demand billing is used consistently throughout the electric utility industry.

**How can demand charges be reduced?** To reduce demand charges, simply examine your operation.

- What energy-efficient improvements can be made?
- Does all of the equipment need to be running at the same time?  
If not, what can be turned off while other equipment is running?
- If the equipment requires heaters, start one machine at a time allowing the first machine to come up to temperature before starting the second.
- Often there is equipment that is operated infrequently. If this is the case, can some other equipment be turned off while this equipment is running? The result may be a significant savings in your monthly demand charge.

It is helpful to know when your meter is read by The Energy Cooperative. If possible, wait until after the meter has been read to run equipment that is operated infrequently.

For example, you want to test your irrigation system in the spring, instead of waiting until you need it on a hot day in July, only to discover that it's not running properly. You know that your meter is read on the 25<sup>th</sup> of each month. If you haven't used the system during the first part of the month, you may want to wait until after the meter is read for the month to test the system. Even for a short test, you will be billed for the energy used by the irrigation system, plus a demand charge for the entire month. By waiting a few days, you could move that demand charge into a month when you'll be using the irrigation system anyway, saving an extra month's demand charges.