



## Understanding Demand & Demand Charges

### What is demand?

"Demand" is the total amount of electricity being used by a consumer at any one time. Demand varies from hour to hour, day to day and season to season. This usage, which is expressed in kilowatts (not kilowatt-hours) is called the "demand" on the system. Central Electric Cooperative monitors demand over a 15-minute period. The customer is charged for the highest 15-minute average recorded on the demand meter. After Central Electric reads the meter each month, demand is reset to zero and the meter starts over, recording the highest 15-minute average for the next billing period.

### What Is demand charge?

Demand charge is based on each customer's maximum 15-minute demand on the cooperative's distribution system each month. Demand is measured in kilowatts (kW). Customers 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 simple examples:

#### Example 1:

Running a 20 kW load continuously for 50 hours would result in usage of 1,000 kilowatt hours (kWh) and accrue a demand charge of 20 kW.

$20 \text{ kW} \times 50 \text{ hours} = 1,000 \text{ kWh}$ .

Demand = 20 kW.

#### Example 2:

Running a 2 kW load for 500 hours would also result in usage of 1,000 kWh but would only accrue a demand of 2 kW.

$2 \text{ kW} \times 500 \text{ hours} = 1,000 \text{ kWh}$ .

Demand = 2 kW

Both examples use the exact same amount of energy (1,000 kWh) and perform the same amount of work. However, the resulting bill will be very different.

Applying Central Electric's Agricultural Irrigation rate demand charge of \$6.37 per kW and an energy charge of 5.02 cents per kWh to both examples produces the following results:

#### Bill number 1

$20 \text{ kW} \times \$6.37 = \$127.40$

$1,000 \text{ kWh} \times .0502 = \$50.20$

Total = \$177.60

#### Bill number 2

$2 \text{ kW} \times \$6.37 = \$12.74$

$1,000 \text{ kWh} \times .0502 = \$50.20$

Total = \$62.94

## Why so different?

The actual energy (kWh) used is the same, and the work done 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 co-op pays for generation and distribution capacity it needs to meet peak demand that occurs from time to time. The demand charge your co-op pays to its wholesale power supplier is also calculated on the basis of the highest demand during the month.

## Who incurs a demand charge?

All of the cooperative's larger customers that are billed under the commercial, industrial, or agricultural irrigation rate schedules.

## Are demand charges unique to Central Electric?

No. Demand charge billing is used consistently in the electric utility industry.

## How can demand charges be reduced?

To reduce demand charge, simply examine your operation.

- What energy-efficient improvements can be made, like variable frequency drives for pumps that don't run at full capacity all the time?
- 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?

Sometimes 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 Central Electric. If possible, run equipment that is operated infrequently during a billing month when you've already incurred a demand charge for that month.

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 25th 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. While you're testing your system, and running your pump motor, 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.