



ANDY CARTER

# CUANDO Y CUANTOS?

BY ANDY CARTER  
MEMBER ENGAGEMENT MANAGER

Whether it's in Spanish or in English, they both matter! When (cuando) you use appliances and how many (cuantos) you use at the same time make a difference in the cost to provide you power. We spent the last few months discussing different aspects of electric rates and we hope you have a good base of knowledge that will aid you as we work through some practical examples of how "cuando y cuantos" will impact your bill in the future.

Before we get started, let's look at the proposed rate structure again. The monthly grid access charge will remain the same, but energy use over time, measured in kilowatt-hours (kWh), will be charged at two different prices: on-peak and off-peak. On-peak pricing will be roughly three times as expensive as off-peak pricing. There will also be a monthly demand charge, measured in kilowatts (kW), based on the highest demand you place on the Empire Electric Association grid at any time during the month.

EEA's proposed on-peak time will be Monday through Saturday from noon until 10 p.m. except for the following six holidays: New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. If one of these holidays occurs on a Monday through Saturday, that holiday will have no on-peak time and will be treated like a Sunday, which is always off-peak pricing.

EEA will measure your demand based on 15 minute intervals. Maximum demand is determined by dividing the largest kWh usage in any 15-minute period during the billing period by one-quarter of an hour to remove the time component. For example:

**Largest 15-minute kWh usage during the billing period = 1.500 kWh**

**Maximum demand = (1.500 kWh) / (0.25 hours) = 6.000 kW**

The last piece of the puzzle is understanding what appliances can make a big difference on your bill when the proposed rates take effect. Here again, time has an influence. For example, let's compare two common appliances: a full-size microwave oven at full cooking power and an electric space heater set on "high" both use 1,500 watts, or 1.5 kW of power. Because they have the same power rating, they have the potential to impact your maximum monthly demand

## Common Appliance Demands



Electric Range ~ 5 - 7.5 kW

Water Heater ~ 3.8 - 6 kW

Clothes Dryer ~ 3.8 - 5.5 kW



4 ft Base Board Heater ~ 0.8 kW

8 ft Base Board Heater ~ 1.6 kW

Microwave ~ 0.8 - 1.6 kW



Gas Forced Air Furnace Fan ~ 0.4 - 0.8 kW

TV ~ 0.3 kW

# EMPIRE ELECTRIC ASSOCIATION

*Echoes of the Empire*

FEBRUARY 2021

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the same. The difference will come in hours of operation. Even if you cooked all your meals with the microwave oven, you probably won't have close to the same energy use as the space heater if you are using it to warm a room at night.

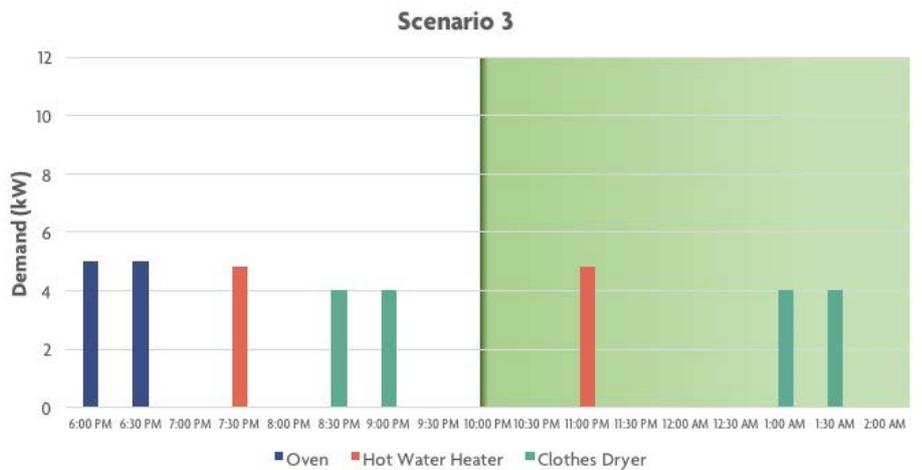
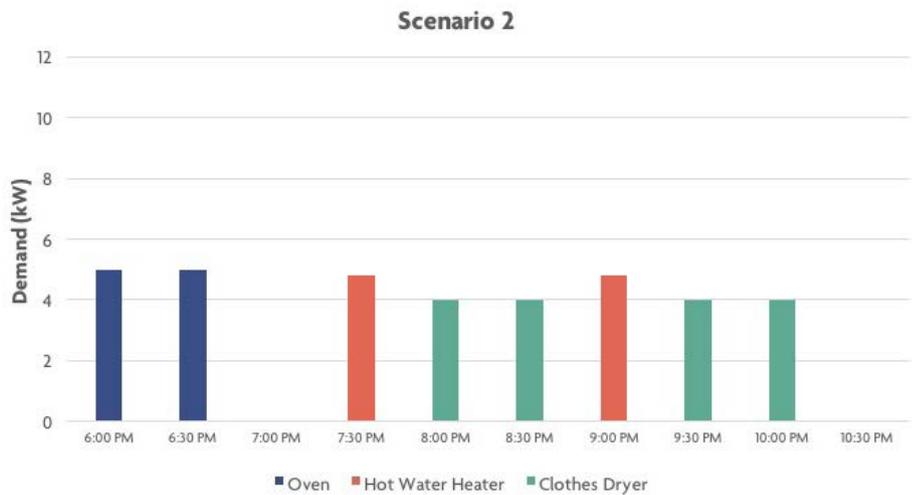
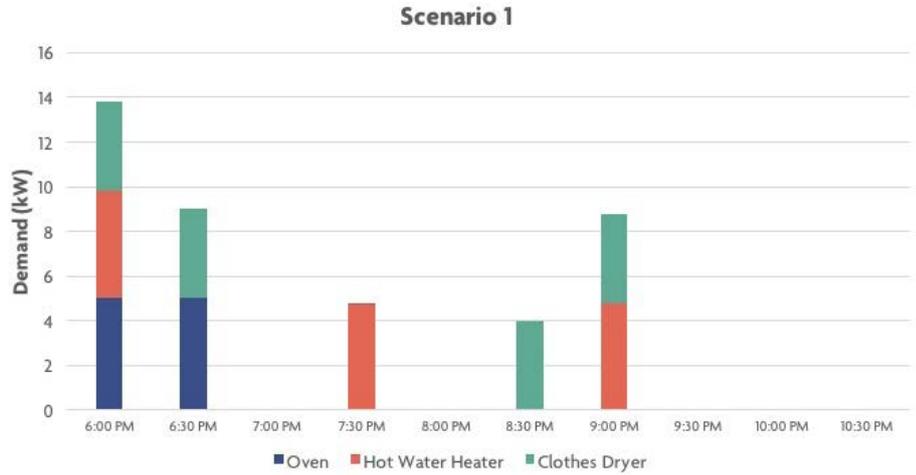
**1.5 kW microwave oven used for 2 hours = 3 kWh energy used**

**1.5 kW space heater used for 8 hours = 12 kWh energy used**

Even though the microwave and the space heater have the same power requirement or demand, it's the hours of operation that make the difference. On a time-of-use rate this is even more pronounced because using energy during the peak time will be more expensive. If the space heater in the example above was not turned on until off-peak prices were in effect after 10 p.m., the daily energy cost would be reduced by over 60%. This could be accomplished by using an appropriate timer to eliminate the heater from coming on too early or staying on too long.

In addition to when and how long an appliance runs, the number and kind of appliances that are being used at the same time will impact your overall energy bill because of the demand charge. The power demand for the appliance is much more important than how many hours it operates when it comes to demand charges. The chart on page 7 provides power requirements for common household appliances. Let's compare different scenarios to illustrate timing of appliance use on demand charges.

In Scenario 1, the family arrives home in the evening and immediately goes to work cooking dinner in the oven, getting the children bathed and drying the load of laundry they started washing before they left for the day. Adding up the power requirements for the oven, hot water heater and the clothes dryer shows a maximum demand of 13.8 kW at 6 p.m. As the evening continues, they use



more hot water at 7:30 p.m. and 9 p.m., and they dry another load of laundry beginning at 8:30 p.m.

In Scenario 2, the family is more conscious of the demand they are placing

on the distribution system and they make an effort to reduce their maximum demand. They wait until after preparing and eating their evening meal before they start using hot water, as well as staggering when they

are drying clothes to avoid running larger appliances at the same time. By only running one large appliance at a time, their maximum demand of 5 kW occurs at 6 p.m. when the oven is on. They do the same amount of work, they just accomplished it at different times and the result will be lower demand charges on their bill.

Seeing the reduction in demand charges on their electric bill, the family makes more changes as shown in Scenario 3 where they use timers and built in scheduling functions on their newer appliances to shift some hot water and clothes dryer use to off-peak time and save even more.

Being aware of when you are using power as well as how many large appliances you are using at once will provide the information necessary to take action to save energy and money once the new rate structure is in place in the fall. EEA has been providing your maximum monthly demand on your bill, and you will see an updated bill soon that will also show how much energy you use during the proposed on-peak and off-peak period. The proposed rate pricing will be finalized in the next two months. When pricing is approved, EEA will provide examples and tools for comparing your current rate to the proposed rate. EEA looks forward to providing you with a rate that will give you more control over your energy costs.



**Stay Comfortable.**

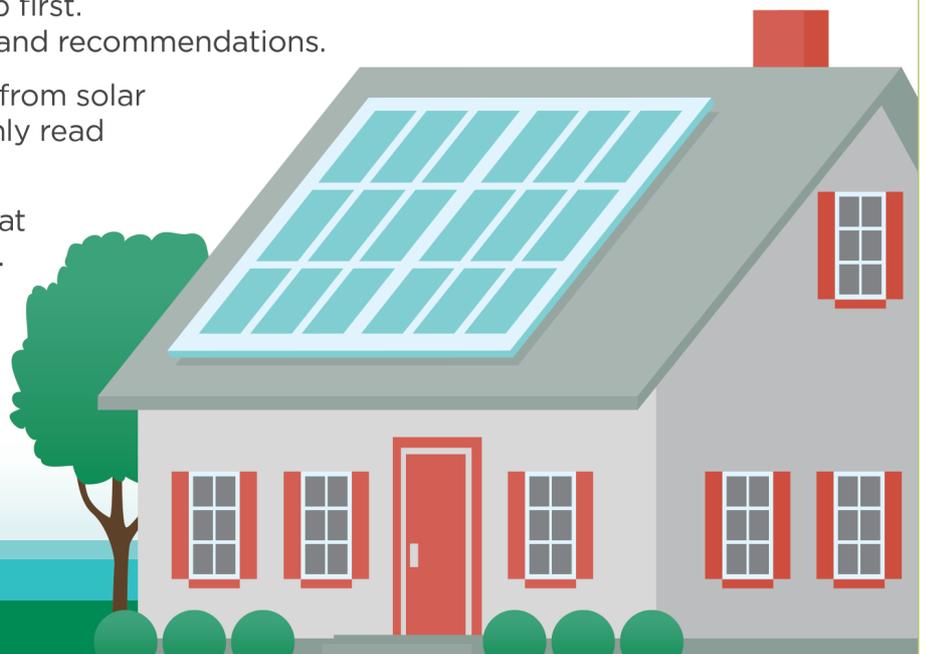
Space heating and cooling account for a large portion of the average home's energy use. A programmable or smart thermostat can help you control the temperature of your home and save energy.

Photo Credit: Consumers Energy

## TIPS FOR AVOIDING SOLAR SCAMS

As the popularity of rooftop solar panels increases, so do solar scams. Here are a few tips to consider before you install a solar PV system for your home.

- Talk to your electric co-op first. They can offer guidance and recommendations.
- Get at least three quotes from solar companies, and thoroughly read their reviews.
- Avoid solar companies that use high-pressure tactics.
- Don't believe unrealistic promises.
- Only sign clear, easy-to-understand contracts.



## February 2021 Co-op Photo Contest Winner

**Pasture Move**  
Photo by Destri Lockhart  
and Scotty Cox



## My Co-op Calendar

**February 2**  
Groundhog Day

**February 12**  
EEA's board meeting begins at 8:30 a.m. at its headquarters in Cortez. The agenda is posted 10 days in advance of the meeting at [eea.coop](http://eea.coop). Members are reminded that public comment is heard at the beginning of the meeting. Meeting restrictions due to health concerns may require the meeting to be held remotely.

**February 14**  
Valentine's Day

**February 15**  
Presidents' Day. Scholarship applications are due.



As a consumer-member, you have a share in the earnings of your not-for-profit rural electric cooperative.

EEA's rates are set to generate revenue to cover operating costs and pay expenses on construction loans. Revenues in excess of the cost of doing business are returned to our consumer-members as "capital credits."

Capital credits are returned to consumer-members when financial conditions allow and bylaw provisions are met. EEA's policy is to return capital credits on a 20 year cycle and anticipates returning over \$2.6 million at the end of February and in to March 2021 through bill credits or check payments.

Please keep EEA informed of your current address to ensure delivery of future refunds. If you have questions, please call our office at 970-565-4444 • 800-709-3726.



## February 2021 Energy Efficiency Tip of the Month

Use wool or rubber dryer balls in the clothes dryer to reduce drying time and static. Wool dryer balls can also absorb extra moisture. These are an efficient alternative to dryer sheets, which can create buildup on the dryer's filter and reduce air circulation. If you prefer dryer sheets, scrub the filter once a month to remove buildup.

Source: [energy.gov](http://energy.gov)