

PUBLIC POWER CONNECTIONS

RESIDENTIAL SOLAR INSTALLATIONS NEED A BACK-UP

Rooftop solar is gaining in popularity and utilities are adding it to their overall planning process

As residential solar becomes more affordable and prevalent, there are a few things to remember regarding how a solar installation, such as rooftop solar, interacts with the grid.

Customers with residential solar panels are almost always connected to the grid. While it is possible to “go off the grid,” the majority of systems sold are still interconnected. This means customers with solar maintain a relationship with their local utility.



have power. In the event the grid is down, residential solar will not produce electricity. Using an inverter that meets the IEEE 1547 and UL 1741 safety and quality standards is very important. These standards require the inverter to stop working if the grid is down. This is designed for safety – it prevents backflow and keeps lineworkers safe.

Utilities must plan on providing power to each customer, whether the customer has their own behind-the-meter generation or

An installation may be sized to meet some or the entire customer’s need, or intentionally produce more than what the customer can use. Even if the installation is over sized, it is rare that the customer’s energy use patterns will align with the power generated by the solar system at the same time it is being produced. The highest output from solar is generally noon to 2 p.m., but residential needs for electricity are usually higher later in the day – around 6 p.m. Output also greatly varies depending on how sunny or cloudy it is on any given day. The local utility has to be ready to provide the electricity needed so the customer is never without power.

not. As residential solar gains in popularity, it is becoming an increasingly important part of a utility’s overall planning. Many customers don’t realize that there are costs to the utility regardless of how much energy a customer produces or consumes. A utility has to have the power ready and there is a cost for it to secure the resource. A fixed monthly charge, often known as a “standby charge,” may be deployed for customers with solar to help the utility fairly recover its costs and prevent subsidization by non-solar customers.

It is also important to remember that just because a customer has their own generation source doesn’t mean they will always

Municipal electric utilities are on hand and available to provide power and assistance to the resident’s meter in the event their solar panels are not covering the full electrical needs of the home: at night, during cloudy days and times of peak demand.

SAFETY SPOTLIGHT

Roughly half of home fire deaths result from fires reported between 11 p.m. and 7 a.m., when most people are asleep. The National Fire Protection Association recommends smoke alarms should be installed in every bedroom, outside each separate sleeping area and on every level of your home, including the base-

ment. Keep in mind larger homes may need more alarms to provide adequate coverage. Remember to change the batteries in smoke detectors regularly. Pick a date, perhaps a birthday or the change to daylight saving time, to make sure all of the smoke detector batteries in the home are replaced.



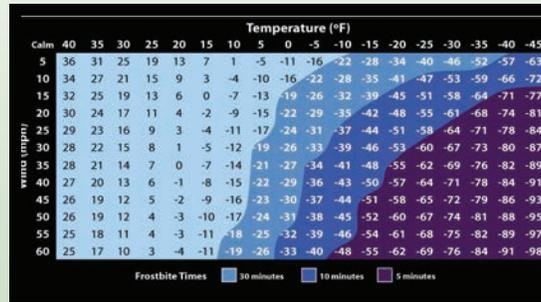
WIND CHILL INDICATES HEAT LOSS, NOT TEMPS

For your safety and that of your family, you should know what wind chill numbers mean and how they should guide your winter outdoor activities and the way you dress for them.

To begin with, the numbers on the wind chill index are not actual temperatures. They indicate what the combined wind and cold feel like based on the rate of heat loss from a person's exposed skin. The greater the wind speed, the faster the heat loss.

The helpful wind chill chart above shows how long skin can be exposed at different temperatures and wind speeds before frostbite occurs. For example, a wind speed of 20 mph when the temperature is 40 would feel like a mildly uncomfortable 30. However, that 20 mph wind blowing when the temperature is 0 would feel like a very uncomfortable -22. It would also result in frostbite after 30 minutes.

Besides frostbite, another danger of exposure is hypothermia, where the body temperature drops below 95 degrees. Immediate medical attention is needed for both of these conditions. You can learn about symptoms and treatment, as well as general winter preparedness, at the Red Cross (www.redcross.org) and Centers



Courtesy of National Oceanic and Atmospheric Administration and National Weather Service

for Disease Control and Prevention (www.emergency.cdc.gov) websites.

Keep yourself and your family frostbite-free when temperatures drop below freezing by (1) using the wind chill chart, (2) heeding weather forecasters' wind chill advisories (potentially hazardous conditions) and a warnings (life-threatening conditions), and (3) planning and dressing according to general

advice from the Red Cross and CDC. Be sure to wear:

- Layers of loose-fitting, lightweight, warm clothing. Outer garments should be tightly woven, water repellent, and, if possible, hooded.
- A hat (preferably covering the ears), because almost half of a person's body heat is lost through the head.
- A scarf, balaclava or neck warmer to cover the mouth and protect lungs in extreme cold.
- Winter gloves or mittens (mittens are warmer than gloves but sometimes may not be suitable).
- Waterproof, insulated boots with good traction to protect feet and help maintain footing on ice and snow.
- A change of clothing if clothes become wet.

HOW IT WORKS: RECYCLING NUMBERS

From bottled water to frozen lunches, we drink and eat from plastics pretty regularly, but do you know what the recycling numbers from 1 to 7 mean on the bottom of your plastic containers? This number system, known technically as the resin identification code, actually provides a great deal of information about the plastic, including what chemicals it contains, its level of biodegradability and its safety.

Plastics numbered 1 are usually clear and used for water and drink bottles, food packaging, salad dressings, mouthwash, etc. They are known as PETE or PET (polyethylene terephthalate) and are widely accepted by curbside recycling programs.

Milk jugs, household cleaner containers, toiletry and motor oil bottles are usually Plastic 2, high-density polyethylene. These plastics are generally opaque and are also

widely accepted by curbside recycling programs.

Plastic 3 (polyvinyl chloride) is used to make plumbing pipes, toys, shower curtains, clear food packaging, medical equipment and windows. It's not recommended to cook or burn this plastic. It can be recycled, but is not typically accepted by curbside recycling programs so check your local program.

Plastics numbered 4 can be found in grocery bags, plastic wrap, computer components, carpet, bread bags and squeezable bottles. Plastic 4 is low-density polyethylene and few recycling centers accept it due to its low rate of recyclability. However, many grocery stores now accept clean, empty grocery bags for recycling.

Plastic 5 (polypropylene) also has a low rate of recyclability.

It's usually found in medicine bottles, Tupperware, yogurt containers, ketchup and syrup bottles, and even clothing.

Plastic 6 is notoriously difficult to recycle. Polystyrene, also known as Styrofoam, is generally not accepted by recycling programs. It can be found in egg cartons, foam food trays, packing peanuts and disposable plates and cups.

Plastic resins that don't fit into any of the other categories are labeled 7. This miscellaneous catchall category encompasses quite a range of products. If a plastic has no imprint, it is typically a number 7. This plastic is difficult to recycle and is generally not collected.

The average American generates nearly one ton of trash a year. Don't let the resin numbers deter you – recycling can make a big difference.