



Michael Keyser  
CEO/General Manager

## Keyser's Corner

# The Backstory on the First Community Solar Garden in Virginia

Here's how BARC's community solar project was developed, and specifics on how the Commonwealth's first such facility came to be.

Recently I was approached by a publication that reports on the electric business in the Southeastern United States. The editor had heard of the BARC community solar garden and asked for an interview for his readership. It seemed that BARC members might find the backstory of our community solar garden idea to be of interest. With that in mind, we have reprinted the full interview below. Enjoy.

### Reprinted from the *Southeast Energy News*

"When the management of BARC Electric Cooperative, which serves over 12,000 members in five rural counties in southwestern Virginia, began thinking about a community solar system in early 2014, the fact that most types of community solar projects were, and still are, prohibited in the Commonwealth

did not deter their efforts.

After exploring the options with help from the Solar Electric Power Association, BARC CEO Mike Keyser set out to lead the development of the state's first true community solar system with a model that he says other communities could replicate.

After announcing the project, accepting subscribers and building the system, the cooperative is set later this summer to flip the ON switch. Comprised of 1,750 panels capable of generating 550 kilowatts of electricity, the system is designed to meet as much as 25 percent of the energy needs for approximately 220 subscribers, at a price fixed for 20 years.

What follows is a Q & A with Mr. Keyser in which he explains how the idea became a reality for a rural electric cooperative set in the middle of Appalachia.

**Q: Tell our readers about BARC Electric Cooperative and why you thought a community solar system would appeal to your members?**

"As a member-focused cooperative, we have a great feel for our membership's needs and wants. We've seen a lot of interest in rooftop solar and members asking for help with calculating the payback. But it wasn't materializing into anything. Many members simply couldn't

afford the upfront costs, or they had some kind of physical barrier to rooftop solar, like shading."

**Q: How did the idea for a true community solar system first arise? And how did you determine, in fact, that you could legally proceed?**

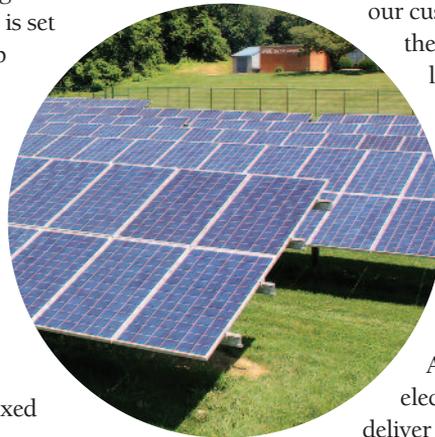
"As a cooperative, we exist to serve our customer-owners. We call them 'members.' We went looking for ways where the cooperative could provide solar to our members and break down the barriers they face individually. The community solar model fit hand-in-glove with our mission. And as the incumbent electric utility, it is our job to deliver electricity to our

customers, so the legality of building a centralized solar array and distributing the power to customers' homes was never a question."

**Q: What type of a system did you set out to develop?**

"We looked at the 'pay-up-front' model where customers get a credit on their bill. We settled on a fixed-rate model because we determined one of the key barriers to solar is the high upfront cost.

"It was also vitally important that the project self-sustain its own growth. We needed to get the leveled cost of energy low enough so that a portion of every



### BARC ELECTRIC COOPERATIVE

P.O. Box 264  
Millboro, VA 24460-0264  
1-800-846-2272

Office Hours: M-F, 8 a.m.-4:30 p.m.  
[www.barcelectric.com](http://www.barcelectric.com)



Come join us on Twitter @BARCElectric  
Or Tweet the CEO @BARCBoss



Come join us on Facebook  
[www.facebook.com/BARCElectricCooperative](http://www.facebook.com/BARCElectricCooperative)

CEO/General Manager  
Michael Keyser

*BARC Electric Cooperative is an equal opportunity provider and employer.*

subscription would be set aside in a revolving fund to pay for project expansion. As long as there is a waiting list, like right now, the project will continue to pay for its own growth. It's tremendous."

**Q: How did you decide on the system's size?**

"It was based on many factors, but it was essentially a balancing act between building a system large enough to serve a meaningful number of members, while keeping the total capital costs manageable so that it was not detrimental to our balance sheet."

**Q: How did you decide to finance the system?**

"We applied for, and were awarded, two grants with the idea of driving down the capital costs so that we could build a meaningful revolving fund. One grant is from the U.S. Department of Agriculture, and the other from the Appalachian Regional Commission."

**Q: How did you organize the signup process?**

"We used bold, uncluttered visuals so customers would quickly grasp what can be complex concepts. We advertised 'solar energy blocks' as opposed to kilowatt-hours. We described the total monthly cost as opposed to the cents-per-kilowatt-hour cost. Plus, we created a cartoon to explain the project and how it worked ([www.youtube.com/watch?v=GiMvGqfg4mc](http://www.youtube.com/watch?v=GiMvGqfg4mc)). We made it fun and easy to understand."

**Q: How did you select the firm to build the system and whom did you choose?**

"We solicited bids and selected the contractor based on their track record, their reputation for quality and their shared vision of what we were trying to accomplish. We hired Affordable Energy Concepts, based in Madison Heights, Virginia. They have been a great partner to work with."

**Q: What is the current estimated total cost?**

"Before factoring in the grants, the current estimate of cost is \$1.35 million."

**Q: How many customers are on the waiting list today? And how big might this system become by 2020?**

"The project sold out just a couple weeks ago, and there are already about 20 members on the waiting list. It continues to grow each day. In addition, nearly every subscriber has expressed interest in receiving more than their 25 percent cap from community solar. So I really think the sky is the limit on how big this can become."

## Lightning-Fast Outage Reporting

by Tom Tate

Here at BARC we are always looking at ways to make dealing with your cooperative "worry free." Since outages are of critical interest to most members, we have two new ways to make reporting fast and accurate.

- **BARC Mobile App.** Once programmed with your account and other information, a tap on the app accomplishes everything.
- **BARC Customer Portal.** In many respects, it is the big sibling to the mobile app. It has tremendous functionality and is available to members anywhere they have internet access and a web browser. In both cases, you do need to set up an account using your BARC account number and a strong password.

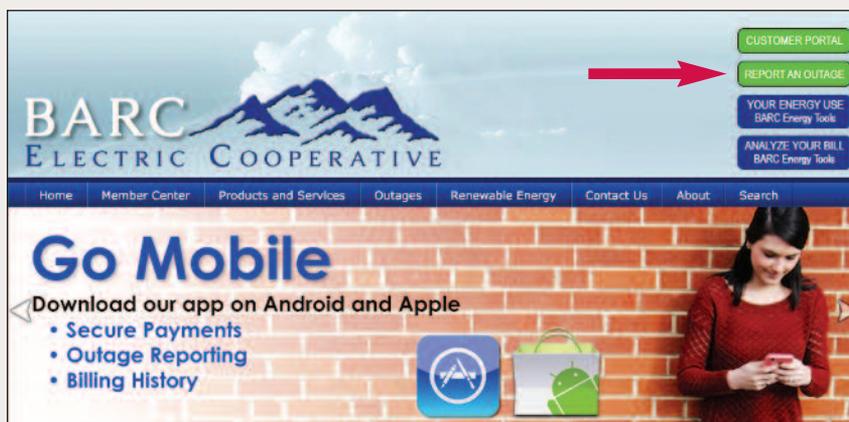
The common thread in all of these options is the BARC account number. That number ties to all the pertinent data about the service to your home or business including exactly where you are.

Recently, a member contacted us with a thoughtful analysis of the ease of using the portal to report an outage. Where he lives cellphone coverage is non-existent so the portal was an appealing option for him. However, he found it hard to find on the website.

Personally, there is little better than member feedback to help us serve members better. As a result, we have simplified access to the portal.

1. We have added an outage button to the top of the website. Clicking on the Report an Outage button takes you to the log-in page. For security reasons, we cannot have a general button take users inside the portal.
2. We have dramatically reduced the verbiage on the landing page making it easier to see what is available. The outage tab is readily visible.

We hope these changes will simplify reporting outages. We also encourage members to provide suggestions on ways to improve and customize their BARC experience.



# Downed-Power-Line Safety Rules

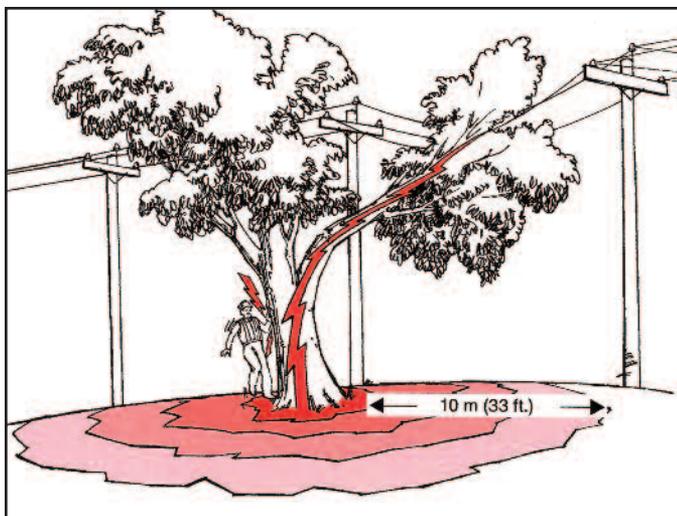
by Tom Tate

In the wake of our recent nasty summer storms, it seems an opportune time to provide information about what to do when you encounter a downed wire, whether it is a power line or not.

**Rule #1** — Stay well away from any wire you see on the ground even if you do not think it is one of our electric lines. Always assume it has an electric charge and is lethal.

**Rule #2** — Report the downed wire to us at 800-846-2272 or to 911.

**Rule #3** — Electricity flows out from the point of contact, losing power as it goes. The distance it flows and the danger presented depends upon soil type and moisture. See Rule #1 for the recommended safe distance and take a look at the following graphic from a safety brochure produced by WorkSafeBC (British Columbia): [www.worksafebc.com/en/resources/health-safety/books-guides/working-safely-around-electricity](http://www.worksafebc.com/en/resources/health-safety/books-guides/working-safely-around-electricity).



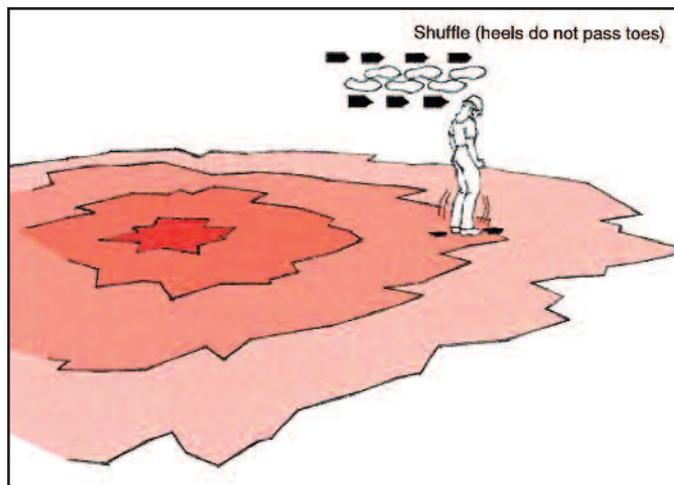
If anything touches a high-voltage power line or if a power line falls to the ground, electricity will flow to the ground, energizing the tree or equipment and anything in contact with it. The surrounding ground may be extremely hazardous. The voltage gradually decreases from the point of contact until it reaches zero. The safe distance shown here — 10 m (33 ft.) — is for line voltages up to and including 60 kV (60,000 V).

**Rule #4** — Never drive over any downed wire lest you fall into a situation covered by Rules #5 and 6.

**Rule #5** — If you are trapped in your vehicle with a power line in contact with it, stay inside until help arrives. Roll down a window and warn people to stay well away (see Rules #1 and 3).

Keep this in mind if you see people similarly trapped. Do not approach or touch the vehicle for any reason!

**Rule #6** — If you have to exit your vehicle for some reason, remove loose clothing that might snag on something, turn sideways on your seat, keeping your arms close to your body and feet together. Then jump out of the vehicle landing with your feet as close together as possible. Do not touch any metal portion of the vehicle while exiting or return to it for any reason. Shuffle your feet and move slowly away from the car as shown below in another excellent graphic from the same WorkSafeBC brochure.



If you must move on energized ground, shuffle while keeping your feet together and touching each other. Don't take steps.

Why keep your feet together? Because the amount of electricity drops the further away from the source you are, there is a "potential" for it to flow. If you separate your feet too much, the electricity will flow through your body "sensing" a differential in potential.

**Rule #7** — This last rule is not about downed power lines but about everyday safety. Always look up into trees before working on or climbing them. If the tree is in contact with power lines or can come into contact due to wind blowing, stay clear. The moment the tree contacts the power line, electricity will flow to ground and through you if you happen to be in contact.

Life wouldn't be the same without electricity. It also won't be the same if you have an accident involving dangerous levels of electricity. With these rules and vigilance in wire-down situations, you'll weather the situation safe and sound.

*Tom Tate writes about a variety of topics of interest to BARC Electric Cooperative and its members.*

# Deer-Be-Gone

by Tom Tate



Ever wonder what the logic is behind how all those wires are hung on our power poles? Well, I am glad you asked because it is pretty straightforward. Wires carrying electricity that are dangerous to touch (ours) are placed the highest up on the pole while lines with low or no voltage like phone and cable are placed closer to the ground. This works out very well for all concerned. The crews that maintain the phone and cable lines don't have to work over our wires and our crews don't have to contort themselves around low-voltage lines in ways that could be risky.

The National Electric Safety Code (NESC) has put together a handy diagram (shown below) that outlines the different "zones" for power and communication lines. The actual distances above ground and between wires varies according to the voltages involved and is one of the many factors your co-op engineers consider when designing overhead facilities. Not all power poles will have every type of wire shown.

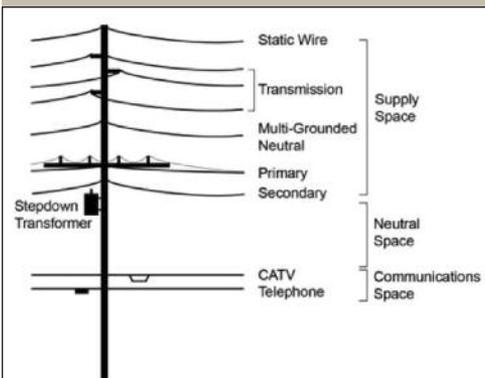


Figure 1: NESC Overhead Construction Zones Diagram

Disney's *Bambi* has turned many a heart soft when it comes to deer. Who could look at that cute little animation and not feel empathy? Well, silver screen animations are one thing while the real McCoy in our gardens and landscapes is quite another. You'd think the furry varmints would be content with the bounty of Mother Nature in the forests but, oh no, they feel compelled to lay waste to anything we see fit to plant.

Talk to any gardener or person who takes pride in their landscaping and the topic of deer is likely to elicit some strong opinions. And if you happen to have encountered one on the highways and byways, that too will leave a lasting impression ... no pun intended.

Options for controlling these pests are rather limited. Many of us live where shooting them is not an option given local regulations. Personal preference may also eliminate shooting. Motion-activated water jets are somewhat effective. Planting only things that have yellow blooms works as long as you are happy with a monochromatic landscape. Fences have to be pretty darn high, the standing opinion in my circle is 10 feet unless the space surrounding is rather small. I was able to get by with 5 feet in rural Pennsylvania even with a large space, but that fence surrounded my chicken yard.

Repellents abound on the market. We tried the variety that smelled like rotten eggs. While popular with some, I didn't like it in the least and its effectiveness was limited to a few days or the first rain, whichever came first. One day my dad mentioned a capsule that they sold in the True Value where he works, Sweeney's "Deer Repellent." He reported positive comments from their customers so I went to Lowe's (it is also available online at Amazon) and purchased a package.

What a miracle worker! The small cartridges are an olive green and about 1.5 inches in diameter and 1.75 inches tall. They come with wires that resemble croquet hoops. You can hang them from the middle of the loop, straighten it out and set them a bit higher (my preferred method) or tie them on fencing or plants. They create a no-go zone about 3 to 4 feet in diameter or larger. And they last all season. In fact, I usually get 1.5 seasons out of them.

Deer avoid them like the plague and it appears to have some effect on rabbits too, although that is not the prime target. The main active ingredient is dried blood. They are not poisonous to dogs (my wolfhound would eat the entire capsule if she had the chance) and best of all, they are odorless to us humans.

The Lowe's in Lexington carries the Sweeney's brand, which is what I have used. You can also buy them from Amazon as noted above. If you prefer Home Depot, the one in Waynesboro has the Havahart equivalent called "Deer Off." I have no experience with the Havahart offering, so cannot give you any review on how well it does or does not work.

No muss, no fuss, no smell, no deer. Just the kind of solution I was looking for. Hope it will work for you too.



Tina Glenn

## TINA's Tastings

### NO-BAKE COOKIES

2 cups sugar	1 teaspoon vanilla
½ cup milk	⅛ teaspoon salt
¼ cup cocoa	1 cup peanut butter
1 stick butter	3 cups oatmeal

In saucepan, bring sugar, milk, cocoa and butter to a rolling boil for 3 minutes. Remove from heat and add vanilla, salt, peanut butter and oatmeal. Mix and drop immediately on wax paper.