



## Trimming Future Problems



Steve Epperson  
President/CEO

I enjoy the beauty trees add to our region, especially at this time of year. But I also enjoy the comfort of knowing power will be available when I need it. At McDonough Power, we're committed to providing you with reliable power. There are some things we can't stop — high winds, ice storms, random acts of nature — but we do what we can to prevent other outage culprits.

As you can probably guess, weather-related events cause the majority of power outages for electric cooperatives — a whopping 19 percent according to a survey by our national service organization, the National Rural Electric Cooperative Association. But vegetation — trees, shrubs, brush — growing too close to power lines and distribution equipment leads to 15 percent of power interruptions.

To “cut back” on potential tree-related problems McDonough Power partners with neighboring co-op, Spoon River Electric, to operate an aggressive right-of-way maintenance program. Our contractors look for foliage growing under lines, overhanging branches, leaning or other types of “danger” trees that

could pull down a power line if they fall, and trees that could grow into lines. It's a job that's never done — by the time crews finish trimming activities along our 1,400 miles of distribution lines, vegetation has started to grow back at the starting point.

In working to keep a safe, reliable, and affordable supply of power flowing to your home or business, we need your help. Let us know if you notice trees or branches that might pose a risk to our power lines. Even more important, before planting trees in your yard, think about how tall they may grow and how wide their branches may spread. As a rule of thumb, 25 feet of ground-to-sky clearance should be available on each side of our utility poles to give power lines plenty of space. Choose tree varieties with care and plant with power lines in mind. **VI56-1SHH575**

Thanks for your help as we work together to keep electricity reliable. To report trees you think may pose a problem, call 309.833.2101. To find out more about proper tree planting, visit [www.arboday.org](http://www.arboday.org).



Our office will be  
closed on Monday,  
September 6<sup>th</sup>  
in observance of  
Labor Day



# McDonough Power Cooperative

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## The Brighter Side of Sunshine

By Megan McKoy-Noe

There's nothing new under the sun — not even the sun. For thousands of years humans have harnessed solar energy to accomplish daily tasks. From starting fires to heating water, the sun powers our society.

The latest wave of solar technology focuses on generating electricity. Some solar power systems span acres while others are no bigger than a postage stamp. At the end of 2009, America's cumulative solar capacity reached 2,108 MW, ranking it fourth in the world behind powerhouses like Germany, Spain, and Japan.

Last year, the largest area of growth involved photovoltaic (PV) installations, jumping 38 percent. Solar water heating, not to be outdone, grew by 10 percent. Pushing this trend are falling prices for solar equipment due in part to federal tax credits. **532RM3-9006**

### How it Works

Solar power plants harness basic premises such as reflective heating to create steam, or use advanced materials to convert sunlight directly into electricity. Whatever the method, all operate under one major condition: The sun must be shining to make things work.

There are two primary methods of harnessing the sun: concentrating solar power (also known as solar thermal energy) and photovoltaics.

### Concentrating Solar Power

The earliest way to convert sunlight into power grew from a basic concept: If you can spin a turbine, you can generate electricity. As a result, solar energy focused to heat water and create steam does just that, creating a power plant that can, if properly operated, deliver electric power year-round. This high-temperature technology exists in a variety of forms.

◆ **Trough Systems:** Long pipes, filled with synthetic oil or other liquids, are placed just above mirrored troughs tilted towards the sun. Heat is concentrated on the pipes, which pump the resulting hot liquid to a steam generating plant nearby.

◆ **Dish-Engine System:** Several small mirrors are fashioned into a large

dish, focused on a central arm and engine — the end product looks very similar to a satellite dish. Inside the engine, collected heat builds pressure and drives pistons, which then turn a generator to produce electricity. Large fields of dishes can be programmed to follow the sun throughout the day.

◆ **Power Tower:** These large-scale reflecting plants direct sunlight to a central tower using hundreds of flat, angled mirrors called "heliostats." The tower contains a liquid that quickly absorbs heat, which then produces steam and generates electricity. Researchers recently have been using molten salt as the heat-capturing liquid, since it retains heat long after the sun has set.

### Photovoltaics

Photovoltaic materials directly convert light into electrical energy without need for turbines, generators or other mechanical assistance. When a PV system absorbs sunlight, energy passes on to electrons. The energized electrons break free and, in the right conditions, join an electric current — which can then power your home.

PV systems are most commonly made up of dark, flat panels installed on roofs. Smaller versions can operate individual lights or remote machines (such as pumps), while larger applications power buildings or supply electricity to the grid. New, more flexible panels are on the way. Scientists at U.S. Department of Energy Pacific Northwest National Laboratory think a transparent thin film barrier used to protect flat panel TVs from moisture could become the basis for flexible solar panels that would be installed on roofs like shingles. The flexible rooftop solar panels — called building-integrated photovoltaics, or BIPVs — could replace today's boxy solar panels that are made with rigid glass or silicon and mounted on thick metal frames. The flexible solar shingles would be less expensive to install than current panels and made to last 25 years.

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# Preparation and Awareness are Keys to a Safe Harvest



**H**arvest season is one of the busiest times of year for farmers – and among the most dangerous. Before taking to the fields, Safe Electricity urges farm workers to be aware of overhead power lines and to keep equipment and extensions far away from them. As part of the “Teach Learn Care TLC” campaign, the program encourages farm manager to share this information with their families, and workers to keep them safe from farm related electrical accidents.

“Electrical equipment around the fields, such as power lines in the end row areas, may get overlooked during such a hectic time of year,” says Molly Hall of Safe Electricity. “However, failure to notice overhead power lines can be a deadly oversight.”

Safe Electricity urges farm workers to heed these safety measures:

- Each day review all farm activities and work practices that will take place around power lines and remind all workers to take precautions.
- Know the location of power lines and keep farm equipment at least 10 feet away from them.
- Use care when raising augers or the bed of a grain truck. It can be difficult to estimate distance and sometimes a power line is closer than it looks. When moving large equipment or high loads near a power line, always use a spotter, or someone to help make certain that contact is not made with a line.

- Always lower portable augers or elevators to their lowest possible level – under 14 feet – before moving or transporting them. Variables like wind, uneven ground, shifting weight or other conditions can combine to create an unexpected result.
- Be aware of increased height when loading and transporting larger modern tractors with higher antennas.
- Never attempt to raise or move a power line to clear a path!
- Don't use metal poles when breaking up bridged grain inside and around bins.
- As in any outdoor work, be careful not to raise any equipment such as ladders, poles or rods into power lines. Remember, non-metallic materials such as lumber, tree limbs, tires, ropes, and hay will conduct electricity depending on dampness and dust and dirt contamination.
- Use qualified electricians for work on drying equipment and other farm electrical systems.

Electrical work around the farm can also pose hazards. Often the need for an electrical repair comes at a time when a farmer has been working long hours and is fatigued. At such times its best to step back and wait until you've rested. Make sure you have the level of expertise required to do the electrical work, and never hesitate contact a qualified electrician when appropriate. Doing electrical

work is also a good time to check your wires because mice and other animals tend to chew at them, leaving the electrical hazard of bare wires that can cause electrical shorts and potentially fatal shocks. **809-255-3151**

“It's also important for farm equipment operators to know what to do if the farm equipment comes in contact with a power line,” Safety Expert Kyle Finley says. “Staying inside the vehicle unless there's fire or imminent risk of fire, is generally the best course of action. If the power line is energized and you step outside, your body becomes the path and electrocution is the result. Warn others who may be nearby to stay away and wait until the electric utility arrives to make sure power to the line is cut off.”

If there is a threat of fire or other risk, the proper action is to jump – not step – with both feet hitting the ground at the same time. Do not allow any part of your body to touch the equipment and the ground at the same time. Continue to hop or shuffle to safety, keeping both feet together as you leave the area. Once you are away from the equipment, never attempt to get back on or even touch the equipment. Many electrocutions occur when the operator dismounts and, realizing nothing has happened, tries to get back on the equipment.

◀ *Continued from page 16b*

## The Bottom Line

Sunlight may look like an easy way to generate electricity, especially in remote areas without easy access to transmission lines. But there are drawbacks. The sun only shines for a set number of hours daily, and cloudy or overcast conditions can wreak havoc on solar power production. Without an effective way to store electricity for nighttime and cloudy day use, a solar system's effectiveness remains limited.

Cost has been a long-standing bar-

rier, though the outlook's in that area looks brighter. Researchers at the U.S. Department of Energy Lawrence Berkeley National Laboratory released a study in late 2009 showing PV installation costs over the last decade had dropped more than 30 percent — and more than 4 percent of the drop occurred in 2008 alone.

Solar power can serve as an excellent supplement to an existing grid. As costs continue to drop you may want research the long-term benefits of adding a system to your home.

*Sources: Solar Energy Industries Association, Lawrence Berkeley National Laboratory, U.S. Department of Energy*

*Megan McKoy-Noe writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association, the Arlington, Va.-based service arm of the nation's 900-plus consumer-owned, not-for-profit electric cooperatives. Scott Gates contributed to this article.*



## Co-Op Connections Featured Business *The Scrapbook Nook*

By: Abby Ala

**P**ictures say 1,000 words and “wow” does *The Scrapbook Nook* have words. They have words in many different fonts as well as papers in different colors, decorative stickers, stampers, ribbons, markers and scrapbooks. They carry everything to make pictures truly stand out. These materials are also great if you just want to decorate picture frames.

Peggy Williams opened *The Scrapbook Nook* in November 2000. They have always been located at 707 Macomb Street in Colchester, but they have expanded. When *The Scrapbook Nook* was first opened, only the front part was used. Since 2000, Peggy Williams has bought the entire building and is now occupying the full space. The expansion of the store was needed because it carries hundreds of different scrapbooking supplies. The front of the store is primarily scrapbooking materials, while the back of the store is designated for scrapbooking classes.

Peggy Williams has been an avid scrap booker for many years. She would actually drive miles and miles to find scrapbooking materials. Her husband, Steve Williams said, “You might as well open one up in this area, because eventually someone else will!” This prompted the creation of *The Scrapbook Nook*. Peggy wanted a place where you could find all scrapbooking supplies, not just a few. She has an array of supplies and will even special order supplies if she does not have exactly what the customer is looking for. **V09Z-5D33S**

Besides *The Scrapbook Nook*, Peggy also has a wonderful family. She has been married to Steve Williams for 37 years. They have two daughters, Stephanie and Heather, and seven grandchildren! Peggy and her family have lived in the Macomb area their entire lives and love it.

*The Scrapbook Nook* joined our Co-Op Connections Program in June 2009. They are currently offering 10 percent off all regular priced items. This offer is



not valid with any other offer. You can find these *Co-op Connection* specials at 707 Macomb Street in Colchester. Remember, you must bring your *Co-op Connections* card or key fob to receive these deals. They are open Monday-Friday, noon-6 p.m. and Saturday, 10 a.m. - 4 p.m.

### MAP LOCATION GAME

Every month we will have four map location numbers hidden throughout *The Wire*. If you find your map location number, call our office and identify your number and the page that it is on. If correct, you will win a \$10 credit on your next electric bill.



Members are saving money with their Co-op Connections card – have you used yours lately? Check out all of the deals at [www.mcdonoughpower.com](http://www.mcdonoughpower.com). Stay tuned for a Co-op Connections update in next month’s issue.