Watt's Going On

Greg McFarland, General Manager/CEO
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Jackson Electric Cooperative's solar array has been on-line since the beginning of December 2013. Many members have been curious about the array's output and, in general, solar energy. We compiled a list of frequently asked questions and we want to share our responses with the membership. If you have any other questions, please feel free to e-mail or call me at the office. Safety always!

How large is the solar array at Jackson Electric? The nameplate on the array is 9.72 kilowatts (kWs). The physical dimension of each panel is 4' x 2-1/2'. There are 36 panels.

Is the solar array large enough to cover the energy needs of Jackson Electric Cooperative's office? No. The building's monthly average electric usage for the first five months (January–May) in 2014 was 32,680 kilowatt-hours (kWhs). The average monthly output of the solar array for the first five months in 2014 was 1,172 kWhs.

Is this size of solar array large enough to cover the energy needs of a typical residence in our area? Possibly. It depends on the actual electrical usage of the home. The average residential consumer on our system uses 1,021 kWhs per month. That's close to the actual output of our solar system. Individual usage varies according to house size, number of people, and how electrical devices are used. Solar system installers typically use past electrical usage in sizing a system. Because of high system costs, most systems are not sized to provide 100 percent of the electrical needs.

How much do solar arrays, similar to Jackson Electric's, cost? The cost varies depending on site preparation. The cost of the cooperative's system, including site preparation, was $5.88 per watt. Each panel is 270 watts. (1,000 watts = 1 kW)

How many years will the panels be operational? We're anticipating 20-plus years. Typically, the panels are very durable and performance does not degrade much over time. These panels and infrastructure were made in the United States. Solar panels manufactured in the United States are of a higher quality than those manufactured overseas.

How long is the payback on a solar array similar to the one at Jackson Electric? Payback varies as no two solar system paybacks are the same. To determine a payback on a solar system, we recommend you consider the following:

- Final cost of the system after incentives, such as the 30 percent federal tax credit;
- The estimated yearly output of the system; and
- The rate at which you will be paid by the electric utility for the system's output to the grid.

Where does the electricity go when the system is producing energy? This system is interconnected with the grid so its output goes directly onto our distribution wires. The energy produced by the solar panels is not directly used by the Jackson Electric building.

Does this system have a battery backup system? No. The cost for the battery backup for this type of solar system is approximately $30,000.

Does this system work in the event of a power outage? No. All renewable systems with an inverter and no battery backup require line voltage to function and will not generate during an outage.

What is the efficiency of the solar panels at Jackson Electric? Most panels manufactured today are rated between 16 to 20 percent efficient.

Does the weather and change in seasons affect the solar production? Both the weather and seasonal changes will affect the amount of sun reaching the panels. During the summer, the panels will produce more energy because the days are longer and the sun is higher. If it's a cloudy day, the panels will produce less. During the winter, there will be less production because of the limited hours of sunlight.

How do you meter a solar array? Two meters are used. One meters the output from the system to the grid; the other meters the electrical usage at the location.

Can I be on dual fuel if I install a solar array? Yes. Any excess generation from the system can be used to offset usage on the heat meter.

I can't afford a solar array. Is there another option available in which I can support renewable energy? Yes. You can enroll in Jackson Electric's Evergreen Program. For as little as $1.50 per month, added to your electric bill, you can support renewable energy by helping offset the additional generation costs.

What's the next step for the solar array at Jackson Electric? This solar array is member-owned. We welcome any comments or suggestions from the membership to help guide us in determining the next phase. ■

Jackson Electric Awards Scholarships to Area Youth

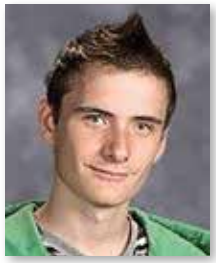
Mikayla Simmons
Alma Center-Humbird-Merrillan High School

Sonja Cook
Black River Falls High School

Brooke Stalheim
Blair-Taylor High School

Stephanie Pipkin
Melrose-Mindoro High School

Julia Schmidt
Osseo-Fairchild High School



Josh Albrecht
Whitehall High School

Congratulations to the students who were awarded scholarships through Jackson Electric Cooperative's annual scholarship program. Each of these students received a $750 scholarship for their continuing education.

Jackson Electric Cooperative's scholarship program encourages post-secondary education for area high school seniors by assisting them in financing their education. Scholarships are offered to eight high schools in Jackson Electric Cooperative's service territory, as well as those students who are home-schooled, open-enrolled, or attend a private school. A $1,000 scholarship is awarded to a deserving senior who participates in Jackson Electric Cooperative's Youth Ambassador Program.

Scholarships were offered to Neillsville and Sparta High Schools and home-schooled/open-enrolled/private school, but no applications were submitted. ■

Brandi Shramek
Youth Ambassador

Fireworks Safety Tips

- Never allow children to play with or ignite fireworks.
- Never try to re-light or pick up fireworks that have not ignited fully.
- Keep a bucket of water or a garden hose handy in case of fire or other mishap.
- Make sure fireworks are legal in your area before buying or using them.
- Light fireworks one at a time, then move back quickly.

More fireworks safety tips at www.cpsc.gov/fireworks.

Source: U.S. Consumer Product Safety Commission 2012 Fireworks Annual Report

Jackson Electric Cooperative's office will be closed on Friday, July 4. If you experience a power outage during this time, please call 855-222-DARK (3275).

Learning Beyond the Classroom

Join Jackson Electric Cooperative's Youth Ambassador Program

Open to all area high school juniors and seniors

- Build leadership skills, learn about cooperative principles and careers, meet new friends
- Tour Dairyland Power Cooperative's Administration building and Genoa Power Plant
- Apply for a $1,000 scholarship
- Apply for an opportunity to attend the Electric Youth Tour in Washington, D.C.

For more information, go to www.jackelec.com or e-mail cblaken@jackelec.com.

You Commented. We're Responding.

Member Comment: *"I want to see my bill cheaper."*

Our Response: Every month, you pay for the amount of electricity you use. Many of the causes of high electric bills are related to the way you use electricity in your home. If you want your monthly electric bill to be less, it may be time to do a walk-through energy audit of what's consuming electricity in your home.

Heating and cooling account for nearly half of your electrical use. To make sure your heating and cooling system is working efficiently, have it checked annually by a heating, ventilating and air conditioning (HVAC) technician. Remember to change your filters monthly. Other areas to consider:

1. Are you operating a window air conditioner or fan(s) in the warm months?
2. Are you operating an electric space heater in the cool months?
3. Is your home well insulated?
4. Do you feel drafts from the area around your outside doors, outlets, and windows?

To get the most out of your heating and cooling system, consider adding insulation, weatherstripping, and caulking to make your home more energy efficient. Another consideration is to install an air source or geothermal heat pump. These heating and cooling systems, in one unit, are between 300 and 600 percent efficient. Qualified units may be added to Jackson Electric's dual fuel rate, with which you'll see substantial savings during the heating and cooling seasons.

Water heating accounts for approximately 15 percent of a home's energy use in the United States. Thirty-seven percent of the typical U.S. homeowner's water consumption takes place in the shower; 26 percent of water is used in the clothes washer. Ask yourself the following questions:

1. How many are in your household?
2. How often are showers taken?
3. How long are the showers?
4. Are clothes washers and dishwashers operated with full loads, and how often?
5. Are any of the faucets leaking?

You may be able to trim some of your electrical usage by limiting the length of showers and washing clothes with a full load in cold water. In addition, fix your leaky faucets. According to energystar.gov, hot water leaking at the rate of one drip per second can waste up to 1,661 gallons of water over a year and up to $35 in electricity.

Some appliances work around the clock for you and are designed to aid us in our work or entertain us whenever we need them. Ask yourself these questions:

1. How many of your appliances do you leave plugged in, even though they're "off?"
2. Are your appliances Energy Star rated?
3. Are the lights left on when you leave a room?
4. Is the television entertaining an empty room?

All these considerations affect the amount of electricity you use to maintain your lifestyle. Many appliances are designed to never turn off because they are waiting for a command from you or for a scheduled task to run. Anything with a clock, such as microwave ovens, coffee makers, and VCRs, need power to keep time while turned off.

Lastly, consider investing in an energy assessment done by a certified energy consultant. By completing this process, you'll gain valuable information on how to make your home more energy efficient. Contact Jackson Electric Cooperative for more information on energy assessments and available incentives.

Jackson Electric Cooperative's Annual

Member Picnic in the Park

Tuesday, August 12, 2014

3:30 – 6:45 p.m.

Lunda Park Upper Shelter, Black River Falls

Let the Professionals at

CCU CO-OP CREDIT UNION

Provide Financing for Your Electric Heating System Upgrade

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Black River Falls – Fall Creek – Galesville – Melrose - Strum

Factor in Power Lines Near Grain Bin Construction

As many grain farmers know, it's sometimes more cost-effective to store your grain in your own grain bins rather than paying storage fees at a grain marketing facility.

Grain bins play an integral role in the efficiency and profitability of farm operations, and safety regulations should always be considered when working around these structures. Whether you're purchasing a new bin or remodeling areas that contain existing ones, proximity to overhead and underground power lines must be a considered factor.

Safe Clearance—The National Electrical Safety Code requires an 18-foot minimum vertical clearance from the highest point of the filling port of the grain bin to nearby high-voltage wires and a 55-foot minimum distance from the power line to the grain bin wall. Changes to landscaping and drainage work can affect clearance heights of power lines, so remember to check these measurements regularly.

Filling Grain Bins—High-voltage power lines are not insulated, so it's important to remember to maintain an adequate high-wire clearance when using a portable auger, conveyor, or elevator to fill your grain bin.

Moving Equipment Near Grain Bins—When moving equipment, such as a hopper or scaffold, be aware of nearby power lines. Maintain a 10-foot clearance to ensure safety.

Accidents can happen in a split-second; always use caution when working near overhead and underground power lines. ■

Non-Discrimination Statement

Jackson Electric Cooperative is an equal opportunity provider and employer. If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (pdf) found online at www.ascr.usda.gov/complaint_filing_cust.html or at any USDA office or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or e-mail at program.intake@usda.gov.

Ask Your Cooperative

Steve Meyer, Member Services Director

Q: What is a kilowatt-hour (kWh)? How is a kWh different than a kilowatt (kW)?

A: What you are purchasing from Jackson Electric are kilowatt-hours, or kWhs. Although very related, a kilowatt (kW) is not the same as a kWh. This can get confusing because people often say or write kW when they really mean kWh.

A kW is a measure of electrical load, and kWh is the load as measured by the electric meter over a period of time. Let's say you are operating a 1,000-watt heater. 1,000 watts is 1 kW. For each hour the 1 kW heater is operating, it consumes 1 kWh of electricity. Simply put, electric meters track load (kW) over time (hours), and the total is in kWhs.

If you have a question to ask Jackson Electric Cooperative, please submit to our office at P.O. Box 546, Black River Falls, WI 54615 or e-mail **cblaken@jackelec.com**, and put in the subject line "Magazine Question." ■

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