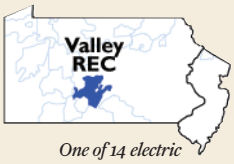
Valley Rural Electric Cooperative, Inc.

Your Touchstone Energy® Cooperative



One of 14 electric cooperatives serving Pennsylvania and New Jersey

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CORPORATE OFFICE HOURS

Monday - Friday
7 a.m. - 5:30 p.m.

HUNTINGDON/MARTINSBURG/SHADE GAP OFFICE HOURS

Monday - Thursday
7 a.m. - 5:30 p.m.

FROM THE PRESIDENT & CEO

Plotting out big energy savings

by Wayne Miller
President & CEO

AROUND THIS time each year, when my cabin fever is at its peak, I find relief by turning my thoughts toward spring. I think of my ambitious neighbors and friends who have no doubt already begun plotting out this year's vegetable and flower gardens. They are busy scribbling out designs for their rows and beds — making sure plants will be arranged so that they have room to grow and taller vegetables won't shade lower-growing species. After they settle on a plan, they'll get to work preparing the soil for the seeds that will hopefully yield an abundant harvest.

Like most endeavors, getting things right calls for a certain amount of planning.

At Valley Rural Electric, we often suggest ways that you can reduce your electric bills by making energy efficiency improvements to your home. Weatherization — sealing air leaks and installing the proper amount of insulation — can make a big difference. On average, weatherization reduces heating bills by 32 percent and overall energy bills by more than $350 per year. The potential payback *can* be substantial.

But just as scattering seeds randomly usually yields a lean harvest, energy efficiency upgrades done without knowledge of how your residence uses energy overall may not produce significant savings.

For instance, investing in additional insulation has little impact on heating bills if a drafty front door or inefficient windows conspire against it. Spending a few hours on a home energy audit — a full assessment of how your house uses energy and where problems lie — will ensure that money designated for efficiency projects is spent wisely.

Valley offers a free online energy auditing tool through the co-op's website. You can perform a complete audit tailored to your specific home by visiting www.valleyrec.com. Click the Save Energy tab to get started.

Those who aren't internet-savvy can have a free professional energy audit performed at their home by the energy specialist we have on staff here at the co-op. He can provide advice on energy efficiency measures, and will systematically inspect your home, creating a list of potential weatherization improvements.

You can also conduct a basic home energy audit with a simple but diligent walk-through. When auditing your home, keep a list of places you have inspected and problems you discover. Most trouble spots can be found in a few key areas. Checklists are available through the co-op by calling the member services department at 814/643-2650 or emailing memberservices@valleyrec.com.

Remember: Before tackling home energy efficiency improvements, be sure to fashion a solid plan. When it comes to weatherization, a little work up front goes a long way.

Co-op members nominate board candidates for ...

Districts 7, 8, 9

By Susan R. Penning
Director of Member Services

LAST MONTH, consumers in co-op director districts 7, 8 and 9 gathered to choose candidates for Valley Rural Electric's board of directors.

Since 1975, Valley has been holding open nominating meetings where co-op members can select candidates for the board of directors rather than relying on a nominating committee appointed by the board.

In 1989, those open meetings started to include meals, offered to all participating consumers and their guests. At the meetings, co-op and energy industry news is shared and time is set aside for question-and-answer sessions.

Each year, Valley REC holds nominating meetings in three of its nine director districts. Next year, members will nominate board candidates for districts 1, 3 and 5. Consumers who reside in those districts will receive invitations to their respective meetings.

The candidates nominated this year will be featured in the next edition of *Penn Lines*.

BELOW: Co-op members from portions of Fulton and Franklin counties enjoy a chicken dinner during the District 7 Nominating Meeting, held at the Hustontown Fire Hall Feb. 1.

ABOVE: Guests enjoy fellowship Feb. 2 at the District 8 Nominating Meeting at the Shade Gap Fire Company Ladies Auxiliary Building.

RIGHT: Valley President and CEO Wayne Miller (left) and meeting chairman Robert Brubaker take nominations Feb. 4 during the District 9 Nominating Meeting at Geeseytown Fire Hall. The meeting drew a crowd of 93.

2010

Feb. 2 - The District 8 Nominating Meeting draws a crowd of 164 from portions of Juniata and Huntingdon counties. James Burdge (bottom left) chairs the nomination procedure and incumbent Earl Parsons is nominated for director.

Feb. 1 - One hundred thirty-five co-op members and their guests attend the District 7 Nominating Meeting. Donald Eisaman chairs the nomination procedure. Incumbent Dave Wright and Alton Hill are nominated as candidates.

Feb. 4 - Co-op executive secretary Kim Kane (above right) allows consumers to choose door prize winners at the District 9 Nominating Meeting. Members from portions of Blair County attend the event where incumbent Cindy Bigelow is nominated for the board.

HYDROPOWER: Time-tested renewable energy

By Scott Gates
National Rural Electric Cooperative Association

PHOTO COURTESY OF VALLEY REC

CLEAN POWER: Raystown Hydroelectric Plant, on Lake Raystown in Huntingdon County, provides about 2.5 percent of Valley's generation needs (enough power for about 8,500 homes).

YOU MAY NOT REALIZE it, but a rush of water likely helps keep your lights on every day. Like many electric co-ops around the country, Valley draws on hydropower to keep electricity reliable and affordable.

Energy from flowing water has been harnessed and used for more than 2,000 years. Ancient Greeks invented the first water wheels, using them to grind wheat into flour. In Imperial Rome, water-powered mills were also used for sawing timber and stone. The power of a wave of water released from a tank was used for extraction of metal ores in a method known as hushing. Hushing helped remove lead and tin ores and evolved into the hydraulic mining used during the California gold rush.

In the 1880s, using rushing water to make electricity became a reality in the United States. The breakthrough swept the nation and within a decade, 200 U.S. plants were using hydropower for generation.

Today, hydropower provides about 80,000 megawatts of capacity in this country and accounts for 86 percent of all renewable, carbon-free electricity used by co-ops.

How does it work?

Hydropower converts the natural energy in moving water to mechanical energy. The water is held behind a dam, forming an artificial lake or reservoir. The force of the water being released from the reservoir through the dam spins the blades of a giant turbine. The turbine is connected to a generator that makes electricity as the blades spin. After passing through the turbine, the water flows back into the river on the other side of the dam.

With highly efficient turbine generators doing the job formerly performed by water wheels, electricity can be generated in a number of ways:

Impoundment: By plugging a river and amassing water in a reservoir, its flow can be better controlled and electricity generated as needed.

Diversion: Water is channeled away from a river, typically near natural falls, down to generators at the falls' base. This can be done without any visible impact to the natural course of a river. In fact, this kind of generation was used to bring electricity to Buffalo, N.Y., from Niagara Falls in the 1800s.

Pump Storage: This method essentially uses off-peak electricity to make electricity for use during times of high consumption. Two reservoirs are filled, one typically uphill from the other, with an electric pump/generator in between. At night, when demand is low and electricity is less expensive, water from the lower reservoir gets pumped uphill. During the day, when demand for power increases, that water is released down through the generator to make electricity.

More than 600 electric co-ops across the country purchase power from 134 federally owned and operated dams, most of which were built between the late 1930s and early 1960s. Despite the incredible importance of these resources, maintenance has lagged in recent years, creating room for improvement.

Electric co-ops are making efforts to address this problem, advocating that the government set aside funds to repair and maintain dams and the turbines inside them. Researchers are also looking to create more efficient and environmentally sound (i.e., fish-friendly) ways of generating hydropower. Careful studies of aquatic environments have given dam operators a better idea of how to simulate a natural river downstream. More unique environmental protection solutions, such as fish ladders, are also being researched and put into action.

This push for increased maintenance and technology development will ensure that hydropower remains a reliable and affordable renewable resource for decades to come.

Susan Penning contributed to this article.

Safety Tip

NEVER put water on an electrical fire; it can make matters worse. Make sure you have a chemical fire extinguisher on each floor of your home. Know where it is located and how to use it safely.

Need money for college?

THIS YEAR, Valley Rural Electric will award up to 25 $1,000 scholarships to eligible students who apply. The money to fund this new scholarship program comes from unclaimed capital credits that previously had to be turned over to the state. Thanks to the efforts of our political advocates, we can now keep those funds in our local communities. Students must be members or dependents of co-op members to apply. High school seniors as well as college students and adults returning to school may qualify. For more information, email memberservices@valleyrec.com or call 814/643-2650.

Do tankless water heaters live up to the hype?

AN UNLIMITED SUPPLY of hot water definitely sounds like a sweet deal to many homeowners. So do reduced water heating costs, instantaneous hot water on demand and more space in the utility closet.

These are all promises made by companies selling tankless water heaters. But does the technology really deliver?

Unlike traditional electric resistance or gas-fired water heaters, tankless models do not store hot water — they heat water only as it's consumed. One heating element (or a series) within a tankless water heater is activated when a hot water faucet or valve is opened. The unit heats water until the faucet or valve gets closed.

'Unlimited' hot water?

An unlimited supply of hot water sounds great, but generally doesn't make for responsible water use, particularly in areas of the country suffering from drought or chronic water shortages. Moreover, even the largest whole-house unit may not supply enough hot water for simultaneous, multiple uses.

For example, such a unit may be able to supply only two showers simultaneously or perhaps one shower, a dishwasher and a sink. If users demand too much water, temperatures will drop. As a result, a tankless system probably won't meet the needs of a large family.

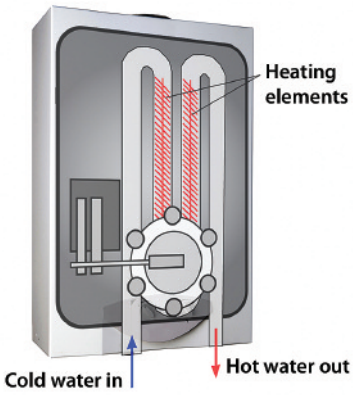
In addition, water temperature depends on the volume coming out of a faucet. If you turn on the faucet only a trickle, water runs cold. If you open the faucet further, you will trigger hot water — the hottest possible. If you open the faucet to maximum, the temperature will drop back a bit. If you open more than one faucet, temperatures will drop further.

Hidden costs

Generally, tankless water heaters do not require a lot of space (a large unit can fit in an area no bigger than 24 inches square, and extend from the wall about 8 to 10 inches). But they do require an upgrade in electrical service — something many home improvement stores don't mention, and a chief reason electric co-ops generally don't recommend the appliances. This means consumers who want to replace an existing conventional water heater with a tankless unit or add one as part of a home-remodeling project will incur additional costs.

A tankless water heater at work

Unlike a traditional water heater, a wall-mounted tankless model does not store hot water. It heats water only as it is used with heating elements inside the water heater that are activated when a hot water faucet or valve is opened. Consumers can generally save more on energy costs by using traditional water heaters (with a tank) efficiently.



Source: U.S. Department of Energy

For example, a traditional tank water heater with 4,500-watt elements operates on No. 10 wire and a 30-amp circuit breaker. One whole-house tankless model carries an electrical load of 28,000 watts. This requires wire and a circuit breaker that will handle at least 120 amps.

If a tankless water heater is installed in an existing home without upgrading the electrical service, low voltage or sudden voltage drops are likely. This will cause dimming lights, blinking lights and other problems.

The extra load also necessitates a larger and more expensive meter loop and main breaker panel for the house. In addition, consumers may need a larger, more expensive transformer at the pole as well as new wiring between the transformer and the meter. Check with a licensed electrician to determine what inside improvements would be necessary; check with the co-op to see what outside upgrades would be needed.

While gas-fired tankless water heaters generally do not need basic service upgrades, the same considerations must be made when determining how many hot water faucets will be turned on at any given time and how far away the tankless heater remains from sinks and showers.

Other options

Consumers looking for an efficient water heater should consider a heavily insulated electric resistance unit. These appliances are often the most cost-effective option over the long term. And because of their hot water storage capabilities, Valley Rural Electric Co-op uses these types of heaters as a key component of its demand response energy efficiency program. The demand response program (formerly called load management) helps the co-op shave power costs during times of peak demand — a proven method in keeping rates down and electric bills affordable. It's worth noting that tankless water heaters may contribute to higher wholesale energy demand costs because they often require the bulk of their energy when demand prices are at their highest; they also don't allow for the shifting of electric load to off-peak periods.

To reduce home water heating costs, the Oak Ridge National Laboratory suggests simple and inexpensive measures, such as tank insulation, temperature setback, heat traps and low-flow showerheads. All of these are more practical and provide a greater return on investment than putting in a tankless water heater.

Information courtesy of the National Rural Electric Cooperative Association's Cooperative Research Network, which monitors, evaluates and applies technologies that help electric co-ops control costs, increase productivity and enhance service to their consumers.

'The cleanest kilowatt-hour is the one that is never generated'

Co-op members with a 50-gallon or larger water heater may be eligible to participate in demand response. Visit www.valleyrec.com for more information. Follow the Programs and Services link to the Energy Management section. Or call 814/643-2650.