South Dakota Electric

Your Touchstone Energy® Partner

Cooperative Connections

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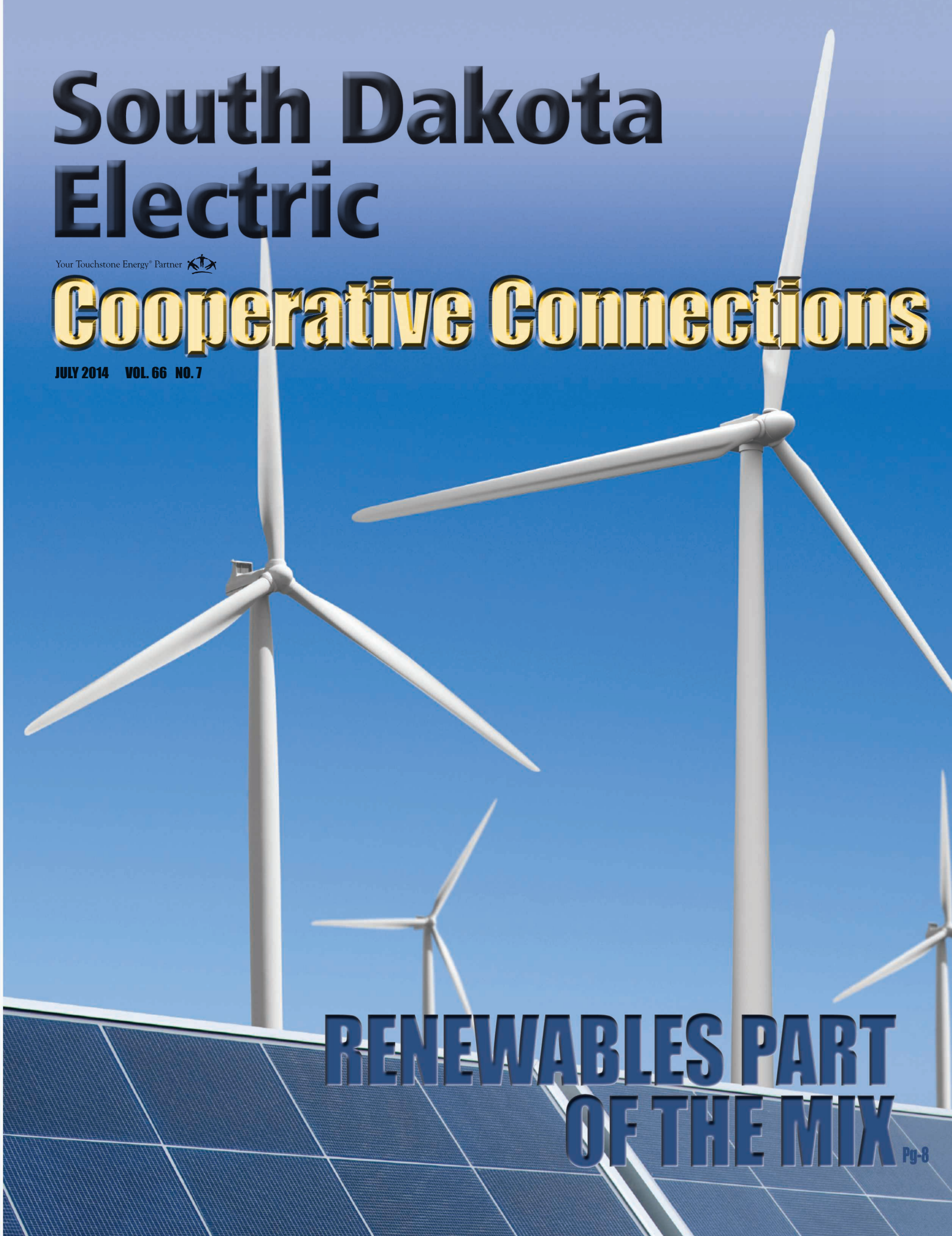

RENEWABLES PART OF THE MIX

Pg-8

HERE'S SOMETHING THAT WILL REALLY WAKE YOU UP.

ELECTRICITY

1936	5¢
2013	11¢
INCREASE	**2X**

BASED ON AVERAGE COST PER KILOWATT HOUR

POUND OF COFFEE

1936	14.5¢
2013	$7.43
INCREASE	**51X**

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South Dakota Electric Cooperative Connections
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Black Hills Electric, Custer, S.D.
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Union County Electric, Elk Point, S.D.
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Editorial

Co-op Membership: What's in It for You?

Ed Anderson
General Manager, South Dakota Rural Electric Association

You set up your electric service account with your local electric cooperative and you think to yourself, "That's done. Now I just have to pay my monthly bill." But the truth is we're more than just a utility provider that you pay each month for electricity. We have more to offer – and we want you, our members, to know about these benefits.

There are more than 900 electric cooperatives in the U.S. that serve 42 million members. South Dakota's 28 distribution cooperatives have lines stretching across 65,000 miles – enough to circle the earth two and a half times. So what makes being a member of an electric cooperative unique?

We're all in this together. You are a member of your cooperative – not a customer. And that means you have a voice when it comes to the way your cooperative does business. Each year at your co-op annual meeting, you have the option to vote for your board of directors. These directors play a key role in making important decisions for your co-op, which is why members' voices must be heard.

We're local. It's likely that you know an employee of your local electric cooperative. Our employees – your friends and neighbors – share the same concerns for our community that you do. Each year, cooperative participate in numerous community events and activities such as 4-H clubs, school safety demonstrations, Youth Tour, scholarships, etc. This spring alone, electric cooperatives awarded more than $100,000 in scholarships to area teens.

Cooperatives care about their members' quality of life, which is why our employees are continuously finding innovative ways to improve our service.

We're not-for-profit. Electric cooperatives in South Dakota and western Minnesota don't offer profits to investors – they return money over and above operating costs to their members, based on electricity consumption. Annually, electric co-ops nationwide return millions of dollars to members through this capital credits process.

Electric cooperatives are here for you. Their mission is to provide you with safe, reliable and affordable electricity. Cooperatives care about their members' quality of life, which is why our employees are continuously finding innovative ways to improve our service.

These are just a few facts about electric cooperatives that make us unique. For more information about your local electric cooperative and the services they offer, look up one of the cooperatives listed at left on the Web.

Lightning Safety Tips

Outdoors is the most dangerous place to be during a lightning storm. Because lightning can travel sideways for up to 10 miles, blue skies are not an indication of safety. If you hear thunder, go inside immediately.

Indoor Lightning Safety Tips

- Once indoors, stay away from windows and doors.
- Do not use corded telephones, except for emergencies. You can use cordless or cellular phones.
- Unplug electronic equipment before the storm arrives and avoid contact with electrical equipment or cords during storms.
- Avoid contact with plumbing, including sinks, baths and faucets.

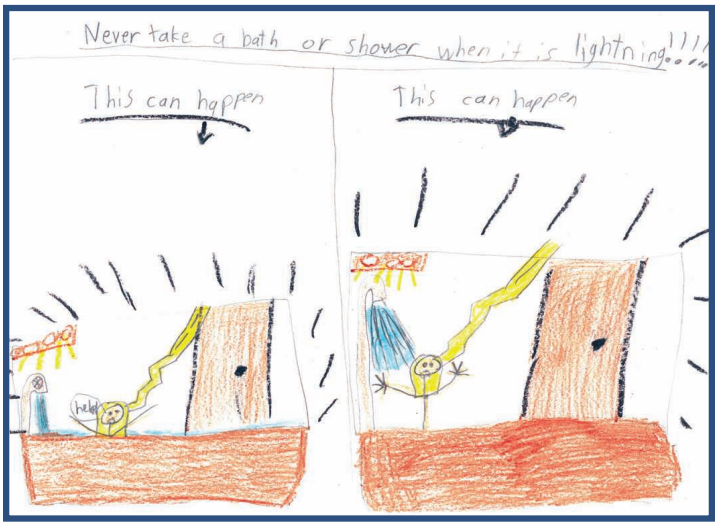
Outdoor Lightning Safety Tips

- Go to a low point. Lightning hits the tallest available object. Get down low if you are in an exposed area.
- Stay away from trees.
- Stay away from water, including pools, lakes, puddles and anything damp – like grass.
- Don't stand close to other people. Spread out.
- Avoid metal. Don't hold onto metal items like bats, golf clubs, fishing rods, tennis rackets or tools. Stay away from metal sheds, clotheslines, poles and fences.
- If you drive into a thunderstorm in your car, slow down and use extra caution. If possible, pull off the road into a safe area. Do NOT leave the vehicle during a thunderstorm. A vehicle is considered safe during a thunderstorm if it is fully enclosed with a metal top such as a hard topped car, minivan, bus, truck, etc. While inside a safe vehicle, do not use electronic devices such as radio communications during a thunderstorm.
- If you feel a tingling sensation or your hair stands on end, lightning may be about to strike. Crouch down and cover your ears.
- Don't forget pets during thunderstorms. Doghouses are not lightning safe. Dogs that are chained can easily fall victim to a lightning strike.

Source: esfi.org

Kids' Corner Safety Poster

"Never take a bath or shower when it is lightning!"



Alayna Foss, 8 years old

Alayna is the daughter of Kalon and Misty Foss, Lemmon, S.D. They are members of Grand Electric Cooperative, Bison, S.D.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

Delicious Desserts

Gina's Boston Cream Pie Dessert

27 whole graham crackers (1 box)
2 (4 serving size) pkgs. instant vanilla or French vanilla pudding
3 cups cold milk
1 (12 oz.) container frozen whipped topping, thawed
1 (16 oz.) container chocolate fudge frosting

Arrange 1/3 of crackers (1 package) on bottom of 9x13-inch pan, breaking to fit if necessary. Add pudding to milk and beat for 2 minutes. Fold in whipped topping. Spread 1/2 of mixture over crackers. Place 1/2 of remaining crackers (1 package) over pudding, then top with remaining pudding mixture and finally the last layer of crackers. Put frosting in microwavable dish and microwave on high for 1 minute or until frosting is pourable. Spread evenly over crackers. Refrigerate at least 4 hours or overnight.

Nancy Stenson, Fort Pierre

Chocolate Pie

8 oz. marshmallows
1 cup milk
2 T. cocoa
4 oz. whipped topping
1 baked pie shell or graham cracker pie crust

Melt together first 3 ingredients; cool. Fold in whipped topping. Spread in pie shell/crust.

Carol King, Colome

Mom's Homemade Blizzard

1 quart vanilla ice cream, slightly softened
1/4 cup chocolate syrup
1 envelope Dream Whip
M&Ms, chopped candy bars, etc.

Combine all ingredients; beat with mixer at low speed. Stir in treats of choice.

Deb Nelson, Fairfax, MN

Apple Crescent Rolls

1/4 cup butter
1 cup sugar
2/3 cup Sprite
1 can refrigerated crescent rolls
1 large Granny Smith apple, peeled and cut into 8 sections
Cinnamon

Melt together butter, sugar and Sprite; set aside. Wrap each apple wedge in a crescent section. Place in greased 9x13-inch pan. Sprinkle with cinnamon. Pour Sprite mixture over rolls. Bake at 350°F. for 30 minutes. Pour syrupy mixture on top of each roll. Serve warm with whipped cream.

Deloris Bachman, Rapid City

Hot Cinnamon Fireworks Cake

2-3/4 cups all-purpose flour
2 tsp. baking powder
1/2 tsp. salt
2 cups (4 sticks) butter, softened
2 cups granulated sugar
6 eggs
1-1/2 tsp. vanilla extract
1 (6 oz.) bottle Wilton Cinnamon Drops, crushed
1 (1.5 oz.) box Wilton Blue Colorburst Batter Bits
1 cup sifted confectioners' sugar
3 to 4 T. milk
Red, white and royal blue Wilton Candy Melts candy, melted
Red, white and blue colored sugars

Spray a Dimensions Cascade Pan with vegetable pan spray. In large bowl, combine flour, baking powder and salt. In second large bowl, beat butter and sugar until light and fluffy. Add eggs one at a time, scraping bottom and sides of bowl often. Add vanilla; beat until well combined. Add flour mixture and beat at low speed until just combined. Fold in Cinnamon Drops and blue Batter Bits. Pour into prepared pan; smooth out top. Bake at 350°F. 60 to 65 minutes or until toothpick inserted in center comes out clean. Cool in pan 10 minutes on cooling grid. Remove from pan and cool completely. In large bowl, whisk together confectioners' sugar and milk. Drizzle melted candy onto cake to look like fireworks. Sprinkle sugars onto melted candy. Yield: 12 servings

Nutritional information per serving (excludes candy melts and colored sugars): Calories 648; Fat 39.5g; Protein 84.5g; Carbohydrates 68.5g; Cholesterol 204mg; Sodium 262mg; Fiber 1.02g; Potassium 208mg; Sugars 44g

Pictured, Cooperative Connections

Blueberry Dessert

1 can blueberry pie filling
14 oz. frozen blueberries
1/2 cup sugar
1 box white cake mix
1/2 cup melted butter

Grease a 9x13-inch pan. Spread pie filling in pan. Coat blueberries with sugar and layer over filing. Sprinkle dry cake mix over blueberries. Drizzle with melted butter. Bake at 350°F. for 45 minutes or longer if necessary until top is browned lightly. When slightly cooled, serve with ice cream or whipped cream.

Diana Spence, Utica

Borden's Cherry Cream Pie

14 oz. sweetened condensed milk
1/3 cup lemon juice
1 tsp. vanilla
1/2 tsp. almond extract
1/2 cup whipping cream, whipped
1 cooked pie shell
1 can cherry pie filling

Combine first 4 ingredients, stir until thick. Fold in whipped cream and spoon into cooked pie shell. Top with pie filling. Chill for 2 to 3 hours before serving.

Margaret Jangula Dickinson, Lemmon

Please send your favorite salad, garden produce and pasta recipes to your local electric cooperative (address found on page 3). Each recipe printed will be entered into a drawing for a prize in December 2014. All entries must include your name, mailing address, telephone number and cooperative name.

Give Your Water Heater A Boost

Jim Dulley
www.dulley.com

Dear Jim: My 80-gallon electric water heater is getting old, but it does not leak. Since it is old, I imagine there are some things I can do to make it operate more efficiently. What improvements do you recommend? – Ron H.

Dear Ron: Heating domestic hot water is one of the greatest contributors to your monthly utility bills. For a typical family of four, it is not unusual for water heating to consume 20 percent to 25 percent of the total annual energy use.

An electric water heater is a very simple device. It is basically a big insulated tank of water with an upper and a lower resistance-heating element. The lower element is the main one used. When most of the hot water has been used, the lower one goes off. The upper one then comes on to supply hot water more quickly since the water is drawn from the tank top.

Even if you do not use any hot water, the lower element will cycle on at times to make up the heat lost through the tank walls (called standby losses). Heat can also be lost through the tank's piping, especially if the tank is without heat traps. Your older water heater likely just has a couple of inches of fiberglass insulation between the glass-lined metal tank and the external skin.

Insulating the water tank

Place the back of your hand against the water heater tank near the top or on the top. If it feels warm, it is losing heat and adding an insulation wrap kit would be effective and save money. With a tall 80-gallon tank, the insulation wrap may not reach all the way down to the floor. This is okay because the majority of the heat loss is from the upper part of the tank.

If you have some old fiberglass wall insulation, just wrap that around the tank with the vapor barrier facing to the outside. Putting a layer of reflective radiant barrier over the insulation also helps. You can certainly install you own insulation, but a kit from a home improvement store is roughly $20, easy to install and includes instructions (get one with an insulating value of at least R-10). If you DIY, it is more important to tape and seal the joints in the insulation (where the insulation on the top meets the sides) to create an air-tight barrier. Fiberglass insulation is only effective if you prevent air from passing through it.

Draining the water tank

At least once a year, drain a gallon of water from the drain valve at the bottom of the tank. This will flush out sediment, which collects there. Sediment insulates the water from the heating element. This is more important to do with a gas or propane water heater, but it also helps some on an electric one.

Managing the Water Temperature

It is important to keep the water temperature as low as possible. A greater temperature difference between the hot water and the air in your basement or utility room increases the tank standby losses. During the summer, these losses heat up your house and make your air conditioner run longer, creating a double energy expense.

Check the temperature of the hot water at a faucet where you use the most hot water. I keep the water temperature at my house at only 110 degrees. If you keep it so hot that you have to mix much cold with it to tolerate the temperature, it is too hot. Most laundry detergents work well in cold water and dishwashers have built in preheaters. Be sure to turn off electricity to the water heater before making any adjustments.

Feel the temperature of the hot-water outlet and cold-water inlet pipes. If they are fairly warm, it means hot water, because it is less dense, is naturally circulating upward and cooling off. Put tubular foam insulation on the water heater inlet and outlet water pipes to minimize the heat loss. This type of insulation is split on one side, making it easy to install over the pipes. Insulate the first four to six inches of the exposed piping.

If you are having some other plumbing work done, while the plumber is there, have him install heat trap fittings in the water heater to block this circulation in the pipes. Paying to have a plumber come just to install heat trap fittings will probably not make economic sense.

Installing a timer

Installing a water heater timer can be effective if your work schedule means you typically do not use hot water during a longer regular time period. This keeps the heating elements from coming on. The temperature should not drop much on a well-insulated tank. Check with your electric co-op regarding load management programs. They can identify the times of day when the demand for electricity is less.

If you end up deciding to get a new electric water heater, select a 12-year warranty model. These have higher R-value foam insulation in the tank walls than a cheaper six-year model. Also, most of the 12-year models have electronic digital controls, which simplify setting the hot water temperature. They also have a vacation-mode setting to save electricity when you travel.

Heat pump water heaters should also be considered if you're looking to make a purchase. These water heaters use electricity to move heat from one place to another rather than generating heat directly. While they tend to cost more initially, they have lower operating costs, which can save you money in the long run.

Have a question for Jim? Send inquiries to: James Dulley, *Cooperative Connections*, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit www.dulley.com.

EPA Adds Clothes Dryers to ENERGY STAR® Program

The U.S. Environmental Protection Agency (EPA) announced recently the first-ever ENERGY STAR® label for clothes dryers. If all residential clothes dryers sold in the U.S. meet these new requirements, the utility cost savings will grow to more than $1.5 billion each year and more than 22 billion pounds of annual greenhouse gas emissions would be prevented. Informed by extensive input from manufacturers, retailers, the U.S. Department of Energy and environmental groups, the new specifications will recognize a selection of highly efficient electric, gas and compact dryers that will use approximately 20 percent less energy than what is required by the minimum efficiency standards effective in 2015. In 2013 alone, Americans, with the help of ENERGY STAR, saved $30 billion on their utility bills and prevented greenhouse gas emissions equal to those of 38 million homes.

"The addition of clothes dryers expands the range of ENERGY STAR products to include one of the most energy-intensive home appliances not yet covered by the program," said U.S. EPA Administrator Gina McCarthy. "Working with industry on innovative approaches to address our changing climate, we are helping consumers select more energy efficient appliances, save money and reduce greenhouse gas emissions."

More than 80 percent of U.S. homes have a clothes dryer and these appliances account for approximately 6 percent of residential electricity consumption. Dryer models that meet the new ENERGY STAR requirements are likely to have improved auto termination sensors, which help reduce energy use by more effectively ending the drying cycle once clothes are dry. Among the more efficient gas and electric dryers that will earn the ENERGY STAR, consumers should expect to encounter a promising new technology. Heat pump dryers recapture the hot air used by the dryer and pump it back into the drum to dry more clothes. By re-using most of the heat, it creates a heat pump dryer that is more efficient and avoids the need for ducts leading heat out of the laundry room.

This new ENERGY STAR specification also establishes optional "connected" criteria for residential clothes dryers. ENERGY STAR dryers with connected functionality will offer consumers convenience and energy-savings features, such as an alert indicating there is a performance issue or feedback to consumers on the energy-efficiency of different cycle selections. These products will also be "smart grid" ready, meaning they will give consumers the option to connect their dryer with their local utility to save money on their energy bills, where those services are offered, and also facilitate broader electric power system efficiency.

To earn the ENERGY STAR label, products must be certified by an EPA-recognized third party, based on testing in an EPA-recognized laboratory. In addition, manufacturers of the products must participate in verification testing programs operated by recognized certification bodies.

From the first ENERGY STAR qualified computer in 1992, the label can now be found on products in more than 70 different categories, with more than 4.5 billion sold over the past 20 years. More than 1.5 million new homes and 23,000 office buildings, schools and hospitals have earned the ENERGY STAR label.

Learn more: http://www.energystar.gov/products/specs/node/117

Judge Strikes Down Minnesota Coal Rule

A federal judge in Minnesota has struck down an over-reaching regulation of out-of-state business that would've had an impact on Basin Electric Power Cooperative, Bismarck, N.D., and East River Electric Power Cooperative, Madison, S.D. In 2007, the Minnesota Legislature passed a bill that established energy and environmental standards regulating carbon dioxide emissions in the state. It was effectively an attempt to ban the use of coal generation resources to serve Minnesota consumers.

It outlawed any new coal-fired generation to be used in Minnesota, even if the power plant was built in another state. That meant Basin Electric, which has most of its generation assets based outside of Minnesota, wouldn't have been able to sell new coal-fired electricity over the border.

Basin Electric and others sued the Minnesota PUC and Department of Commerce arguing that the law was unconstitutional. On April 18, the U.S. District Court in Minnesota issued a summary judgment in favor of Basin Electric and other regional utilities.

The court ruled that the law violated the Commerce Clause of the U.S. Constitution through its over-reaching regulation of out-of-state business. The judge said electricity put onto a regional grid cannot be restricted in its flow to a particular state. So to comply with the law, out-of-state parties like Basin Electric, who were conducting out-of-state transactions, would be unconstitutionally forced to follow Minnesota law for all transactions. This issue isn't over yet. Gov. Mark Dayton has said the State of Minnesota will appeal the judge's decision.

Scholar of the Year Clarification

The name of Alex Holzwarth, Hamlin, was missing from last month's photo of the 2013-14 Touchstone Energy® Scholars. The students pictured are, front row: Tanna Waltman, Parkston; Danika Pollreisz, Ethan; Heaven Zevenbergen, Elk Point-Jefferson; Mikayla Bonnet, Langford Area; Alli Steckelberg, Chamberlain; and Shelby VanDriel, Scotland. Second Row: Nichole Dvorak, Andes Central; Lisa Smith, Kimball; Kaitlin Van Ruler, Edgerton, Minn.; Taylor Homann, Pipestone, Minn.; Kayla Breske, Waubay; Tory Makela, Ipswich; and Tyson Mitzel, Aberdeen Roncalli. Third row: Garret Reed, Estelline; Mathew Preszler, Menno; Noah Brown, Baltic; Allison Deal, Sunshine Bible Academy; Noah Klamm, Brandon Valley; Michael Saffel, Irene-Wakonda; and Alex Holzwarth, Hamlin; Back row: Tyler Panek, Tea Area; Lydia Blume, Redfield; Craig Reiter, Florence; Cooper Eliason, Howard; David Weidler, Howard; and Derrick Podoll, Frederick Area.

Renewed Focus on Renewables

By Andrea Blowers

Basin Today

Renewable sources of energy are a big deal for Basin Electric. Take the cooperative's current portfolio. At the end of 2013, more than 10 percent of the resources Basin Electric owns or purchases to fulfill its energy obligations come from renewable sources like wind and waste heat.

Getting there didn't happen overnight, but it has been an aggressive resource development program. In fact, the cooperative's first venture with a renewable wind project began only about 12 years ago with two 1.3-megawatt turbines north of Chamberlain, S.D. It was a small project in cooperation with Class A member East River Electric Power Cooperative, but it was significant on multiple levels (see sidebar) and opened a door to further opportunities.

Over the next decade, there was a flurry of renewable development including the addition of 44 megawatts of recovered energy generation along the Northern Border Pipeline (see sidebar). The opportunities, especially for wind development, seemed to find Basin Electric. As knowledge of turbine operation, efficiency of wind turbines, the decline in cost of turbines and tax incentives became available, the size of the wind projects grew larger and larger.

The last wind project Basin Electric put into operation was the 108 1.5-megawatt turbines of the PrairieWinds SD 1 Crow Lake Wind Project in February 2011. By this time, the cooperative reported more than 757 megawatts of renewable resources had been added to its portfolio.

Unfortunately, following the Crow Lake project, the nation's economic situation slowed opportunities for Basin Electric to add more renewable capacity to its portfolio – until recently.

In the last few months of 2013, the cooperative entered into agreements to purchase 376 megawatts of additional renewable capacity from three different wind projects in North Dakota and South Dakota to meet its member energy obligations and those obligations continue to grow.

It's due in large part to the booming Williston Basin oil development and associated needs of the communities in northwestern North Dakota and eastern Montana.

As part of the resource planning process, Basin Electric sent out a request for proposal in June 2013 to purchase power to meet its growing energy needs.

According to Becky Kern, manager of utility planning, Basin Electric received responses back in July for more than 10,600 megawatts. Kern says they reviewed all the proposals and short-listed the most economical project responses for more detailed analysis. That included a total of 674 megawatts of wind resource development opportunity.

"The wind proposals were very favorable offers," Kern says. "It's low-cost power and 25-year contracts."

Though wind is not considered a baseload resource, it does compliment natural gas peaking resources very well and the cooperative has peaking units, either beginning operation or under construction, in western North Dakota. They are the Pioneer Generation Station and the Lonesome Creek Station. (http://bit.ly/BEPCProjects)

Kern says the first two power purchase agreements for 278 megawatts of wind in North Dakota were signed on Nov. 6. The developer is Infinity Wind Power of Santa Barbara, Calif. The two projects are the Sunflower Wind Project, which will be a 106-megawatt project to be located near Hebron, N.D., and the Antelope Hills Wind Project, which will be a 172-megawatt project to be located near Golden Valley, N.D. Both are planned to be operational by the end of 2015.

"We signed another contract on Dec. 20 for an additional 98 megawatts of capacity," Kern says. The power purchase agreement is associated with the development of the Campbell County Wind Farm to be constructed in South Dakota. It is co-owned by Fagen Inc. of Granite Falls, Minn., and the principals of Dakota Plains Energy, Aberdeen, S.D. It's also planned to be operational by the end of 2015.

"The addition of these projects will bring the renewable portion of our portfolio to 1,133 megawatts," she says.

Initiating a solar resource strategy

As part of the short-listed responses, Kern says Basin Electric also has opportunity to purchase the output of large solar generation projects, up to about 50 megawatts.

"As we consider our long-term energy needs, we're not discounting solar," she says. In fact, the cooperative is considering how to best incorporate both small and large solar into its generation fleet.

"Several of Basin Electric's members have asked about incorporating solar as a resource option. Solar cities are popping up, solar companies are seeking to put in community solar projects," she says.

Though it's not widely known, Basin Electric had participated in a solar energy project years ago. It was part of a supplemental heating system demonstration project at the cooperative's headquarters building in the late 1970s. Though it was decommissioned in the early 1990s for economic and operational reasons, the project provided good initial insight into opportunities for the cooperative to engage in solar projects down the road.

With the rapidly declining costs of solar equipment and increased efficiency, now may be the time. According to the Solar Energy Industries Association website, the average price of a solar panel has declined by more than 60 percent since the beginning of 2011.

Additionally, according to a Nov. 18, 2013, ECT.coop article, Solar Where You Might Not Expect It, http://bit.ly/ECT-solar11-13, solar panels lose their efficiency for every degree above 80 degrees and snow can help reflect sunlight adding to the solar resource. The article states that taking into account the temperature and weather, Bismarck, N.D., has essentially the same resource as Kauai Electric in Hawaii.

Kern says, like wind, once the initial investment is made, there is no fuel cost. The U.S. tax code includes an investment tax credit for solar. It's a 30 percent tax credit for solar systems on residential and commercial properties and remains in effect through Dec. 31, 2016.

Kern says Basin Electric staff will continue to work with the membership as we develop our solar resource strategy. "We've got several different pieces to put together before we move forward," she says.

Stay tuned for more regarding Basin Electric's efforts to incorporate additional renewable resources into its diverse generation portfolio.

PrairieWinds: A commitment to renewable resources

The project followed the cooperative's board of directors authorizing its first renewable energy program in May 2000. The program allowed Basin Electric to purchase renewable energy from member projects when production exceeded member needs.

Then in January 2001, the Rural Utilities Service made a historic decision. The agency awarded its first-ever wind energy loan guarantee to Basin Electric for its initial wind project, what would turn out to be the two 1.3-megawatt turbines at Chamberlain, S.D. Customer support provided the impetus for this historic wind energy project. More than 4,000 customers signed up to buy wind power in 100-kilowatt/hour blocks for $3 extra per month.

Recovered energy generation

Eight recovered energy generation units use "waste heat" from the Northern Border Pipeline to provide 44 megawatts of baseload generation to Basin Electric member-consumers. Powered by hot exhaust, these units each generate 5.5 megawatts with no fuel and no emissions.

Our Community Is the World

By Zuraidah Hoffman

Do you remember what it was like when the lights were turned on for the first time? Not many of us do. For most of us, the only time we don't take electricity for granted is when the lights go out and we're left in the dark. We worry about our food spoiling and how to charge up our electronic devices to stay connected.

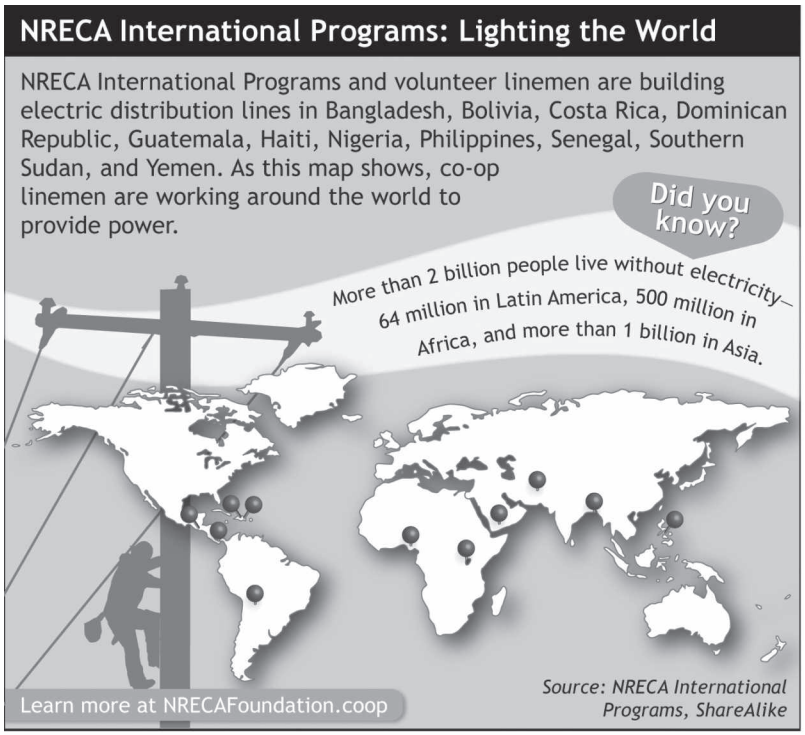
Millions of people around the world still live without access to reliable and affordable electricity, very much like our parents or grandparents did in rural America 75 years ago. And because the rural electric co-op model was so successful in lifting millions of Americans out of poverty, it is our mission to share that wealth of knowledge with countries and communities that need help. NRECA (National Rural Electric Cooperative Association) International, with the help of our electric co-ops, provides people in developing countries with access to reliable electricity, resulting in increased agricultural productivity, new jobs and a better quality of life.

More than 1,000 electric co-op volunteers across the U.S., with more than 5,000 directors, managers, office staff, engineers and linemen in other countries, have been trained in establishing and maintaining electric cooperatives. NRECA International has benefited more than 100 million people in 42 countries around the world.

Lighting up the world

In 2013, NRECA International recruited several volunteer linemen from Arkansas and Alabama to leave their homes for a few weeks to travel to Guatemala. Several groups were sent over a span of 18 months and while they were there, big things happened in eight small Guatemalan villages. After years of waiting, light bulbs illuminated homes and schools for more than a thousand villagers. The promise of a better life came into sight. For the first time, their world became brighter and bigger.

Earlier this year, in the southern part of sun-drenched Haiti, NRECA International staffers counted ballots for a new electric co-op's first general



assembly where members chose their first board of directors. A major part of the mission is not only establishing power supply in other parts of the world, but sustaining it as well by implementing the cooperative business model.

In the northern part of Haiti, Daniel Sanders, a former Mid-South Synergy co-op lineman from Navasota, Texas, fulfilled one of his biggest dreams. Sanders learned a few years ago how putting a single street light in the middle of nowhere can give people hope and he now works for NRECA International helping build distribution grids in Haiti.

And in South Sudan, Randy Erickson, chief mechanic for Kodiak Electric Association in Kodiak, Alaska, found himself sitting under the hot sun with a crippled Sudanese boy, humming church hymns during a Sunday service. He saw firsthand how helping these communities get access to electricity makes a big difference in the lives of people like that little boy.

Sharing our knowledge

Making this happen is routine work for the NRECA International staff. Their mission began 50 years ago when President John F. Kennedy witnessed the signing of a cooperative agreement between NRECA and the US Agency for International Development.

The original purpose was – and continues to be – to share with developing countries around the world the lessons rural electric co-ops have learned in electrifying rural America. Since then, together with many electric co-ops, NRECA International has shared the successes and expertise of the cooperative business model with developing countries.

Much of it started in the Philippines, more than 40 years ago. NRECA International helped the Philippines' National Electrification Administration establish rural electric cooperatives (RECs) and since then, 119 RECs have been established, providing electricity to more than 80 percent of the rural population in the country.

NRECA's relationship with the Philippines remains strong. This was evident when the strongest typhoon to ever hit our planet landed on the shores of this archipelago in November 2013. Hours after the disaster, NRECA International launched a fund-raising campaign to restore power in the affected areas. In three months, funds raised by U.S. electric co-ops and individual donors totaling $100,000 were presented to 11 electric cooperatives devastated by Typhoon Haiyan.

In 1977, another relationship in Asia began. NRECA International helped Bangladesh's Rural Electrification Board (REB) build what many now regard as the developing world's most successful rural electrification program. Today, 70 electric cooperatives provide electricity to approximately 48,700 rural villages, helping more than 45 million people in rural areas improve their quality of life.

Brightening lives

These early achievements created an outstanding team. In Haiti, NRECA International's volunteers were the first in the power sector to respond to the devastating 2010 earthquake. They supported relief efforts, connected hospitals and health clinics and helped begin the longer process to reconstruct the Haitian grid and outlying power systems. The work in Haiti continues today in different regions of the country, bringing reliable and affordable electricity to various communities.

NRECA International has created strong and permanent relationships between local utilities in Guatemala and our member co-ops. It started with a grant from the U.S. government to establish the Electricity for Progress Trust Fund. Since its creation in 2000, the trust fund has distributed 100 loans totaling more than $5 million to finance investments in grid-based and off-grid projects throughout rural areas of Guatemala. Over the years, many volunteers from electric co-ops have traveled to Guatemala – often leaving their country for the first time – to light up homes and lives.

Our community is the world

It is the co-op way to help communities and help each other build stronger lives. Our reach and commitment to community extends beyond our country's borders to help reduce poverty and improve the quality of lives. U.S. electric co-ops play a significant role in the success of this program because our community is the world and electric co-ops care about other people sharing the benefits of reliable and affordable electricity. To learn more about the work that NRECA International and electric co-ops do, visit http://www.nreca.coop/what-we-do/international-programs.

Zuraidah Hoffman is the communications manager for NRECA International and writes on international 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.

Net Metering: Is Fair Pricing Fair?

By Brenda Kleinjan

From time to time, the concept of net metering, an incentive system where owners of small renewable energy systems receive retail payments for the excess energy they generate, comes to the forefront of legislative discussions.

When the concept of net metering came in front of a committee at the 2014 South Dakota Legislature, Gary Hanson, chairman of the South Dakota Public Utilities Commission was called to testify.

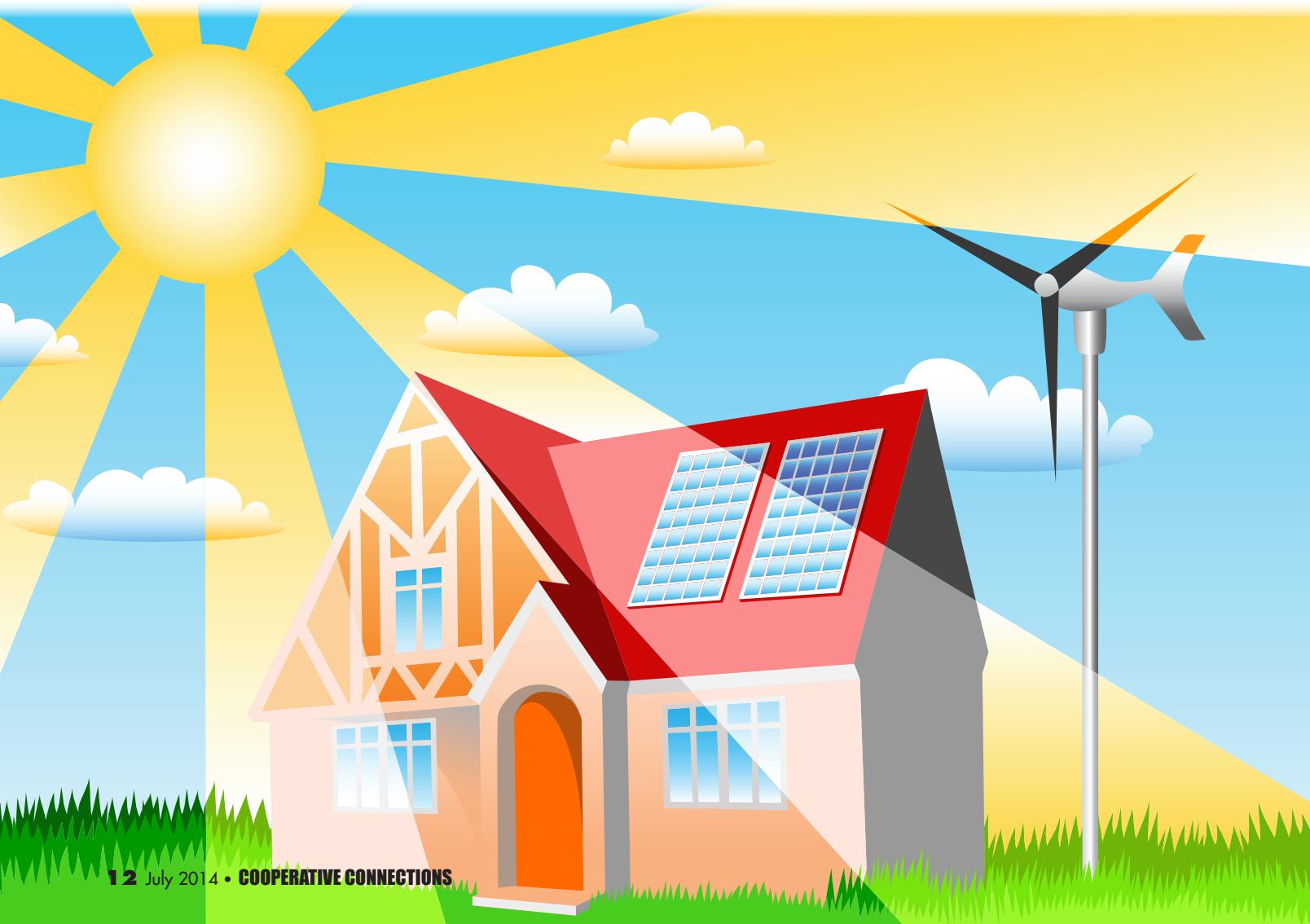
In his testimony, he outlined issues, challenges and inequities that the system can create.

"Net metering is actually not fair because it increases the cost of electricity to all the utility customers who do not have a generation facility," said Hanson, the most tenured member of the South Dakota Public Utilities Commission, told the House Agriculture Committee, which was considering legislation on net metering,

"Net metering forces consumers to pay towards the cost of generation facilities that someone else decides to build and they have no say in what that person builds," Hanson explained.

"This is not about the utilities trying to protect their revenue. The utilities will not have to pay this expense, they simply pass their cost on to the consumer and the consumer has to pay these new expenses. The utilities here today are trying to protect their consumers from unfair and unnecessary costs," Hanson explained.

Hanson pointed out that the consumers without



distributed generation suffer the increase in rates.

"Understand this: The poorest of the consumers suffer the most. Nationally, net metering is described as the reverse of Robin Hood who robbed from the king and gave to the poor. Those persons who can afford to build solar and wind turbines – and they are still expensive even though solar has decreased by approximately 70 percent over the past three years – will do so and will sell their excess generation at a higher price than the utility otherwise would pay for generation," Hanson said.

"However, not everyone can afford to build renewable generation. Those persons who can not afford to build generation facilities are forced to pay the higher cost of electricity that is forced upon them by more affluent persons who can afford to build generation facilities," Hanson said.

Nationally, net metering is described as the reverse of Robin Hood who robbed from the king and gave to the poor.

Advocates for net metering urge that if better state incentives were offered, in addition to having the utilities pay higher prices for the energy through net metering, more people could afford to build renewable generation.

"In national forums, there is no question that there is a cost shift created by net metering. In fact, there is a national organization of consumer advocates, utility commissioners and utilities that have had several meetings on how to deal with cost shift that is created by net metering laws," Hanson said.

A federal system already calls for utilities to buy distributed generation at avoided costs. As opposed to paying a retail cost, the utility pays for electricity the price it would spend on wholesale energy.

"Net metering forces a business to pay more for the product they sell," said Hanson. "The customer generator uses the utilities facilities at a considerable discount. Who's left to pay the ancillary services and infrastructure? The rates we approve include all the costs not just generation."

(In South Dakota, the PUC establishes rates paid by people receiving power from investor-owned utilities. Electric cooperatives, because they are governed by directors elected by the members of the cooperative, set their own rates.)

Hanson noted that generation costs comprise 20 to 40 percent of the cost of electricity.

"Avoided costs will increase as coal plants and new and more strident Environmental Protection Agency regulations are met. Also, that photovoltaic costs decreased approximately 70 percent over the past three years," Hanson said, in explaining that costs for installing some types of small renewable generation may become more appealing.

"Net metering forces the customer who can not build a generation facility to pay twice for the services the utility provides and allows those who can afford to build distributed generation to escape paying their fair share, even though these customers are producing intermittent generation. Net metering means the utility will pay more for generation. It is counter intuitive to think otherwise. Net metering means more money goes to (the) customer generator, those dollars have to come from the utility and the utility then charges all the other customers to pay those costs," Hanson said.

"It is intellectually insincere to say that net metering decreases prices," Hanson concluded. "If the government forces a business to purchase more expensive generation, it must raise rates. If the government forces a business to purchase generation that it cannot sell, it must raise rates. When a businesses costs increase, it does not reduce its rate, it increases its rates. And that means that consumers will pay more for electricity."

Hanson's entire testimony, and that of others, can be accessed at http://sdpb.sd.gov/SDPBPodcast/2014/hag20.mp3

NRECA on Net Metering

• Net metering policies require utilities to pay consumers the retail price for wholesale power. The retail rate utilities charge includes not only the marginal cost of power, but also recovers costs incurred by utilities for transmission, distribution, generating capacity and other utility services not provided by the customer-generator.

• The policies require utilities to pay high costs for what is often low-value power. Power from wind and photovoltaic systems is intermittent, cannot be scheduled or dispatched reliably to meet system requirements. Even those forms of customer generation that could technically be dispatched at times when utilities need the power do not need to enter into operating agreements with utilities in order to obtain net metering under state net metering mandates.

• Net meters allow customers to under-pay the fixed costs they impose on the system. A utility has to install sufficient facilities to meet the peak requirement of the consumer and recover the costs of those facilities through a kWh charge. When the net meter rolls backwards, it understates the total energy used by the consumer, and thus understates the consumer's impact on the fixed costs of the system. It also understates the consumer's total share of other fixed charges borne by all consumers such as taxes, stranded costs, transition costs, and public benefits charges.

Energy-Saving Heating and Cooling Systems

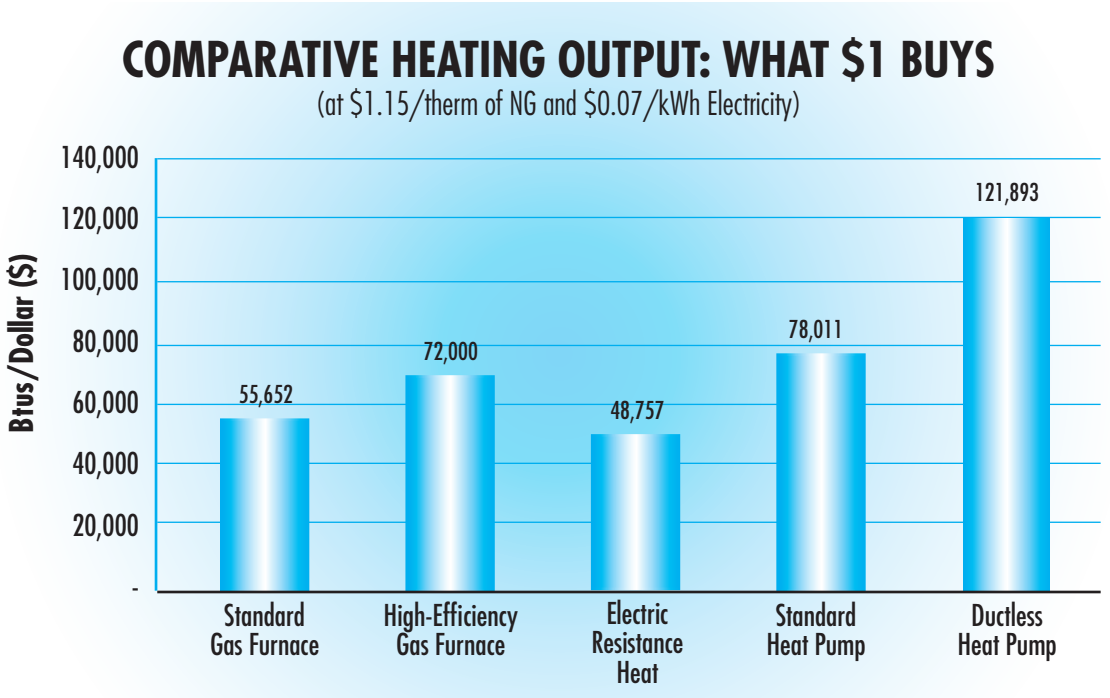
Climate, Costs and Technology Matter

By Thomas Kirk

Did you know that more than half of what you're spending on energy bills goes to heating and cooling your home? It all adds up when you think about the amount of energy and money it takes to heat a home in a cold climate and to cool one in a region where the temperatures are hot. However, consumers can turn this necessary expense into savings by selecting the appropriate heating, ventilation and air conditioning (HVAC) system for their needs. Modern systems featuring ductless, air-source or ground-source technologies are just as effective as more traditional systems, but are much more energy efficient.

Consider Going Ductless

If you are conditioning smaller areas in retrofits, home additions or in new construction, a ductless heat pump (DHP) may be right for you. And it's energy efficient. The DHP uses an estimated 50 to 60 percent less energy than electric resistance heating systems and may exceed the efficiency of ducted heat pump systems by more than 25 percent. They're comprised of an outside compressor, indoor air handling units (mounted on a wall or ceiling), refrigerant lines and a controller (either an in-home display or wireless remote). A 1-1/4 ton DHP system – an average size for heating and cooling a single-zone home – could cost about $4,000 to install. Keep in mind that pricing will vary based on brand and installation needs. But despite the system's benefits, some consumers may not like having their heating system and equipment located on their walls and visible. When DHPs are installed, they are placed at the top of walls, near the ceiling.



Is Air-Source the Right Choice for You?

Ducted electric air-source heat pumps (ASHPs) provide year-round space-conditioning and can both heat and cool a home. They use a single piece of equipment – allowing for a lower capital cost in most cases – and provide heat cheaper than electric resistance heating. These systems work by transferring energy between the air outside and either the air or water inside a building. This principle of moving energy, not creating heat, is what allows ASHPs to be more efficient than electric resistance heating.

When choosing an ASHP, consider your local climate and heating needs. Most air-source heat pumps are best suited to relatively warm climates, such as the southeastern U.S. When temperatures are low in such regions, a heat pump's efficiency falls dramatically. Choosing the right size system is also important. If a heat pump is too small, it can't provide sufficient cooling and an oversized one can be costly and require ductwork and other equipment to operate, which are added expenses. Newer systems are proving effective in northern regions, especially when combined with a backup fuel source such as natural gas.

Know Before You Buy

Before buying a new HVAC system, you can take some easy and inexpensive energy-saving measures in your home. Any of these will maximize efficiency:

- Add caulk and weather stripping around doors and windows.
- Add insulation to attics and exposed walls.
- Move furniture or obstacles away from vents.
- Close blinds or curtains during the day to keep heat out, or open them up to allow more heat in.

Ground-Source

Ground-source heat pumps (GSHP), also called geothermal heat pumps or geoexchange systems, are electrically powered devices that use consistent year-round temperatures found underground to regulate indoor air temperature. GSHP systems are comprised of one or more underground loops that act as heat exchangers. They are connected to a heat pump unit that is then connected to a home's heating and air conditioning system.

In the summer, the loops transfer heat from the home into the ground, or in some cases, water.

In the winter, the process is reversed. Because GSHPs take advantage of moderate temperature found below ground for heating and cooling, in most climates they are much more efficient than air-source heat pumps and other standard HVAC equipment.

While savings vary depending on climate, the U.S. Department of Energy estimates that most homeowners will see a return on their investment in a GSHP system in two to 10 years through lower energy bills. A desuperheater or hot water generator can be added to the GSHP system, eliminating the need to heat water with gas or more electricity. If the investment is financed on a mortgage, cost savings begin immediately.

While savings vary depending on climate, the U.S. Department of Energy estimates that most homeowners will see a return on their investment in a GSHP system in two to 10 years through lower energy bills.

As you consider these many heating and cooling options for your home, think carefully about whether a high-efficiency system will save you money in the long run and if it meets your heating and cooling needs. Remember that HVAC costs vary significantly by manufacturer, region, dealer and the time of year the unit is purchased. So, as you evaluate these systems and comparison shop, be sure to get local or regional price quotes. Some of the best savings and deals can come from your local electric cooperative and from government programs offering rebates, tax incentives or interest-free loans.

Thomas Kirk is a technical research analyst specializing in energy efficiency and renewable energy for the Cooperative Research Network (CRN), a service of the Arlington, Va.-based National Rural Electric Cooperative Association

Regional Dateline

June 23-25
St. Francis Indian Day
Pow Wow, Saint Francis, SD
605-891-9992

June 26-28
National Red Power Round Up
SD State Fairgrounds
Huron, SD, 605-353-7340
redpowerroundup2014.com

June 26-28
Crystal Springs Ranch Rodeo
Clear Lake, SD, 605-874-2996
crystalspringsrodeo.com

June 26-29
Camaro Rally, Sturgis, SD
406-891-1372

June 27-29
Montongator Joe's Country
Music Festival, Madison, SD
866-245-2702

June 27-29
Black Hills Bluegrass Festival
Sturgis, SD, 605-348-1198
www.blackhillsbluegrass.com

July 2-4
Sitting Bull Stampede Rodeo
Mobridge, SD, 605-845-2387

July 3-6
Wild West Days
Faulkton, SD, 605-598-6515
faulktoncity@venturecomm.net

July 3-6
Black Hills Round Up
Belle Fourche, SD
605-892-2676
www.balckhillsroundup.com

PHOTO COURTESY OF S.D. DEPARTMENT OF TOURISM

Events of Special Note

July 11-13
Antelope Pow Wow
Mission, SD, 605-319-8694

July 19-21
Corn Creek Celebration
Pow Wow, Rosebud, SD
605-828-0952

To have your event listed on this page, send complete information, including date, event, place and contact to your local electric cooperative. Include your name, address and daytime telephone number. Information must be submitted at least eight weeks prior to your event. Please call ahead to confirm date, time and location of event.

July 4-6
Sisseton Wahpeton Oyate
147th Annual Wacipi
Agency Village, SD
605-698-8217

July 5-7
Rosebud Casino 4th of July
Pow Wow, Mission, SD

July10-13
Hot Harley Nights
Sioux Falls, SD, 605-334-2721
www.hotharleynights.com

July 10-13
Boss Cowman Days
Lemmon, SD, 605-374-5716

July 11-13, 18-20, 25-27
Laura Ingalls Wilder Pageant
DeSmet, SD, 800-776-3594
www.desmetpageant.org

July 12
Heart of the Hills Parade &
Logging Show, Hill City, SD
605-574-2368

July 12-13
Summer Arts Festival
Brookings, SD, 605-692-2787

July 12-13
Railroad Days, Prairie Village
Madison, SD, 800-693-3655

July 17-19
JazzFest, Sioux Falls, SD
www.jazzfestsiouxfalls.com

July 17-20
Corn Palace Stampede Rodeo
Mitchell, SD, 605-770-4919

July 18-20
Horse and Buggy Days
Sisseton, SD, 605-698-3980

July 18-20
Festival in the Park
Spearfish, SD, 605-642-7973

July 18-20
Hills Alive Festival
Rapid City, SD, 605-342-6822
www.hillsalive.com

July 19
Corn Palace Stampede
Rodeo Parade, Mitchell, SD
605-996-8305

July 22-26
Days of '76 Rodeo
Deadwood, SD, 800-344-8826

July 25-26
Storybook Land Festival
Aberdeen, SD, 605-226-1557

July 26-27
South Dakota Peach Festival
Sioux Falls, SD, 605-366-7022
SouthDakotaPeachFestival.com

July 26-27
Western Dakota Gem and
Mineral Society Show
Rapid City, SD, 605-348-8948

July 26-28
Milks Camp Community
Pow Wow, Herrick, SD
605-469-5708