

## Building Toward a Green Future

- 2 geothermal heat pumps ✓
- 1 solar water heater ✓
- 1 radiant floor heating system ✓

Occupying a corner in Wayne Underwood's 5,000-square-foot home in Erwin, these energy-efficiency investments are helping the family of four go green.

"We were building a house and I wanted to go as green as possible," he said. "Everything is going in that direction."

That direction involves more energy efficiency measures in homes as well as the use of renewable energy.

The Underwoods installed a renewable energy application in the form of a 120-gallon solar water heater.

"It has three collector panels and we have an electric back up for the days it isn't sunny," he said. "Home Energy Inc. of Wendell installed it and it also backs up the radiant floor heating."

How does radiant floor heating work?

When building a home, a concrete slab is poured and tubing is run through it. Meanwhile,



Wayne Underwood with his geothermal units and water heater.

two-inch foam insulation is placed between the concrete and the ground creating a thermal barrier.

Hot water runs through this tubing under the floor, delivering heat directly from the warm surface (the floor), to people and objects in the room.

"At 82° it's a very comfortable temperature," said Underwood. "Your feet stay warm."

Another energy efficiency measure is the use of geothermal heat pumps, which use the constant temperature of the earth as a natural heat source.

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## Ideas Add to the Classroom

Teachers, are you looking for a way to purchase novels for your class? Could you use manipulatives to help students understand math a little better? It is time to apply for a Bright Ideas grant!

Teachers from certified public K-12 schools can visit [www.ncbrightideas.com](http://www.ncbrightideas.com) to complete an application.

Those applying before August 17 will be entered to win a \$500 Visa gift card. The final application deadline is September 18.

For more information please contact Catherine O'Dell or Julie Wahl at 910-892-8071.

## Play Ball with the SwampDogs

Hey Kids! There is still time to sign up to win a scholarship for one of two Fayetteville SwampDog Day Camps left, which will be held July 15 and August 3 at JP Riddle Stadium in Fayetteville.



If you are ages 5-12 and are interested in applying for a scholarship, please mail or e-mail (sremc@sremc.com) the following information to our office: student's name, address, age and daytime phone number. Please place the words "camp scholarship" on the envelope or subject line. Four names will be drawn randomly for each camp.

The deadline for the July 15 camp is July 8 and for the August 3 camp will be July 27. Parents or guardians are responsible for transportation to and from JP Riddle stadium on the camp day.

## Traveler's Tale

"I recently returned from a trip to the Islands of Bermuda. While riding the local bus I overheard a couple from the British Isles. The wife was telling her husband all about the sights, which he seemed uninterested in viewing. She said, "Oh, lookie, there's a house that's yellor like a bananer" and "there's one o' them Seven Days Adventurist churches."

I'm not sure how the Seventh Day Adventist feel, but I thought it was highly amusing!"

**Ruth Miner**  
Fayetteville, N.C.



## BUILDING Continued From Page A

A few feet below the earth's surface the ground temperature remains relatively constant, ranging from 45° to 75° depending on the area. Through a series of pipes, or loops, below ground, heat is extracted from the earth and moved into the home through fluid in the loop. In the summer, the process reverses itself and heat is removed from the home and absorbed by the earth.

"A regular air-to-air heat pump won't always be able to keep the house as warm as it needs without emergency heating coming on during extremely cold outside temperatures," he said. "I chose the geothermal heat pumps because of the unit being indoors, out of the elements, and also the 20-year warranty."

However, what Underwood is most enjoying is the spray foam polyurethane insulation he had put in the walls as well as the attic of his new home.

As it is sprayed, it expands, filling even the smallest cavities and forming a closed continuous seal and a better thermal

barrier. This gives it up to twice the R-value per inch than traditional fiberglass insulation.

Although spray foam is more expensive than standard insulation, it eliminates some of the costs associated with weatherizing your attic, such as caulking, applying housewrap and vapor barriers. Spray foam reduces leakage, which amounts to lower energy costs.

Underwood jokingly attributes his energy costs to his wife, Lisa, leaving outdoor lights on a lot of the time.

"I like my systems," he said. "I have no complaints."

The systems have added almost \$50,000 to the price of his home and he has received about \$5,000 in tax credits. That includes South River EMC's solar water heater rebate, which gives members \$1,000 for installing a solar water heater with an electric back up.

"I think people who can afford it, should make changes," he said. "In the next decade or so that's the direction we need to be looking."



*The spray foam insulation in Underwood's home expands to 120 times its volume.*



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ElecTel provides the benefits of membership in a full-service, non-profit financial organization. We've been serving the members of South River EMC for many years, and now, it's time to serve you, the co-op member.

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\* Annual Percentage Rate

# Super Safe Summer Safety

Lakes and pools are perfect places to cool off during the summer's heat. With a few safety warnings in mind, your trip to the lake or pool will be fun and relaxing, but be aware that these cool retreats can be dangerous and even life threatening.

- Before boating, always tell someone where you are going, who you will be with and when you are expecting to return.

- Make sure that each person in the boat wears a U.S. Coast Guard approved life jacket. Wearing a life jacket in a boat is just as important as wearing a seatbelt in a car.

- Keep a fully charged fire extinguisher on the boat at all times, and teach all passengers how to use it.

- Bring all of the gear that you may need, including a flashlight, batteries, a map, flares, sunscreen and a first aid kit. Keep anything that needs to be protected in a watertight pouch or a container that will float.

- Always test your boat lights before leaving the dock. Even if you plan to return before dark, an equipment malfunction or weather change could



cause a change in your plans. Sudden wind shifts, lightning flashes and choppy water can all be signs of a brewing storm.

- Bring a portable radio on the boat with you to check weather reports.

Swimming is another good way to stay cool in the summer, but safety should always be the first priority.

- Only swim in supervised areas and read and obey all rules and posted signs.

- Never swim alone. If you are not a strong swimmer, use a U.S. Coast Guard approved floatation device to assist you.

- Always enter the water feet first unless the area is clearly marked for diving.

- Get out of the water if there is threat of a storm because lightning can travel through water and strike a human.

Beat the heat in the water this summer, but don't put yourself at risk. Exercise caution to make the most of your time at the lake or pool.

## South River EMC's Statement of Non-Discrimination

South River Electric Membership Corporation is the recipient of federal financial assistance from the Rural Utilities Service (RUS), an agency of the U. S. Department of Agriculture, and is subject to the provisions of Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973, as amended; the Age Discrimination Act of 1975, as amended; and the rules of the U. S. Department of Agriculture, which provides that no person in the United States on the basis of race, color, national origin, age or handicap shall be excluded from participation in, admission or access to, denied the benefits of, or otherwise be subjected to discrimination under any of this organization's programs or activities.

The person responsible for coordinating this organization's nondiscrimination compliance efforts is Executive Vice President and CEO Buddy G. Creed. Any individual, or specific class of individuals, who

feels that this organization has subjected them to discrimination may file a written complaint with this organization;

or the Secretary, U. S. Department of Agriculture, Washington, D.C. 20250; or the Administrator, Rural Utilities Service, Washington, D.C. 20250. Complaints must be filed within 180 days after the alleged discriminatory action, or by such later date to which the Secretary of Agriculture or the Administrator of RUS extends the time for filing. Identity of complainants will be kept confidential except to the extent necessary to carry out the purposes of the rules and regulations of the U.S. Department of Agriculture.



# Linemen Practice Rescue Techniques

A South River EMC lineman looks up and yells, "Cool, are you alright?"

Receiving no reply, he rushes to the truck to radio for help. "Mayday! Mayday! Man hurt on pole number 54321."

He waits for a response before moving into action.

The lineworkers are rehearsing two scenarios. The first, pole top rescue, finds a coworker unconscious atop a utility pole. The second, called bucket rescue, finds the coworker incapacitated while in the bucket of a utility truck.

"The Occupational Health and Safety Administration (OSHA) requires annual training in these practices," said Talmadge Evers, manager of technical training for the North Carolina electric cooperatives.



"Although these kind of incidents do not happen often."

It is tough to fit in time for this training but, practicing better prepares lineworkers in case events like this do occur.

*Lineman Tom Carter operates the bucket truck.*

For pole top rescue, South River EMC linemen must radio for help and don their climbing gear including gloves, a belt and harness and hooks for their boots, to scale a 30-foot utility pole.



Once at the top they must rig a pulley, lower "Cool," a 130-pound mannequin, climb back down and begin to administer CPR.

*Underground Foreman Lacy Auman begins to lower Cool.*

He must be lowered within five minutes. The reason being that five minutes is the longest a person could survive without getting oxygen to the brain.

For bucket rescue, Cool is placed in the bucket to simulate a man down in the truck.

A lineworker climbs onto the back of the truck and upon reaching the controls, lowers the bucket.

The bucket tilts to allow the worker to pull Cool out and set him on the ground to deliver CPR.

It took most South River EMC lineworkers under one minute to complete the drill.

## What is a Carbon Footprint?

A carbon footprint is the amount of greenhouse gases (GHG) a person produces while consuming energy.

Consuming energy consists of acts like the use of electricity in your home, driving, and waste disposal.

As you can imagine, we put out a large amount of GHG ourselves. One of the most common gases is carbon dioxide. The average family of four produces 83,000 pounds of carbon a year.

Of course, there are families under and over that mark. You can find out how your family is doing by visiting [www.epa.gov/climatechange/emissions/ind\\_calculator.html](http://www.epa.gov/climatechange/emissions/ind_calculator.html). There you can fill out a calcu-

lator with your energy choices and see your carbon output.

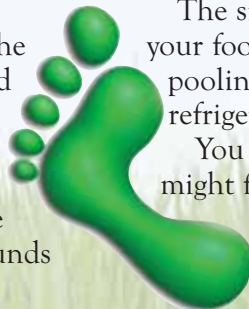
The site also gives you suggestions for reversing your footprint. Simple things like recycling or car pooling and larger items like replacing your old refrigerator with an ENERGY STAR model.

You may already do all that you can, but you might find something to share with someone else.

Remember, it is not just your footprint alone that will affect the earth, it is all carbon footprints together.

However, by making a change you can encourage others to do the same.

It's everyone's future.



# Planning to Build or Buy a New Home?

In a time when energy costs are rising and the federal government is making moves to regulate greenhouse gas emissions, this is the time to purchase a home that saves energy and reduces your carbon footprint.

How does an energy efficient home do that? Energy used in homes often comes from the burning of fossil fuels at power plants, which contributes to global climate change. So, the less energy used, the less air pollution generated. And the easy way to make sure a new home is energy efficient is to look for the blue ENERGY STAR mark. These homes are at least 15% more energy efficient than standard built homes and generally include additional energy-saving features that typically make them 20-30% more efficient.

South River EMC members who build or purchase a new ENERGY STAR certified home, qualify for a rebate of \$350-\$750. Additionally, they may qualify for state and federal tax credits.

Here are a few of the benefits of an ENERGY STAR home:

- An efficient home envelope, with effective levels of wall, floor and attic insulation properly installed, comprehensive air barrier details, and high-performance windows;
- Efficient air distribution, where ducts are installed with minimum air leakage and are effectively insulated;
- Efficient equipment for heating, cooling, and water heating;
- Efficient lighting, including fixtures that earn the ENERGY STAR; and
- Efficient appliances, including ENERGY STAR qualified dishwashers, refrigerators, and clothes washers.

These energy efficiency improvements save homeowners about \$200 to \$400 per year on utility bills.



More importantly, monthly energy savings can easily exceed any additional mortgage cost for the energy efficiency improvements, resulting in a positive cash flow from the first day of home ownership. As a result, the cost-effectiveness of ENERGY STAR improvements can help offset additional costs associated with other green home features. For a complete listing of requirements of an ENERGY STAR qualified home, visit [www.energystar.gov](http://www.energystar.gov).



## Benefits to Homeowners

- **Added Confidence**  
Look for the government-backed ENERGY STAR label to easily identify homes that are truly energy efficient.
- **Lower Ownership Cost**  
Compared with standard homes, ENERGY STAR qualified homes enjoy \$200 to \$400 in energy savings annually.
- **Better Performance**  
Properly installed energy-efficient home improvements deliver better protection against cold, heat, drafts, moisture, pollution, and noise.

## Rebate Information

### Contractors:

If you build a new ENERGY STAR certified spec home that receives electricity from South River EMC, you will receive a \$400 rebate once the home has been certified as ENERGY STAR qualified by a licensed independent HERS rater.

### Members:

If you move into a new home that has been ENERGY STAR certified, you will receive a \$350 rebate. For members who have an ENERGY STAR certified home custom built, you will receive a \$750 rebate, once the home has been certified as ENERGY STAR qualified by a licensed independent HERS rater.

For more information, visit our Web site at [www.sremc.com/EnergyStarHomeNew.aspx](http://www.sremc.com/EnergyStarHomeNew.aspx) or contact Catherine O'Dell at 910-230-2982.

## Insulate for Savings

Insulating your water heater pipes reduces heat loss and can raise water temperature 2–4° F over uninsulated pipes. This allows for a lower temperature setting and a limited wait for hot water when turning on a faucet or showerhead.

Unless your water heater's storage tank already has a high R-value of insulation (at least R-24), adding insulation to it can reduce standby heat losses by 25%–45%.

If you don't know your water heater tank's R-value, touch it. A tank that's warm to the touch needs additional insulation.

Insulating your water heater tank is fairly simple and inexpensive, and it will pay for itself in about a year.

You can purchase one from South River EMC for \$12, which includes the blanket, pipe insulation, a water-efficient showerhead, two faucet aerators and a kitchen sink aerator. For an additional \$10, a South River EMC employee will come and install the water heater efficiency kit for you. Installing the entire kit will save you around \$70–\$90 annually in water heating costs.

You can install an insulating jacket or blanket on your electric water heater tank yourself. Read and follow the directions carefully. Be sure to leave the thermostat access panel(s) uncovered. Do not set the thermostat above 130° F on water heaters with an insulating jacket or blanket—the wiring may overheat.



## Green Jobs and Renewable Energy

“The problem was the cost,” said Joseph Sheffield, general manager of Alternative Energy Concepts (AEC) Inc. “This company was founded on the idea of making solar power as affordable as possible.”

AEC, a solar water heating and solar electric installer, is a division of the electrical contractor, Intellect Inc., based out of Fayetteville.

“We get our electrical expertise from Intellect,” he said. “We frequently get accolades from utilities due to the quality of the electrical work.”

Besides a passion for affordable renewables, Sheffield also has love for the city of Fayetteville.

“I am passionate about bringing jobs here, I grew up in Fayetteville and always knew it could offer more,” he said. “I want to be a leader in renewable energy job growth and help hardworking people find a career they can really believe in and enjoy doing.”

Those currently working with Sheffield tell him they really like the work and they are making a dif-

ference. It encourages them to do the very best at each job. One employee is so dedicated he drives from Raleigh every day.

Employees participate in continuing education at places like NC State's Solar Center, Solar Energy International and other outlets as well. This helps the company stay abreast of regulations and new installation techniques.



*AEC employees work to install a photovoltaic unit on a home.*

One employee is now a certified energy auditor and will be taking classes to be a home energy rater, or HERS rater, which can certify houses and businesses as ENERGY STAR qualified. Another is completing his photovoltaic, or PV, installation and design class.

“Solar seems to be growing at a steady rate, we have been very active installing solar water heaters around Fayetteville” said Sheffield. “We only have two teams out there to stay lean and keep costs down.”

However, Sheffield finds that a lot of people care about going green. They are willing to invest a significant amount of hard-earned money to save money and reduce their greenhouse gas output.

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## ALTERNATIVE Continued from Page G



AEC installed this 4-kilowatt system in Durham.

AEC put the first photovoltaic systems online in New Bern, Mt. Olive and Apex. Sheffield has tirelessly promoted renewable energy in North Carolina.

“We are obsessive about the workmanship of the installations,” he said. “Many times when I show up for a bid the person is really and truly excited about being able to do something that will have an impact.”

Sheffield’s two team business only has seven employees in order to keep clients excitement up

about doing something that will have an impact and is affordable.

“We want to build upon the excitement of what the client is doing,” Sheffield said. “I try to continue that excitement through the project.”

Projects range in size for AEC, the largest being 8 kilowatts, or kw, to the smallest at 1.4 kw. However, the most common range from 2 to 3 kw are solar water heater installations.

South River EMC offers a \$1,000 rebate to members that install a solar water heater with an electric powered back up.

Another fact that may catch your eye is the headline on AEC’s Web site, “Did you know that enough sunlight falls on the Earth’s surface every hour to meet world energy demand for an entire year?”

For more information about AEC visit [www.alternativeenergync.com](http://www.alternativeenergync.com), and for information on rebate offers and tax incentives visit [www.dsireusa.org](http://www.dsireusa.org).

## The Economics of Solar Water Heating



It’s true, solar water heating systems usually cost more to purchase and install than conventional water heating systems. However, a solar water heater can usually save you money in the long run. How much money depends on:

- The amount of hot water you use.
- Your system’s performance.
- Your geographic location and solar resource.
- Financing and incentives.
- The cost of conventional fuels.

If you’re building a new home or refinancing, the economics are even more attractive. Including the price of a solar water heater in a new 30-year mortgage usually amounts to between \$13 and \$20 per month. The federal income tax deduction for mortgage interest attributable to the solar system reduces that by about \$3–\$5 per month. So, if your fuel savings are more than \$15 per month, the solar investment is profitable immediately. On a monthly basis, you’re saving more than you’re paying.

If you install a solar water heater with an electric back up you’ll receive a \$1,000 rebate from South River EMC.

**Information from the U.S. Department of Energy.**



Member Frank Stump installed an 80-gallon solar water heater with an electric back up.

