

Twin Valley Electric Cooperative, Inc.

NEWS

From the Manager... The Future of Power Generation

The ability of the U.S. to meet the electricity needs of American consumers reliably and at an affordable cost is seriously at risk.

Even assuming large investments in efficiency, electricity demand will continue to grow to meet the needs of 45 million new Americans by 2020 with 30 million more expected, totaling 75 million people by 2030.

Without the near-term ability to build coal-based plants and with the unavailability of new nuclear plants, much of the new capacity – even with substantial new renewable capacity investments – will have to be fueled by natural gas that will come increasingly from off-shore sources.

And, the U.S. now faces the globalization of demand for electricity infrastructure components, causing scarcity and high prices exactly at the time when the U.S. needs to invest in both new capacity and

efficiency infrastructures. These forces are major challenges facing the electric industry today – challenges we face before the nation has put in place regulations or law to lower carbon emissions.

For decades, the U.S. has relied on abundant domestic fuels to

provide electric power. Currently, the elec-

tricity generation mix in the U.S.

is 49 percent coal, 19 percent nuclear, 22 percent natural gas, 6 percent hydro,

2 percent petroleum and 2.5 percent

non-hydro renew-

able. The elec-

tricity sector's "electricity independence" has helped

the economy and shielded consumers

from eco-

nommic shocks, like those being

experienced now in the oil-dependent

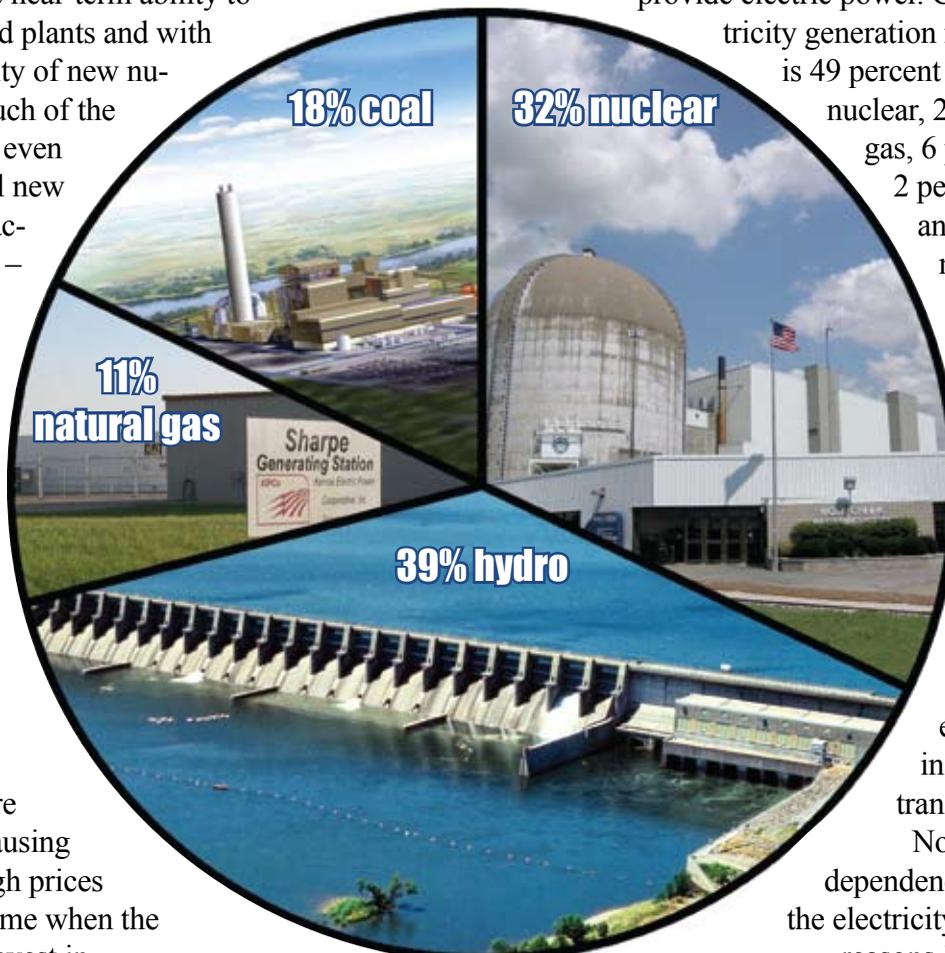
transportation sector.

Now our fuel in-

dependence is eroding in

the electricity sector. The key

reasons include a set of



More than 50 percent Twin Valley's power generation comes from non-greenhouse gas emitting sources.



Ron Holsteen

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From the Manager... Continued

factors pushing electricity generation in the U.S. to the use of natural gas. Nearly all experts say America no longer has enough domestic natural gas to support its current growth needs. Canada, our largest international exporter, is lowering its export projections because it needs the gas for its own growth. This lack of fuel independence will likely leave the U.S. dependent on imported Liquefied Natural Gas (LNG) to meet electricity demand over the next decade. Unfortunately, the largest natural gas reserves are located overseas, in some of the world's most politically unstable areas.

The U.S. will have to compete for gas in the volatile global market. Rising and volatile natural gas costs will hit electricity bills immediately. No group will feel this more acutely than low-income and moderate income families and households.

Twin Valley Electric Cooperative, Inc.

Ron Holsteen - Manager

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Carbon: The Basics

Carbon, the basic building block of life on Earth, has recently become a celebrity of sorts. While most students receive a formal introduction to carbon in science class, those of us who missed out on (or have forgotten) the lessons can find a quick summary in the following few sentences:

Car · bon (*noun*): A naturally abundant, non-metallic element that occurs in all organic compounds and can be found in all known forms of life. Diamonds and graphite are pure forms.

Concentrated carbon also makes up the fossil fuels we use to produce approximately 70 percent of our nation's electricity (primarily coal and natural gas). When those products are burned, carbon combines with oxygen and gets released into the atmosphere as carbon dioxide. Carbon is an element that occurs naturally in the environment and can even be beneficial.

For better or worse, carbon dioxide molecules can last for a century or more in the atmosphere, where they soak up heat. Prior to the Industrial Revolution, the atmosphere contained 280 parts per million. Atmospheric levels of carbon dioxide are currently at 390 parts per million and climbing, with some projections estimating 450 parts per million by 2040. As result, carbon dioxide is considered a "greenhouse gas"

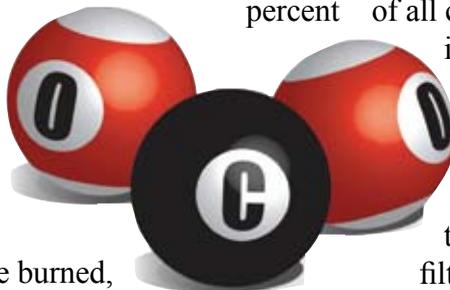
and is blamed for contributing to climate change.

In the U.S., power plants that burn fossil fuels produce about 2.4 billion tons of carbon dioxide every year, which is about 39 percent of the nation's man-made output (the largest single source). Since one pound of the gas would fill a beach ball a few feet across, imagine almost five trillion beach balls being made every year—enough to fill more than 600,000 football stadiums!

There are several ways to reduce the amount carbon dioxide in the air, some of which take place naturally. Forests, for example, act as a sponge for 15 percent of all carbon emissions in North America. Researchers are even working to develop "synthetic trees" that use absorbent filters to capture carbon dioxide from free-flowing air and prepare it for commercial use or permanent storage deep underground.

Another process is called "carbon capture and sequestration," through which carbon dioxide can be isolated, or captured, in an advanced coal power plant and stored underground. When the technology becomes available on a commercial scale, the result could be huge reductions in the amount of carbon dioxide that is released into the atmosphere.

Technology holds the key to tackling challenges connected to climate change. Twin Valley will play an active role in this effort.



Energy-Efficient Ventilation – Circulating Fans

Circulating fans include ceiling fans, table fans, floor fans, and fans mounted to poles or walls. These devices create a wind chill effect that will make you more comfortable in your home, even if it's cooled by natural ventilation or air conditioning. Ceiling fans are considered the most effective of these fans.

If you use air conditioning, a ceiling fan will allow you to raise the thermostat setting about four degrees Fahrenheit with no reduction in comfort. In temperate climates, or during moderately hot weather, ceiling fans may allow you to avoid using your air conditioner altogether. Install a fan in each room that needs to be cooled during hot weather. Ceiling fans are only appropriate in rooms with ceilings at least eight feet high. Fans work best when the blades are seven to nine feet above the floor and 10 to 12 inches below the ceiling. Fans should be installed so the blades are no closer than eight inches from the ceiling and 18 inches from the walls.

Larger ceiling fans can move more air than smaller fans. A 36

or 44 inch diameter fan will cool rooms up to 225 square feet, while fans that are 52 inches or more should be used in larger rooms. Multiple fans work best in rooms longer than 18 feet. Small- and medium-sized fans will provide efficient cooling in a four to six foot diameter area, while larger fans are effective up to 10 feet.

A larger blade will also provide comparable cooling at a lower velocity than a smaller blade. This may be important in areas where loose papers or other objects will be disturbed by a strong breeze. The fan should also be fitted to the aesthetics of the room - a large fan may appear overpowering in a small room.

A more expensive fan that operates quietly and smoothly will probably offer more trouble-free service than cheaper units. Check the noise ratings, and, if possible, listen to the fan in operation before you buy it. When buying window fans, look for the ENERGY STAR® label. Fans that earn the label move air 20 percent more efficiently, on average, than standard models.

Improve Your Air Conditioner's Efficiency

Air conditioners use a lot of electricity, consuming the most in a summertime heat wave. Proper maintenance and repair of your air conditioner will save you money and can extend its life for roughly 15 years. An annual tune-up of your air conditioner averages approximately \$50 to \$100, but can reduce your cooling costs by five percent or more.

Here are some maintenance tips that should be performed by a professional:

- Clean the blower so that it can move air more efficiently.
- Oil the motors, and check the belts for tightness and wear.
- Verify the airflow by measurement. Improper airflow can affect efficiency.
- Clean the indoor evaporator and outdoor condenser coil.
- Straighten any bent films on the condenser and evaporator coils.

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We Have the Power to Serve You Best

As you might know, Twin Valley Electric is not alone in its mission of bringing reliable supplies of electricity to rural residents. There are 29 electric distribution cooperatives like Twin Valley Electric in Kansas and more than 850 nationwide. Despite our obvious similarities, each business is different – first and foremost because the areas we serve are unique.

Each electric cooperative has its own individual history and serves a distinctive mix of residential, industrial, commercial and agricultural members. And each makes its own business decisions independently. That's what Cooperative Principle No. 4, Autonomy and Independence, is all about. It's one of seven principles upon which all cooperative forms of business are based.

Electric cooperatives are subject to less regulation by federal and state governments because of the healthy way in which our members regulate us. Our independence from distant, outside regulators is also based on our historical commitment to the communities we serve.

To be autonomous and independent is crucial for your electric cooperative to be able to best serve the needs of you, our members. That's because what might be a sound decision for one cooperative, say, with a relatively small number of members spread out in an extremely rural area, might not work for another that has a larger number of members, some living in a more urban setting. Local service and attention to your unique needs are why having local control is best for your co-op.

Although Twin Valley Electric sails its own ship, so to speak, we

are not sailing alone. Our cooperative belongs to a statewide association, Kansas Electric Cooperatives, Inc. (KEC), and our national group, the National Rural Electric Cooperative Assn. (NRECA).

These umbrella groups provide support and products such as this magazine and its Loss Control, Safety and Compliance program, which provides valuable safety courses to our employees and mutual aid in times of need. KEC and NRECA provide advice on what lawmakers in Topeka and Washington, D.C., are doing that could affect your electric cooperative and, ultimately, your electric rates.

However, none of these groups tells us what we must do. The decisions about how to bring you electricity at the best possible cost are left to our employees and to our Board of Trustees, which is elected by you, the members.

When Twin Valley Electric enters into agreements with electricity suppliers, those contracts don't give them the right to tell our cooperative whom to serve or what rates to charge. That's left up to the cooperative.

On occasion, we might need a large amount of capital to pay for expansion. We can borrow it from a number of sources, including the USDA's Rural Utilities Service or the Cooperative Finance Corporation, a bank that is itself a cooperative. Of course, while we enter into any such agreement with a great deal of deliberation, the deal would not give the lending entity any power over our operations.

Our independence and autonomy to make our own decisions allow us to serve you in the most efficient way possible. And that's the way it should be.

Protect Your Older Home from Electrical Hazards

Half of all homes in the U.S. were built before the advent of automatic coffeemakers or garage door openers, and one-third were built before hair dryers or electric can openers. Add to that computers, cell phones, and other electrical devices, and you have a great many residences with potential electric wiring problems.

Research shows that faulty or overloaded wiring accounts for an estimated 67,800 fires, 500 deaths, and more than 2,000 injuries each year, and a whopping \$868 million in property damage.

By educating yourself about common hazards in older homes and installing lifesaving electrical safety devices, these risks can be reduced greatly.

- AFCIs – an outlet that recognizes fire hazards and immediately shuts off power.
- GFCIs – an outlet that senses when water comes into contact and cuts out to prevent electrocution.

In addition to installing the technology above, here are some additional safety tips:

- Make sure functioning smoke alarms are installed on every floor and in every sleeping area.
- Limit use of extension cords, particularly cords used to power room air conditioners.