

Nebraska ENERGY

Q U A R T E R L Y

Nebraska Energy Office

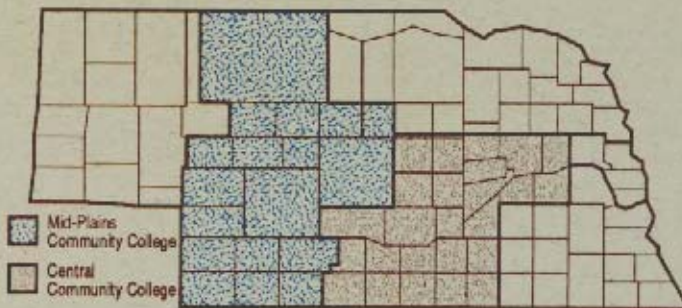
Fall 1991

Columbus and North Platte...

Circuit Riders Cross the State

For many Nebraskans the term "circuit rider" conjures up visions of a traveling preacher. Nowadays, however, the circuit riders traveling around Nebraska are saving energy rather than souls.

Geographic Areas Served by Circuit Riders



The Nebraska Energy Office is completing the first year of a two-year pilot program to provide energy management services through the Circuit Rider Program. The program, hosted by the Central Community College in Columbus and the Mid-Plains Community College in North Platte has a dual mission: to determine what is needed to develop a self-supporting energy management program and to assist

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Summer School...

Students Weatherize Homes Over Summer

During the sultry summer days of July, few homeowners are inclined to worry about the effects of a Nebraska winter wind on their heating bills. For six Auburn High School seniors, however, summer is the time to put a year of weatherization training to use and arm area homes against the chill of winter.

Learning Practical Skills

The students are participating in the final year of a three-year training program that teaches high school industrial arts students how to audit and weatherize energy inefficient homes. The program requires two semesters of classroom training before students are eligible for the summer retrofit activity. The curriculum includes energy auditing, energy management and conservation, residential construction and weatherization, safety, and quality control.

A Versi-Cad software program is used to produce scale models of home designs. Spreadsheet software is used to calculate retrofit costs and estimated energy savings. Students also receive training on



Two students caulk around window frames to eliminate air infiltration in one Auburn home.

the blower door, a device that measures air infiltration to calculate energy use and potential savings.

Nearly 20 Auburn homes have been weatherized by the students over the past three summers. Home improvements include adding sidewall and attic insulation, attic venting, caulking, weatherstripping, and window glazing. Instructor Larry Peterson, a veteran industrial arts teacher, selected the homes based on both the potential learning experience that different improvements would provide and the homeowner's financial need. Although homeowners purchased the weatherization materials, Exxon Oil Overcharge funds paid for training materials and student/instructor labor.

On the Road...

Even Tires Can Save Energy

Short of buying a new car, most people believe there is little they can do to improve their vehicle's fuel efficiency. How wrong they are! Even the mechanically-inept can improve their vehicle's gas mileage without venturing under the hood. One need only look as far as the tires to get the most mileage for your buck.

Blow 'Em Up

According to the Energy, greater rolling re-economy, and For every two pressure under the rec-per square inch — the rec-found right on the side of door jam of your vehicle, or manual — you will lose one your fuel economy. That trans-about 3.8 cents that could be saved gallon of gasoline if the tires are to the highest recommended pressure. cording to U.S. Department of Energy ies, one-quarter to one-half of the ve-hicles on the road have at least one tire underinflated by four or more pounds.

U.S. Department of underinflated tires cause sistance, decrease fuel cause greater wear. pounds of tire ommended pounds ommendation is the tire, on the in the owner's percent of lates into on each inflated Ac-stud-



A Free Fuel Saver

While quantities last, the Energy Office will supply a free tire pressure gauge with attached key chain to anyone who asks. Contact Jerry Loos at the Nebraska Energy Office for your free gauge. Auto efficiency experts advise that tire pressure gauges on air machines located at service stations are notoriously unreliable and should not be used. They also suggest that tires be checked before driving when the tires are cold.

Save Even More

Even the type of tires you have on your vehicle can effect fuel efficiency. Radial tires improve gas mileage by 3-5 percent during city travel and up to 10 percent on the highway. But, if you are thinking about buying new tires, a word of caution is in order — on average, a new tire will lose about two pounds per month with only a minimum amount of driving. Tires should also be balanced and rotated every 6,000-8,000 miles.



What Next...

Solar-Powered Electric Fence Keeps Cattle Moov'n!

A northern Nebraska family farm has demonstrated that solar-powered electric fencing can be used for planned grazing without increasing energy demand. Brownlee, Nebraska's 47 Ranch Co. purchased five photovoltaic collectors after determining that solar-powered fencing could be installed for 30 percent less than the cost of traditional barbed wire fencing and without the increased utility costs associated with conventional electric fencing.

Less is More

Over 80,000 feet of wire was used to divide nine pastures on 4,000 acres into 51 grazing paddocks. The nineteen miles of fencing lines were carefully planned and took into account water locations, existing fencing, range conditions, and grass mix. The new fencing allows the ranch to implement a schedule of planned grazing and concentrate larger number of cattle in smaller pastures for shorter lengths of time. This practice encourages more uniform grazing and results in significant benefit to the landscape by eliminating overgrazing, decreasing erosion, and encouraging plant growth. "We are basically in the business of selling grass, in the form of high level beef protein," says ranch owner Jerry Garner. "Solar power has been completely effective" for controlling cattle movement through the pastures and allowing the grass to rest and grow.



With fresh grass to graze on all summer, cattle growth increased substantially, sickness was significantly diminished, and the ranch was able to increase the number of cattle they could raise on the same amount of land. An additional 71 cow-calf pairs were added to the stock rates and increased ranch income by an estimated 12 percent in the first year of fencing operation.

One Year Cost Recovery

The three-strand electric fence averaged \$2,120 per mile, including the cost of the solar panels, chargers, and batteries. The fencing demonstration was funded in part with oil overcharge funds provided by the Energy Office. Without the added cost of electrical power and with the sale of the increased stock, however, 47 Ranch owners estimate the project would pay for itself in a little over one year.

CIRCUIT RIDERS Continued from page 1

institutions and communities to adopt good energy management techniques.

The energy management services are offered by circuit riders Doug Pauley in Columbus and Gary Exon in North Platte. They identify low and no cost energy efficiency measures, provide formal energy maintenance training, and establish energy accounting systems to track energy consumption and savings within the geographic areas they serve.

The circuit riders report that many facilities can cut their energy bill by 10 to 15 percent with little capital investment.

When circuit rider Doug Pauley conducted a school energy audit, he found that the boiler had lost 31,128 gallons of hot water. The new maintenance person had been told by the outgoing maintenance person that if the system used less than 150 gallons of water a day it was normal. Normal, in fact would be if the system did not use any water. The system has been fixed saving the school the cost of the water, water heating, chemicals to treat the water and deterioration on the boiler. The circuit riders have many stories of simple audits paying big returns to participating institutions.

The circuit riders currently concentrate their efforts at schools, hospitals, nursing homes and local government facilities. Once the pilot program is complete, the program may expand to offer these same services to commerce and industry. The pilot phase is funded through oil overcharge funds.

For more information contact Allison Meyer at the Nebraska Energy Office 402-471-2867 or the circuit riders:



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New Publications ...

Energy Information at Your Fingertips

The Energy Office's two annual publications — the *Annual Report* and the *Handbook of Nebraska Energy Statistics* — have been updated through 1990 and are available at no charge.

The *1990 Annual Report* details the agency's activities and expenditures from July 1, 1989 through June 30, 1990 in addition to addressing energy related issues and trends.

The *Handbook of Nebraska Energy Statistics* provides the most comprehensive look at the state's consumption, expenditures, prices, and resources over a thirty and, in some cases, forty year period.

To receive a free copy of either publication, contact: Jerry Loos, at the Nebraska Energy Office.



Did You Know...

Fast Facts

- The U.S. consumes 17.3 million barrels of oil per day, 63% of which is used in transportation. (American Petroleum Institute)
- There are 140 million cars in the United States. If each car is driven an average of 10,000 miles annually, Americans drive more than a trillion miles each year. (Department of Transportation)
- It takes less gas to start a car than to let it idle for more than one minute. (Iowa State University Energy Extension Service)
- The average automobile will save 17 percent of its fuel by driving at 55 mph rather than 65 mph. (DOE)
- M-1 tanks, which were used extensively during the Gulf War, travel 0.58 miles per gallon of fuel. (Rocky Mountain Institute)
- It takes half a barrel of crude oil to produce the rubber in one truck tire. Approximately 240-260 billion tires are discarded annually in the United States. (The Earthworks Group)

Fremont Gets 'Em First...

Natural Gas Powered Buses a First

In July, Fremont became the first town, in a state demonstration project, to receive and put into service, two public transportation mini-buses that can be powered by either compressed natural gas or gasoline. An additional 12 dual-fueled natural gas vehicles have been delivered in Scottsbluff, McCook, Minden, Hastings, Aurora, Seward, Lincoln, Beatrice, and Omaha.

According to Dan Nelson, Fremont's gas superintendent, the mini-buses represent the first stage of a conversion of the city's municipal fleet to run on either fuel. Randy Reyzlik, Fremont's budget, research, and personnel director said that the conversion was being made for several reasons — natural gas is about 40% cheaper than gasoline, it is better for the environment and it's safer to operate than gasoline. Additional savings will result because of natural gas vehicles



The state's first natural gas mini-bus fuels up at a pump.

require less maintenance.

In a July 20, 1991, editorial, the Fremont Tribune commented on the arrival of the mini-buses in Fremont:

"...the city's step toward using natural gas is a positive move against petroleum companies whose lobbying efforts have kept use of natural gas from catching on in the United States.



Unlike gasoline-powered vehicles, these are filled up at the front, near the engine.

Use of alternative fuels, such as natural gas and ethanol, should be encouraged because such use benefits everyone. The city's innovative move toward use of natural gas as an alternative to expensive and pollution-causing gasoline hopefully will encourage others to follow suit."

Municipalities and counties interested in purchasing alternatively-fueled vehicles which operate on compressed natural gas, propane, or 85%-100% ethanol should contact Larry Pearce in the Energy Office.

Answers to Your Questions...

Energy Information Services

CAREIRS The Conservation and Renewable Energy Inquiry and Referral Service answers questions at no charge. (800) 523-2929 Renewable Energy Information P.O. Box 8900 Silver Spring, MD 20907

CAREIRS is now offering five new free publications, *Automatic and Programmable Thermostats* (FS215), *Radiant Floor Heating* (SD238), *Innovations in Heat Pumps and Air Conditioners* (BD7), *Heat Pumps* (FS143), and *Efficient Air Conditioning* (FS206). Please refer to the number in parentheses when ordering a publication.

NATAS The National Appropriate Technology Assistance Service offers free tailored technical and commercialization assistance. (800) 428-2525 NATAS

U.S. Department of Energy
P.O. Box 2525
Butte, MT 59702-2525

SERI/TIS The Solar Energy Research Institute/Technical Inquiry Service offers technical solar information for scientific and industrial professionals. (303) 231-7303

Technical Information Service
Solar Energy Research Inst.
1617 Cole Blvd.
Golden, CO 80401

NEIC The National Energy Information Center in the Energy Information Administration provides data and projections on energy production, consumption, prices, and supplies. (202) 586-8800 Nat'l Energy Info. Center

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