

Nebraska ENERGY

Q U A R T E R L Y

Nebraska Energy Office

Winter 1993

Changing the Climate...

Nebraska Caught in National Spotlight

\$3.4 Million in Tax Dollars Saved Yearly

A recent study of buildings owned by the state showed that by simply installing the latest in energy efficient lighting technology, over \$3.4 million currently being paid for electricity could be saved every year.

The Governor said the lighting changes would be made in the buildings according to routine maintenance schedules. Agencies will use current maintenance funding to pay for the replacements. If additional funds are needed, grants and loans would be made available by the Energy Office and Task Force for Building Renewal.

Good deeds do not always go unnoticed nor unrewarded. That's the case with the state's effort to increase energy efficiency and prevent pollution by replacing lights in state government buildings. "It's always nice to be recognized for something that is not only 'right', but good for the environment," said Governor Nelson.

During President Bill Clinton's announcement in October on a Climate Change Action Plan to reduce greenhouse gases, the state's efforts were lauded by Vice President Al Gore. See GREENLIGHTS page 4

Demand Side and Dollar Savings...

Wahoo Utility Loans Good for Local Economy

One foresighted eastern Nebraska utility's customers are saving an estimated \$25,000 every year through an energy-saving loan and grant program. Wahoo's electrical utility turned a potential dollar-draining situation into a winning opportunity for all its residents.

From Growth, An Opportunity

In 1989, Wahoo faced an electricity dilemma. Its rate of electric load growth was exceeding four percent a year. If the current rate of growth continued, within ten years the local utility would not be able to purchase low-cost power because the city is required to maintain generating capacity in excess of its electrical load and the margin would have disappeared.

The utility is a member of the NMPP Energy and is able to purchase the less costly power — also known as interruptible economy energy — under certain conditions. Being able to buy this type of power saved the utility and its ratepayers \$750,000 in just 19 months.

A Rate Raising Alternative

Wahoo had three choices. It could do nothing while electric use increased, forcing a rate increase of \$40,000 per month to pay for the more expensive power. It could build more generating capacity, raising the rates to cover construction costs. Lastly, electricity waste by residents could be reduced.

The town's city council acted quickly, approving a demand-side management plan developed by the utility's superintendent, Brian Skeahan. The plan was simple — reduce electric use in the city by "purchasing back" power from customers who saved energy.

Wahoo's homeowners were offered free energy audits which identified cost and energy-saving improvements. If the improvements were made, the homeowner received a grant of 33 cents per kilowatt-hour saved for cooling and 18.6 cents per kilowatt for home and water heating. If the grant didn't cover the cost of the home improvements, a no-interest loan of up to \$3,000 was available.

See WAHOO page 3

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STATE OF NEBRASKA

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Fossil Fuels at the Source...

Today's Gardens, Tomorrow's Coal?

Contrary to what some people believe, fossil fuels such as oil, natural gas and coal are not the remains of dead dinosaurs. Most fossil fuels were formed from plants and tiny sea animals that lived on the planet millions of years before the first dinosaurs appeared.

Much of the coal used to fuel electric power plants, like the ones near Nebraska City and Sutherland, began forming over 300 million years ago — one hundred million years before the earliest dinosaurs walked the earth.

Flora & Fauna

After the prehistoric plants and animals died, they were covered with layers of mud, rock and sand which collected on the earth's crust due to natural events — floods, volcanic eruptions, landslides and earthquakes.

Over the next millions of years, the dead plants and animals decomposed underground into organic materials and formed pockets of coal, gas and petroleum, depending on what combination of materials were present and to what temperature, pressure and other conditions the materials were exposed.

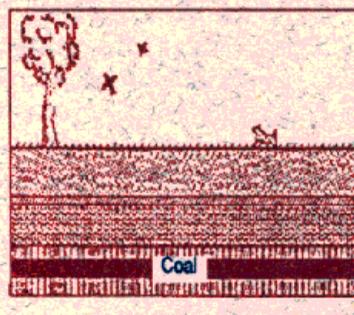
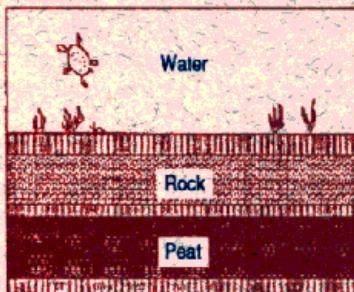
A Pressure Cooker

Petroleum and natural gas were created from sea organisms that died and were buried under ocean sediment. Long after the great prehistoric seas vanished, heat, pressure and bacteria combined to compress and "cook" the organic matter under more and more layers of silt. Petroleum was formed first, but in deeper, hot regions underground, the

continued at bottom of next column

The Formation of Coal

Ten feet of prehistoric plant debris was needed to make one foot of coal.



Energy Office a Partner...

Math & Science Ed Gets State/Federal \$5.8 Million Boost

Nebraska received a second multi-million dollar grant from the National Science Foundation to further math and science education in kindergarten through twelfth grade in the state.

The new grant brings to \$10 million the amount the foundation has awarded to the Nebraska Statewide Systemic Initiative since 1991. The latest \$5.3 million grant is spread over five years.

Nebraska is among the first ten states to be awarded a second stage grant. Luther Williams, assistant director for education and human resources for the foundation said, "You have to demonstrate results to get another grant."

The Energy Office is working to fully integrate energy themes into classroom curriculum in collaboration with this effort. The Governor approved an Energy Office commitment of \$500,000 for energy activities. These funds also will serve as match to the grant.

"We are excited about this opportunity to help students of all ages learn more about energy," said Ann Brockhoff of the Energy Office.

The \$500,000 in oil overcharge funds will provide materials as part of teacher training workshops where energy will be the model curriculum. It will also fund implementation of energy-related science activities in formal and informal learning settings.

"This partnership is one way in which the Energy Office is working to meet one of the goals in the Governor's Energy Action Plan which reads, 'To provide timely and reliable information and education opportunities to help Nebraskans learn about energy and make good decisions regarding their energy costs and use,'" Brockhoff said.

COAL continued

cooking process continued until natural gas was formed. Many of the pockets of petroleum and gas sought today are trapped under rock formations that are dense enough to prevent them from seeping to the surface.

(Excerpted from *Dinosaurs and Power Plants*, U.S. Department of Energy)

NEBRASKA
MATH & SCIENCE
INITIATIVE

Clean Fuels and Clean Air...

Nebraska Towns Can Become 'Clean Cities'

Several of the state's largest cities have recently been contacted to join the federal government's voluntary effort to accelerate and expand the use of alternate-fueled vehicles and infrastructure.

Known as *Clean Cities*, the effort was launched last September by the U.S. Department of Energy with a goal of



putting a quarter of a million alternate-fueled vehicles on the road and adding 500-1,000 refueling stations in 50 cities across the country.

While the national effort is being directed to the country's most polluted cities, any town, including those located in a 'clean air state' such as Nebraska, can request official *Clean City* designation. "It might be financially beneficial to some towns to consider switching to alternate fuel vehicles," said Bob Harris, Energy Office Director.

He said some may want to consider adopting Fremont's approach which is to convert the entire city government fleet to natural gas by 1997. "Since the city owns their natural gas system and would be 'buying' the fuel from themselves, Fremont officials have estimated savings of 40-50 percent," said Harris.

Jobs and More

"*Clean Cities* will help reduce American dependence on imported oil, help cities meet new standards set by the *Clean Air Act* through reduced vehicle emissions and create jobs by strengthening American competitiveness," said Harris. The state agency is spearheading the voluntary program in Nebraska.

"We've seen what producing and using clean-burning fuels such as ethanol can do to a state's economy," said Harris. According to the Energy Office, the state has leaped from nearly last among ethanol producing states to ranking in the top five. "It means jobs in Columbus, Blair, York, Hastings and Sutherland and higher prices for the state's corn growers," Harris said.

The Energy Office estimates the number of alternate fuel vehicles currently operating in the state to be 300-400. At this time, natural gas fuel appears to be the first choice, with ethanol coming in second. Ethanol vehicles are capable of operating on fuel mixtures up to 85 percent ethanol.

Voluntary and Not

According to the Energy Office, government and organizations in a number of major metropolitan areas will

be required to have alternate-fueled vehicles and filling stations under the *Clean Air Act* and the *Energy Policy Act*. Both were passed in the last several years. "It appears that most Nebraska businesses and governments will be exempt from compliance with these two laws," said Harris, "because of the state's comparatively small population centers and air quality."

Others Can Join

Nebraska cities and towns interested in joining the voluntary effort can contact Bob Harris in the Energy Office or call the federal energy agency at (800)CCITIES.

WAHOO continued from page 1

High Standards

The utility wanted to maximize the energy savings, so only the most energy saving types of improvements could qualify for grants and loans. The improvements were generally limited to air conditioners with a rating of 11, heat pumps with a rating of 7.2, setback thermostats, caulking, weatherstripping, water heater and hot water pipe wraps, duct insulation and portable electric space heaters.

Almost half of the homeowners who received the free audits have made the improvements, saving an estimated \$25,000 a year. More importantly, the rate of electricity growth in Wahoo has stopped. In fact, it's decreasing and the program has improved the town's economic vitality by keeping dollars at home while boosting the business of local contractors.

Expanding the Effort

According to Skeahan, there was only one problem with the program. Local businesses could not take maximum advantage of the loans and grants because of the \$3,000 loan limit. During the last session of the Unicameral, the city lobbied hard to increase the amount a utility could loan its ratepayers. Because of its efforts, the Legislature increased the maximum amount of loans to \$10,000.

Skeahan reports that the first improvements being made in local businesses are now underway. For more information about Wahoo's demand-side grant and loan program contact Brian Skeahan at (402)443-3222.

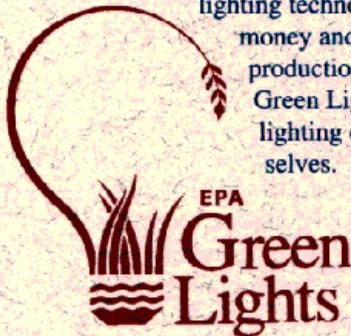
What They've Been Saying

“ We have been forced to recognize that energy efficiency serves both our economic and environmental objectives. ”

Bill White
Deputy Secretary of Energy
at the Inter American Petroleum and Gas Conference
Sept. 27, 1993

Voluntary, Money-Saving Effort

The state effort, known as Green Lights, is a joint undertaking of the Energy Office and the state's Task Force for Building Renewal. Green Lights is a national voluntary effort involving hundreds of participating entities including state government, businesses and manufacturers. The goal is to utilize the latest in lighting technologies in buildings, saving money and electricity and avoiding the production of pollution. Participants in Green Lights agree to make only those lighting changes which pay for themselves.



"This is yet another example of how government can use tax dollars more efficiently," Nelson said. "It's

See GREENLIGHTS page 5 Col. 1



Vice president Gore (right) congratulates Energy Office Director Bob Harris on the state's efforts to prevent pollution and increase energy efficiency during the White House Climate Change announcement.

School's Never Out for These Students

One of the first thoughts that Lynn Chamberlin of the Nebraska Energy Office had when Nebraska joined Green Lights in March 1992 was, "Does anyone have a free hand?" The Energy Office knew it faced a major challenge in upgrading a state that takes eight hours to cross, has 29 million square feet of lit space and contains 49 legislative districts.

"We had several vendors propose to survey the largest buildings, but nobody who we felt had the capability to handle the entire program," notes Chamberlin. "Fortunately, we had used college interns the previous summer to do surveying and felt pretty good about what they were able to accomplish."

The intern program began in 1992 when the Energy Office received a \$28,000 grant from the U.S. Department of Energy to develop a lighting-efficiency survey program for school buildings. As part of the grant, the Energy Office hired six students from the University of Nebraska's College of Architecture and Engineering and trained them in electricity, lighting fundamentals and energy-efficient lighting technologies. That summer the students were able to survey 270 public and private schools at an average cost of \$130 per building. They recommended 1,600 lighting upgrades that would cost \$2 million and, when implemented, would produce annual savings of 7.6 million kilowatt-hours and \$413,000 in electricity bills.

"The Energy Office quickly realized that this was a win-win situation for everybody," recalls Bonnie Ziemann, Assistant Director for Operations at the Energy Office.

"From these surveys, the Energy Office already has received over \$192,000 in requests for no-interest financing under the state-funded School Weatherization Program to implement identified lighting improvements," said Ziemann.



Sherri Arnold, student intern, changes some bulbs.

In May, the Energy Office decided to hire six more interns to survey 246 state buildings. By the end of June, Nebraska and its student surveyors were well on their way toward meeting their goals. Of 180 buildings surveyed, the state found that even with electricity rates of 2-4 cents per kilowatt-hour, internal rates of return [on the suggested lighting improvements averaged] 12 percent — indicating that savings are still possible when a building already has "cheap power."

The Energy Office plans to extend the internship program into next summer and to complete another 200-250 surveys in state-owned buildings.

(Excerpted from the Green Lights Update, September 1993. Reprinted with permission from the U.S. Environmental Protection Agency)

GREENLIGHTS from page 4

amazing how much money can be saved by simply changing a light bulb."

Expanded Effort

Under the Climate Change Action Plan, the Environmental Protection Agency's Green Lights Program will be expanded to include new partnerships with electric utilities and nonprofits and provide additional technical support according to EPA Administrator Carol Browner. An additional \$60 million will be added to this effort and other programs associated with the Climate Change Action Plan. The ceremony on the south lawn of the White House was attended by federal and state officials including Energy Office Director Bob Harris and Ralph Newell of the Task Force for Building Renewal.

Ceremonial Comments

"This President has announced executive order after executive order transforming our government into a leader in pollution prevention and energy efficiency," said Vice President Gore.

"...We are proud to be a part of this effort. Let me tell you about some special partnerships already bearing fruit..."

"Administrator Browner and her team also deserve a big congratulations for their efforts in a number of partnerships. In the successful Green Lights program for energy efficient lighting, we have Eli Lilly, the Melville Corporation, AMOCO and the State of Nebraska."

A Second Planning Grant...

Federal/State Research Effort

A \$20,000 U.S. Department of Energy grant was received by the state under the federally-funded Experimental Program to Stimulate Competitive Research. The grant is to be used to improve the state's application for next year's research projects.

The purpose of the program is to conduct nationally competitive energy-related research. In addition to Nebraska, some of the other states eligible for the grants are Kansas, North and South Dakota, Oklahoma and Wyoming.

Of the \$5 million available this year, four states — Kentucky, Louisiana, Maine and Montana — received up to \$1.25 million each over the next two years. The federal energy agency requires each state to provide a dollar-for-dollar match of the grant.

The grant winners are selected based on technical merit of the proposals and compatibility with federal energy research goals. The state-level grants will develop science and human resource programs and engineering manpower to meet current and future needs.

The federal program is modeled after a similar project started at the National Science Foundation in 1979 that assists states which do not fare well in securing federal research dollars.

Frequently Asked Questions...

5% Dollar and Energy Saving Loans

The *Nebraska Energy Quarterly* features questions asked about 5% Dollar and Energy Saving Loans. Loan forms may be obtained from participating lenders or the Energy Office.

Can towns get loans for energy-saving infrastructure improvements?

Yes. Any political subdivisions, except state government, can receive up to \$175,000 in loans. A recent modification in state law clarified a subdivision's authority to take on a loan obligation for a period up to ten years to make energy conservation improvements with known savings such as furnaces and air conditioners. Loans for other projects are based on the project's estimated payback.

What options are available to property owners with energy-efficiency improvements exceeding \$10,000 for single family dwellings and \$37,500 for multi-family dwellings?

Recently, the Energy Office noted rising costs, with many projects exceeding the loan limits. Effective November 15, the limit for a single family dwelling increased to \$20,000 and \$60,000 for a multi-family dwelling. If a borrower already has a \$10,000 loan in repayment, a second loan for up to \$10,000 could also be secured for additional work to be done.

What are the most common energy-saving improvements being made with the loans?

In homes and apartments, replacing furnaces, air conditioning and windows are most common.

Improvements in small businesses are nearly identical to those being made in homes and apartments.

Popular agricultural improvements include installing low-pressure irrigation systems, replacing irrigation pumps and motors, making well modifications and replacing grain dryers.

City and county governments are generally replacing boilers, furnaces and installing heat pumps.

In the future, will more money be available for loans?

The Governor has agreed to add \$1.75 million in oil over-charge funds for loans if these dollars are matched dollar-for-dollar by energy and equipment suppliers. Specifically, one-half million dollars would be dedicated to telecommunications equipment purchase and installation, when matched, and \$250,000 would be allocated to alternate fuel vehicles and fueling stations, when matched. The remaining one million dollars, when matched, would be used for financing loans in homes, business, on farms and in city and county governments.

What improvement costs can be included in a loan?

All necessary costs for an eligible project may be included in a loan. The cost for wiring or upgraded electrical service, duct work and air returns, gas line piping, fuel oil or propane tanks and removal of asbestos are some common items which may be included in loans.

Project Loans to date: 6,151 for \$35.3 million

Above, Below and Just Average...

Nebraska Energy Prices

A federal energy agency released a state-by-state comparison of energy prices and expenditures showing that Nebraska is, for the most part, on par with the surrounding states.

The Energy Information Administration report on 1991 prices and expenditures examined comparative prices and costs for all states.

energy — such as gasoline taxes — are included in the price analysis.

Nationally, the highest prices were paid in Connecticut at \$11.73 per unit. Louisiana paid less than half that amount, \$5.69 per unit.

Way Above Average

The state was considerably above average when energy expenditures were measured on a per capita basis, ranking 15th in the country. Only folks living in the surrounding states of Wyoming and Kansas paid more than Nebraskans. The state exceeded the national expenditure per capita by nearly \$100, from \$1,853 to \$1,942. Factors playing a role in this ranking were population density, traveling distances, use of irrigation and weather.

Alaska and neighboring Wyoming nearly tied for the top spot — paying the highest energy prices on a per capita basis. Alaska nosed out Wyoming by just four dollars at \$3,249. Florida finished last in the ranking with \$1,533 per capita.

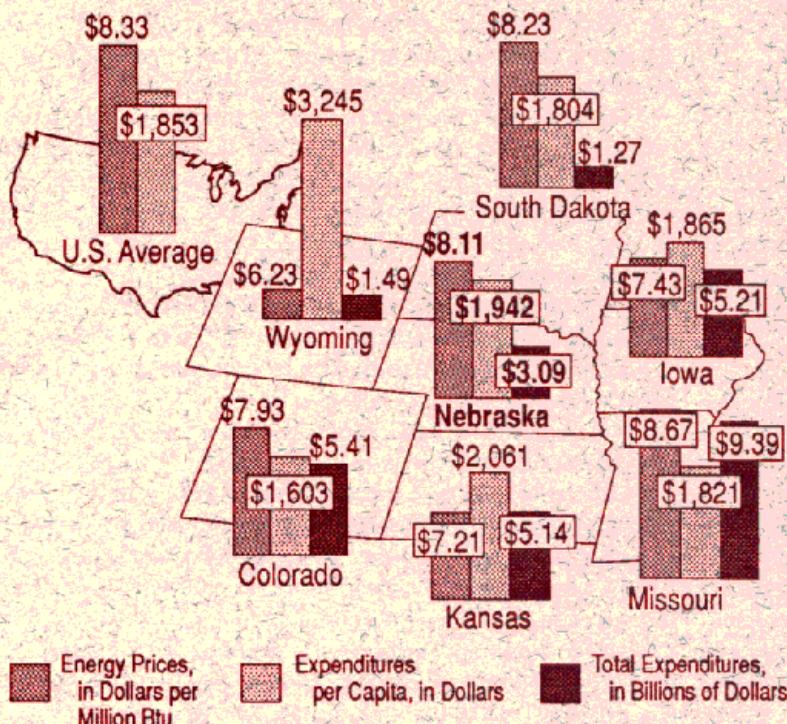
One of the anomalies of comparing states on the basis of per capita expenditures is that energy production itself consumes vast quantities of energy. For that reason, states producing fossil fuels took seven out of the top ten spots. In Nebraska, very little energy is produced. But, the state's main industry, agriculture, requires vast amounts of energy for irrigation which is not the case in states such as Iowa.

The Big Picture

Totaling all energy expenditures is merely a reflection of per capita price and population. Given those factors, California, the most populous state, finished first with total energy expenditures of nearly \$47.5 billion in 1991. Nebraska ranked 35th with nearly \$3.1 billion — the same level the expenditures have been for the past several years.

For more information about Nebraska's energy patterns, contact Larry Kinyon in the Energy Office.

Energy Prices, Expenditures and Per Capita Expenditures by State, 1991



Source: State Energy Price and Expenditure Data System, 1991 U.S. Energy Information Agency.

Below Average

Nebraska fared best in a comparison of energy prices by standard unit of measurement — the now infamous British thermal unit or Btu. For every million Btu, Nebraskans paid \$8.11 per unit — 22 cents less than the national average. Missouri, the highest of the surrounding states, paid \$8.67 per unit. Wyoming, at the other extreme, paid nearly two dollars less, \$6.23 per unit.

The state's energy prices exceeded those of some surrounding states, in part, because state taxes levied on

January 7, 1980

The first solar-cell power plant was dedicated at Natural Bridges National Monument, Utah. The \$3 million photovoltaic system had 266,029 solar cells mounted in 12 long rows producing a 100-kilowatt output. The plant supplied electrical current for staff residences, maintenance facilities, a water sanitation system and a visitor center.

13.5% Savings...

Free Home Weatherization A Winner

A nation-wide evaluation of the cost-effectiveness of the Weatherization Assistance Program — operated in Nebraska by the Energy Office — concluded that average energy use decreased by 13.5 percent as result of the free home energy improvements.

Goldenrod Hills — One of the Best in the Nation

The national evaluation included a review of three of the state's weatherization providers including Goldenrod Hills Community Services. As a result of the evaluation, Goldenrod Hills ranked fourth best in the country.

The U.S. Department of Energy recognized the regional agency last year. The award included a statement from the program evaluator, "my experience as a weatherization monitor has sent me into the offices of over 370 agencies in 19 state and 20 Indian reservations. I have never encountered a staff with more competence and professionalism than the one you have."

The study was based on information from 1989. Most of the energy savings came from space-heating. If other energy uses were excluded, space heating needs declined by almost one-fifth.

The study also claimed that an average of \$116 per dwelling was saved on utility bills in the first year following the improvements. Average Nebraska dollar savings were not available.

About \$1,515 is spent on each home, of which

two-thirds is the cost of labor and related expenses.

two-thirds is the cost of labor and related expenses.

Available, but Limited

The Weatherization Assistance Program, begun in 1976, makes energy saving improvements in the homes of elderly, disabled and other low-income Nebraskans. However, the services are not available to everyone in the state. Income qualifications are used to determine who receives this free service. People who currently qualify for Aid to Dependent Children or Supplemental Security Income automatically qualify for the free home energy improvements.

Interested?

To find out more about this assistance contact Pete Davis in the Energy Office or any of the regional organizations listed below which offer the free service.

Nebraska Low-Income Weatherization Assistance Program Organizations

Blue Valley Community Action, Inc.
P.O. Box 273
Fairbury, NE 68352
(402) 729-2278

Central Nebraska Community Services
P.O. Box 509
Loup City, NE 68853
(308) 745-0780

Goldenrod Hills Community Services
P.O. Box 280
Wisner, NE 68791
(402) 529-3513

Lincoln Action Program
2202 South 11th Street
Lincoln, NE 68502
(402) 471-4515

Mid-Nebraska Community Services
P.O. Box 2288
Kearney, NE 68848
(308) 234-2591

Nebraska Inter-Tribal Development Corporation
RR 1, P.O. Box 66A
Winnebago, NE 68071
(402) 878-2242

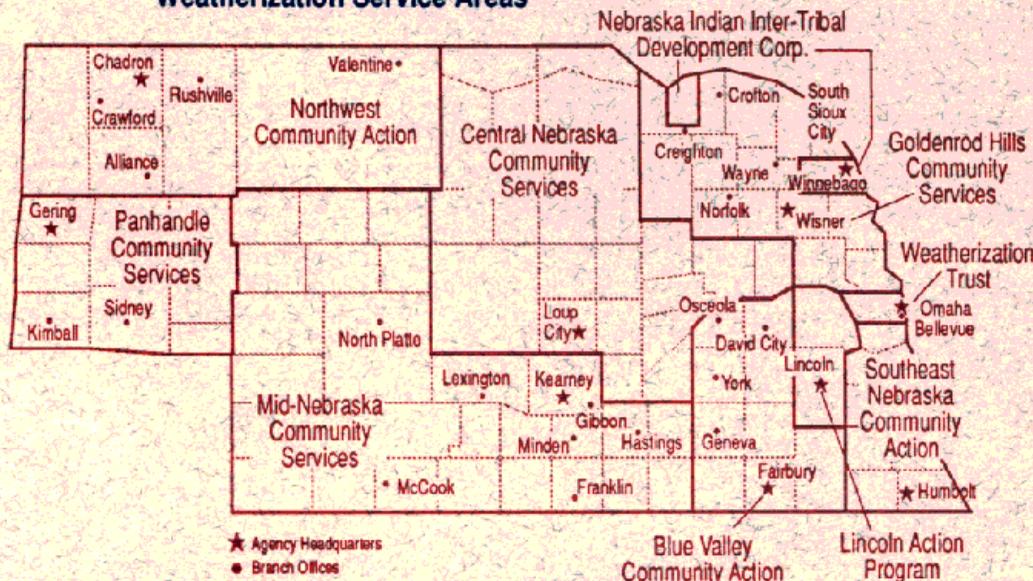
Northwest Community Action
245 East 10th Street
Brooks Hall
Chadron, NE 69337
(308) 432-3393

Panhandle Community Services
3350 10th Street
Gering, NE 69341-1700
(308) 635-3089

Southeast Nebraska Community Action Council
P.O. Box 646
Humboldt, NE 68376
(402) 862-2411

Weatherization Trust Inc.
2111 Douglas Street
Omaha, NE 68102
(402) 342-1611

Weatherization Service Areas



Information Services

The toll-free **Alternative Fuels Hotline** provides general and specific information on alternate vehicular fuels including fuel performance and availability. Call between 9am-5pm CT, Monday-Friday. (800) 423-1363

CAREIRS The Conservation and Renewable Energy Inquiry and Referral Service answers questions at no charge. Call between 7am-4pm CT, Monday-Friday. (800) 523-2929 Renewable Energy Information P.O. Box 3048 Merrifield, VA 22116

CAREIRS is now offering two free fact sheets, *Buying an Energy Efficient House (FS207)* and *Energy Efficient Factory-Built Houses (FS222)*. Please refer to the numbers in parentheses when ordering a publication.

NATAS The National Appropriate Technology Assistance Service offers free technical and commercialization assistance. Call between 9am-6pm CT, Monday-Friday. (800) 428-2525 NATAS U.S. Department of Energy P.O. Box 2525 Butte, MT 59702-2525

The **National Materials Exchange Network** provides free advice via computer modem on recycling and reducing disposal costs. Call 24 hours per day. Modem access (800) 858-6625 General assistance (509) 325-0507

NREL/TIS The National Renewable Energy Laboratory/ Technical Inquiry Service offers free technical solar information for scientific and industrial professionals. Call between 9am-6pm CT, Monday-Friday. (703) 487-4650 Technical Information Service National Renewable Energy Laboratory 1617 Cole Boulevard Golden, CO 80401

NEIC The National Energy Information Center provides data and projections on energy production, consumption, prices and supplies. Call between 7am-4pm CT, Monday-Friday. (202) 586-8800

National Energy Information Center
U.S. Department of Energy
Forrestal Bldg., EI-22, Room 1F048
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Information Services by Modem

COGIS The Comprehensive Oil & Gas Information Source provides energy data to subscribers on Internet. For more information, call between 7am-4pm CT, Monday-Friday. (202) 586-8800

EIC The Electric Ideas Clearinghouse offers a free source of commercial and industrial energy information and downloadable software on electronic bulletin board. To access call (800) 797-7584.

Energy Word Block

The block below contains words applicable to energy. Draw around energy words you find, as has been done for the word "power". Words may be found on horizontal, vertical, or diagonal lines or in reverse directions. A list of words used is furnished for your guidance.

P O W E R
G W A R T I C H U L E M I C E S A C L I N O B K L Y M R D U B T H S G
P A R T I G K H S A V E X D S S O C S U S T O T E S A E T L G N W S M O G E N E
P O T E R U C R U D R E M A N N A D S E R O C C U O G L E S A E T L G N W S M O G E N E
L R E R U C R U D R E M A N N A D S E R O C C U O G L E S A E T L G N W S M O G E N E
U L E N V I E R O N M E I O N H I F O M L A E I A N U A U T T O R
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O N T S L W A S T U R I A V E O C O R O N T A T R I O A S L O I O M A L T R O
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R D A N V R H I E L O N K T I P B R O C A R B O N S
Y E U O R S G A S L I E N G K T I P B R O C A R B O N S
S T O R A G E B Y S H Y D R O C A R B O N S

appliance	coolant	fossil	mass	save
atom	core	fuel	matter	smog
barrel	critical	gas	nuclear	solar
Btu	crude	gasoline	particulates	steam
calorie	demand	generation	petroleum	storage
carbon	ecology	generator	pollution	sun
chemical	electricity	geothermal	population	uranium
coal	element	heat	potential	waste
coke	energy	hydrocarbons	power	water
combustion	environment	ion	recycling	wind
community	fission	kilowatt	reserves	work
control	food	kinetic	resource	

Source: Modified from the Energy Learning Centers, Arizona Energy Office

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This material was prepared with the support of the U.S. Department of Energy (DOE) Grant No. DE-FG47-92CE60420. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author and do not necessarily reflect the views of DOE.

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Bulk Rate
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