

Nebraska Energy

Q U A R T E R L Y

A Cog in the Nationwide System...

Getting Natural Gas From the Field to Your Home

Editor's Note

This is the last of several articles on the state's underground fossil fuel transportation system. Previous articles on the oil and propane pipeline systems appeared in the summer and winter 1994 issues of the *Quarterly*, respectively.

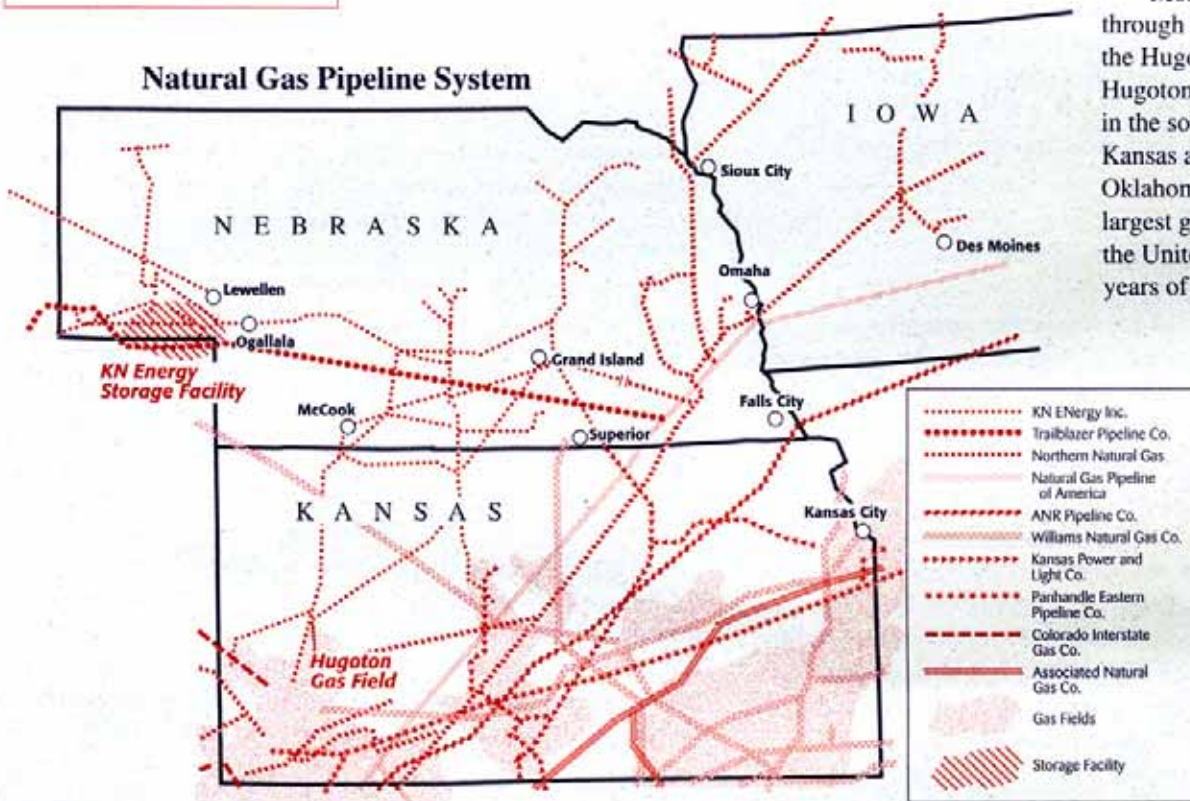
A web of pipelines, varying from one and one-quarter to 12 inches in diameter bring natural gas to homes and businesses in Nebraska for heating, cooking and other uses.

In 1993, 933 billion cubic feet of natural gas came into the state, but like most gas the lion's share of it was passed — right on through the state.

The transitory behavior of natural gas entering the state is due to Nebraska's position in a complex grid of pipelines which traverses the continent, connecting all of the lower 48 states except Vermont.

Most of the gas passing through Nebraska originates in the Hugoton gas field. Hugoton, discovered in 1922 in the southwestern corner of Kansas and extending into Oklahoma and Texas, is the largest gas field ever found in the United States. After 70 years of operation, this vast field is still the top producer in the nation.

Of the natural gas entering the state in 1993, 809 billion cubic feet or 87 percent left the state. Most of this gas, 499 billion cubic feet, traveled through Iowa continuing on to Wisconsin, Illinois and Indiana.



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A Pipeline Becomes A Truck

Pipeline companies acquire gas supplies from their own production as well as from other producers. They also sell gas transportation services to others.

Until the mid 1980s, nearly all natural gas moving in the interstate market was owned by the pipeline companies which transported and sold gas to their customers. Regulatory changes required pipelines to maintain open access to all shippers. As a result, some gas is purchased directly from producers by large users and the pipeline companies provide transportation services.

However, most gas moved by the pipeline companies is still their own gas. It does not matter that gas owned by different parties mixes in the pipelines. It is fungible — one cubic foot of gas is the same as the next cubic foot of gas.

Who Is That Crossing Our State?

Natural gas pipeline companies operating in Nebraska in order of volume carried are Northern Natural Gas, Natural Gas Pipeline Company of America, ANR Pipeline, Trailblazer Systems, KN Energy and Williams Natural Gas Company. While the ANR Pipeline crosses the state, it transports gas to Missouri.

Of the natural gas consumed in Nebraska, 40 percent is carried by Northern Natural Gas Company, one-third by the Natural Gas Pipeline Company of America and Trailblazer Systems, about one-quarter by KN Energy and one percent by Williams Natural Gas Company. In addition to the gas imported from other states, two billion cubic feet were produced from Nebraska wells.

Better Than Average

In 1993, consumption of natural gas in Nebraska totaled 126 billion cubic feet and cost ratepayers \$512 million. Natural gas rates in 1993 for residential and commercial customers are considerably less than the U.S. average, \$4.89 vs. \$6.16 per thousand cubic feet and \$4.26 vs. \$5.16, respectively. The lower rates are primarily attributable to the nearness to the Hugoton field. Rates for industry and utilities are comparable to national averages.

The Local Picture

Unique among the pipeline companies operating in Nebraska, KN Energy operates not only transit lines, but local distribution systems in central and western Nebraska. The other major distribution systems in the state are Northwestern Public Service, primarily serving Grand Island and Kearney and North Platte; Peoples Natural Gas Company serving Lincoln and most of eastern Nebraska; and Midwest Gas Company, primarily serving South Sioux City.

Fourteen Nebraska municipalities operate their own natural gas systems, including Metropolitan Utilities District serving Omaha, Bennington, Fort Calhoun and Springfield. Other large municipally-owned systems are in Fremont, Hastings, Falls City, Nebraska City and Superior. Approximately 30 percent of Nebraskans are served by publicly-owned systems.

Natural gas service is not available in some areas of the state. Most of the counties in the Sandhills lack natural gas service and residents rely on heating oil, propane or electricity for space heating and other energy needs.

Customers of local distribution companies are generally classified as residential, commercial, industrial, vehicle fuel and electric utility. The largest use of natural gas in Nebraska is for heating homes. In 1993, 48 billion cubic feet or 38 percent of consumption in the state was used in the residential sector. The commercial sector used 38 percent and industrial sector 31 percent. Electric utilities accounted for 1.5 percent of total consumption, reflecting the fact that coal and nuclear power are used to generate most of the electricity in the state. Vehicle fuel, one of the newer uses, consumed only one million cubic feet of natural gas in 1993.

The Winter Stress


Local distribution companies contract with pipeline companies for natural gas to meet the needs of their customers. They contract for "firm" service to meet the requirements of their high priority customers and for "interruptible" service to meet the needs of their lower priority customers. Residential and commercial customers are considered high priority because they have no alternatives for fuel, whereas industrial and electric utility customers are considered lower priority. They generally have the capability of switching to alternative fuels.

Interruptible service does not account for a large proportion of total customer deliveries, but can relieve stress on the system when needed. During periods of stress, service may be curtailed to interruptible customers. In Nebraska, it is not unusual for service to interruptible customers to be curtailed with the sudden onset of severe cold weather. During 1993, 27 percent of deliveries to industrial customers were under interruptible contracts.

By varying service between firm and interruptible service customers, the pipeline companies are able to maintain higher utilization of the pipeline. Storing natural gas during the nonheating season to be withdrawn during periods of peak demand is important to the efficient working of Nebraska's system because of seasonal variation in demand.

Storage facilities in the Nebraska system are owned and operated by KN Energy at Sidney and Big Springs. During 1993, additions to storage exceeded use from storage with a net increase of around three billion cubic feet of natural gas.

Those Pesky Outages

Interruptions in natural gas service do occur. However, they are infrequent and generally localized. The most prevalent cause of interrupted service is damage to natural gas pipelines, generally ruptures caused by excavating or other equipment. The pipelines which were laid underground — sometimes as deep as ten feet — may be much shallower today. 

After 15 Years...

School Weatherization Program to End Next Year

In May, the Legislature voted to create a technology fund for the state's public schools. The fund will be financed with proceeds from the School District Energy Efficiency Program which is scheduled to sunset in mid-1996.

The energy efficiency program, commonly called the School Weatherization Program, finances energy saving improvements in the state's public schools with no-interest loans. Grants of up to \$2,500 per building are also available for analyzing what types of improvements would be cost-effective for a school to make.

Any remaining funds in the program — including loan repayments over the next 14 years — will be transferred to the School Technology Fund operated by the state's Department of Education to award grants to public schools for Internet connections.

1995 and 1996 Deadlines

Applications for loans must be submitted to the Energy Office no later than April 17, 1995. Project inquiries (reserving the loan funds, but submitting the application later) must be received by the agency on or before November 17, 1995. Technical assistance grant applications must be submitted no later than December 18, 1995.

Applications for grants or loans after these deadlines will not be accepted.

The School Weatherization Program, created in 1981, was the first on-going state-supported program to make energy saving improvements in public schools in the nation. Initially a grant program, the weatherization effort was converted to offering no-interest loans for financing the improvements in 1986.

The Energy Office estimates that by June of next year, more than \$30 million in school building improvements will have been financed since the program began.

A portion of the oil and natural gas severance taxes collected by the state funded the program. However, since 1991, the

weatherization program has been self-supporting, making loans from a revolving fund capitalized from loan repayments and interest earnings.

For information about the school weatherization program, contact **Lynn Chamberlin** in the Energy Office. ☛

Elkhorn Administration Building Sports Newer, Cost-Efficient Look

The Elkhorn Public School District's 64-year-old administration building is sporting a new look this spring with smaller windows and insulated panels replacing many of the old windows.

"The change is part of an overall \$225,000 energy conservation project to reduce energy costs and extend the useful life of the building," said Steve Baker, assistant superintendent.

"Along with the energy savings, the really good thing about the project is that it is being funded without any additional costs to the taxpayers. The majority of the funding, \$156,000, is from a zero percent loan through the Nebraska Energy

Office, he said. The remainder will be paid from the district's sinking fund.

"The district will pay the loan back over the next seven years with the money it saves in heating costs. "It's a wonderful bargain for the taxpayers," Baker said. Once the loan is repaid, the cost savings will continue and be reflected in a lower budget.

"The district has already experienced the advantage of making cost saving energy improvements, using this type of loan, when it changed the heating system at Skyline Elementary from electric heat to gas, a few years ago."

Douglas County Post Gazette
June 6, 1995

Heat Wave Turns On the Tap...

\$275,000 More to Weatherize Homes

This summer's heat wave, in addition to increasing most Nebraskans electricity use and bills, caused the federal government to release discretionary energy assistance funds to 19 states including Nebraska.

December 29, 1848

The first gaslight was turned on in the White House during the administration of President James Knox Polk.

Nationally, \$100 million in emergency funding were distributed to the states as a result of the July heat wave.

The state's Department of Social Services was notified Nebraska would receive \$2.7 million in emergency funds from the Low Income Home Energy Assistance Program.

The social services agency, in turn, will transfer ten percent — \$275,000 — to the Energy Office for home weatherization. According to Pete Davis from the Energy Office, an extra 125 homes of low income Nebraskans will be weatherized at no cost.

Most of the state's remaining funds will be distributed to approximately 18,000 low income Nebraskans to pay cooling bills. ☛

Winter is Coming...

Protect Your Home From Outside Cold

Millions of single-family homes in the United States still are not adequately protected from outside weather, according to Department of Energy estimates.

Here are some tips to make sure yours is not one of them.

Draft-Proof Windows, Floors and Other Air Leaks

- **Test your windows and doors for airtightness.** Attach a piece of tissue paper to a dowel. Move the dowel around the frames and sashes of your windows. If the tissue flutters, you need caulking and/or weatherstripping.

- **Caulk and weatherstrip doors and windows.** Do-it-yourself caulking and weatherstripping materials cost about \$25 for the average house (12 windows and two doors). Savings in annual energy costs could amount to ten percent or more.

- **Look for other air leaks** through walls or ceilings. Close fireplace dampers, seal cracks or holes and fill gaps in insulation.

- **Install storm windows.** Combination screen and storm windows (triple-track glass combination) are the most convenient and energy efficient because they can be opened easily when there is no need to run heating or cooling equipment.

Alternatives range from a heavy-duty, clear plastic sheet on a frame (about \$10 - \$15 each), to clear plastic film which can be taped tightly to the inside of the window frames (a total of about \$10 for the average home). These provide as much savings as permanent storm windows, but must be replaced each year.

Savings in reduced space heating costs for any of these types of protection can amount to as much as 15 percent a year. Adding storm doors in very cold or very hot climates could increase these savings.

Insulate

No matter how you heat or cool your home, if it is not properly insulated, you can reduce the load on your heating equipment by as much as 20 to 30 percent by investing a few hundred dollars in insulation. The benefits of insulation — lower utility costs — continue for years.

- **Find out if your home needs insulation.** Your needs will depend on the climate in which you live and the amount

of insulation, if any, you already have. For guidance, consult a reputable insulation dealer in your community or your local building inspector or county agent.

- **Find out about R-values** before you buy your insulation materials. Then buy the thickness of insulation that will give you the R-value you should have.

R-values are numbers which indicate the resistance of an insulation material to winter heat loss or summer heat gain. The higher the R-number, the more effective the insulating capability. The numbers should appear on all packages of insulation materials: mineral, glass fiber or rock wool batts or blankets; foam or loose fill materials that are poured or blown into insulation spaces; or rigid board insulation.

If the insulation you buy doesn't have the R-value written on the package, ask the salesperson to write the R-value on your receipt for future references.

- **Insulate your attic floor or top floor ceiling** to a minimum of R-38 for these spaces if possible.

If you have old insulation in your attic, you probably won't be able to judge its R-value. But if you have three inches or less of old insulation, chances are you need more to bring the insulation level up to the recommended level.

Investment costs could range from \$100 to \$1,000. Heating and cooling savings should range from somewhere around five percent, if you are adding to present insulation, to as much as 30 percent if you have no insulation.

- **Don't insulate over eave vents or on top of recessed lighting fixtures or other heat-producing equipment on the attic floor.** Also, keep insulation at least three inches away from the sides of these types of fixtures.

- **Consider insulating exterior walls.** This is an expensive measure that requires the services of a contractor, but it is worth the cost if you have uninsulated walls. There should be enough space in the walls to accommodate blown-in insulation that is at least R-11 to R-13 in most construction except masonry.

Costs range from 30 cents to \$1.65 per square foot. Savings could amount to 16 to 20 percent of utility costs.

- **Insulate floors over unheated spaces** such as crawl spaces and garages.

- **Avoid unwanted moisture buildup** caused by faulty installation of insulation. Follow the instructions on the product, or obtain instructions from your insulation supplier on the correct method of installation and any needed ventilation.

Costs could range from \$200 to \$400. Savings could amount to about eight percent on your heating and cooling costs. ❄️

If every gas-heated home were properly caulked and weatherstripped, we would save enough natural gas each year to heat about four million homes.



These energy-wise suggestions have been excerpted from *Tips for Energy Savers* published by the U.S. Department of Energy.

Alternate Transportation Fuel Use Barrier...

Legislature Makes Some Changes

In July, the *Scottsbluff Star-Herald* editorially pointed out a contradiction in the state's efforts to encourage the use of alternate transportation fuels.

"Nebraska has an alternative fuels permit fee that charges people extra money if they drive a vehicle that doesn't run on gasoline or diesel fuel.

"Why? Because state officials are worried about losing money for building state roads. Like other states, Nebraska taxes every gallon of gasoline and diesel fuel used to travel on state highways. The tax money goes back to the state Department of Roads for more highway construction.

"Other than its contributions for construction of ethanol plants, Nebraska has done little to help cars that run on solar power, electric batteries, propane or natural gas to gain a foothold.

"All of these alternatives release virtually no pollution, and solar power and electricity are renewable resources that will last forever. But state officials would rather see gas-guzzling cars that cough smoke and fumes — as long as they can pave another mile of road."

But, the Legislature did partially correct the situation in its most recent session which ended in May. According to the state's Department of Revenue, owners of licensed motor

vehicles powered by propane or compressed natural gas are no longer required to purchase an alternative fuel user permit.

However, the situation which sparked the editorial interest of the *Star-Herald* was Paul Wood of Lincoln who operates an electric vehicle. Wood will still be required to obtain a permit.

How Many?

While some alternate fuel users may have objected to the permit and its fee, the necessity to have a permit did provide a census of the number of alternate fuel vehicles in Nebraska.

According to the Department of Revenue, 2,618 cars, pickups, trucks and buses used either propane or compressed natural gas.

Of the 2,269 vehicles using propane, only 60 were cars. Twelve hundred pickups use propane and slightly more than a thousand trucks and buses operate on propane.

More than 200 pickups use natural gas in addition to 86 cars and 51 buses and trucks.

Geographically, Lancaster and Douglas counties have the most vehicles using natural gas or propane with 129 and 126, respectively. In Lancaster County, natural gas vehicles hold a slight edge over propane. In Douglas County, propane vehicles hold a nearly two to one advantage over natural gas vehicles.

Phelps, Adams and Jefferson Counties round out the top five counties having the most propane or natural gas vehicles. 🚗

This is the third in an on-going series highlighting information and other types of assistance available to local officials. Previously, energy and dollar saving projects were featured in the summer issues of the Quarterly in 1994 and 1995.

Lincoln's Cool Storage System A Model...

Making the Right Cost, Energy and Environmental Choices

Local government officials in the state can learn how other city officials in Lincoln and across the nation are saving tax dollars and energy.

Three new factsheets chronicle today's success stories by local officials who are putting energy efficiency solutions into practice.

- **Keep It Cool with Thermal Energy Storage.** Five cities including Lincoln are using an innovative way of storing nighttime off-peak energy for daytime peak use — cool thermal energy storage.

Cool storage is one of the most powerful tools available to utilities for balancing their power loads and to local governments and private businesses for cutting energy costs and promoting more efficiency energy use in their communities.

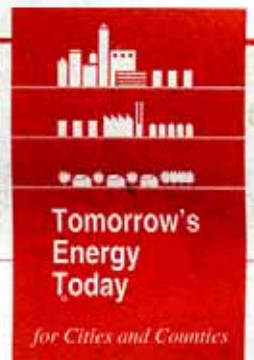
- **Beating the Traffic with Commuting Alternatives.** By encouraging commuting options, local governments can help reduce air pollution, fuel consumption and traffic congestion. Minimizing these problems makes the community more appealing to businesses, residents and visitors and boosts the local economy. Cities as diverse as St. Louis and Boulder, Colorado are using a combination of transportation alternatives such as

bicycle commuting, regional bus systems, ride sharing, telecommuting and light rail systems.

- **Sustainable Development: Municipal Services with Broad Appeal.** Many cities — Portland, San Francisco, Miami, Newark and Chattanooga — are taking steps today so that tomorrow's urban centers remain livable for generations to come. Collective efforts such as these are referred to sustainable development.

According to the United Nations, sustainable development meets the, "needs of the present without compromising the ability of future generations to meet their needs." This translates into more jobs, efficient use of energy, cleaner air and water and less waste, traffic congestion and dependence on imported fossil fuels.

Any of these publications can be obtained from **Sally Evans**, National Renewable Energy Laboratory, 1617 Cole Boulevard, Golden, Colorado 80401-3393, Phone 303-275-4363, Fax 303-275-4053. Copies of "Sustainable Development" may be obtained from **Jerry Loos** in the Energy Office. 🚗



The Nebraska Energy Quarterly features questions asked about 6% Dollar and Energy Saving Loans. Loan forms may be obtained from participating lenders or the Energy Office.

Frequently Asked Questions...

6% Dollar and Energy Saving Loans



During the heating season, can approval of loans for furnaces be expedited?

Yes. During the winter (The Energy Office considers September through May, "winter."), quick approval of loans for replacement of furnaces, in certain situations, is standard procedure. If the unit has stopped working, the lender should call or fax the information on both the old and new units to the Energy Office, as well as the reason for the emergency. If the new furnace meets performance requirements for the loans, the Energy Office will contact the lender to authorize installation of the replacement furnace immediately.

Can a borrower have more than one loan?

Yes. A Nebraska resident may borrow up to \$20,000 for improvements on a single-family home; up to \$60,000 on a multiple-family building; up to \$75,000 on an agricultural operation and up to \$100,000 on a small business or non-profit operation. Additionally, loans for up to \$150,000 for alternate fuel vehicles and fueling facilities and telecommunications equipment are also available.

The borrower has the option of getting one loan or several loans over a period of time for the improvements as long as the total amount borrowed does not exceed these maximums. Combining several

loans into one is at the discretion of the lender. However, the length of the loan cannot exceed the length of the original loan. For example, in 1990, a borrower received a \$5,000 loan to replace a furnace and air conditioner. In 1994, a \$10,000 loan for window replacement was obtained. The maximum length of these loans was 2000 and 2004, respectively. However, if the borrower combines the loans, the maximum length of the loan would be 2000.

Can telecommunications equipment be financed with a loan?

Yes, a variety of telecommunications equipment can be financed with a loan. Items such as network access equipment, video products-audio conferencing equipment, satellite up and downlinks, facsimile machines, cellular telephones or radio emergency response network systems, mobile data terminals and microwave, fiber-optic or wireless transmission equipment can be financed.

The maximum loan amount is \$150,000. Any legal resident in the state is eligible to apply for a loan. Simply complete a Telecommunications Equipment Application (Form 8) and apply for a loan from a participating lender.

Who are participating lenders offering Dollar and Energy Saving Loans?

The majority of Nebraska banks, savings institutions and credit unions offer Dollar and Energy Saving Loans. First, check with the financial institutions you regularly use to see if they offer the loans. If none of them do, simply contact the Energy Office for names of the lenders in your area offering the loans.

Can alternate fuel vehicles or the installation of alternate fueling stations be financed with a loan?

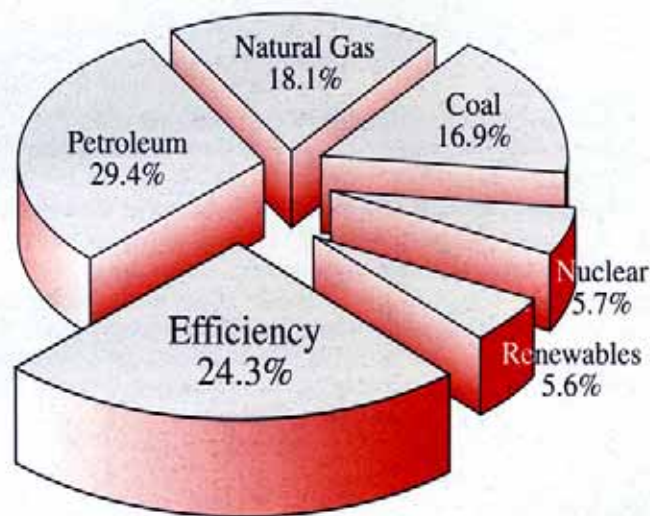
Yes, both types of projects

may be financed with a low-interest loan. The maximum amount of the loan is \$150,000 and can include dedicated fuel vehicles, conversion costs for existing vehicles or the incremental costs of flexible-fuel vehicles. Dedicated fuel vehicles can only operate on one type of fuel while flexible-fuel vehicles may operate on one or two fuels such as propane and gasoline or gasoline and ethanol.

Alternate fuels are defined as compressed natural gas, electricity, ethanol, liquefied natural gas, methanol or propane. ☺

Energy Efficiency Today

Savings achieved through energy efficiency and energy conservation provided nearly a quarter of U.S. energy services in 1992*



* Latest Figures Available

Source: Safe Energy Communication Council, based on U.S. Energy Information Administration's 1992 Annual Review

November 8, 1906

Electric lamps were used in a railroad train for the first time on Chicago and North Western's Railroad "Overland Limited." The train ran from Chicago to California.

Dollar Savings in the Billions and Mounting...

Federal Energy Research Breakthroughs Lead to American Economic Vitality

A group of energy experts who studied the Department of Energy's past research efforts recently concluded government financed research is "essential to our nation's future well-being."

Federal energy research has been targeted by some members of Congress for substantial reduction or possible elimination. However, the task force cautioned against further funding cuts.

The task force of energy experts conceded that some of the research during the earlier energy crises were misguided, but noted that not only have funds used for research declined, but that America's energy dependence on imports is expected increase over the next decade.

The Energy Department's research and development funding, measured in constant 1995 dollars, has declined by 75 percent over the last 17 years — from \$9.7 billion in 1978 to \$2.5 billion today.

The task force cited examples of past successful building technology research — commonly used in new and remodeled homes in the nation — which has yielded some impressive achievements:

Fluorescent Lamp Electronic Ballasts

Department of Energy research and development created the current state-of-the-art electronic fluorescent lighting ballast, which was unknown in the mid-1970s. The electronic ballast not only improved lighting quality, but has saved consumers \$750 million in energy bills from a \$3 million investment.

This new industry's sales totalled \$275 million in 1992, accounting for one-quarter of all ballast sales. Electronic ballasts are expected to replace magnetic ballasts in at least 75 percent of applications by 2015.

Advanced Energy Efficient Windows

A 20-year Department of Energy research and development partnership with industry culminated in the development of an advanced energy efficient window that uses low emissivity coatings to block heat gain or loss.

No U.S. manufacturer had invested in this technology before the Department's research and development began. Cumulative consumer energy savings attributable to using low-emissivity windows are \$1.8 billion from just a \$3 million investment in the early 1980s.

Today, every major glass and window manufacturer offers low-emissivity products which are being installed in an estimated one-third of homes.

High Efficiency Refrigerator/Freezer Compressor

From 1978 through 1980, the federal energy agency, in partnership with industry, developed a high efficiency compressor for household refrigerators. The resulting product achieved a 44 percent improvement over existing compressor technology.

The availability of high efficiency compressors was a major reason that average refrigerator energy use dropped from about 1,300 kilowatthours per year in 1980 to about 900 kilowatthours per year in 1990. Use of the improved compressors has saved consumers at least \$6 billion in energy costs from 1980 to 1990.

The task force was headed by Daniel Yergin, president of Cambridge Energy Research Associates and author of *The Prize*, a history of the oil industry. ■

\$500,000 Grant...

Nebraska's Science and Math Students to Work with National Scientists

Nebraska is likely to receive a half million dollar grant to augment the state's effort to improve science and math education by linking schools to a federal research laboratory.

The federal funding for the Nebraska Math and Science Initiative was approved by the Senate in August in the Energy and Water Appropriations bill. The bill must still be reconciled with the House version of the bill, re-approved by both houses of Congress and approved by the President.

The new effort creates a partnership between students and scientists at the Department of Energy's National Renewable Energy Laboratory, the primary renewable energy research facility.

The Colorado-based laboratory studies areas such as materials sciences, biosciences, engineering and optics and assesses the

environmental impacts, economics and market potential of renewable sources of energy.

The state's Math and Science Initiative is funded by a multi-year \$10 million grant from the National Science Foundation and by a half million dollar grant from the Energy Office. The effort to improve the quality of mathematics, science and technology education began in 1991. ■

October 19, 1814

The first steam-powered warship, Demologos, was launched in New York Harbor. Designed and built by Robert Fulton, the ship was officially christened Fulton the First.



The Alternative Fuels Hotline provides general and specific information on alternate vehicular fuels including fuel performance and availability.

Alternative Fuels Hotline
P.O. Box 12316
Arlington, VA 22209
 Phone between 9am-5pm CT,
Monday-Friday, **1-800-423-1363**
Call for information on modem and Internet access

The Comprehensive Oil & Gas Information Source provides energy data to subscribers on Internet.

For more information, call
1-202-586-8800 between
7am-4pm CT, Monday-Friday.

The Electric Ideas Clearinghouse offers a free source of commercial and industrial energy information and downloadable software on electronic bulletin board.

Modem access at
1-800-797-7584.

The Energy Efficiency and Renewable Energy Clearinghouse provides fact sheets, brochures, videos and publications on energy efficiency and renewable energy.

Energy Efficiency and Renewable Energy Clearinghouse,
P.O. Box 3048,
Merrifield, VA 22116
 Phone between 7am-4pm CT,
Monday-Friday, **1-800-363-3732** or for
the hearing impaired call
1-800-273-2957 8am-6pm.

Internet address:
ENERGYINFO@delphi.com
Modem access at **1-800-273-2955**

Heating the Home, a new publication from the Clearinghouse is now available for homeowners who are preparing for the arrival of winter and would like information on cutting their residential energy bills. The Clearinghouse can also provide information on improving the efficiency of your electric, gas or oil heating system.

The Energy Efficiency and Renewable Energy Network or EREN is a world wide web site on Internet and a gateway to energy efficiency and renewable energy information sources.

EREN Internet access — use the Uniform Resource Locator (URL) <http://www.eren.doe.gov> (SLIP connection required).

The Motor Challenge Information Clearinghouse provides research, software, technical assistance and education materials on electric motor systems efficiency.

Motor Challenge Information Clearinghouse,
P.O. Box 43171
Olympia, WA 98504-3171
 Call between 8am-7pm CT,
Monday-Friday, **1-800-862-2086**

The National Energy Information Center provides data and projections on energy production, consumption, prices and supplies.

National Energy Information Center
U.S. Department of Energy
Forrestal Bldg., EI-22,
Room 1F048
1000 Independence Ave. S.W.
Washington, D.C. 20585
 Phone between 7am-4pm CT,
Monday-Friday, **1-202-586-8800**
 Internet address: infoctr@eia.doe.gov
Modem access at **1-202-586-2557**

The U.S. government's Short-Term Energy Model, used to forecast supply and prices of major fuels 18 months into the future, can now be downloaded to most personal computers with modems via Internet or an electronic bulletin board.

- The electronic energy model allows the user to:
- Access all the forecast information used by the Energy Information Administration to produce its short-term projections
 - Change data and forecasts to percentages and graphs
 - Revise forecast assumptions (such as economic growth, oil prices or weather) and recalculate the model.

Internet access can be obtained through the Energy Information Administration's Home Page on the Mosaic/World Wide Web system. The Internet address is <http://apollo.osti.gov/html/eia/eiahome.html>.

On the Home Page opening screen, users click on the model's distinctive four season logo and follow the downloading instructions. Users need Microsoft Windows 3.1 or higher, a Mosaic client and six megabytes of free disk space on their hard drive.

Bulletin board access is available through the agency's Electronic Publishing System, a menu-

driven bulletin board available free of charge, 24 hours a day, via a personal computer with an asynchronous modem. The system's dial-in number is 202-586-2557. The bulletin board is also available through FedWorld.

A diskette version of the Model is available from the Office of Scientific and Technical Information at 615-576-8401 or by mail at P.O. Box 62, Oak Ridge, TN 37831.

The National Materials Exchange Network provides advice on recycling and reducing disposal costs, 24 hours per day.

General assistance at **1-509-466-1532**
 Modem access at **1-509-466-1019**

The National Renewable Energy Laboratory/Technical Inquiry Service offers free technical information on solar and other renewable technologies for scientific and industrial professionals.

Technical Inquiry Service
National Renewable Energy Laboratory
1617 Cole Boulevard
Golden, CO 80401
 Phone between 9am-6pm CT,
Monday-Friday, **1-303-275-4099**

Nebraska OnLine provides several services — a development services directory, calendar of events, bulletin board referral, electronic databases, job listings and mail. Nebraska OnLine may also be available at your nearest local university or community college library.

Modem access at
1-800-392-7932 (Nebraska only) or
1-402-471-4020 (Lincoln only)

The Wind Information Network provides updates on wind technology via EcoNet, a nonprofit electronic service for the global environmental community. For more information contact Tom Gray at the American Wind Energy Association.

Phone **1-202-383-2500**
 Internet address: tgray@igc.apc.org or
6569855@MCImail.com

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Bulk Rate
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Lincoln, NE
Permit No. 212

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