Nebraska ENERGY QUARTERLY

Nebraska Energy Office

Spring 1989

March 24, 1989

National Energy Education Day

Nebraska's NEED program is well underway with 51 schools participating. Year-long classroom energy education activities will culminate with special NEED celebrations in classrooms throughout the state on March 24, 1989.

The Nebraska Propane Gas Association is sponsoring the statewide program in cooperation with the Office of Energy and Economic Education at the Nebraska Council of Economic Education.

Leadership training and program packets were provided to 120 teachers and students at NEED workshops last fall. Since then participating schools have been involved in energy education activities such as debates, plays, public service announcements and energy-enriched lesson days.

Carnivals, contests, game shows and numerous other creative and interesting programs were also planned by teacher and student teams throughout the state.

Statewide Contest

After NEED day, participating schools will submit project reports to the statewide NEED committee for judging in the NEED Youth Awards Program for Energy Achievement.

Plaques and awards will be presented at awards luncheons on May 11th in Ogallala and May 12th in Lincoln. The Nebraska school team with the most outstanding project will receive special recognition. Representatives from the school team will attend the National Recognition Ceremonies in Washington, D.C., this June.

For more details on Nebraska's NEED Program contact: **JoAnn McManus, Program Coordinator, Office of Energy and Economic Education, 307 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0402, Phone (402) 472-5612.**

Inside

Governor Orr Sends to Legislature

$19.9 Million Oil Overcharge Plan

Governor Kay A. Orr proposed that $19.9 million in oil overcharge funds be returned to Nebraskans through several programs. The funds were received by the state as a result of certain oil companies overcharging consumers from 1973-1981.

One of the key features of the Governor's spending plan is the potential for private sector participation. It is estimated that up to $52 million may be added from the private financial sector to the $19.9 million in oil overcharge funds.

"One of my goals is that as much of the money as possible be returned to the people of the state," Orr said. "They are the ones injured by the oil company pricing violations." Under the plan, over 70% of the funds will be returned to people in the form of loans, free home energy saving improvements, transportation subsidies and other energy conservation activities.

The highlights of the 12-part spending blueprint are:

Direct Benefits to Consumers $14.1 million

- **Loans for homeowners, small businesses and farms and ranches, $8.5 million.** Under this program, low-interest loans to make home or building improvements would be available at participating local lending institutions. The oil overcharge funds would be used to reduce the interest rate. It is estimated that the $8.5 million could generate an additional $50 million in loan activity. Also, this program would demonstrate the leveraging of local lending institutions' funds with oil overcharge money. Tentative distribution of the loan funds are:

	Portion of Loan Fund*
Residential	$6,000,000
Small Business	$1,500,000
Farm and Ranches	$1,000,000

- **Low Income Weatherization Assistance Program, $4.55 million.** This existing federally-funded program, which makes home improvements for those who cannot afford to make the improvements themselves, would receive $900,000 annually for the next five years. $250,000 would be spent over the five years for home energy improvement materials for units of the Omaha Housing Authority.
- **Rural public transportation revitalization, $1 million.** Under the program, the Department of Roads would receive $500,000 to buy energy saving or alternate fuel buses for operation in rural areas. The remaining $500,000 would be used to subsidize commercial buslines operating between cities as an incentive to continue to serve the rural areas of the state.

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* Based on petroleum consumption during the period of price controls

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Indirect Benefits to Consumers $5.85 million

ENERGY RESEARCH GRANTS

• **Innovative energy grants, $500,000.** This program would provide small grants for research and development of innovative energy-related projects. The Energy Office will work in conjunction with the Technical Assistance Center and the University of Nebraska-Lincoln in developing grant criteria.

• **Energy-related biotechnology, solar and conservation research, $2 million.** The University of Nebraska would receive a conditional grant of $2 million for energy-related research which must be matched, dollar-for-dollar, with funds from the private sector. Possible areas for research are:

- Genetic engineering of micro-organisms for improved ethanol production
- Co-fermentation of corn and whey for improved ethanol production efficiency
- Ethanol process improvement technology
- Development of fuel substitutes from vegetable oil
- Co-generation technology research
- Anaerobic digestion for production of methane from agricultural waste
- Thin-film photovoltaics
- Multi-fuel engine technology

GRANTS AND PROGRAMS FOR POLITICAL SUBDIVISIONS

• **Loans for local governments, $1.5 million.** This program will be a component of the residential, small business and farm and ranch energy loan program above. The maximum loan amount is expected to be $50,000. Likely applicants will be cities, villages, counties, community colleges and other local governmental subdivisions.

• **University of Nebraska and State Colleges energy saving building improvements, $1 million.** The University of Nebraska and the State College System will each receive $500,000 to make building improvements that save energy, resulting in lowered operating costs. Since 1979, the University has invested $8 million in similar improvements, saving an estimated $16 million.

• **Local government energy manager circuit rider, $400,000.** This project would provide energy management services to cities, counties, school districts, hospitals, community colleges and nursing homes. After a two-year pilot phase, it is anticipated that this service will become self-supporting.

• **State buildings energy team, $150,000.** The 309 Task Force, which disperses the funds for deferred building maintenance, would work with state agency personnel to identify and implement energy saving building improvements.

• **Indian Tribal Governments, $50,00.** The Nebraska Indian Commission will contract with the Energy Office to develop energy conservation programs for Native Americans.

PLANNING AND PROGRAM OVERSIGHT

• **Planning and monitoring of the oil overcharge programs, $200,000.** Over the next two years, $200,000 will be used by the Nebraska Energy Office to provide the court and federal government mandated oversight through monitoring of programs funded with oil overcharge money.

• **Emergency Preparedness, $95,000.** The Energy Office would receive $95,000 over three years to update and revise the statutorily-required energy shortage management plan.

The plan will be submitted to the Legislature for review,

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and then delivered to the U.S. Department of Energy for approval.

"When the plan is approved by the U.S. Department of Energy, I fully expect to see a significant increase in home and building energy improvements in every part of Nebraska," Orr said.

According to Governor Orr, the state began receiving the *Exxon* and *Stripper Well* oil overcharge funds in March 1986. The money had been collected by the federal government from oil companies for price violations of petroleum products between 1973 and 1981. The money is being distributed by the states as restitution to consumers whose petroleum use was so slight as to make direct refunds impractical.

Copies of the proposed oil overcharge plan can be obtained by contacting **Jerry Loos in the Nebraska Energy Office.**

Planning Underway

Energy Emergencies

The U.S. Department of Energy's Office of Energy Emergencies has moved to revitalize federal-state cooperation and coordination in managing energy shortages. During the past two years, policy makers' attention has turned increasingly to the potential for energy crises.

The Nebraska Energy Office has actively responded and is sponsoring meetings with energy office staff in Iowa, Kansas, and Missouri to stimulate interstate cooperation and information exchange on energy contingency matters. In November 1988, the first meeting was held, with the second meeting scheduled for July 11 and 12. Immediately following the four-state meeting, the Nebraska Energy Office will host a seven-state regional meeting for the Office of Energy Emergencies. The seminars will provide further information and education on basic energy contingency considerations and energy conditions within the region.

Schools Save Dollars

Budget Stretcher

Is your school district spending more for energy than is necessary? Otoe Elementary School reduced its energy consumption by 45.7% and its yearly energy bill by $1,137. Clarkson High School is saving $736 each year rather than paying an additional $1,103 due to a price increase.

These schools, and many others, are participants in the Nebraska School Weatherization Program. This program provides funding for energy improvements in K-12 public schools which can result in lower energy costs, a more comfortable learning environment and a more aesthetically pleasing building. Grants are available for engineering studies and no-interest loans provide the capital necessary to make the building improvements.

Doesn't your school district have more important things to spend money on than energy? If you are interested in finding out how your school district can save money, **contact John Osterman, Lynn Chamberlin or Allison Meyer at (402) 471-2867.**

Nurturing an Industry

Greenhouse Energy Efficiency

Under two Exxon grants totaling $199,000, the Nebraska Energy Office is funding the development of a greenhouse management system. The production of both ornamental and vegetable crops in greenhouses is an important facet of world-wide agriculture. Controlled environments provide a means of producing crops of economic importance not possible under natural conditions at certain times of the year.

Energy in the form of solar energy and fossil fuel drives the greenhouse production process. Fuel costs account for 15 to 30% of the entire production costs of a greenhouse crop. The typical Nebraska greenhouse producer spends approximately $1.00 to $1.50 per square foot per year in heating costs. Based on these figures, the energy expenditure by Nebraska's greenhouse industry ranges from $8.1 million to $12.1 million annually. The production of one six-inch potted chrysanthemum plant currently utilizes approximately one gallon of fuel oil during the production cycle. More effective use of conventional energy sources and of solar energy must be made for Nebraska to remain viable in greenhouse production. Solar energy resources in this state are excellent throughout the year and make year-round production attractive for a multitude of vegetable and ornamental crops.

97% Imported

Improvement to Nebraska's agricultural economy could be made through innovative use of greenhouse technology. Each year, Nebraskans currently consume an average 9.4 stems of cut flowers per person, with 97% of these being imported from outside the state. These figures do not include blooming potted plants, greenhouse grown vegetables, foliage plants or bedding plants that are purchased by Nebraskans. According to U.S. Department of Agriculture figures, the American public spent 4.4% of their expendable income on flowers and seeds in 1983. This expenditure was an increase of 28.5% over 1973's amount . During the period of 1977 to 1982, florists' sales in the U.S. increased 42.7% from an estimated $108 million in 1977 to $150 million in 1983.

Economic data and personal consumption patterns of greenhouse-produced products demonstrate potential and existing markets in the state.

Export Potential

Expanding greenhouse production in Nebraska could be economically advantageous. The potential exists for Nebraskans to grow and export these products to adjacent states and population centers. The state is centrally located and has shipping advantages to many population centers.

Production of crops in environmentally-controlled systems has a high labor demand. While utility costs account for approximately 17% to 20% of the total cost of production of these crops, labor accounts for approximately 33% of production costs. This can be regarded as a potential increase in demand for labor within the state, creating badly needed jobs in rural areas. Displaced agricultural workers would not need extensive, high-cost training to satisfy the labor requirement in the greenhouse industry. Numerous greenhouses in rural communities could be of substantial economic benefit to the state and the industry is an environmentally "clean" one.

Two Exxon Grants

Two projects are underway to help greenhouses prosper. A greenhouse at the University of Nebraska West Central Research & Extension Center in North Platte was fitted with an energy efficient covering. "Not only have energy costs been reduced up to two-thirds, but the improved light levels and the ability to control heat have resulted in increased plant growth," says Paul Nordquist, plant breeder at the center. People can tour the retrofitted greenhouse by contacting Dale Lindgren at (308) 532-3611.

The UNL Departments of Agricultural Engineering and Horticulture are cooperating on an ambitious project to improve the efficiency of the greenhouse industry. George Meyer, project leader, says that combining plant growth modeling with greenhouse structural design and management is unique. No other system interfaces these aspects of greenhouse production in one accessible package.

Various aids are being designed to help greenhouse growers select the most efficient building design, heating and cooling systems, lighting systems, controls and materials handling systems for the plants they produce. Computer software programs are being developed that will enable a producer to determine the profit capabilities of various crops grown and make decisions on facility use to maximize profits.

Results are already visible. Dr. Jay Fitzgerald, extension horticulture specialist, says, "In the first year, we have already greatly improved my ability to respond quickly and fully to greenhouse operators' needs."

Rubbish or Recycleable?

Used Tires

The Energy Office has completed an overview of recycling and disposal options for waste tires. The report provides an overview on waste tires and helps clarify the issues in any tire recycling, burning or disposal approach being considered. **To obtain a free copy, contact Kirk Conger in the Energy Office.**

It's Legal

Turning on Red Lights

In 1973 the Nebraska Legislature established the statewide right- turn-on-red law as an energy conservation measure.

According to the Nebraska Driver's Manual, at many intersections you may turn while the traffic light is red. Before turning, you must come to a complete stop, look both ways and yield the right-of-way to pedestrians and other traffic.

Right turn on red. You may turn right at a red light after stopping, unless there are signs posted at the intersections that prohibit turning on red.

Left turn on red. You may turn left at a red light after stopping only if you are traveling on a one way street and turning onto another one way street, unless there are signs prohibiting a left turn on red.

The Energy Quarterly was printed on recycled paper.

What Totaled 3.6 Trillion Btus?

State and Federal Programs Save $16.1 Million

In its just-released 1988 Annual Report, the Nebraska Energy Office, reports that state and federally funded programs saved 3.6 trillion Btus (British thermal units), the equivalent of $16.1 million between 1987 and 1988.

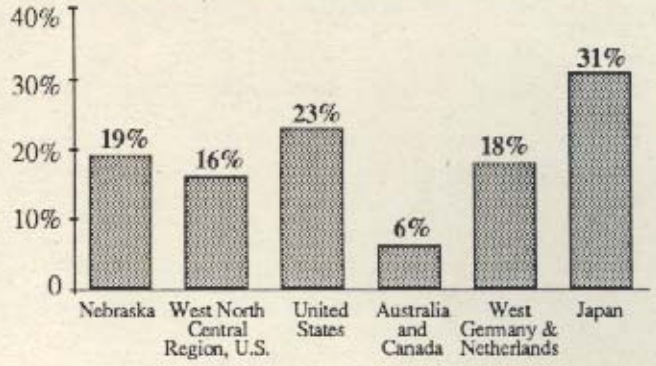
The federal Institutional Conservation Program which pays for half of the energy saving building improvements in schools and hospitals, reported savings totaled an estimated $3.6 million.

In the nation's oldest state-funded energy conservation building improvement program, the School Weatherization Program, an estimated 1.1 trillion Btus or $4.7 million was saved. The program pays up to $2,500 per building to conduct energy analyses of public school buildings. Energy saving improvements identified in the study may then be financed with no-interest loans repayable within 14 years.

Energy Efficiency Tops 19%

In a section of the report which compares energy efficiency improvement among states and nations between 1973 and 1986, Nebraska made better strides than other states in its region, improving its energy efficiency by 19% over the 13 year period. By contrast, the West North Central Census Region (including Nebraska, North and South Dakota, Iowa, Minnesota, Kansas and Missouri) increased its efficiency by 16%. The country as a whole improved energy use by 23%. Comparisons with other countries are illustrated below.

Improvements in Energy Efficiency, Nebraska, United States and Selected Countries, 1973-1986



Free copies

Copies of the Energy Office's 1988 Annual Report can be obtained by contacting **Jerry Loos in the Energy Office.**

CAREIRS Factsheet

Buying an Energy Efficient House

Buying a new home can be an exciting and scary prospect. In many cases, potential buyers are not architects, builders or engineers, so they're at a disadvantage. That dream house may turn out to be a costly nightmare if it isn't energy efficient. One way to avoid purchasing an "energy hog" is to know what makes a home energy efficient.

What's Important, What's Not

Poor insulation, lack of weatherstripping and inefficient appliances are just a few conditions that can lead to added expenses. To avoid buying a house that will use a lot of energy and result in exorbitant energy bills, consumers can determine what features are important and how to inspect a house.

Take a Checklist Along

To learn about what makes a home energy efficient, ask for the fact sheet "Buying an Energy Efficient House" (FS207) from the Conservation and Renewable Energy Inquiry and Referral Service (CAREIRS). This fact sheet provides a brief explanation of important energy efficiency features, such as insulation, ventilation, caulking and weatherstripping, landscaping, appliances and windows. It also offers the potential homeowner tips for checking energy features with realtors and previous owners and may serve as a handy checklist to take along when viewing a house. "Buying an Energy Efficient House" includes a bibliography. CAREIRS also has fact sheets on many of the specific energy features mentioned in this article.

To receive a free copy of "Buying an Energy Efficient House," write: CAREIRS, P.O. Box 8900 Silver Spring, MD 20907 or call (800) 523-2929.

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