

Nebraska Energy Office

1992

Annual Report

STATE OF NEBRASKA

EXECUTIVE SUITE

P.O. Box 94848
Lincoln, Nebraska 68509-4848
Phone (402) 471-2244



E. Benjamin Nelson
Governor

February 12, 1993

Dear Nebraskans:

Just two years ago, our nation was in the midst of dealing with Iraq's invasion of Kuwait, imperiling yet again the country's energy supply. It is events such as this that continue to demonstrate the nation's dangerous reliance on others for its most basic of needs — petroleum — and reminds us that persistence in reducing that reliance must be maintained. We must continue our efforts at energy conservation and efficiency to lower the state's \$3 billion-plus total energy bill.

In December, 1992, I released the *Energy Action Plan* identifying 20 different ways Nebraskans and state government can use energy resources more wisely. Nine of these objectives address ways of reducing the state's nearly total reliance on petroleum-based transportation fuels. It's time for government to illustrate by example that it can use energy efficiently and lead in the use of tomorrow's alternative fuels — electricity, ethanol, natural gas and propane.

The 19-state Governors' Ethanol Coalition, which I founded and chaired during its first year, has had a tremendous impact on policy planners and decisionmakers nationwide. Ethanol is good for Nebraska agriculture. This renewable fuel reduces our dependence on imported petroleum and improves the nation's air quality.

The Energy Office's Dollar and Energy Saving Loan Program, which I referred to in my *State of the State* speech, illustrates an innovative public-private partnership to finance energy efficiency improvements. It is unique in all the country. While it operates for the benefit of Nebraskans, no state funds capitalized nor finance its operation. Yet everyday the program provides low-cost financing to people wanting to reduce energy use and costs. In the last 18 months, the number of loans issued has increased 27.6 percent to 5,706 and the total amount of loans made by the state's financial institutions has risen by 34 percent to \$32.5 million. This is a remarkable achievement since only \$14.4 million in oil overcharge funds was invested in the program. This shows how important energy efficiency is to Nebraskans.

It is with pleasure that I present the Nebraska Energy Office's 1991-1992 Annual Report.

Sincerely,

A handwritten signature in black ink that reads "Ben Nelson".

E. Benjamin Nelson
Governor

An Equal Opportunity/Affirmative Action Employer



printed on recycled paper

Table of Contents

Energy Financing Division	
Nebraska School Weatherization Program	1
Institutional Conservation Program	2
State Energy Conservation and Energy Extension Service Division	
State Energy Conservation Program	3
Energy Extension Service	4
Oil Overcharge Funds	4
Weatherization Division	
1991-1992 Highlights	11
Since 1979	12
Grants and Legislation	
Grants	13
Legislation	13
Natural Gas Technical Assistance	
<i>Municipal Natural Gas Regulation Act</i>	14
Technical Assistance	14
Ethanol	
1991-1992 Activities	15
Issues and Trends	
Transportation	17
Electricity Developments	18
Nuclear Power and Nuclear Waste	19
Natural Gas Developments	20
Alternative Energy	21
Petroleum	22
Fiscal and Organizational Notes	
Financial Review	23
Organization	24

Table of Figures

Fig. No.	Title	Page
1	Institutional Conservation Program Grants and School Weatherization Loans and Grants by County, 1991-1992	1
2	Institutional Conservation Program Grants Awarded, 1980-1992	2
3	Gasoline Equivalent Saved by State Energy Conservation and Energy Extension Service Programs	3
4	Nebraska Energy Settlement Fund	5
5	Oil Overcharge Funds Invested in Types of Dollar and Energy Saving Loans	6
6	5% Dollar and Energy Saving Loan Program	6
7	Cumulative Savings of Communities Borrowing Electrical Load Management Resource Funds	6
8	Oil Overcharge Contracts	8
9	Weatherization Funding Sources, 1988-1992	11
10	Nebraska Weatherization Assistance Program Service Areas and Homes Weatherized	11
11	Number of Homes Weatherized and Sources of Funds, 1979-1992	12
12	Areas Receiving or Appealing Natural Gas Rate Requests in 1991-1992	14
13	Governors' Ethanol Coalition Member States	16
14	Total Energy Expenditures, Nebraska, 1970-1991	17
15	Gasoline at Historic Lows	18
16	Chicago & North Western Rail Line in Nebraska	18
17	Natural Gas Production, Nebraska, 1960-1991	21
18	A Slowdown in Drilling	22
19	Where The Money Came From	23
20	Where The Money Went	23
21	Nebraska Energy Office Organization	24

technical reviews of the planned improvements, monitor the progress of the energy modifications, collect loan repayments and analyze energy consumption reports filed by schools.

Zero Interest Loans

During the 1991-1992 fiscal year, \$506,025 in energy improvement loans were approved for projects in 24 buildings in 18 school districts.

The loan portion of the program is designed so a school district retains half the savings resulting from an energy improvement, while the rest goes toward repayment of the loan. This structure allows a school to immediately share in the return on its investment.

During the current fiscal year, reporting school districts have shown an actual energy savings of 44,208 million Btus, which represents a 6 percent reduction in energy use. The cumulative energy savings which have been reported since the implementation of the program are 135,836.3 million Btus or 23,420 barrels of oil equivalent.

As of June 30, 1992, the Program's loan pool contained \$13 million of which \$5.2 million was still available for loans and \$136,839 for engineering study grants. Currently, 117 school districts have 232 loans in repayment, totaling \$7.6 million. In 1991-1992, the agency approved loans for energy improvements in 24 buildings in 20 districts amounting to \$695,855 and \$374,907 has been set aside for 13 more projects in seven school districts. Applications and inquiries are currently under review for 14 buildings in four school districts amounting to \$385,047.

Projects funded through the loan program must have an anticipated payback period of less than their expected life. The loan period may be up to fourteen years.

The table and figure 1 on the previous page list the school districts receiving loan funds in 1991-1992.

Engineering Study Grants

The School Weatherization Program also provides grants up to \$2,500 per building to finance an engineering study and report on the building and its energy-using systems. A registered professional engineer or architect must conduct the study, which identifies all potentially cost-effective conservation improvements, as well as energy-saving changes in operation and maintenance procedures.

During 1991-1992, the Energy Financing Division issued engineering study grants totaling \$75,000 to 15 school districts for studies in 30 buildings. The table on the previous page lists grant-receiving

schools and figure 1 identifies the counties of schools receiving grants.

Institutional Conservation Program

The Institutional Conservation Program provides 50/50 federal matching grants to hospitals and public and private schools, either for engineering studies to identify cost-effective, energy-saving building improvements or for implementation of energy improvement projects. The Energy Office provides program information to applicants, reviews and ranks applications, submits project proposals to the U.S. Department of Energy for final review and monitors the progress of approved projects.

1991 and 1992 Grants

In August 1991, the U.S. Department of Energy awarded \$354,208 under the program's thirteenth

Institutional Conservation Program July 1, 1991 - June 30, 1992 Engineering Study Grants

School	No. of Buildings	Amount
Ashland- Greenwood Schools	1	\$1,625
Battle Creek Public Schools	2	\$4,260
Omaha Boys Town	4	\$15,236
Omaha Brownell- Talbot School	1	\$2,250
Omaha Opportunities Center	1	\$2,310
Omaha Roncalli High School	1	\$4,399
Pender Hospital	1	\$3,456
Sutherland Public Schools	1	\$2,000
Tecumseh Public Schools	3	\$4,379
University of Nebraska- Omaha	2	\$19,550
TOTAL	17	\$59,465

Energy Conservation Grants

Broken Bow Medical Center	1	\$10,030
Chadron Hospital	1	\$87,749
Gothenburg Hospital	1	\$11,735
Lincoln Blessed Sacrament School	1	\$1,585
North Platte-Hall School District	1	\$10,845
Omaha Boys Town	3	\$79,676
Omaha St. Cecilia School	1	\$6,189
Ravenna Public Schools	1	\$4,524
Trenton Public Schools	1	\$3,450
University of Nebraska- Kearney	1	\$78,960
TOTAL	12	\$294,743

grant award cycle — \$59,465 for engineering studies on 17 buildings and \$294,743 for energy conservation projects in 12 buildings. The energy conservation projects funded by the 1991 grants are expected to cost \$495,139 but are expected to save \$90,011 annually in avoided energy costs. The table below lists recipients of both engineering study grants and energy improvement grants.

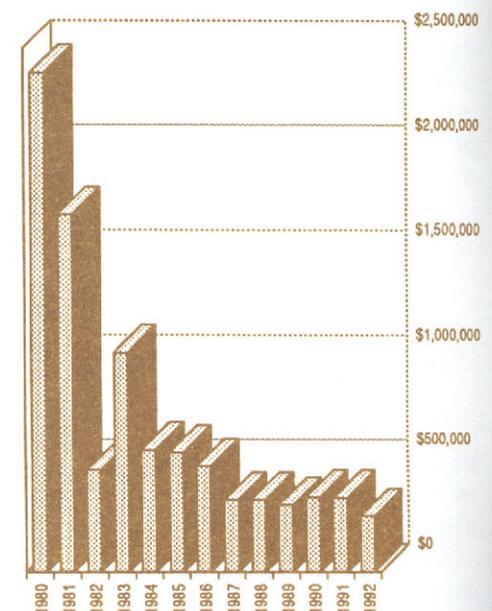
Under Cycle 14, 17 schools and hospitals applied for \$155,184 for engineering study grants in 31 buildings. Fifteen schools and hospitals applied for grants to fund energy saving building improvement projects estimated to cost \$365,457 in 17 buildings. Only \$265,986 was requested for eligible projects and studies. Grants are expected to be awarded in August 1992.

Since 1980

A total of \$9.2 million in federal funds has been awarded to 210 different Nebraska institutions for energy savings studies and improvements in buildings since 1980, when the program became operational in Nebraska.

Annual funding, for the most part, has remained in the \$260,000 to \$350,000 range since 1987. However, the \$300,000-plus in grant funds currently available is only 11 percent of what was initially awarded to schools and hospitals in 1980 (see figure 2 below).

Institutional Conservation Program Grants Awarded 1980-1992



Source: Nebraska Energy Office

Figure 2

State Energy Conservation and Energy Extension Service Division

INCLUDING
OIL
OVERCHARGE
FUNDS

The Energy Office is responsible for administering two federally-funded programs created under the *Energy Policy Conservation Act* of 1975 — the State Energy Conservation Program (SECP) and the Energy Extension Service (EES). Both programs let the state use its discretion in providing energy conservation services, but the Energy Office must submit annual program plans to the U.S. Department of Energy.

In general, agency staff run the SECP and EES programs directly. In some cases, the agency may work closely with outside contractors hired to perform the work. The Division is also responsible for preparing annual energy savings reports, *Nebraska Energy Statistics*, *Nebraska Energy Quarterly* and for federal reporting requirements on oil overcharge programs such as the Dollar and Energy Saving Loan Program (see page 6).

During calendar year 1991, SECP/EES Programs produced estimated

annual energy savings of 4.839 trillion Btus, which is equivalent to 38.691 million gallons of gasoline. Figure 3 shows estimated savings over the past seven years as a result of specific SECP/EES projects.

State Energy Conservation Program

Since the inception of the State Energy Conservation Program, the federal government has granted funds on an 80/20 matching basis to the states. In 1991-1992, Nebraska received \$112,900 in federal funds which were matched with \$22,580 in state funds.

In 1991-1992, SECP projects included:

- Federally-mandated projects
- Oil overcharge project management
- Energy shortage management and emergency preparedness
- Energy Policy development

Federally-Mandated Projects

According to the *Energy Policy Conservation Act*, the Energy Office must undertake mandatory projects in the specific areas of procurement, transportation, lighting standards, thermal standards and right-turn-on-red. Since the Legislature passed legislation allowing right turns on red lights in Nebraska, the federal government has required no further action on this mandatory activity. Nebraska also has left-turn-on-red legislation for one-way streets.

Oil Overcharge Project Management

The majority of oil overcharge projects are managed as SECP or EES projects. See pages 4-10 for a full description of projects financed by Petroleum Violation Escrow, or as more commonly known, oil overcharge funds.

Gasoline Equivalent Saved by State Energy Conservation and Energy Extension Service Programs

(Millions of Gallons)

Project Type	1985	1986	1987	1988	1989	1990	1991
Thermal Lighting Standards	11.072	14.904	18.768	22.368	26.080	30.144	33.304
Nebraska Community Energy Management Program	0.248	0.336	0.384	0.384	0.392	0.392	0.392
Agricultural Energy Management	0.496	0.744	0.992	1.240	1.240	1.400	1.400
Omaha Traffic Light Program	0	0	0	0	1.803	1.803	1.803
Dual Fuel Vehicles	0	0	0	0	0	0	0
Municipal Loan Programs	0	0	0	0	0	0.011	0.018
Public Buildings	0	0	0	0	0	0.003	0.083
Dollar and Energy Saving Loan Program	0	0	0	0	0	0.134	1.691
Total Gallons of Gasoline Saved (in millions)	11.816	15.984	20.144	23.992	29.515	33.887	38.691

Source: Nebraska Energy Office

Figure 3

Energy Shortage Management and Emergency Preparedness

During 1991-1992, the state continued energy emergency preparedness activities. Contingency plans developed in prior years provide the structure for any necessary energy emergency preparedness activities. The agency regularly tracks the status of energy supplies into the state and any conditions which might disrupt supplies.

Numerous electrical power outages due to ice storms and tornadoes as well as diesel fuel outages during periods of heavy field use have come to be expected. However, the winter of 1991-1992 was notable for the severity of the ice storms. Electrical power outages occurred throughout the state, but were most severe and longest in the southeast.

During these periods, the agency coordinated with state civil defense personnel and continued to monitor the adequacy of energy supplies to the communities.

Energy Policy Development

In spring 1991, the Governor appointed a 52-member Energy Policy Council to develop recommendations for the state's first energy policy plan. The Energy Office coordinated the council's work.

A first draft of the group's suggestions were reviewed by over 2,000 Nebraskans at 15 regional meetings. Modifications to the first draft of the policy plan were made based on people's recommendations. A summary of the second draft of the plan was distributed to 10,000 people in the fall of 1991. Several weeks later, six public hearings were held for citizen reactions to the second draft. Further modifications were made before presenting the *Nebraska Energy Policy Plan: Recommendations* to the Governor in January 1992.

The Energy Office was assigned to evaluate the recommendations and determine their feasibility, benefit and cost and prepare an Energy Action Plan. The Plan will be presented to the Governor by December 1992.



Energy Extension Service

Since the inception of the Energy Extension Service (EES), the federal government has granted funds on an 80/20 matching basis to the states. In 1991-1992, Nebraska received \$60,100 in federal funds which were matched with \$12,020 in state funds.

In 1991-1992, EES projects included education and information programs and oil overcharge project management.

Education and Information

The Energy Office continued to deliver energy education materials targeted for grades kindergarten-12. Classroom materials and audio-visual aids were made available at no cost to the state's educators.

Energy Information Services offered by the U.S. Department of Energy

CAREIRS — Conservation and Renewable Energy Inquiry and Referral Service answers energy conservation questions at no charge to the general public. 1-800-523-2929, Box 8900, Silver Spring, MD 20907

NATAS — National Appropriate Technology Assistance Service offers free, tailored technical and commercial assistance. 1-800-428-2525, Box 2525, Butte, MT 59702

NREL/TIS — The National Renewable Energy Laboratory/Technical Inquiry Service offers technical solar information for science and industry professionals. 1-303-231-7303, 1617 Cole Boulevard, Golden, CO 80401

NEIC — The National Energy Information Center provides data and projections on energy production, consumption, prices and supplies. 1-202-586-8800, U.S. Dept. of Energy, Forrestal Bldg., E1-22, Room 1F048, 1000 Independence Ave., S.W., Washington, D.C. 20585

The first national Energy/Environmental Education conference was attended by an agency staffer and two Nebraska teachers — one parochial and one public. Educators, administrators and program developers reviewed energy education programs from around the nation. The two teachers' expenses were paid for with a portion of a \$3,000 grant from the U.S. Department of Energy.

The Energy Office publishes and distributes the *Nebraska Energy Quarterly* to thousands of Nebraskans. The *Quarterly* highlights a variety of energy conservation projects and ideas. Two mandated agency publications, the *Annual Report* and *Nebraska Energy Statistics*, were also produced and distributed.

Oil Overcharge Project Management

Some oil overcharge projects are also managed as EES projects. These Petroleum Violation Escrow-funded projects and others managed by other divisions are detailed on this and subsequent pages in this section.

Oil Overcharge Funds

Since 1982, Nebraska has been receiving oil overcharge funds (also referred to as Petroleum Violation Escrow funds) as a result of various court actions against oil companies that overcharged their customers during the period of federal price controls from 1973 through 1981. Since direct compensation to injured consumers seemed unrealistic, the courts ordered the oil companies to distribute award money to the states to fund programs that provide indirect restitution to injured energy consumers. States were directed to use the money, within parameters established by the courts, to fund energy assistance and conservation programs.

The agency's three programmatic divisions — Financing, Weatherization and State Energy Conservation and Energy Extension Service — oversee and manage projects financed by oil overcharge funds.

The Nebraska Energy Settlement Fund

The Nebraska Energy Settlement Fund was established by the Legislature for money paid to Nebraska from awards or allocations to the state in oil overcharge cases since March of 1986. Total funds (including interest) received as of June 30, 1992 were approximately \$39.1 million: \$22.73 million in

Nebraska Energy Settlement Fund

A Summary of Exxon, Stripper Well and Diamond Shamrock Oil Overcharge Funds, June 30, 1992

	<i>Exxon</i>	<i>Stripper Well</i>	<i>Diamond Shamrock</i>	Total
Total Received	\$15,504,944	\$12,582,157	\$359,172	\$28,446,273
Interest Earned	7,228,470	3,299,516	149,142	10,677,128
Total	\$22,733,414	\$15,881,673	\$508,314	\$39,123,401
Less Budgeted				
Contracts	\$3,742,962	\$5,972,000	\$0	\$9,714,962
Program Development	103,692	0	6,434	110,126
Monitoring/Evaluation	296,308	0	0	296,308
Education	226,824	0	0	226,824
Load Management	50,039	0	0	50,039
Attorney General Legal Fees	0	299,327	0	299,327
Bank Wire Fees	0	83	0	83
Low Income Weatherization	3,954,614	2,370,682	0	6,325,296
Emergency Preparedness	95,000	0	0	95,000
Dollar & Energy Saving Loan Program	11,344,097	2,855,903	0	14,200,000
Loan Program Delivery	475,970	0	0	475,970
Special Projects	322,896	0	0	322,896
Designated Interest	575,122	665,658	0	1,240,780
Oil Overcharge Administration	0	384,199	489,380	873,579
Direct Restitution Project	0	0	12,500	12,500
Governor's Overcharge Plan '89	0	605,000	0	605,000
Governor's Overcharge Plan '90	100,000	0	0	100,000
Uncommitted Balance	\$1,445,890	\$2,278,926	\$0	\$3,724,816
Low Income Uncommitted	\$0	\$449,895	\$0	\$449,895

Source: Nebraska Energy Office

Figure 4

Exxon funds, \$15.88 million in *Stripper Well* funds and \$.51 million in *Diamond Shamrock* funds.

A total of \$3.7 million (\$1.44 million from *Exxon* and \$2.27 million from *Stripper Well*) remains in a reserve fund and has not been committed to any new or existing programs (see figure 4). Also, one-half million dollars of the uncommitted balance are, by court order, allocated to low-income programs.

Specific Oil Overcharge Projects

The status of each oil overcharge project financed by the Nebraska Energy Settlement Fund, reviewed by the Legislature and approved by the U.S. Department of Energy is described here.

Arbor Day Center Project

Exxon funds totaling \$562,400 were added to the Dollar and Energy Saving Loan program and in turn loaned to the National Arbor Day Foundation which

leveraged a loan through a local lender for the construction of a fuelwood-based heating system for the Lied Conference Center in Nebraska City.

Under the loan program, a local lender originated the loan of \$1.124 million of which one-half was purchased by the Energy Office at zero interest. The interest rate to the Foundation was three percent. Two other local lenders also purchased one-third of the 15-year loan.

The Foundation is repaying the loan monthly and those repayments are being returned to the loan program for use by other borrowers.

Auburn Public Schools Foundation

The Auburn Public Schools Foundation completed a three-year residential energy audit and weatherization program for the city's high school industrial arts students. In the summer of 1991, students completed the final phase of the project where seven Auburn homes were weatherized.

Of the initial \$93,725 in *Exxon* funds awarded, \$74,431 were spent. The Foundation provided \$1,800 in cash and \$96,010 in matching funds.

College of Technical Agriculture at Curtis Building Weatherization

The University of Nebraska College of Technical Agriculture at Curtis, under contract, will receive \$250,000 in *Stripper Well* oil overcharge funds to weatherize campus buildings. During 1991-1992, the campus administration identified potential weatherization projects and had an engineer evaluate them for cost and energy savings. The first project completed was adding insulation, thermostats and new windows to the dormitories. No oil overcharge funds have been spent to date since the college will request reimbursement when all of the projects are completed.

Courthouse Trail

Berggren and Woll, a Lincoln architectural firm, completed its program, Courthouse Trail, designed to illustrate the energy savings potential of energy saving improvements in historically significant county buildings.

Post-improvement analyses of the five projects (courthouses in Antelope, Gosper, Hamilton, Kimball and Pawnee counties), illustrated that while only moderate cost savings were achieved, the buildings entire energy use should be evaluated with priorities established before energy conservation projects are selected.

The architectural firm spent \$627,579 of its \$629,454 *Exxon* grant. Cash matches provided by the counties totaled \$166,669 and \$14,462 for the architectural firm.

Demonstration Lighting Project

This \$40,000 *Exxon*-funded project (low-income restricted funds) was designed to replace incandescent lights with compact fluorescent bulbs in multi-family high-rise units in Omaha.

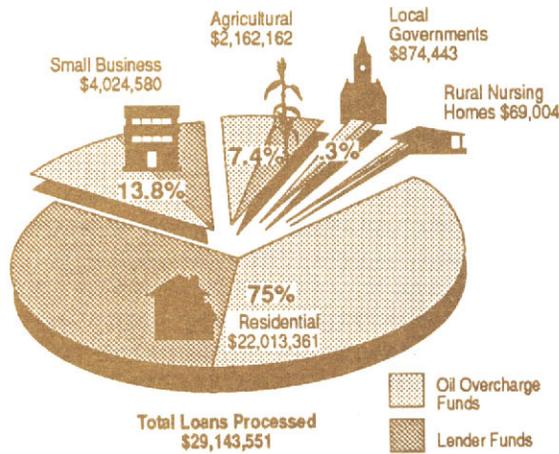
In the past two years, no eligible contractor expressed interest nor proved a need for this effort. As a result, the federal government approved an alternative use of these funds.

The Landlord Loan Program, a part of the Dollar and Energy Saving Loan Program, was approved in April 1991. Ten thousand dollars from SECP Special Projects were added to the initial \$40,000 in *Exxon* Funds. The oil overcharge funds were matched with a \$50,000 U.S. Department of Energy incentive grant to capitalize the Landlord Loan Program.

No loans had been made by the end of the fiscal year. For more information about this project, see page 12.

Oil Overcharge Funds Invested in Types of Dollar & Energy Saving Loans

July 1, 1991 through June 30, 1992



Source: Nebraska Energy Office

Figure 5

The Dollar and Energy Saving Loan Program

Exxon funds totaling \$11.34 million and \$2.86 in Stripper Well funds have capitalized the Dollar and Energy Saving Loan Program, which provides low-interest loans to Nebraskans to finance home, building and system improvements. Over 300 participating lenders provide a maximum of five percent financing for up to ten years on loans for pre-qualified energy projects such as:

- Doors, walls windows and ceilings
- Heating, air conditioning and water heating
- Lighting
- Appliance replacement

All other energy improvements require an energy audit before a borrower may be approved for a loan. These may be financed for up to five, ten or fifteen years depending on the type of improvement. Funds are also available at zero percent interest for energy audits. Loans are available for

homes, apartments, small businesses and nonprofits, farms and ranches, rural nursing homes and subdivisions of local government.

Applicants obtain appropriate forms from the Energy Office. After obtaining bids, applicants may then apply for a loan from one of the lenders across the state. Once a lender approves the loan application, a commitment agreement is submitted to the Energy Office for review. On final approval from the agency, the lender notifies the applicant to proceed with the energy improvement project.

Since the loan program began over two years ago, 5,400 project loans have been made. Over \$16.1 million in oil overcharge funds (the initial \$14.2 million plus loan repayments which have been reloaned) have leveraged in excess of \$13 million from the state's private lenders. Over \$29 million in low interest loans have been used to finance energy saving projects (see figure 5). The types of energy improvements being made are illustrated in figure 6.

The loan program has federal approval to operate through the year 2000 at which time it may be reauthorized.

Downtown Lincoln Commuter Trail

Exxon funds totaling \$97,000 have been dedicated to partially support a \$402,800 commuter bike trail in downtown Lincoln, closing several gaps in the existing trail network. Construction of the first phase,

5% Dollar & Energy Saving Loan Program Analysis of Improvements 1992

Type of Improvement	Total Project Costs (Energy Office, Lender and Borrower Funds)	Percentage of All Loans
Appliance Replacement	\$283,674	1.0%
Windows, Walls, Ceilings and Floors	\$11,814,151	41.1%
Mechanical Systems	\$14,011,506	48.8%
Lighting Systems	\$340,649	1.2%
Process Improvements	\$206,562	0.7%
Livestock Production	\$29,390	0.1%
Grain Production	\$2,045,504	7.1%
Energy Audits	\$900	Less Than 0.1%
Totals	\$28,732,336	100%

Source: Nebraska Energy Office

Figure 6

the 1.2 mile Central Rock Island Downtown Commuter Trail was nearly complete by June 1992. A second phase north of the campus should be completed by the end of 1992. The city is providing \$305,800 in matching funds. To date, no funds have been expended pending the receipt of claims from the city.

Electrical Load Management Resource Fund

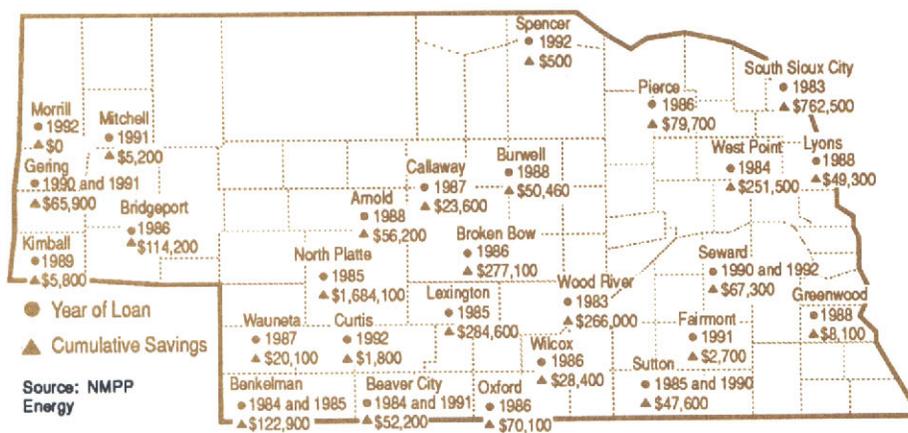
In 1983, the Energy Office capitalized the Electrical Load Management Resource Fund with \$50,000 in oil overcharge funds. (Originally Section 155 funds were granted, but in 1987 these were replaced with Exxon funds.) Under contract, the Nebraska Municipal Power Pool (NMPP Energy) manages the loan applications and repayments.

The fund offers interest-free gap financing to the group's ninety-plus Nebraska-member municipal electric utilities to help them purchase and install or upgrade load management systems. These systems allow utilities to monitor and reduce peak demand, save energy and avoid being charged for expensive electricity produced during high use times.

Over the ten years of operation, the initial capital

Cumulative Savings of Communities Borrowing Electrical Load Management Resource Funds

1983-1992



Source: NMPP Energy

Total Estimated Savings to Date \$4,397,860

Figure 7

investment of \$50,000 has revolved over six times, saving ratepayers in the participating towns over \$4.3 million (see figure 7). Communities that install load management systems continue to earn additional savings during the lifetime of the equipment.

In 1991-1992, four loans were made — Seward, \$10,000; Curtis, \$12,000; Morrill, \$10,000 and Spencer, \$18,000.

Emergency Preparedness

Exxon funds totaling \$95,000 continued to be used for staff and other costs required to maintain the state's mandatory energy shortage management plan. See page 4 for details about emergency preparedness activities in 1991-1992. In this reporting period, a total of \$3,474 has been spent on this activity.

Energy Management Circuit Rider

Four hundred thousand dollars in *Stripper Well* funds have financed a two-year pilot project to provide technical assistance to cities, counties, school districts, hospitals and nursing homes in parts of the state. The Circuit Rider Program operates within the jurisdictions of two community colleges — Central in Columbus and Mid-Plains in North Platte.

For the past two years, circuit riders have assisted institutions and communities develop self-supporting energy management programs, identify necessary energy improvements and utilize energy accounting systems. Participating facility managers have reported cost savings between 10-40 percent after making energy improvements.

Under contract, the program based at Columbus was extended for a third year as it transitions to self-supporting status. Nebraska Public Power District and NMPP Energy have contracted with the program to provide training and conduct technical energy audits. The North Platte-based program has not yet submitted plans for moving to self-sufficiency. Of the initial \$400,000, \$263,101 have been spent to date.

Hundred Points of Light

A quarter of a million dollars in Exxon funds is being used to subsidize the replacement of incandescent bulbs with compact fluorescent lamps in commercial buildings. Compact fluorescent bulbs require only one-quarter the energy to produce an equivalent amount of light. They are more expensive but last up to ten times longer, often paying for themselves in one or two years.

The Energy Office is working with the state's two largest electric providers — Nebraska and Omaha Public Power Districts — to educate building owners about the benefits and proper use of the bulbs. Both utilities are operating pilot efforts in which they sell compact fluorescents to their commercial customers with a five dollar subsidy. The subsidy is equally

shared by the Energy Office and the utility. Expansion of the program is undetermined at this time.

Of the initial \$250,000, \$37,814 have been spent. The utilities have provided \$31,974 in matching funds. Fifty thousand dollars from this program were diverted to the state's GreenLights program. For more information about the GreenLights program, see page 9 (State Buildings Energy Team).

Innovative Energy Grants

Stripper Well funds totaling \$500,000 have been earmarked for grants to individuals for research and/or development of energy-related inventions. The Energy Office, along with the University of Nebraska's Technical Assistance Center, has developed evaluation criteria for project review.

Since the grant program was announced, 26 grant requests have been received. Six applicants were invited to submit further information for detailed analysis. To date, no grant requests have been funded.

Kimball Electrical Metering Survey

Kimball city government concluded an end-use survey of electrical users. The results of the survey revealed nearly identical summer and winter electrical loads, precluding the need for additional load management activities. However, the municipal utility continues to consider other energy efficiency improvements for the future.

The metering equipment purchased for the survey is continuing to be used by other members of NMPP Energy, an association of municipally-owned electric utilities.

Only \$14,620 of the \$20,000 grant in Exxon funds was used. The city provided an additional in-kind match of \$19,515.

Lincoln Energy Conservation Interest Subsidy and Rebate Program

Lincoln's city government completed its energy conservation interest subsidy and rebate program in 1991. Over the life of the program, interest rates ranged from zero to three percent and rebates up to 25 percent (a maximum of \$2,500) for making energy conservation improvements in residential and mixed use buildings.

A total of 419 different projects was provided financial assistance before the program ceased.

The city was originally granted \$321,260 in Exxon funds for the subsidies and \$28,740 for operating the program. Funds spent to date total \$341,971. Additional support was provided in the form of a cash match of \$946,836 from the city and the Nebraska Investment Finance Authority plus an additional in-kind match of \$33,800.

Any subsidies that are not fully utilized through 2002 will be returned to the Energy Office. Unused

subsidies result when property changes hands and loans are paid in full earlier than scheduled.

Low-Income Weatherization Assistance Program

A total of \$6.32 million in oil overcharge funds (\$3.95 million from Exxon and \$2.37 from *Stripper Well*) have been allocated to the Low-Income Weatherization Assistance Program to assist low income Nebraskans with residential weatherization to improve efficiency and reduce energy costs. In 1991-1992, \$1,044,857 in Exxon funds were spent through the program.

The terms of the *Stripper Well* court order mandate that an equitable share of the funds be set aside for the state's low-income population. To date, \$619,584 in *Stripper Well* funds have been spent.

Interest accruing from both Exxon and *Stripper Well* funds earmarked for the Weatherization Assistance Program totaled \$170,640 and was approved for use by the federal government. It is anticipated these funds will be spent in future years.

For more detailed information about the Low-Income Weatherization Assistance Program, see pages 11 and 12.

Native American Tribal Governments

The *Stripper Well* court order requires the state to provide an equitable share of oil overcharge funds to Native American tribal governments. Based on the number of Native Americans in the state, \$77,000 have been set aside for eligible projects suggested by the tribal governments.

In 1991-1992, the Omaha tribe spent \$6,138 to supplement the tribe's transportation and housing improvement programs. The Santee Sioux tribe spent \$20,000 to supplement its housing improvement program.

To date, \$42,805 have been spent of the \$77,000 fund, leaving \$34,195 to be spent on future energy conservation projects.

Nebraska Recreational Trails Plan

Seventy-five thousand dollars in Exxon funds, under contract to the state's Department of Economic Development, is being used to research existing trails and potential trail corridors, prepare a Nebraska Recreational Trails Plan and determine the feasibility of implementing a statewide trails project. The state must have a plan to apply for available federal recreational trails funds. This project is scheduled for completion by the end of 1993.

To date, \$279 have been spent out of the \$75,000. The Department of Economic Development is providing \$8,631 in in-kind match.

Nebraska State College System

A total of \$1.5 million in *Stripper Well* funds was allocated for energy conservation projects at the

Oil Overcharge Contracts

state colleges. To date, the State College Systems' Board of Trustees has designated funding for only two projects: construction of a wood-fired boiler at Chadron State College and development of a comprehensive master utilities plan for Peru State College.

In 1991-1992, Chadron State's wood-fired boiler was completed in time for use during the heating season. First year savings have been estimated by college officials at \$120,000-\$140,000, resulting in a seven year payback on the \$971,520 project.

In 1991-1992, the comprehensive utilities master plan at Peru State was begun. Forty-five thousand dollars were allocated for this portion of the project.

Of the \$1.5 million, \$1,013,500 have been spent. The State College System is also providing \$18,000 in matching funds.

Neighborhood Housing Services

Under a \$250,000 Exxon grant, Neighborhood Housing Services in Lincoln had planned to provide a low-interest weatherization revolving loan program for property owners unable to use conventional credit sources. Loans were to be available at three percent interest.

Due to lack of interest by potential borrowers, the grant funds were returned to the Energy Office.

While the program was in operation, \$5,240 in oil overcharge funds were spent on operational expenses to design and promote the project.

Northern Natural Gas Cogeneration Projects

Northern Natural Gas Company completed a project to determine the potential energy savings of using natural gas to cogenerate electricity and hot water or steam in buildings in the Omaha area. Cogeneration units were installed at the Jewish Community Center and the Florence Home.

Analyses of energy and system operations revealed estimated annual savings of over \$19,000 at the Jewish Center and over \$3,000 at the Florence Home. Paybacks based on the investments were five and 20 years respectively.

Northern Natural Gas spent \$83,594 of its \$90,000 Exxon grant. The company also provided \$300,600 in cash and \$34,400 in in-kind matches.

Planning, Monitoring and Evaluating Oil Overcharge Programs

To comply with federal reporting regulations, \$384,199 in Stripper Well and \$400,000 in Exxon funds have been committed for planning, monitoring and evaluating programs funded with oil overcharge dollars. In 1991-1992, a total of \$57,068 (\$3,428 in Stripper Well and \$53,640 in Exxon) were spent.

Rural Revitalization:

Public Transportation

One million dollars (\$200,000 from Exxon and

Category	Exxon		Expenditures Through 6-30-92
	Allocated Funds	Contracts Issued	
Energy Education	\$685,499	\$530,499	\$515,499
Financing Demonstrations	1,136,455	1,136,455	812,092
Agriculture	291,276	291,276	291,276
Feasibility Studies	193,827	193,827	110,300
Building Improvement Demonstration	735,905	735,905	729,499
Transportation	700,000	700,000	700,000
Load Management	50,039	50,039	50,039
Dollar and Energy Saving Loan Program	11,344,097	9,774,171	9,774,171
Low Income Weatherization	3,954,614	3,954,613	3,003,529
Total Exxon Contracts 6-30-92	\$19,091,712	\$17,366,785	\$15,986,405

Stripper Well

Category	Allocated Funds	Contracts Issued	Expenditures Through 6-30-92
State Buildings Energy Team	150,000	0	0
Local Government			
Energy Management Circuit Rider	400,000	400,000	263,101
Public Transportation	800,000	800,000	796,883
Energy Related Biotechnology, Solar and Conservation Outreach	2,000,000	2,000,000	1,259,916
Greenhouse Project	400,000	400,000	400,000
Innovative Energy Grants	500,000	0	0
Dollar and Energy Saving Loan Program	2,855,903	2,749,707	2,749,707
Indian Tribal Governments	77,000	51,333	42,805
University of Nebraska Building Weatherization	500,000	500,000	221,116
Nebraska State College System	1,500,000	1,500,000	1,013,500
Curtis Weatherization	250,000	0	0
Total Stripper Well Contracts 6-30-92	\$11,803,585	\$10,771,722	\$7,366,612

Source: Nebraska Energy Office

Figure 8

\$800,000 from Stripper Well) were allocated to rural transportation in the form of bus subsidies and the purchase of alternate-fueled vehicles.

Half of the project funds (\$500,000) subsidized two intercity bus lines, Black Hills Stage Lines and Star Transportation Systems, for two years. Nearly 19,000 customers of the bus lines benefited from the subsidies. After spending nearly all of the subsidy funds, the bus lines ceased operations in the state. All but \$3,117 were spent on the bus subsidy portion of this project.

Under the other half of the project, 39 mini-buses and alternate fueled passenger vans were provided

to 30 rural transit systems and three Native American tribal organizations. The purchase of these vehicles was aided by the receipt of a \$831,000 Urban Mass Transit Authority grant. The total cost of the project was \$1.16 million of which the Energy Office provided \$225,000, rural transit systems contributed \$55,400 and three natural gas companies installed five refueling sites at an estimated cost of \$54,000.

Energy saving analysis for the alternate fuel vehicle project is being conducted by the University of Nebraska and should be available in 1992-1993.

The balance of the oil overcharge funds, \$275,000, was obligated under contract to the De-

partment of Roads to purchase regular fueled vehicles for rural transit systems.

Rural Transportation Feasibility Study

Under a \$5,000 Exxon contract with the Rural Development Commission, future rural transportation options are being examined. Included in the review are recommendations for maintaining existing regional public or commercial transportation systems or creating new ones. Ways of decreasing dependence on low-occupancy, high energy consumption personal vehicles will be examined. Completion of the study is due in 1993.

To date, \$1,573 in Exxon funds have been spent. The Commission is providing matching funds of \$7,930. The Exxon funds came from the SECP Special Projects category.

Schuyler Energy Conservation Loan Program

Schuyler city government and its Energy Commission continue to operate a 3.6 percent interest energy conservation loan program for homes, business, nonprofits and governmental buildings.

The loan pool was capitalized with \$178,007 in Exxon funds and \$199,500 from local lenders. Program operations were financed with an additional \$56,993 in Exxon funds.

To date, ten commercial loans totaling \$148,272 and 61 residential loans totaling \$164,983 have been made. The program is scheduled to operate through 1997.

Funds expended to date for program operations total \$20,331. The city has provided \$31,329 in in-kind match. Additional operating funds are provided by interest income.

South Sioux City Energy Conservation Loan Program

The South Sioux City Energy Conservation Loan Program is operated by the local Chamber of Commerce. This four percent interest loan program is designed to improve the energy efficiency of local commercial buildings.

The loan pool was initially capitalized with \$132,000 in Exxon funds and \$66,000 from local lenders. An additional \$6,664 in Exxon funds was set aside for operation of the program. To date, nine projects have been completed, using loans totaling \$77,332 and operational expenses have totaled \$1,203. The local Chamber of Commerce has provided \$2,200 in in-kind match.

This program is scheduled to operate through 1992. Loan repayments should continue through the

year 2000. The portion of the loan funds being repaid to the Energy Office continue to accrue in the project's account until all loan repayments have been made.

State Buildings Energy Team

As originally planned, \$150,000 in Stripper Well funds would be used to finance the State Buildings Energy Team to coordinate management and use of energy in all state buildings, recommend efficiency projects and provide energy management training for facility operators.

In March 1992, the Governor announced a state building lighting efficiency program — GreenLights — to replace the State Buildings Energy Team. Fifty thousand dollars in Exxon funds (from the Hundred Points of Light program, see page 7) were added to the initial \$150,000 in Stripper Well funds. GreenLights, a national Environmental Protection Agency effort, concentrates on using state-of-the-art lighting in commercial and governmental facilities to reduce energy, costs and pollution.

Negotiations with the designated contractor, the state's 309 Task Force, are currently underway. To date, no funds have been spent.

Statewide Energy Education

Two hundred thousand dollars in Exxon funds have been dedicated to coordinate statewide energy conservation instruction in grades kindergarten through twelfth grade and with groups such as educational service units and the state's Department of Education. The goal of the effort is to promote energy conservation to future consumers.

In 1991-1992, the agency co-sponsored, with the state's Department of Motor Vehicles (Highway Safety Division), a special television program emphasizing transportation safety and energy savings. Over six thousand tire pressure gauges were also distributed as part of the promotion.

To date, \$9,030 have been spent on this activity.

Statewide Energy in Community Planning

Originally, \$75,000 in Exxon funds had been planned to develop an energy component as part of the Strategic Targeting and Resource Training (START) program operated by the University of Nebraska at Omaha. START is an analytical and decision-making process used by Nebraska communities.

In 1991-1992, this project was modified to develop an Energy in Community Planning project consisting of two parts — financial support for the Nebraska Development Network and development of a strategic planning component which integrates

energy efficiency into traditional forms of economic development and community planning.

The Energy Office selected the state's Department of Economic Development as the most likely contractor to perform the work. Negotiations between the two agencies are currently underway. To date, no funds have been spent.

Stuart Energy Conservation Loan Program

While this local commercial loan program ceased making new loans in 1991, repayments from the borrowers will continue beyond the beginning of the next century. The portion of the loan funds being repaid to the Energy Office continue to accrue in the project's account until all loan repayments have been made.

University of Nebraska Building Weatherization

The University of Nebraska has been selected to receive \$500,000 in Stripper Well funds to finance ten energy saving projects in buildings at three campuses — Lincoln, Omaha and the Medical Center. One project was completed in 1990-1991 and the remaining nine are in various stages of completion. The payback on the projects selected range from two to almost seven years.

To date, \$221,116 have been spent on these building improvement projects.

University of Nebraska Energy-Related Research

The University of Nebraska received \$2 million in Stripper Well funds to further energy-related research. Projects selected must receive matching funds before qualifying for oil overcharge dollars.

A tenth project (The other nine research projects were detailed in the 1990 and 1991 Annual Reports) was selected for funding in 1991-1992.

- Dr. L. Davis Clements, UNL Chemical Engineering Department, received \$64,960 to prototype and optimize a system for removing plastics from institutional solid waste. If successful, this would allow pelletizing of waste into refuse-derived fuel which burns very cleanly. Matching funds for this research project were provided by the Western Regional Biomass Energy Program.

Since the research program began, \$1,259,916 in oil overcharge funds have been spent.

Non-Energy Settlement Oil Overcharge Funds

Not all oil overcharge funds are part of the Nebraska Energy Settlement Fund. Some of these funds have been held in escrow by the U.S. Department of Energy and distributed only when a plan is submitted by a state energy office and approved by the federal energy agency's Office of Hearings and Appeals.

Oil overcharge settlement funds resulting from fines levied against *Amoco*, *Palo Pinto*, *Vickers* and other companies fall into this category. According to the Department of Energy, all future settlement funds will be classified as *Stripper Well* funds and not subject to the Office of Hearings and Appeals' scrutiny.

BERT Loan Program in Omaha

The Benson neighborhood in Omaha was one of the last participants in the agency's previous communities program. As a result of that program, the Benson Energy Resource Team — BERT — was formed and launched a revolving loan program to help homeowners finance energy saving improve-

ments. The loan program was capitalized with \$90,000 in *Amoco* oil overcharge funds.

In 1990, Douglas County Bank became the administrator of the loan program which was expanded to include energy saving improvements in businesses in zipcode 68104. The interest rate to the borrower is eight percent.

During 1991-1992, two loans totaling \$19,220 were made. Since the program began, only three loans totaling \$36,860 have been made. The loan program is expected to cease in June 1993.

Dollar and Energy Saving Loan Program

The Energy Office added \$275,068 to the agricultural portion of the Dollar and Energy Saving Loan Program and \$13,753 were allocated for operating the program. The sources of the oil overcharge funds were as follows: \$176,470 from *Vickers Energy Corporation*, \$77,245 from *National Helium Corporation*, \$7,572 from *Coline Gasoline Corporation* and \$13,781 from *Standard Oil Corporation of Indiana* (known as *Amoco II funds*).

Even though legislative scrutiny was not required for this allocation of funds, the Energy Office did

submit a predisbursement plan to the Executive Board of the Legislature for review and comment.

Statewide Energy Information Service

The Energy Office secured approval for the establishment of an Energy Information Service (as recommended by the Energy Policy Council) which is to be funded with \$150,000 in *Amoco I and II* oil overcharge funds. The information service, as planned, calls for the development of a library, energy display and information center, informational materials and the distribution of the information in traditional and electronic formats.

The funds came from three different projects — interest and unspent dollars from a sugar beet planting equipment development project (Agritech), interest from a University of Nebraska's College of Technical Agriculture at Curtis curriculum project and interest and unexpended funds from a \$91,206 statewide energy management education curriculum development project at Mid-Plains Community College. The latter two projects have previously not been reported.

braska Department of Social Services, supplied a total of \$699,283 and \$1,044,857 came from Exxon Petroleum Violation Escrow Funds.

Figure 9 shows the funding amounts and sources for the past five years.

Number of Homes Weatherized

A total of 2,492 homes, down two percent from last year, were weatherized in fiscal year 1991-1992. In keeping with the agency's priority to serve Nebraska's elderly community through the Low Income Weatherization Assistance Program, the division weatherized 725 elderly households, or 29 percent.

The map below shows the ten Weatherization Assistance Program service areas and the number of homes weatherized in each area from July 1, 1991 through June 30, 1992.

Home improvements made through the program saved Nebraskans a total of \$288,720 in avoided

Weatherization Funding Sources, 1988-1992

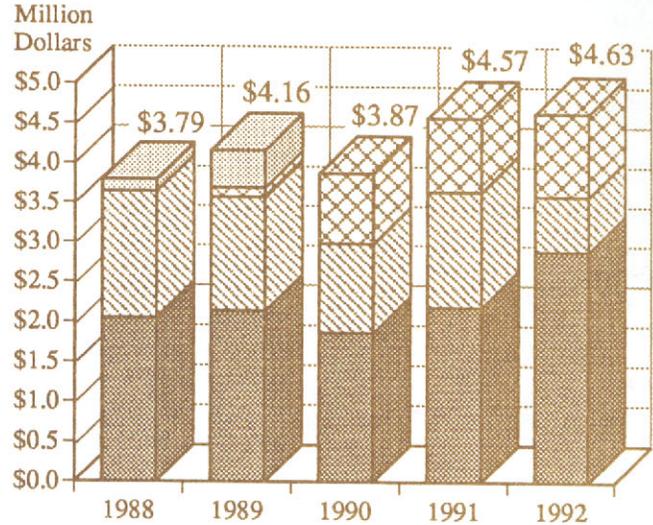


Figure 9

- Stripper Well Petroleum Violation Escrow Funds
- Exxon Petroleum Violation Escrow Funds
- Low Income Home Energy Assistance Program (U.S. Dept. of Health and Human Services)
- U. S. Department of Energy

Source: Nebraska Energy Office

Weatherization Division

The Weatherization Division administers the Low Income Weatherization Assistance Program—a federally-mandated program for weatherizing homes to save money and energy. The Energy Office is responsible for inspecting about 30 percent of the homes—or 750—that are weatherized and for monitoring and auditing the subgrantees—primarily community action agencies which actually make the home weatherization improvements.

1991-1992 Highlights

In 1991-1992, total funding for the program was \$4,633,233. The Department of Energy's Low Income Weatherization Assistance Program provided a total of \$2,889,093 and the Low Income Home Energy Assistance Program, administered through the Ne-

Nebraska Weatherization Assistance Program Service Areas and Homes Weatherized July 1, 1991 - June 30, 1992

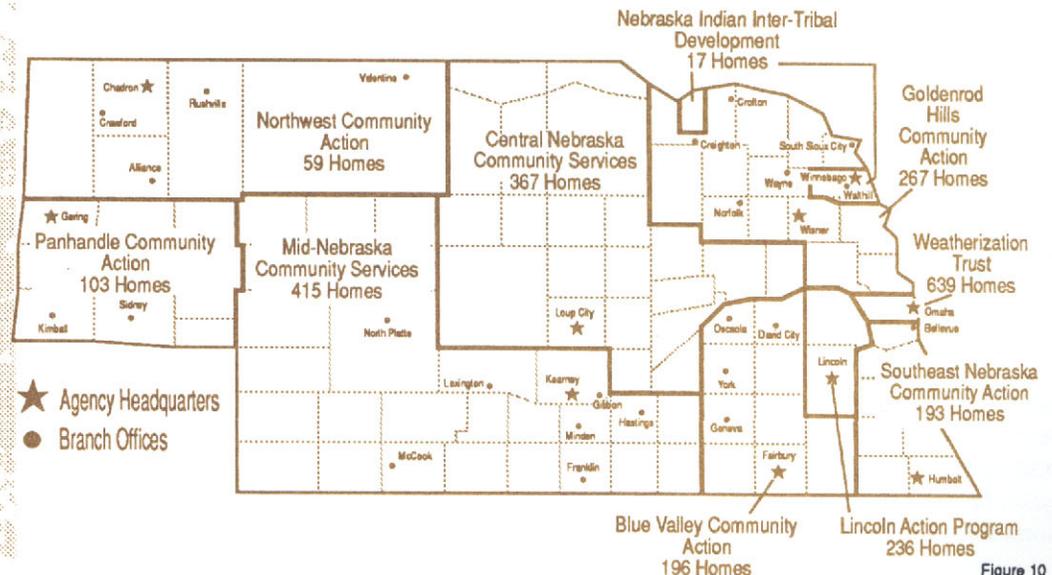
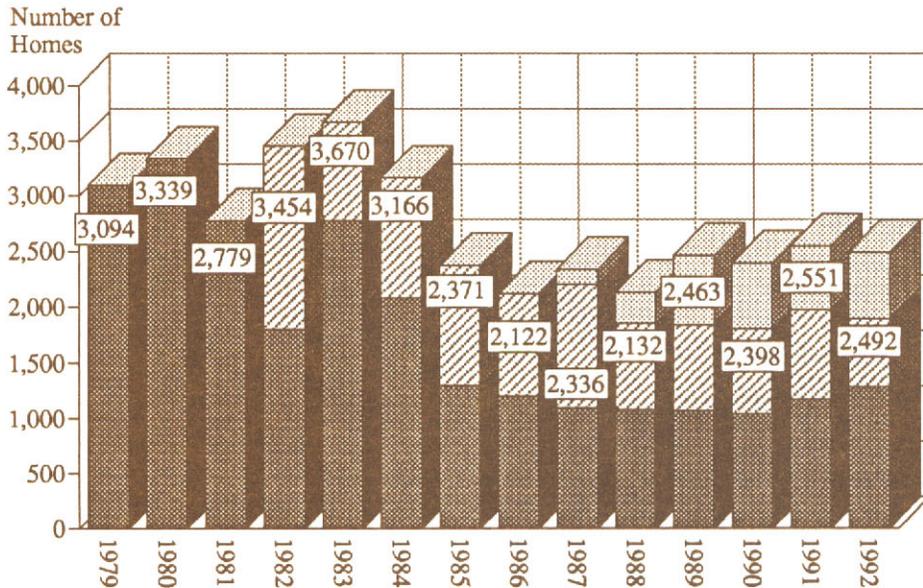


Figure 10

Number of Homes Weatherized and Sources of Funds 1979-1992



- Oil Overcharge Trust Funds
- Low Income Energy Assistance Program (U.S. Dept. of Health and Human Services)
- Low Income Weatherization Assistance Program (U.S. Dept. of Energy)

Figure 11

Source: Nebraska Energy Office

energy costs during 1991-1992. The home improvements represent a one-time investment that most likely will yield a rate of return for at least twenty years.

New Services

In April of 1992, local program providers began performing backdraft tests to check for possible carbon monoxide fumes in furnaces. This safety precaution is done twice — before and after the weatherization of a home. Efficiency tests of all furnaces and boilers in homes, begun in 1991, also continued.

Omaha Housing Authority

In the fourth year of a cooperative arrangement between the Energy Office and the Omaha Housing Authority, the Energy Office continued to provide funds for purchasing weatherization materials and the housing authority contributed funds for installing them. Annually, up to \$250,000 are made available to the Weatherization Trust for the replacement of windows, caulking, weatherstripping and ceiling insulation in housing authority buildings. The housing authority uses federal rehabilitation funds to pay the labor costs. Since 1989, 626 housing units have been weatherized of which 17 percent or 106 homes were done in this fiscal year.

Oil Overcharge Projects

The Energy Office was awarded a \$50,000 federal incentive grant to establish an innovative loan program for landlords as a part of the Weatherization Assistance Program. To these funds, the agency added \$40,000 in Exxon oil overcharge funds (from a low-income demonstration lighting program which was never started) and \$10,000 in Exxon Special Projects (oil overcharge) funds.

Because of modification in federal and state rules in the Weatherization Program, landlords owning multi-family housing (two or more units in the same building), were required to pay half the cost of weatherization improvements starting in April 1992.

To provide financing for landlords who may need assistance in sharing the costs, the \$100,000 Landlord Loan Program was created and will be operated in conjunction with the Dollar and Energy Saving Loan Program. Replacement furnaces in single-family rental homes will also be financed under the program.

In the three months of operation of this effort, no loans have been requested or made.

Regional Issues Grant

In 1991, the agency received a \$10,000 training and technical assistance grant from the regional U.S. Department of Energy for professional and program development. This is the fifth consecutive year a training grant has been received by the agency. Annually, the weatherization program staff from Nebraska, Iowa, Kansas and Missouri gather to explore issues of mutual concern. The 1991 Lincoln conference was devoted to a potential regional home energy audit design and selecting homes to be weatherized based on energy use.

Since 1979

Since the Low Income Weatherization Assistance Program began operation in the state in 1979, over \$48.5 million in federal and oil overcharge funds have been spent to weatherize the homes of low-income elderly, disabled and others.

In the past fourteen years, a total of 38,367 homes have received free weatherization (see figure 11). Yet, an estimated 65,000 Nebraska homes remain eligible for this service.

Grants and Legislation

G grants

Throughout the reporting period, the Energy Office received several one-time or project-specific grants. Collectively, the grants received totaled \$97,577. A separate \$1.3 million grant application for the City of Lincoln for alternative-fuel buses was prepared and matching funds secured through the efforts of the Energy Office.

U.S. Dept. of Energy Price Monitoring Grant

In 1992, the Energy Office received a second \$2,008 grant from the U.S. Department of Energy to continue monitoring Nebraska residential propane and fuel oil prices during the winter months.

The Energy Office, under agreement with the Energy Information Ad-

ministration, surveyed selected sellers of propane twice a month from October through March, to ask current sales prices. The survey results appear weekly in the federal agency's *Winter Fuels Report*.

The Energy Office declined a third year of participation in the 1992-93 survey.

U.S. Dept. of Energy Regional Grants

The Energy Office received three grants, awarded competitively within the four-state federal region, from the Kansas City office of the federal energy agency.

- For the fifth year, the U.S. Department of Energy's regional office gave the state Energy Office \$10,000 to conduct training sessions for the Weatherization Assistance Programs in the four-state region. For more information on this grant, see page 12.
- In September, 1991, the agency received \$28,034 from the U.S. Department of Energy's regional office to conduct lighting surveys in the state's public and private schools, train student interns and provide information to the schools on available financing opportunities to make the lighting improvements. The Energy Office matched the grant with \$7,359 in in-kind services and materials. When the studies are completed in September 1992, lighting systems in approximately 250 schools will have been surveyed.
- A U.S. Department of Energy technical assistance grant of \$3,000 was used, in part, for scholarships to allow two teachers to attend the National Energy/Environmental Education Conference was also received by the agency.

For more information on this grant, see page 4.

Western Regional Biomass Energy Program grant

A \$10,000 grant was awarded under this program to the Energy Office to support selected activities of the Governors' Ethanol Coalition. For more information about this grant and the Coalition's activities, see page 15.

The regional biomass program is one of five regional projects across the country designed to develop short-term, cost-effective uses for biomass resources — renewable organic matter, including forest residues, agricultural crops and wastes, wood and wood wastes, animal wastes, livestock operations residues, aquatic plants and municipal wastes.

A scoping study by the National Renewable Energy Laboratory in Golden, Colorado, indicated that Nebraska has the greatest potential for ethanol production from agricultural waste of any of the 13 states in the Western region.

At present, the University of Nebraska is conducting research to validate the earlier study and determine operating parameters for a hypothetical agricultural residue-to-ethanol conversion facility. This research is being completed under a \$25,000 contract from the Western Regional Biomass Energy Program.

Nebraska's region is administered by the Western Area Power Administration.

Two Energy Office representatives sit on program advisory boards, which direct the entire program as well as specific demonstration projects.

U.S. Departments of Energy and Agriculture Grant

This \$44,535 grant — \$30,000 from the Energy Department and \$14,535 from the Agriculture Department — was awarded by these federal agencies to the Energy Office to support the activities of the Governors' Ethanol Coalition. For more information about this grant, see page 15.

U.S. Dept. of Transportation's Federal Transit Administration Grant to the City of Lincoln

The Energy Office assisted the city of Lincoln in completing an application for a federal grant for at least three 100 percent ethanol-fueled buses. The \$1.33 million grant was matched with \$213,000 from eight private and public entities. The Energy Office secured the local matching funds for the city.

Legislation

Federal

Two major bills — the Senate's *National Energy Security Act* and the House's *Comprehensive Energy Policy Act* — continued to progress toward expected passage by the end of 1992. Both bills were based, in part, on the President's *National Energy Strategy* proposed in early 1991.

In late 1991, action by senators eliminated the most contentious elements of the legislation — oil and natural gas development in the Arctic National Wildlife Refuge and an increase in Corporate Average Fuel Economy for vehicles.

The House bill, as sent to the conference committee, contained sections for increasing energy efficiency, removal of regulatory barriers on natural gas pipelines, increasing use of alternate fuels and eight other sections relating to changes in energy policy.

State

Successful energy legislation in the 1992 session of the Unicameral was confined to the passage of an extension of the ethanol producer credit. As adopted, the bill extends a 20 cent per gallon credit for each gallon of ethanol produced in the state through 2000. The credit is financed with unspent ethanol plant financing funds (the program was eliminated in 1990) and highway trust funds. Each ethanol producer cannot receive more than \$5 million annually or \$25 million over five years.

Natural Gas Technical Assistance

About 30 percent of the state's natural gas consumers receive their service from one of 14 municipally-owned natural gas utilities. The remaining 70 percent, receive natural gas from one of five different investor-owned natural gas utilities — KN Energy, Midwest Gas, Minnegasco, Northwest Public Service and Peoples Natural Gas Company.

Natural gas is imported into the state to the investor-owned and municipally-owned utilities primarily through major pipelines operated by Northern Natural Gas Company and KN Energy.

Municipal Natural Gas Regulation Act

Nebraska is one of only two states in the nation to regulate investor-owned

“News that negotiators for 61 communities in Minnegasco’s rate areas in Nebraska have reached a settlement with Minnegasco on the proposed general rate increase is welcomed news here.

“Welcomed not because we will be paying more for natural gas, but because we will be paying less than what Minnegasco first asked for and that the matter appears to have been settled without a lengthy court battle.”

Editorial, *West Point News*
October 31, 1991

natural gas suppliers at the local level. Village boards and city councils review rate requests under the state’s *Municipal Natural Gas Regulation Act* of 1987. The Energy Office administers the Municipal Natural Gas Revolving Loan Fund, created by the *Act* and provides technical assistance to communities as they perform their regulatory duties.

Revolving Loan Fund

The Municipal Natural Gas Revolving Loan Fund was created in 1987 under the *Municipal Natural Gas Regulation Act*. The loan fund was initially capitalized with \$350,000 in oil and natural gas severance tax revenues. The fund finances local review of utility-initiated general rate requests and judicial review, if necessary. Groups of communities borrow from the fund to finance the rate studies and the fund

is replenished in the same amount by the utilities, which in turn recover the cost of regulation from the ratepayers.

Regulations governing the loan fund were adopted and took effect in 1987.

1991-1992 Loan Fund Activities

In 1991-1992, six rate areas representing 108 towns and villages received loans totaling \$212,021 to offset the costs of rate analysis and court actions regarding rate regulatory activities.

Thirty-three towns served by Peoples Natural Gas Company (see Figure 12 below) requested \$110,478 for the rate hearing phase of the regulatory process. In January 1992, negotiators representing the utility and the communities successfully reached

a settlement on the proposed general rate increase. This became the third negotiated settlement since passage of the *Act*.

Seventy-five towns served by KN Energy requested \$101,543.08 to cover the costs of both district and supreme court appeals phases of the regulatory process. The appeal by the communities of the district court decision was assigned to the state’s new court of appeals. A decision is expected in late 1992.

Minnegasco also reached a negotiated settlement with the 60 towns it serves in the eastern part of the state in November 1991.

Technical Assistance

Throughout the reporting period, the Energy Office provided assistance to municipal officials during all phases of the regulatory process as mandated by statute.

Typical kinds of assistance include organizing and providing support services for rate area committees, publishing periodic issues of *Natural Gas Rate Regulation Update* in each utilities’ service area, issuing requests for proposals for professional services and responding to specific inquiries regarding the regulatory process and statutes.

Areas Receiving or Appealing Natural Gas Rate Requests in 1991-1992

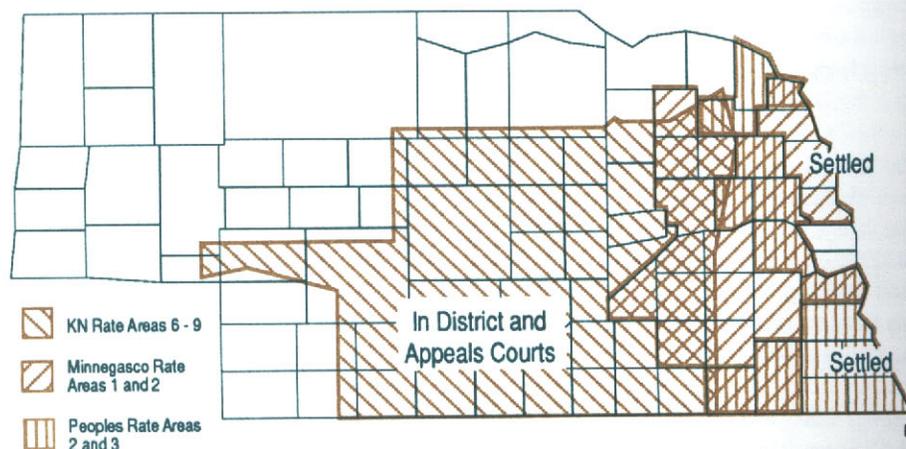
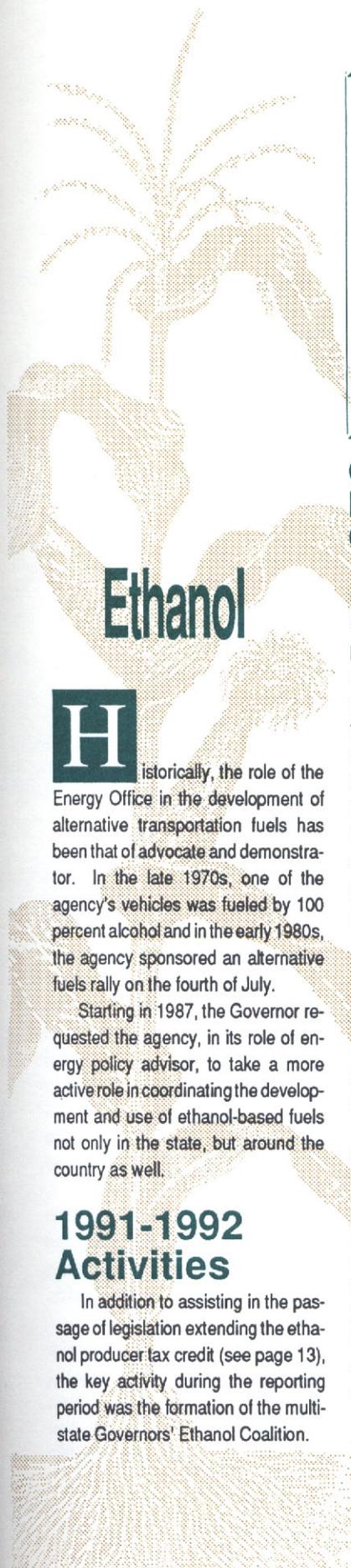


Figure 12



“Ethanol is a clean-burning fuel that’s better for the environment and it can be produced without relying on foreign suppliers. That means ethanol can help us keep the earth cleaner while we reduce the need to import petroleum-based energy from foreign suppliers.

“Best of all, ethanol is derived from a renewable source — corn and other grains — and so it will be available indefinitely for energy consumers.

“Clean, environmentally sound and renewable. What more could a person want from a fuel?”

Editorial, *Kearney Hub*
May 1, 1992

Governors’ Ethanol Coalition

In late summer of 1991, the Governor asked other governors interested in creating a group devoted to the promotion and increased use of ethanol to join him in Lincoln. The first meeting of that group (which became the Governors’ Ethanol Coalition) was attended by nine states — Nebraska, Colorado, Illinois, Indiana, Iowa, Minnesota, Missouri, South Dakota and Wisconsin. Nebraska’s Governor agreed to serve as the chairman of the group for the first year. His term expires in October 1992.

During the Coalition’s first year, its membership more than doubled to 19 governors stretching from Hawaii in the west to Kentucky in the east and from North Dakota to Texas (the current members are illustrated in figure 13 on page 16).

The federal Departments of Energy and Agriculture gave the Coalition \$44,535 (\$30,000 from the Energy and \$14,535 from Agriculture) to support the activities of the Coalition. Also, in a meeting with the Governor and Vice-Chair Jim Edgar of Illinois, the heads of Energy, Agriculture and the Environmental Protection Agency agreed to coordinate their ethanol research and related activities.

A second grant totaling \$10,000 from the Western Regional Biomass Energy Program was also received by the agency to support activities of the

Coalition. These funds were used to reimburse the expenses of individuals presenting information at the Coalition’s meetings.

At each of the group’s five meetings, briefings were provided by Detroit’s Big Three automakers on the status of the development of vehicles capable of operating on alternate fuels such as ethanol.

The Clean Air Act Amendments

The primary focus of the first year’s activities centered on the Environmental Protection Agency’s adoption of

regulations for implementing the amendments to the *Clean Air Act* passed in 1990. At the Chicago EPA hearing, the Governor, representing the Coalition, championed the carbon monoxide reducing benefits of the fuel and vowed to work with the federal government to resolve unanswered questions about ethanol’s ability to reduce smog.

The Domestic Renewable Oxygenates Initiative

In mid-1992, the Coalition proposed to the nation’s President that the country adopt the *Domestic Renewable Oxygenates Initiative*. The proposal calls for fifty percent of the oxygen required to be included in gasoline in the oxygenated and reformulated gasoline programs be derived from domestic feedstocks and thirty percent be derived from domestic renewable sources, such as ethanol, by 1995. Two years later, the percentages would increase to 80 percent domestic and 50 percent domestic and renewable.

By the end of June, the White House had yet to issue a response to the proposal.

Historically, the role of the Energy Office in the development of alternative transportation fuels has been that of advocate and demonstrator. In the late 1970s, one of the agency’s vehicles was fueled by 100 percent alcohol and in the early 1980s, the agency sponsored an alternative fuels rally on the fourth of July.

Starting in 1987, the Governor requested the agency, in its role of energy policy advisor, to take a more active role in coordinating the development and use of ethanol-based fuels not only in the state, but around the country as well.

1991-1992 Activities

In addition to assisting in the passage of legislation extending the ethanol producer tax credit (see page 13), the key activity during the reporting period was the formation of the multi-state Governors’ Ethanol Coalition.



Issues and Trends

For the second consecutive year, Nebraska's total energy bill surpassed \$3 billion — precisely \$3.115 billion — a modest decline from 1990 (see figure 14). The state's petroleum dependence and ensuing cost were also evident — over half of all energy expenditures were for petroleum and its refined products.

No single energy issue galvanized either attention or action. Yet energy trends and issues from years gone by continued — site selections for a low and high level nuclear waste, relicensing of hydropower projects and implementation of the *Clean Air Act*, to name just a few. On this and successive pages, trends and issues occurring from July 1, 1991, through June 30, 1992, are chronicled.

“Increasing fuel economy should always be a goal, whether that goal is reached by consumer demand or federal mandates. There are those who still don't realize that our fossil fuels are a finite, non-renewable resource.”

“To keep traveling down the wasteful path we've traveled, however, is short-sighted and self-serving.”

Al Koontz, *Beatrice Sun*
September 20, 1991

Transportation The Costs

Transportation expenditures in Nebraska increased 16.4 percent in 1990 to an all-time high of \$1.377 billion, surpassing the 1981 record of \$1.329 billion.

Conversely, according to Cambridge Energy Research Associates, the cost of gasoline reached historic lows in May 1991 when inflation was taken into account and state and federal taxes were not included. The research concluded that the pretax price at the pump was the lowest since 1947, but eight cents a gallon higher than the 1988 absolute bottom. The average for the first 5 months of 1991 was \$1.15 in constant 1991 dollars (after Consumer Price Index adjustments), six percent lower than it was in 1972, the year before the Arab Oil Embargo and 56 percent lower than the 1980 price peak caused by the Iranian revolution.

The state maintained its national ranking of having the third highest gasoline tax in the country according to the state's Department of Roads, but other states also charge sales taxes, environmental surcharges, petroleum insurance fees and cleanup charges.

Automotive Efficiency and Trends

Fuel efficiency in 1992 cars was down from 1991 models, the sixth consecutive year with little or no reduction in new automobiles' appetite for gasoline according to the Environmental Protection Agency's annual fuel economy report. The 1,000 1992 cars surveyed — both domestic and imports — achieved an overall average of 27.5 miles per gallon.

The government's first fuel economy standards in the 1970s coincided with the oil crisis. From 1974 to 1985 the overall average leaped from 14 to 27 miles per gallon. However, since 1987 the fleet averages have

stagnated between 27 and 28 miles per gallon.

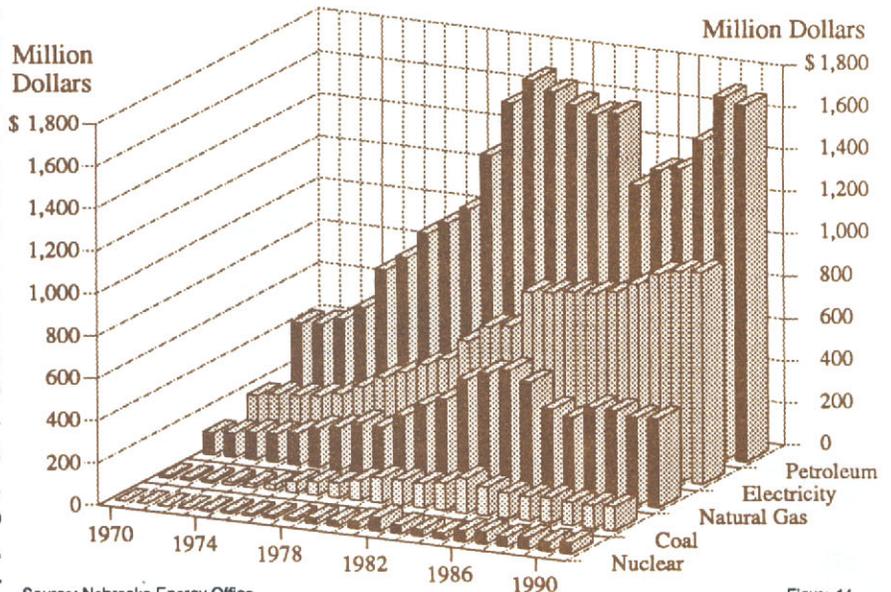
In July, Honda and Mitsubishi announced the development of two engines that would boost gas mileage by up to 20 percent without cutting performance. One of the engines — estimated to achieve 65 miles per gallon — debuted in the 1992 Honda Civic.

In a May 1992 report, the Census Bureau found that fewer people were carpooling or using mass transit than ten years ago. Nebraska ranked near the bottom at 45th in the percentage of people age 16 and older who commuted to work in carpools in 1990 — only 11.2 percent. In comparison to the surrounding states, only South Dakota fared worse, landing at the bottom with only 10.1 percent. The national average was 13.4 percent.

Alternate Fueled Vehicles

The trend to supplant gasoline as the primary transportation fuel gathered steam with the passage of the amendments to the *Clean Air Act* and the likely passage of the *National Energy Strategy Act*. Both statutes require dual-fuel or dedicated alternate

Total Energy Expenditures, Nebraska, 1970-1991



Source: Nebraska Energy Office

Total \$3.115 billion

Figure 14

fuel vehicles or fuels be used in certain areas and in certain situations.

At the state level, the main trend was the emergence of natural gas being used as a transportation fuel.

- Fremont city government started to convert its entire municipal fleet to operate on compressed natural gas. The city's fueling station opened in May 1992.
- Union Pacific railroad became the first in the country to order two dual-fueled (liquefied natural gas or diesel oil) locomotives.
- The state's first retail natural gas pump opened in Omaha in July 1992. There are currently ten other natural gas pumping facilities around the state being used primarily by commercial or utility fleets. According to the Natural Gas Vehicle Coalition, fewer than 100 natural gas pumps are available to the public at service stations across the country with the majority concentrated in Texas, Oklahoma and San Francisco and San Diego in California. An additional 250 more are dedicated to commercial fleets.

Nationally, announcements by the Big Three automakers were across the alternate fuels spectrum.

- Spring 1992, saw alternate fuel production line vehicles — cars, trucks and vans — emerge from General Motors, Ford and Chrysler according to the American Gas Association.
- Chrysler announced that by December 1992,

50 electric minivans should be available for sale at \$100,000-\$120,000 each.

- While dual, flexible or variable fueled vehicles have been available in limited quantities for several years, they have always been approximately \$1,500 to \$2,000 higher. In April, Chrysler announced that methanol/gasoline cars would be produced and sold without an extra charge.
- The federal government continued to support alternate fuel research, committing \$130 million to be matched by a similar amount from the Big Three automakers to develop batteries for electric cars. On the other hand, the Department of Energy told congress that as of July 1991, only 65 alternate fuel vehicles — .002 percent — were in the federal fleet. Higher costs than expected and limited availability were cited as key reasons why more vehicles had not been acquired.
- Sioux Falls, South Dakota, became a testing ground for a new fuel made from either canola, sunflower or soy oil as a replacement for diesel fuel in buses.

Railroad Abandonment

In April 1992, the Interstate Commerce Commission ruled that Chicago & North Western railroad could discontinue service on a 320 mile line between Norfolk and Chadron. However, the Commission ruled that the rail line must remain intact to allow the state to find another operator. In May, the rail company agreed to continue service until November 30, 1992, an additional 5 months.

Chicago & North Western Rail Line in Nebraska

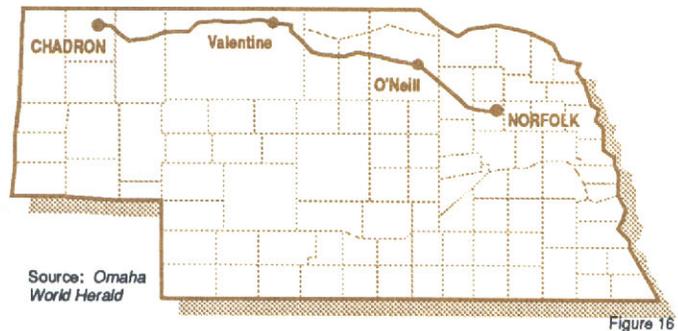


Figure 16

Electricity Developments

In 1990, energy use by the state's utility sector reached its fifth straight all-time high — 235.1 trillion British thermal units. The types of fuel used to produce electricity continued a trend evident over the past several years. Coal, the dominant fuel, increased by almost ten percent. Both nuclear and hydropower continued to decline. However, between 1980 and 1990 energy consumption by the utilities only increased by three percent.

Kingsley Dam Relicensing

While Kingsley Dam and Lake McConaughy were celebrating their 50th anniversary in 1991, the eight year battle to obtain a 30-year renewal of the operating license from the Federal Energy Regulatory Commission continued. Relicensing involves balancing seemingly competing interests — irrigation, power generation, recreation, fish and wildlife and flood control. The 1941 license expired in 1987. As of July 1991, the two utilities involved in the relicensing, Nebraska Public Power and Central Nebraska Public Power and Irrigation Districts, had spent an estimated \$18-20 million on relicensing issues.

In January, FERC issued its draft environmental

Gasoline at Historic Lows Reckoning for Inflation

Average per gallon retail gasoline price in constant 1991 dollars

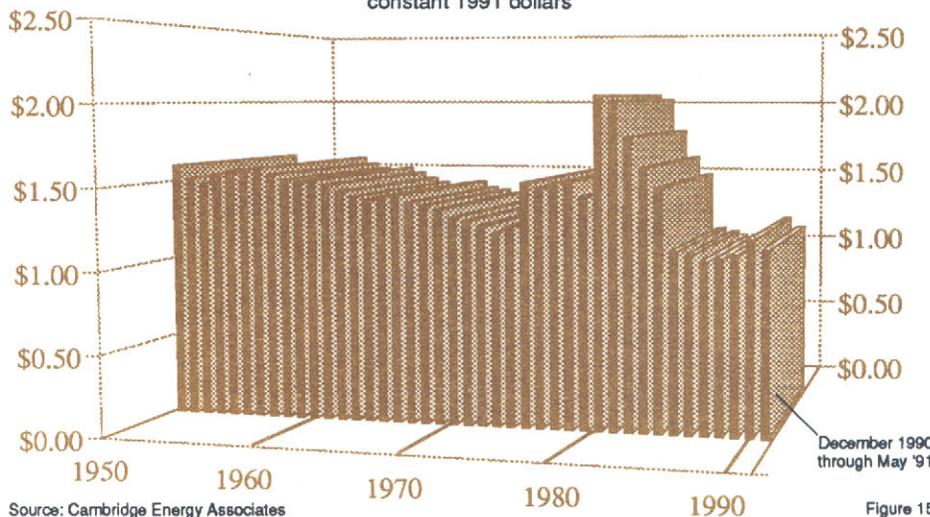


Figure 15

impact statement recommending that winter releases to generate hydropower be stopped — about a four percent reduction in overall generation from the five hydropower plants.

“Not enough water is in the Platte River to go around. FERC said water for wildlife, crops and people should come ahead of water for the generation of electricity.”

— *Omaha World-Herald*
January 26, 1992

In June, the Nebraska Natural Resources Commission shared with the ten major interests a state-initiated concept where a flexible “water account” — reserving an amount of water behind Kingsley Dam — would be established to maintain wildlife habitat downstream on the Platte.

Later in June, the regional office of the Environmental Protection Agency rejected FERC’s draft environmental statement as “inadequate.” FERC now has three options: totally rewrite the draft statement, ignore the EPA’s findings and proceed or refer the matter to the President’s Council on Environmental Quality for resolution.

Clean Air Act Developments

The *Clean Air Act* of 1990 set limits on the amount of sulfur dioxide the nation’s coal-burning power plants could emit, generally cutting the emissions in half. Because Nebraska’s utilities use low sulfur coal, they are not expected to be affected by the regulations until 2000. Until that time, Nebraska Public Power and Omaha Public Power Districts will likely earn credits, a reward for producing few emissions. Those credits, in turn, can be sold or reserved for later use when new generating facilities might have to be built.

In May, early estimates from the Environmental Protection Agency indicated that Nebraska Public Power earned about 6,000 credits for 1991. No estimates were available for Omaha Public Power District.

New Technologies

Lincoln Electric System is pioneering the use of ice technology to lessen its summer peak demands. At its downtown District Energy Corporation facility (which cools and heats the County-City Building and county jail), ice produced in non-peak times com-

bins with existing chillers and groundwater source heat pumps to provide cooling for the buildings between 4 and 8 p.m., when Lincoln’s summer peak load is traditionally reached. Approximately \$120,000 will be saved annually.

A second ice project, at the Rokeby peaking generator, opened in August. An estimated 1.1 million gallons of ice will be produced and stored each weekend, and used to produce cooler denser air for the generator. It is expected that the output of the peaking facility will increase by 25 percent to 71 megawatts and delay the construction of a new peaking facility for about one year.

At Nebraska Public Power’s Sheldon Station in Hallam, shredded tires are being mixed with coal to generate electricity. In a 300 ton test in March, the utility used shredded tires to supplant more expensive high British thermal unit coal. A second 4,500 ton test is to be concluded by the end of 1992. If successful, the power plant could burn up to 71,000 tons — 7 million tires — annually. At that level, approximately the entire yearly number of tires discarded in Nebraska, South Dakota, Iowa and Kansas would be used. Only seven Midwestern utilities are currently burning shredded or whole tires.

Future Needs

In August, 1991, the Nebraska Power Association released its 1991-2010 statewide resource and transmission planning guide which forecasts the utilities’ electricity needs for the next 20 years. Of the over 1,800 additional megawatts of power needed by 2008, approximately 16 percent is expected to come from conservation improvements like heat pumps, lighting replacements and load interruptions on air conditioners and other equipment.

Only peaking turbines and combustion units will be needed through 2003. Two 600 megawatt coal units are expected to be needed by 2005 and 2008. The plan is updated every two years.

Other Developments

- Two municipally-owned electric systems, Bridgeport and Beatrice, demonstrated the results of making efficiency improvements. Bridgeport started replacing their street lights with mercury vapor ones, producing about 28 percent in energy savings. Beatrice, involved in load management activities since the early 1980s, estimates that through 1991, \$1.954 million has been saved by their ratepayers.
- Two coal-fired plants supplying Nebraskans produced some of the cheapest electricity

in the country according to the Utility Data Institute. From 1986-1990, the Laramie River Station (partially owned by Lincoln Electric System) was the lowest-cost producer of electricity in the country.

Omaha Public Power District’s Nebraska City Power Station had the third lowest production costs of all fossil-fueled or nuclear plants in the country in 1990.

- In June 1992, Nebraska Public Power District announced that because of surplus capacity sales of electricity, its customers — both retail and wholesale — will receive a bonus of almost \$100 million over the next eight years. In 1992, sales of electricity to other utilities reached \$8.8 million, a 19-fold increase over 1988.

Nuclear Power and Nuclear Waste

General Trends

The amount of nuclear-generated electricity consumed in Nebraska in 1990 was about 1/3 of all electricity produced. The historic high occurred in 1982 when nearly 48 percent of all electricity used came from nuclear sources. Nuclear generation tends to fluctuate more than other fuel types because of planned and unplanned outages.

Internationally, nuclear power plant capacity declined for the first time in 1991 according to the International Atomic Energy Agency. The decline was about 3,000 megawatts.

Nationally, the nation’s oldest operating nuclear plant, Yankee Rowe in Massachusetts was voluntarily closed in 1992 by the ten utilities which owned it. The utilities cited the expense of proving the plant’s safety to operate for an additional 20 years beyond the expiration of their operating license as the reason for closure.

In mid-1991, the Federal Energy Regulatory Commission approved a rule which would allow currently operating nuclear power plants to apply for renewals of their licenses for up to 20 years beyond the standard 40 year license.

Locally, the Nuclear Regulatory Commission extended Cooper Nuclear Station’s operating license by over five years to January, 2014. In essence, the commission changed the start of the operating license date from the start of construction to the start of the operation of the nuclear facility.

Review of the State's Nuclear Power Stations

Omaha Public Power District's Ft. Calhoun plant received improved marks in two of seven categories in the Nuclear Regulatory Commission's review of operations. The utility received either "superior or good performance exceeding regulatory requirements" in all categories. The review covered the period from May 1990 through July 1991.

A similar review by the Commission of Nebraska Public Power District's Cooper Station at Brownville resulted in declines in two areas and improvements in two other areas. The review covered operations from July 1990 through January 1992.

High-Level Nuclear Waste

The state's two nuclear facilities produce high-level spent fuel which has primarily been stored on site, awaiting the construction of a national high-level waste storage facility.

Ft. Calhoun would have exhausted its storage capabilities in 1995 if Omaha Public Power District had not approved spending \$5 million to design and install new underwater storage racks. The racking will extend the life of the storage facility to 2003. This will be the third racking at the facility.

Cooper Nuclear Station will also need additional storage by 2003 despite previous racking as well as removing and shipping 1,056 spent nuclear fuel bundles to a storage facility in Illinois from 1983-1989.

Permanent High-Level Nuclear Waste Issues

Waste Isolation Pilot Plant

Construction of the nation's first permanent nuclear waste repository was begun in 1983 in caverns under the New Mexico desert near Carlsbad. Only Defense Department nuclear waste transferred from bomb production plants is scheduled to be stored at this facility.

In October 1991, Secretary of Energy Watkins announced that the first shipment of nuclear waste would arrive in New Mexico in October. He also announced that the Department of Interior had transferred control of the land containing the site to the Department of Energy. Because neither congressional nor state permission was granted, a federal judge issued a temporary injunction in November. In

January 1992, the judge made the injunction permanent saying that both congress and the state must approve transfer of the land. Without that approval, no waste can be stored on the site.

Yucca Mountain

In 1987, Congress selected Yucca Mountain, Nevada, as the most likely site, if found suitable, for permanent storage of high-level nuclear waste from the nation's 111 nuclear reactors. Since that time, site suitability tests and legal skirmishes have pushed back the original 1998 opening to 2010. The Edison Electric Institute estimates that approximately 35 plants will exhaust their on-site storage by 2007.

Monitored Retrievable Storage

As part of the 1980 congressional legislation establishing a permanent national site for high-level waste, the act also called for construction of a temporary storage site called the Monitored Retrievable Storage facility. The facility would be used in the event the permanent storage site had not opened before on-site storage capacity was reached by nuclear power plants.

According to *Nuclear Waste News*, the Department of Energy has received 21 requests for feasibility assessments. Six feasibility grants have been awarded, two of them near Nebraska — Fremont county in Wyoming and the Prairie Island Indian Reservation in Minnesota.

Transporting Nuclear Waste

Whether high-level nuclear waste is civilian or military, it must be transported from its temporary storage site to permanent repositories when those facilities open. Because most of the nuclear power plants are in the east and the likely permanent storage facility will be in the west, Nebraska's rails and interstate highways will probably be corridors for shipments of spent nuclear fuel.

Through participation on the High-Level Waste Transportation Committee of the Western Interstate Energy Board, the Energy Office monitors current developments relating to future transportation issues which may effect the state.

According to the Nebraska State Patrol, there are monthly shipments of high-level nuclear waste currently crossing the state. Currently, State Patrol escorts are provided only from the Iowa border to 50 miles outside Lincoln.

Permanent Low-Level Nuclear Waste Storage

Boyd County Radioactive Waste Storage Facility

Since Nebraska and Boyd County were selected

by the Central Interstate Low-Level Radioactive Waste Compact and U.S. Ecology, respectively, the development of a low-level radioactive waste facility has progressed along a predetermined number of stages.

Events of significance occurring between July 1, 1991, and June 30, 1992, were:

- In September, the Department of Environmental Control which is conducting a review of U.S. Ecology's application for a license to operate the facility in Boyd County, said that between \$6-7 million will be spent analyzing the document.
- The expected costs associated with the facility have tripled from initial projections to about \$100 million.
- In December, the Environmental Department declared that the application by U.S. Ecology was complete and met the requirements necessary for application.
- In June, the U.S. Supreme Court struck down a portion of the law establishing low-level radioactive waste facilities. The Supreme Court declared unconstitutional the law which required states not having disposal facilities by January 1, 1996, to take title to the low-level nuclear waste generated within their borders.
- It is expected that the state will issue its determination on U.S. Ecology's license to operate a facility in Boyd County in late 1992.

Natural Gas Developments

National

Two events on the natural gas scene at the national level may have both a short and long-term impact on the state:

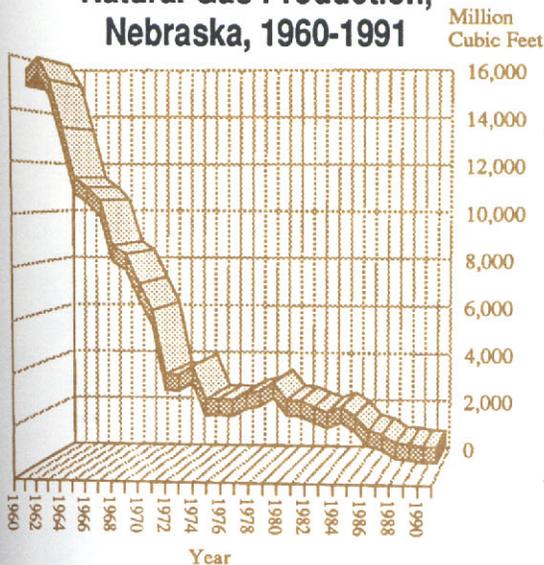
- In March, 1992, natural gas prices collapsed, to the lowest winter level in more than a decade and caused a severe jolt to the nation's gas producers. A supply glut depressed prices and made costly new drilling unprofitable. The long-term implications are unknown.
- The continued deregulation of the natural gas industry by the Federal Regulatory Energy Commission or FERC will have significant long term implications for the state's ratepayers. In the commission's Order #636, natural gas pipelines were

deregulated and generally must become common carriers available to all. The Energy Office is studying the impact of this order on the state's unique regulatory structure.

Nebraska Production

A small amount of natural gas is mined in the state meeting less than one percent of the amount consumed. Generally, natural gas production has nearly always declined from the previous year since reporting began in 1950. However, figures available

Natural Gas Production, Nebraska, 1960-1991



Source: Nebraska Energy Office

Figure 17

next year may indicate a reversal because of the development of a major natural gas field in Cheyenne county.

Nebraska Regulation

Natural gas retail service in the state is provided by five investor-owned utilities serving 298 towns and 14 municipally-owned and operated systems. The remaining 190 towns in the state receive no natural gas service.

In communities served by investor-owned natural gas companies, retail rates are regulated by the *Municipal Natural Gas Regulation Act* administered by the Energy Office (see page 14). Unlike the rest of the country, retail rates are established by locally elected officials in each town.

Other Highlights

The year's other natural gas developments are detailed below:

- At the request of the U.S. Environmental Protection Agency, Minnegasco began testing seven manufactured gas production sites for contaminants. Generally, these plants operated in the 1800s through the turn of century producing gas from coal or oil. The sites are located in Lincoln, Beatrice, York, Norfolk, Columbus, Blair and Plattsmouth.
- Two utilities — one investor and the other publicly owned — ended their dispute over providing service to residents of Omaha and its environs. Under the legislative compromise, the public utility could not use its powers of condemnation to acquire parts of an existing utility nor could it expand its service territory unless economically feasible.
- Stuart, the last community to vote to condemn a local distribution system owned by a private utility, accepted the value of the system as established by a three judge panel of the Court of Condemnation. The court-determined price, \$220,538, was over \$400,000 less than asked by the utility but almost twice what the city offered. Stuart agreed to accept the court's findings. However, the utility chose to appeal the valuation to a higher court.
- Three communities Bertrand, Broken Bow and Neligh, currently served by investor-owned utilities, held municipalization ballot questions in May of 1992. The issue failed in all three communities. Wahoo had scheduled its municipalization question for the fall of the same year.

Alternative Energy

Recent efforts to develop clean, abundant and affordable alternatives to coal or oil-generated electricity have focused on renewable energy sources — geothermal, solar, hydroelectric and wind powered. Although these sources account for only a fraction of the nation's (and Nebraska's) energy supply, they remain worth investigating.

Hydropower

Hydropower from both in and out-of-state generation (purchases from Western Area Power Administration) accounts for about 14.8 percent of all electricity produced in the state. However, not all hydropower produced is consumed by Nebraskans — a portion of the electricity in the state is sent

elsewhere or sold for use in other parts of the country.

All other forms of alternatives account for less than one percent of the electricity produced in Nebraska.

Solar

Use of solar energy to produce electricity is making inroads in livestock producing areas of the state, replacing wind generation or direct transmission lines. While the initial cost of a solar panel unit may exceed a windmill, ongoing costs — repairs and labor — are nonexistent. In some cases, transportable solar units which can take the place of several windmills have an initial investment advantage. Also, energy production from the sun may be more reliable and consistent than wind generation. And McCook Public Power District is even offering grants to its customers to cover the cost of solar-powered livestock water pumps or other improvements where the cost is less than installing or replacing downed power lines.

Wind

While electricity generation from wind in the state relies primarily on windmills from an earlier time, changes may be coming. In September, 1991, an Iowa-based electrical utility and U.S. Windpower announced a plan to jointly develop wind farms in the

“Sooner or later, rising expenses associated with electricity generated by fossil-fuel burning or nuclear activity will begin to convince more rural Nebraskans — one can only hope — of the cost-efficiency of wind-generated power. Imagine, a basic resource available for free. Another plus: Nothing can compare to windpower for environmental friendliness.”

Lincoln Journal
April 14, 1992

upper Midwest (Nine states, including Nebraska, have been suggested as possible locations).

The initial plan calls for 700-800 wind machines — an investment in excess of \$200 million — capable of generating 250 megawatts annually. After five years, the project could be doubled to 500 megawatts — the equivalent of a coal-fired generating

plant. As conceived, the firms plan on using the newest wind turbines which can produce electricity for about five cents a kilowatthour.

If constructed, this would be the first wind generation units outside of California and Hawaii. However, according to the windpower firm, California's wind resources pale in comparison to that in the Midwest.

Petroleum

As noted earlier in the Transportation portion of this section (see page 17), Nebraska is especially petroleum dependent, primarily because of its use in vehicles. As such, what happens nationally and internationally is of import to the state.

The following is a brief overview of petroleum trends:

- In August, 1991, the Energy Information Agency said the nation's reliance on imported petroleum will continue to increase sharply over the next 20 years unless dramatic steps are taken to conserve and increase domestic production. Without a change in policy, the agency

stated that by the year 2010, 70 percent of the oil America uses will be imported.

- United States oil drilling activity in 1991 hit a post-World War II low (unequaled since 1942) primarily because of low oil and natural gas prices. Other factors cited by the American Petroleum Institute were the economic recession and environmental laws and restrictions. The number of

which attempts to curb smog, carbon monoxide and other toxic emissions in the nation's most polluted cities, may add four to five cents a gallon at the pump. No Nebraska cities are involved in this program.

- According to a University of California study, retail gasoline prices do (as consumers have long believed) rise faster than they

fall. But the assumption that big oil companies may be to blame is probably erroneous. The university researchers came to the conclusion that the local retail gasoline station may be the cause of slow price declines. The report cited two reasons: a desire for increased profits and the decline in local competition.

"Congressional leaders must turn their attention to America's embarrassing reliance on foreign oil.

"It has been obvious for several years that the United States' meager efforts at conservation and domestic production are sapping this country's economic growth."

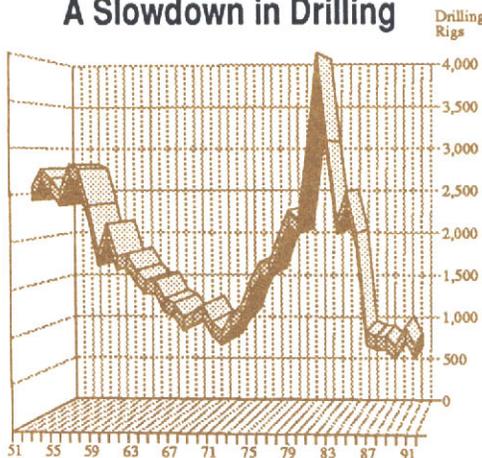
Fremont Tribune
August 7, 1991

active drilling rigs also declined to the lowest level since the 1930s Depression.

- As part of implementation of the 1990 *Clean Air Act*, the nation's oil industry signed an agreement to produce and market cleaner burning gasoline by 1995. The accord,

- The 1991-1992 period, did not see a repeat of the doubling of propane prices that occurred in 1988-1989. The statewide average in the first week of January was 58 cents per gallon, a reflection of normal wintertime fluctuations. However, dramatic prices surges in this fuel could occur in the future because either supply disruptions or a prolonged cold snap could create shortages.

A Slowdown in Drilling



Source: Baker Hughes Inc.
for the *New York Times*

Figure 18

Fiscal and Organizational Notes

Financial Review

The accompanying figures illustrate the Energy Office's budget from July 1, 1991 through June 30, 1992, which amounted to \$11,621,095 and includes federal funds, state funds and petroleum violation escrow or oil over-charge funds.

Approximately 56 percent of the agency's funding came from petroleum violation escrow funds, a decline of 13 percent from the previous year. Additionally, federal funds decreased slightly and state severance taxes also declined. State funds came almost exclusively from severance taxes. No General Funds have been appropriated to the Energy Office since 1983.

Over 54.2 percent of all expenditures were used for petroleum violation escrow aid which was made in the form of loans under the Five Percent Dollar and Energy Saving Loan Program. Over 84 percent of all federal funds were expended as aid in the Low-Income Weatherization Assistance Program. In excess of 40 percent of all state severance taxes were

spent as aid under the School Weatherization Program.

A full accounting of the Energy Office funds appears in figures 19 and 20. Overall, the agency spent state, federal and petroleum violation escrow funds in eight different ways. Aid, which makes up the largest portion of the agency's expenditures, consists of money from the three sources which is

received and passed on to delegate agencies or directly to beneficiaries such as schools, hospitals, small businesses and individuals. Money spent for operations pays travel, telephone, computers, salaries and other administrative expenses.

A more detailed accounting of the petroleum violation escrow funds appears on pages 5 and 8.

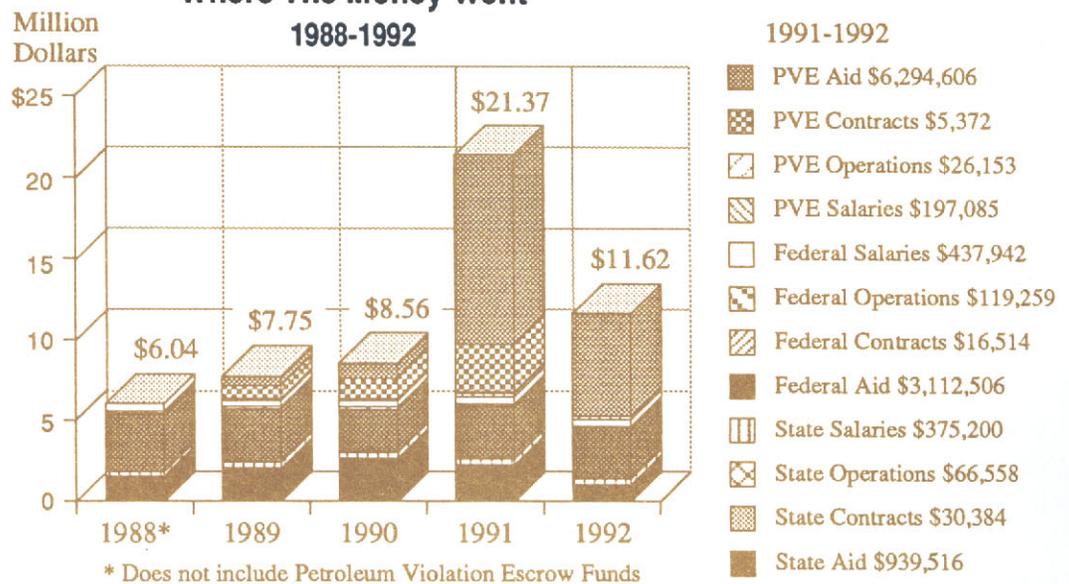
Where The Money Came From 1988-1992



Source: Nebraska Energy Office

Figure 19

Where The Money Went 1988-1992



Source: Nebraska Energy Office

Figure 20

Organization

The Energy Office was created in November 1973 as the Fuel Allocations Office and was a division of the Nebraska Department of Revenue until 1977. The agency had independent status from 1977 to January 1987, when it became by Executive Order, a division of the Governor's Policy Research Office.

The organizational chart below shows the functional structure of the Energy Office.

Nebraska Energy Office Organization

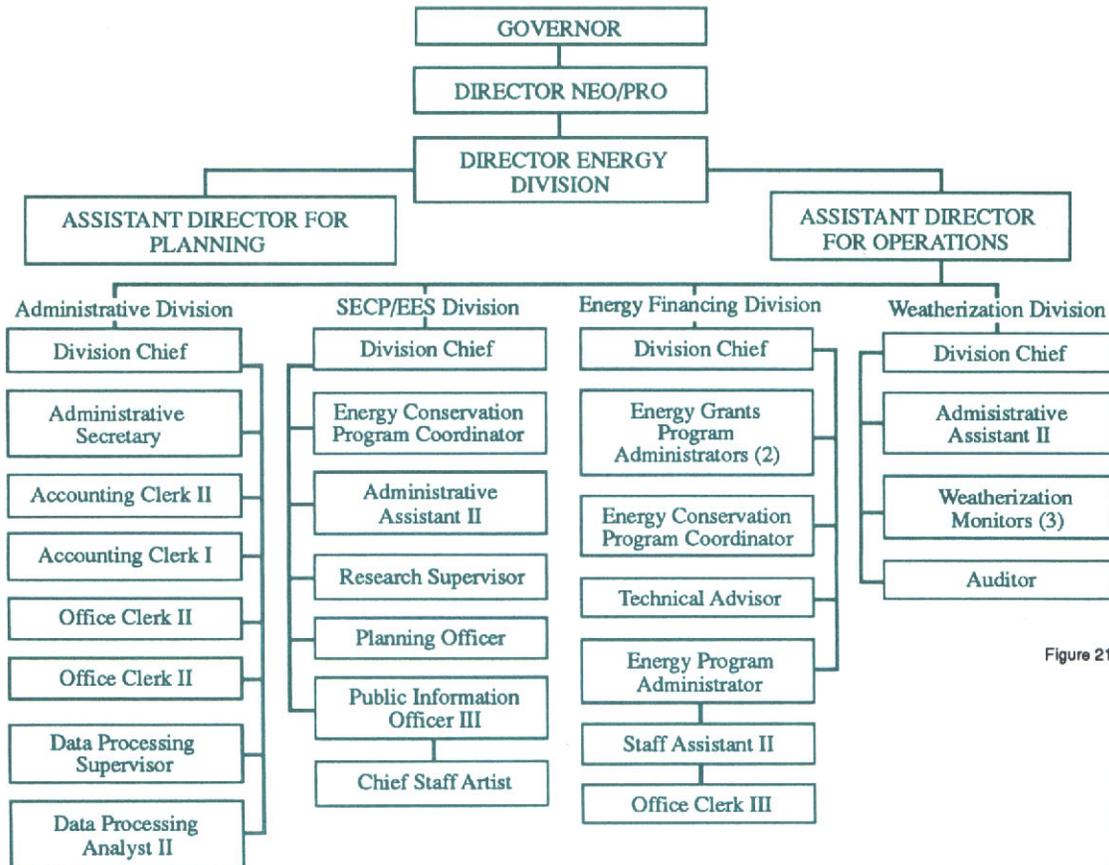


Figure 21

The Energy Office logo found on the back cover is from the "Genius of Creative Energy" floor mosaic by Hildreth Meiere located between the vestibule and foyer inside the north door of the State Capitol in Lincoln.

This Annual Report is for the period July 1, 1991, through June 30, 1992, except where noted.

This report is published pursuant to Nebraska Revised Statutes, Sections 81-1607 and (R.S. Supp., 1988).

Copies are on file with the Clerk of the Legislature and Nebraska Library Commission.

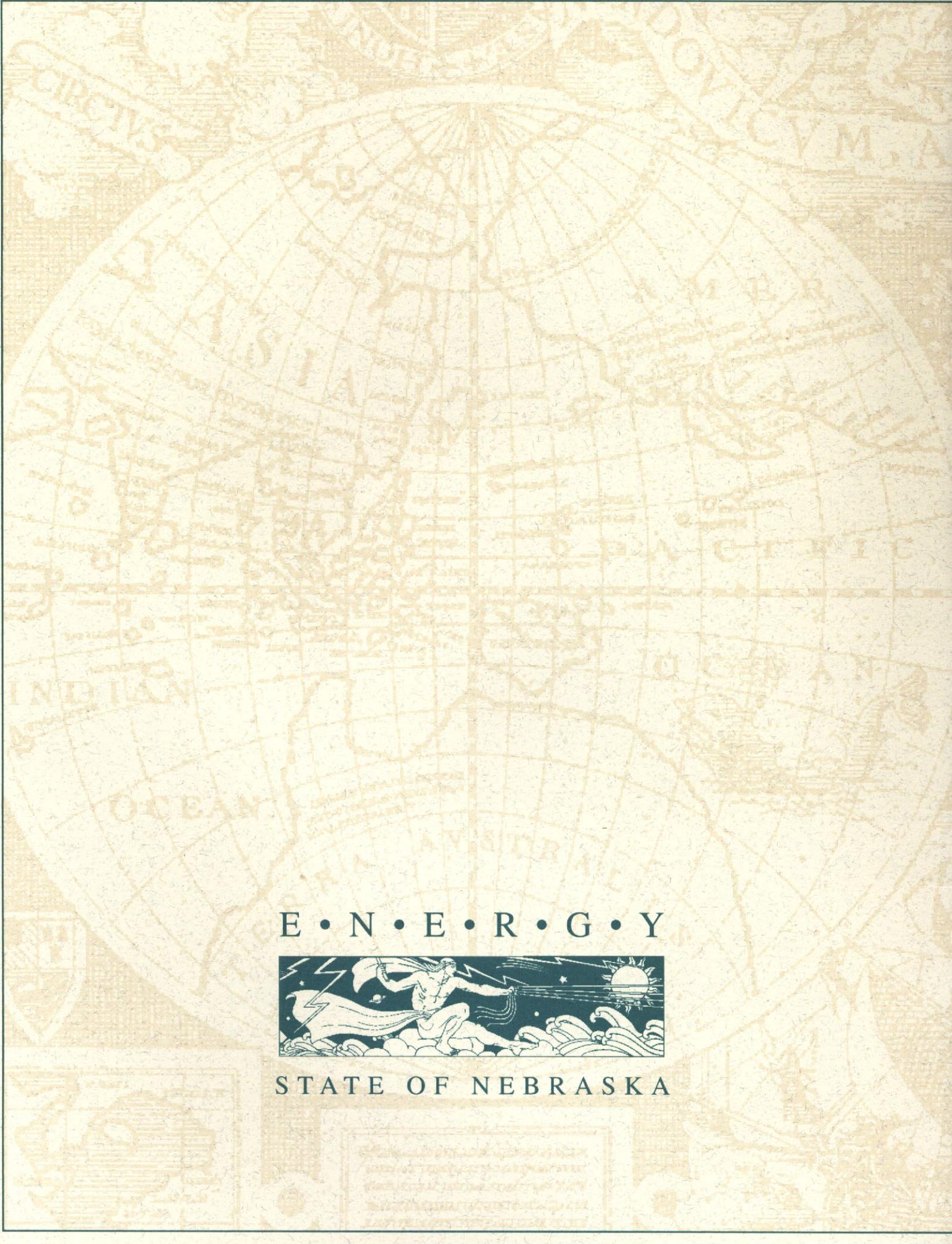
Published by the Nebraska Energy Office, Box 95085, 1200 N Street, The Atrium, First Floor, Lincoln, NE 68509-5085

Phone (402) 471-2867 FAX (402) 471-3064

Printed on Recycled Paper



This material was prepared with the support of funds returned to the Nebraska Energy Office on behalf of Nebraska consumers by court order to effect restitution for oil overcharges by Exxon Corporation and administered through programs authorized under the U.S. Department of Energy (DOE) Grant Numbers DE-FG47-80CS69109, DE-FG47-80CS63580, DE-FG47-80CS62029 and DE-FG47-81CS65300. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of DOE.



E • N • E • R • G • Y



STATE OF NEBRASKA

STATE OF NEBRASKA
DEPARTMENT OF ENERGY
1000 F STREET, SUITE 100
LINCOLN, NEBRASKA 68502
TEL: 402-471-2000
WWW.NEENERGY.COM