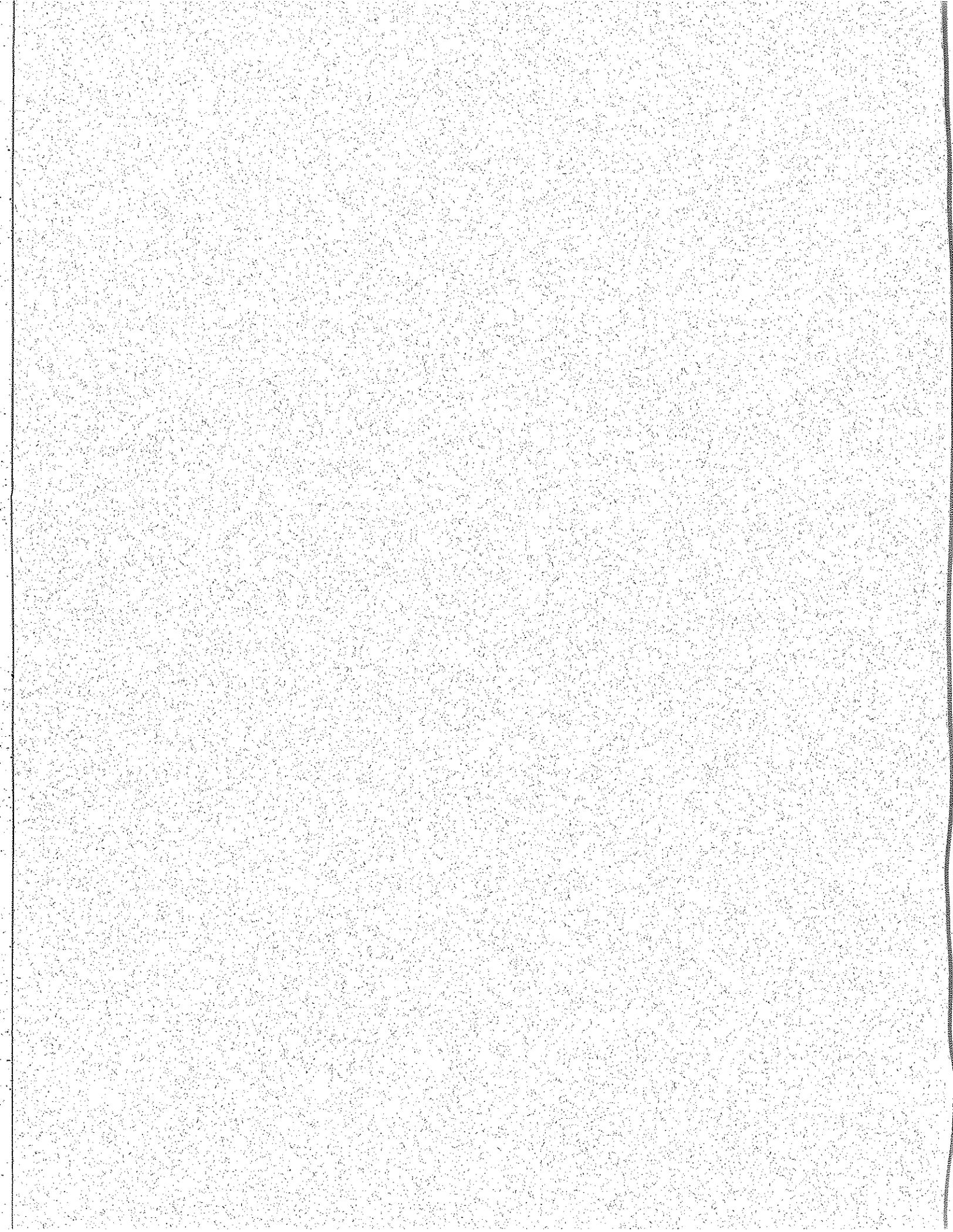


Nebraska Public Buildings Energy Program

Alternative Financing Mechanisms
for Energy Improvements
in Public Buildings:
A Report to the Legislature's
Government, Military
and Veterans Affairs Committee
on LR205



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PREFACE

Legislative Resolution 205 (Appendix CA), introduced by Senator Dennis Baack of Dix and Senator Lee Rupp of Monroe, directed the Government, Military and Veterans Affairs Committee of the Nebraska Legislature to conduct an interim study which examined the Iowa Public Facilities Program. This is a program that makes energy improvements in public buildings with private financing.

The Government, Military and Veterans Affairs Committee directed the Nebraska Energy Office to conduct the study. Once research began, it was apparent that the scope of the study should also include a variety of alternative financing techniques for energy improvements.

Alternative financing is generally any method of financing public improvements that does not include the use of federal, state, or local tax dollars.

The declining availability of tax revenues for capital improvements has necessitated the broadening of the search for financing opportunities into the private sector. This is especially true with financing for energy improvements.

This report examines the development and structure of the Iowa Public Facilities Program, other methods of third party financing and more traditional methods of financing capital energy improvements. The report also examines the need for energy improvements in Nebraska's state-owned buildings. The final section describes the current work of the Energy Office and recommends a course of future action.

INTRODUCTION

Sound fiscal management in state government requires the maximum use of resources in the most efficient manner. Traditionally, states have embraced energy conservation techniques as a cost-effective method to get the maximum use of dollars spent on energy.

Energy improvements in buildings contributes to the economic growth of a state by reducing expenditures for energy and freeing up capital for other uses. The U.S. Department of Energy's Office of Buildings and Community Systems "Annual Operating Plan" commented that energy improvements in buildings help to lower energy prices through decreasing demand which reduces inflation and, in the case of imported fuels, increases national security and reduces the trade deficit.

Despite this, energy costs remain a significant cost in the operation of government. In Nebraska, the fuel expense for state buildings alone exceeds \$24 million. Increasing energy costs have depleted the very revenues needed to implement energy improvement projects.

To mitigate this problem, many states are looking for alternative forms of financing. These new forms of financing are turning energy improvements into investments with substantial returns.

IOWA PUBLIC FACILITIES PROGRAM

INTRODUCTION

Iowa is a typical mid-western state in the 1980s, exporting agricultural products and importing its energy needs. Iowa annually imports 98% of its energy. Most of the money for that energy leaves the Iowa economy. In the early 1980s, caught between the poor farm economy and rising energy costs, the State of Iowa began examining methods to cut energy use in publicly-owned buildings.

In 1982, the Iowa Department of Natural Resources (DNR) began studying various conservation opportunities. The state needed a comprehensive program to reduce public sector consumption and thereby reduce the burden on Iowa taxpayers and stem the flow of dollars out of Iowa's economy. DNR set a goal to make \$300 million worth of energy improvements in schools, hospitals, state facilities, local governmental and nonprofit facilities by 1995. Cutbacks in federal funding, a tightening state budget and the worsening farm crisis left little in the way of conventional funding for this project. DNR goals stressed a revenue neutral program, so DNR began looking for financing alternatives.

In 1984, DNR estimated that \$40 million in energy conservation projects were necessary in state-owned buildings. While most state agencies had practiced sound energy management, a lack of capital prevented those agencies from installing energy improvements. Realizing that private sector financing was vital, Iowa developed a program that was a hybrid of a performance-based contract using lease-purchase agreements. DNR's efforts led to the introduction and passage of Senate File 303 (SF 303) in the Iowa General Assembly. (Appendix CB)

LEGISLATION

The passage of SF 303 in 1985 authorized state agencies to use appropriated funds or other "legally available" funds to make payments on lease-purchase contracts for energy improvements in state buildings. The legislation sought to encourage agencies to seek capital for energy improvements from outside sources.

The main points of the Iowa legislation include:

- Agencies are required to have a comprehensive engineering analysis performed on buildings prior to leasing equipment for an energy conservation project.

- The engineering firm performing the analysis must be selected through a competitive process and is subject to approval by the Iowa Executive Council (made up of the Governor, Secretary of State, State Auditor, State Treasurer and Secretary of Agriculture).
- Before the Executive Council can approve a project, a determination must be made that the State will recover the cost of the energy conservation measures within six years of the initial acquisition.

SF 303 clearly stated Iowa's intent to use energy conservation as a method to reduce state costs. It allowed state agencies to make prudent energy management decisions without the expense of a constitutionally-mandated referendum vote necessary for general obligation bonds, and without the need for tax-generated state funds.

PROGRAM DEVELOPMENT

The passage of SF 303 underlined the need to develop expertise in third party financing. It also emphasized the need for a coordinated effort on behalf of state agencies, eliminating the need for each agency to become an expert in the area. The DNR committee examined several plans including a revolving loan fund. Ultimately, these were rejected in favor of establishing a corporation acting as "a public-sector version of an energy services company." According to Ted Flood, then the Governmental Liaison for DNR, "The state saw what energy performance contractors do and realized that if contractors could make money buying, installing and leasing (energy) equipment, so could the state."

The State of Iowa Facility Improvement Corporation (SIFIC) is a nonprofit entity empowered to purchase and install energy conservation and management improvements in state-owned buildings and to enter into lease arrangements with state agencies. Money for the improvements is generated through the sale of revenue bonds issued by SIFIC. SIFIC is governed by a nine-member Board of Directors who are all officials of the State of Iowa.

The energy savings derived from the improvements, the proceeds generated from the sale of the bonds and the lease payments made by the agencies are synchronized. Thus, the savings generated from the improvements are sufficient to make the lease payments. In turn, lease payments are sufficient to retire the principal and interest on the revenue bonds. Concurrently, the proceeds from the sale of the bonds is enough to make the necessary energy improvements.

The complex design of the program financing necessitates reliable engineering analysis at the outset of the project. SIFIC loans money to the agencies for the performance of the analysis and the loan is repaid through the agency's lease arrangement with SIFIC. Funding for the analyses on the initial series of buildings was provided through a small amount of oil overcharge funds and state appropriations from the proceeds of the Iowa lottery.

One of the strengths of Iowa's program is that it requires no additional funding from the General Assembly. During the term of the lease agreement, funds appropriated to the agency remain consistent with appropriations for energy costs without the improvements. If there are any savings of appropriated funds after energy costs and the lease payments are made, the funds are returned to the state's General Fund. The savings to the state are then amplified when the bonds are retired. It is estimated that once all improvements are completed, the State will save 20-25% of its annual energy bill or approximately \$8-\$10 million per year. Another valuable economic benefit to the state comes in the form of a \$40 million public works project, creating jobs for Iowa companies and workers without the use of tax dollars.

It is important to note that the General Assembly is under no legal obligation to appropriate adequate funding to the agencies to make payments on their lease agreements on top of their energy costs. However, SF 303 clearly stated the Legislature's intent to allow agencies to use appropriated funds to make lease payments for energy improvements. The lease agreements are structured to provide the maximum amount of security for bond holders in the event the funds are not appropriated.

Neither the revenue bonds nor the lease agreements constitute an obligation on the part of the State of Iowa. The bonds issued are not backed by the credit of the state.

ENERGY IMPROVEMENTS

Conventional conservation programs which weatherize and retrofit only a few buildings each year, are much smaller in scope than Iowa's innovative program. This component of the Iowa Public Facilities Program will make energy improvements in all state-owned buildings in the next four to five years.

Iowa has divided its buildings into three series:

- Series A consists of the Departments of Corrections, Human Services and General Services for a total of 16 complexes and 395 buildings.

- Series B agencies include the smaller, self-contained buildings of the Departments of Transportation, Natural Resources, State Parks, National Guard and State Patrol.
- Series C buildings will include the Universities, state colleges, and technical community colleges.

The types of improvements planned for these buildings include caulking, insulation, window replacement, replacing or repairing boilers, heating and cooling systems, upgrading mechanical and electrical systems, lighting changes, combustion analyzers, co-generation and the use of improved technology where indicated. The operation and maintenance of the new equipment and systems are the responsibility of the agency. Companies hired to design and install the equipment provide training to state personnel on proper maintenance of the systems and help the agencies in developing a more energy efficient method to operate and maintain existing systems.

SIFIC hired the Viron Corporation of North Kansas City, Missouri to perform engineering analysis in the Series A buildings. Viron and Weitz Resources, an Iowa-based firm, are working together in the design and construction management. As of October 15, 1987, most of the contracts for installation of the energy improvements have been signed. In buildings where the agency is doing the work themselves, construction is already underway.

Using energy savings to make payments on lease agreements is a proven technique. The real test of the Iowa program is the development and functioning of the financing method. Iowa's success so far should lead to successful repayment of the bond issue.

BOND ISSUE

SIFIC's initial bond issue of \$12 million for the Series A buildings was offered in September of 1986. It was rated A- by Standard and Poors based on the credit worthiness of the state and the strength of the lease agreement. The first series sold with an average interest cost of 7.34%.

The following chart shows the estimated sources and anticipated uses of the funds from the revenue bonds. This information is taken from the Official Statement announcing the Series A bond issue.

SOURCES OF FUNDS

Principal amount of Series A bond	\$12,245,000.00
Estimated Interest Earned During Acquisition of Acquisition Fund, Reserve Fund and Administrative Expense Fund (1)	363,903.62
Accrued Interest from September 1, 1986.....	122,106.38
TOTAL	\$12,731,010.00

USES OF FUNDS

Cost of acquiring projects	\$ 8,156,923.17
Capitalized Interest (2)	2,370,300.63
Reserve Fund (10% of par amount)	1,224,500.00
Capitalized Administrative Expenses	606,000.00
Underwriting Discount	214,287.50
Costs of Issuance (3)	158,998.70
TOTAL	\$12,731,010.00

- (1) assumes earnings at a rate of approximately 5.65%
- (2) average interest rate on the Series A Bonds for a period beginning on September 1, 1986 and ending on approximately June 1, 1989 is 7.173%
- (3) such costs including, but not limited to, printing costs, bond counsel fees and expenses and financial advisor's fees and expenses.

The Series A bonds are general obligations of SIFIC payable from:

- lease payments made by the agencies, proceeds from the Reserve Fund (1% of the bond issue set aside as a self-insurance fund),
- interest from the proceeds of the Series A bonds; and
- any other legally available source.

The sum of the amount of lease payments owed by the agencies equals 100% of the annual revenue requirement to pay bond holders, pay debt service, maintain the Reserve Fund and pay administrative costs.

The Reserve Fund is Iowa's insurance policy. After examining various insurance policies available from private vendors for performance-based contracts, Iowa decided a much less expensive and more controllable approach was to self-insure. If an agency cannot make a lease payment, the Reserve Fund would make the payment. The agency, of course, would be responsible to the Reserve Fund for reimbursement. Once the bond obligation is

retired, Iowa will have approximately \$1 million in the Reserve Fund to use for other energy projects.

The lease payments for fiscal year 1988-89 by the three Series A agencies total approximately \$1,258,000 and is projected to increase to approximately \$2,162,254 during the term of the leases. The obligations of the three agencies are estimated as follows:

Department of General Services	16.56%
Department of Human Services	57.14%
Department of Corrections	26.30%

The leases will be considered complete when the Series A bonds have been paid or when the contract is terminated in accordance with previously stated conditions of the leases.

The agency's obligation to make lease payments is absolute and unconditional. Each agency guarantees in its contract with SIFIC not to establish a higher priority for its legally available funds. The lease payment is subject only to appropriation of funds by the Legislature and approval by the Governor.

Again, SIFIC has no taxing authority. Series A bonds do not constitute a general obligation of the State of Iowa nor any other political subdivision.

THE IOWA SCHOOL ENERGY BANK PROGRAM

INTRODUCTION

Once the process for state-owned buildings was underway, Iowa turned to its next building sector—public schools. Drawing upon lessons learned setting up the state facilities program, DNR determined the first step of the schools program was to assemble the financial team. Requests for proposals were issued for a financial consultant. However, Norwest Investment Services contacted DNR and offered to underwrite the complete School Energy Bank Program, eliminating the need for a bond issue.

Once Norwest was signed, the next step was the introduction and passage of legislation in 1986 and 1987 which created and refined the Iowa School Energy Bank Program. The legislation enables school districts to participate in the program administered by DNR.

To participate, a school district would follow these steps:

1. Energy Audit
2. Engineering Analysis
3. Financing
4. Installation of Energy Improvements

ENERGY AUDIT

If a school district, area education agency or merged school area wishes to participate in the Energy Bank, it contacts DNR and sets up an energy audit. The audits are performed by Volt Energy Systems of Iowa and are free to the school district. The cost of the audit (estimated at \$333 per building) is paid out of interest earned on the bond issue for the Series A buildings in Iowa's Public Facilities Program.

The audit examines the district's fuel bills, use and cost data and occupancy rates. It also indicates if energy improvements would save money and if a more in-depth engineering analysis is needed.

ENGINEERING ANALYSIS

If the school district wishes to proceed after the audit, it contracts with DNR for an engineering analysis. The school district selects an engineering firm from a list of approved engineers provided by DNR. The engineering analysis is a detailed study of the buildings in the school district. The engineers examine the building

envelope, heating, ventilation, air-conditioning, lighting and other energy systems. It is the responsibility of the engineer to determine which energy improvements have a six year payback. That is, where the annual energy savings are approximately equal to 1/6 the cost of the improvement.

The district signs a contract with DNR which commits the district to pay for the analysis at approximately six to nine cents per square foot. This normally ranges from \$3,500 to \$14,000 per school building. If the district participates in the Energy Bank, the lease is structured to pay for the engineering analysis. If the district pays for the energy improvements from its own funds, it must pay the cost of the analysis in six months. If the analysis shows the measures are not cost effective, DNR pays for the cost of the analysis. The contract between DNR and the school district does not commit the district to install any improvements.

FINANCING

When the district decides to make energy improvements in its buildings and decides to utilize the Iowa School Energy Bank, the district contacts Norwest Investment Services. Norwest loans funds to the district which are repaid through a lease-purchase agreement. The interest rate charged is .87% above the published index rate for "A" rated national general obligation bonds and is based on the average life of the lease. Current rates range between 6 and 9 percent. Included in the loan and lease is an administrative fee to DNR based on the square footage of the building.

At anytime, school districts may utilize a team of financial advisors assembled specifically for this purpose at no cost to the district. The advisors are paid through DNR and are on a fixed payment schedule.

INSTALLATION OF ENERGY IMPROVEMENTS

Once the audits, engineering analysis and financing arrangements are complete, the district hires contractors to install the recommended energy improvements. The district uses normal procurement procedures, which, in Iowa, means a bidding system for improvements costing more than \$25,000.

After the work is completed, the district pays the contractor from its loan and begins making payments to Norwest in accordance with the lease payment schedule. Normally, the first payment is due in nine to eighteen months from the time the lease is executed.

MARKETING

Iowa's goal for the School Energy Bank Program is to improve the energy efficiency of the buildings in all 436 school districts, 15 merged area schools and 15 area education agencies. To this end, Iowa hired Riche Associates from Des Moines. The marketing campaign began with a promotional brochure which introduces the program to Iowa schools. Riche is currently in the process of developing an informational kit for schools which describes the program in detail. Other plans include articles in appropriate publications that examine success stories of the Energy Bank.

The goal for Iowa is to get commitments from all schools to implement energy management projects. Whether schools use the Iowa School Energy Bank is entirely up to them. The real benefit comes from reduced energy use and less money spent on energy.

SUMMARY

Iowa believes its Public Facilities Program is economically beneficial to the entire state. The program has experienced expected minor start-up problems. For example, the first energy service company selected to work with the program had financial difficulties and Iowa brought in Viron to replace them. But Iowa is convinced it is on the right course toward getting control of the state's energy future. Iowa's next step is to implement programs similar to the Public Facilities Program and the school Energy Bank Program for local governments, hospitals, and nonprofit facilities.

THIRD-PARTY FINANCING MECHANISMS

INTRODUCTION

The Iowa Public Facilities Program is one method of financing energy improvements. Although Iowa's program is considered an innovative and comprehensive approach to alternative financing, many states are pursuing other, equally successful methods. New Jersey and California are operating state building programs using revenue from general obligation bonds. Both bond issues are in excess of \$50 million. Michigan, Pennsylvania, Utah, Rhode Island, Missouri, Montana, Minnesota, Massachusetts, New York, Alaska, Illinois, North Carolina, Ohio, Oregon, Texas and Oklahoma are all in various stages of alternatively financed public facilities programs. Most other states are at least looking at these new forms of financing.

OVERVIEW

Since the energy crisis of the 1970s, financing energy improvements has gone through a rapid evolution. When it was obvious that energy improvements were needed in public buildings to stem the flow of money used to purchase energy, states first used traditional sources of capital such as capital construction accounts to fund these improvements. The federal government responded with programs such as the Institutional Conservation Program (ICP) which provides 50% grants to hospitals and schools for energy improvements. Although ICP and similar programs are very successful in the buildings where they are implemented, ICP only reaches an estimated 5 to 10% of the eligible institutions. This is largely due to federal funding of state and local energy conservation programs dropping by 77% since fiscal year 1979. The 5 to 10% figures are similar to the amount of energy improvement work done in Nebraska facilities through ICP.

Correspondingly, the country experienced related changes in the private sector. The deteriorating new construction market, the increasing use of electronics and the "privatization" emphasis from the federal government prompted private contractors to look at retrofitting older buildings as a new market. Public officials understand how energy improvements can reduce the taxes necessary to operate public buildings, but the public revenues are not enough to meet the need.

Thus, performance-based contracting with third-party financing emerged to meet the needs of both the public and private sectors. Performance-based contracting is not a new phenomenon, but

rather an old idea with a new application. It encompasses any agreement in which the cost of the improvement pays for itself over the life of the contract with the savings generated.

In this second evolutionary phase, contractors making the energy improvements also provided the financing. This occurred mainly for two reasons. First, energy improvements are an excellent investment and their ability to pay for themselves with the savings they generate, if done properly, is well-documented. Secondly, prior to 1984, the tax benefits accruing to a contractor with this type of project were substantial. Because of these incentives, energy service companies (ESCOs) offering performance-based contracts appeared to fill the needs of the public and private sectors.

The third phase of performance-based contracting is now emerging as more and more public entities attempt to cope with rising costs and smaller budgets. In this phase, the state or political subdivision secures the outside financing and then contracts for the energy services or equipment. This effectively retains most of the energy savings for the political subdivision. This is known as "institutionalizing" the financing. Generally, there are a variety of methods to accomplish this, with each state or political subdivision tailoring the acquisition of financing to their own particular set of circumstances.

States are embracing performance-based contracting as a way to make the necessary energy improvements in state-owned buildings without the need to raise taxes or divert funds away from other programs. The methods by which states and other public entities use energy service companies is changing as this third evolutionary step progresses.

ENERGY SERVICE COMPANIES (ESCOs)

An energy service company combines the individual components of a energy improvement project into a single package. This usually includes engineering and design, equipment purchase and installation, financing and often, maintenance. The ESCO then shares in the savings that these improvements generate with the building owner for the life of the lease or contract. There are a variety of types of contracts that achieve these same ends. They include shared savings, vendor financing, lease-purchasing and chauffage.

SHARED SAVINGS

Shared savings was the most common form of financing in the early days of ESCOs, although it is capturing a progressively smaller portion of the alternative financing market. In shared savings, an ESCO assesses a building's energy savings potential,

provides financing, installs the necessary equipment and recommends changes in the building operation. The resulting savings are shared between the client and the ESCO. The percentage each takes depends on the contract. The ESCOs percentage can vary from as little as 50% to as much as 90%. A common feature of a shared savings contract is for the percentage to vary during the life of the contract. In order to be profitable, ESCOs usually must recover their costs in the first two years of the project. Their percentage may start out very high those first two years and gradually be reduced in the later years of the contract. Contracts can run anywhere from 3 to 10 years with an average range of five to seven years. The percentage an ESCO takes also depends on the type of service they provide. If maintenance or a service component is included in a contract, it normally requires a greater percentage of the savings going to the ESCO.

A popular variation of shared savings is guaranteed savings. Here, the ESCO guarantees a certain level of savings. If the energy improvements fail to reach that level, the ESCO is liable for the cost. If, however, the energy savings exceed the guaranteed level, the ESCO usually gets a large percentage of the savings over that level.

The advantages of shared savings is that one entity handles the entire process. Although the building owner usually still has upfront costs and staff time involved, most of the risks are assumed by the ESCO. Shared savings contracts provide an incentive for contractors to do extra work since this increases their profits. One common problem with shared shavings is the determining and measuring of energy savings. Baseline energy use is often difficult to determine. Recalculating the baseline when changes are made not related to the energy improvements, such as adding computers, is often a complicating factor in these contracts.

The U.S. Department of Energy compared shared savings and direct financing of energy improvements in federal buildings in a May 1984 report prepared by DHR, Inc. of McLean, Virginia. That report drew three basic conclusions:

1. Shared savings can save money and energy in federal facilities.
2. Direct federal financing yields approximately 30% to 70% greater economic benefit to the federal government than does shared savings.
3. Either alternative is preferable to the status quo.

VENDOR FINANCING

Vendor financing generally is used to obtain a specific kind of energy management equipment. The vendor leases the equipment

to the building owner on the guarantee that the lease payments will be less than the expected savings. The building owner is essentially paying for the benefits rather than the equipment.

Vendor financing works well when the building owner knows exactly what is needed to achieve the necessary energy savings. It is generally done after the no-cost, low-cost energy improvements are done and when a particular piece of specialized and/or sophisticated equipment is needed. A guarantee that the savings will be adequate to cover the lease is not automatic with every contract and is an item that the building owner should require. Normally, separate maintenance agreements are also necessary.

LEASE-PURCHASE

Lease-purchase is quickly becoming the most popular type of alternative financing for public institutions. It can be described as an installment purchase of equipment. With a lease-purchase contract, the ESCO determines what improvements are necessary, installs the equipment and then leases the equipment to the building owner. The title to the equipment can remain with the ESCO or transfer to the building owner at the start of the contract. This determination is made depending on who can take advantage of any tax benefits.

The advantages of lease-purchasing for a government entity is that there is no direct capital outlay and it is usually faster than standard procurement. It is the means to acquire new technology faster with a guaranteed net positive cash flow and a low risk of equipment failure. This is also a very competitive market. Contracts can be written that benefit everyone and the expertise and knowledge necessary to enter into a lease purchase agreement is growing with each new contract.

The disadvantages of lease-purchasing include disagreements on how to calculate energy savings and ESCOs often have a bias toward certain equipment. A building owner cannot keep 100% of the energy savings and an ESCO has a shorter term outlook at the building. For example, an energy improvement may have a pay-back of fifteen years. For a building with a life expectancy of fifty years, this is a reasonable investment. But for an ESCO that needs to see profits within the first year or two, it is not an improvement they would be willing to undertake even though it would be an appropriate improvement for the building.

CHAUFFAGE

Chauffage is total energy management of a facility by an energy service company. The ESCO purchases, installs, operates and maintains all of the energy systems for a building. This even

includes the responsibility of paying the utility bills. The building owner pays a flat fee, either monthly or annually, which is based on a percentage of the base year energy costs, usually 90%. Chauffage is rarely used in the United States although it is very popular in France and other European countries.

ESCO PROGRESS

In the infancy of the industry, many ESCOs billed their services as one-stop, no-risk ventures. As with most new industries, some ESCOs were interested in skimming the cream off of energy savings and making notable use of the available tax credits. As consequence, success stories were not the norm for performance-based contracts.

The Tax Reform Act of 1984 denied accelerated cost recovery of equipment leased to any tax exempt organization. This, coupled with the increasing sophistication of building owners, has weeded out most of the unscrupulous ESCOs. And the survivors are a lot smarter. Both building owners and ESCOs have a much better understanding of the risks that each is taking and consequently, a body of knowledge is being built on both sides of the contract negotiation table. This has made performance-based contracting more successful with each contract drawn. Although there are still no standard answers and no guarantees, energy improvements through performance-based contracting or other alternative financing measure may be a risk worth taking for both the building owner and the energy service company.

BOND FINANCING

As states explore the variety of options available to them for financing energy improvements, many are turning to issuing revenue and general obligation bonds. This section describes two bonding techniques used in Oregon and North Carolina. It also examines the potential for funding energy improvements in Nebraska state buildings through the use of the Nebraska Investment Finance Authority (NIFA).

OREGON

During the 1970s, Oregon met the challenge of the energy crisis by instituting progressive steps to finance energy improvements in state facilities. In 1976, Oregon began the State Energy Management Program (SEMP). Its goal was to cut energy consumption in state buildings by 20% by 1981. SEMP met that goal, reaching a 22% reduction in consumption and saving Oregon taxpayers \$30 million.

In 1981, Oregon began issuing general obligation bonds to fund energy improvements for homeowners, local governments and local businesses through a revolving loan fund known as the Small Scale Energy Loans Program (SELP). Oregon also started a program expanding SEMP to a revolving loan fund for small energy projects by state agencies. The Legislature capitalized this fund with \$320,000.

In 1985, SELP expanded to offer loans to state agencies. During the first six months, SELP loaned state agencies \$8 million for projects that saved the state \$1.8 million annually in avoided energy costs. Currently, the fund has loaned approximately \$12 million to state agencies and the Oregon General Services Department estimates about that same amount of money is necessary to complete the energy improvement work in state buildings. The SEMP Fund's purpose changed at the same time. Now the revolving loan fund is used to fund technical analysis on state buildings to determine cost-effective improvements. Last year, the Oregon Legislature added \$1 million to the fund.

Oregon has made sixteen bond issues totaling \$100 million for SELP. This compares to their authority to issue up to \$434 million. Interest rates are 1% above the tax-exempt rate paid for bonds which, over the life of the program, have ranged between 8.5% and 12.5%. These bonds are general obligation bonds, which are constitutional in Oregon, and are backed by the credit of the state.

SELP and SEMP are so successful in Oregon that the state has dedicated \$2 million in oil overcharge funds for the same kind of revolving loan fund for all government entities. Lynn Frank, director of the Oregon Department of Energy, stated that SEMP and SELP "reflect the state's strong commitment to pursue energy and money saving goals."

NORTH CAROLINA

In 1983, the North Carolina General Assembly passed Senate Bill 308 which established the North Carolina Energy Development Authority (EDA). EDA's purpose is to plan, finance and develop energy projects in and for state facilities. EDA was initially established as a method for resource recovery in solid waste facilities which are immense energy users. Along with that mandate, EDA was given broad powers in other energy related areas including energy conservation and management in state buildings.

EDA may issue revenue bonds to finance its projects; however, it may not pledge the credit of the state. It can also utilize third-party financing, if that is a more attractive alternative, and enter into service contracts for energy improvements.

EDA may develop generation facilities provided the facilities also produce electricity. If the generation facility uses a renewable fuel source as its primary fuel, then it does not have to produce electricity.

EDA may hold title to a solid waste facility or a generating facility provided the beneficiaries of such a facility are all state agencies. It can also enter into joint ventures with cities or counties which, in turn, can issue their own bonds.

Since its inception, the North Carolina Energy Development Authority has not issued any bonds. Political turf battles have held up any activity of the EDA since its beginning. Chris Mogensen of the North Carolina Energy Office indicated that state departments have been utilizing tax revenues to make minor energy improvements.

NEBRASKA INVESTMENT FINANCE AUTHORITY

The Nebraska Investment Finance Authority (NIFA) is a quasi-governmental body created in 1983 to provide for and encourage the investment of private capital for the public interest. Sections of NIFA's enabling legislation refer specifically to energy conservation as an activity eligible for funding with NIFA revenue bonds.

The Legislature declared its findings in Section 58-202 of the Revised Statutes of Nebraska in which it stated:

3(d) Energy conservation through building modifications including, but not limited to, insulation, weatherization, and the installation of alternative energy devices has been shown to be a prudent means of reducing energy consumption costs and the need for additional costly facilities to produce and supply energy.

(e) Because of this high cost of available capital, the purchase of energy conservation devices is not possible for many Nebraskans. The prohibitively high interest rates for private capital create a situation in which the necessary capital cannot be obtained solely from private investment of private capital, thereby encouraging the purchase of energy conservation devices and energy conserving building modifications.

NIFA enabling legislation suggests that a mechanism to issue bonds for energy improvements in Nebraska state buildings is feasible without further legislation. However, an entity outside of NIFA would probably be necessary to administer such a program.

The Tax Reform Acts of 1984 and 1986 did constrain the issuing of private purpose revenue bonds--especially industrial development bonds. These constraints, however, do not apply to bonds issued for energy improvements on public buildings. The Tax Reform Acts do not affect these bonds because they are for a public purpose as opposed to a private purpose.

TRADITIONAL FINANCING MECHANISMS

TAX REVENUES

States that do not utilize third-party financing find more traditional methods to pay for necessary energy improvements. In Nebraska, this currently consists of two sources: the General Fund and Severance Taxes. The General Fund provides funding for the Task Force For Building Renewal (LB309). The Task Force was established in 1977 to prioritize and fund maintenance and building renewal projects in state-owned buildings. Over the 10 year history of the Task Force, approximately \$7 million has been allocated to energy projects in state facilities.

The second funding source is the Severance Tax on oil and natural gas which funds, in part, the Nebraska School Weatherization Program administered by the Nebraska Energy Office. This program, which changed from a grant to a loan program in 1986, provides no-interest loans to Nebraska's K-12 schools. The loans are repaid through the school's energy savings. In a sense, the School Weatherization Program functions much the same as a shared savings or lease-purchase contract.

The amount of funds flowing into the School Weatherization Program varies with the amount of Severance Tax received by the state. Severance Tax revenue for the program, based on oil and natural gas prices, has declined over the past two years.

As of September 30, 1987, or eleven months into the loan program, over \$2.6 million has been committed to loans for Nebraska schools. The remaining \$4 million available, which built up over a two year period, is committed to loans as applications arrive from the school districts. The program is administered with approximately \$183,000 of Severance Tax money.

OIL OVERCHARGE FUNDS

In 1986, Nebraska received approximately \$21 million in oil overcharge funds. These funds were paid to Nebraska as a result of overpricing by oil companies in the 1970s and early 1980s. Of that, approximately \$9.8 million remains uncommitted with the possibility of another \$5 million becoming uncommitted. The State also expects to receive additional oil overcharge funds.

LB 683, passed in 1987, established a new process for expending the oil overcharge funds in Nebraska. The constitutionality of LB 683 is being questioned. Although Nebraska's procedure for

expending the funds is unsettled, it is clear that oil overcharge funds may be used to demonstrate how energy improvements are cost-effective in public buildings. One state, Utah, is operating such a program.

In 1985, the Utah Legislature passed a law that enabled state-owned or leased facilities to engage in alternative financing contracts such as lease-purchase or shared savings agreements. The legislation allowed a facility to have their utility appropriation frozen at preconservation levels for a period of three years. Because of the uncertainty of these types of agreements, no agency has used the legislation. Problems cited included agencies' lack of expertise in evaluating the reliability of energy savings claims, and in interfacing an energy management organizational effort within each agency. Also of concern was the uncertainty regarding the funding levels from future legislatures causing the agencies to avoid long-term financial agreements.

The Demonstration Financing Program developed by Utah uses \$3.5 million of oil overcharge funds to set up a revolving loan fund to demonstrate to state agencies the feasibility of alternative energy financing with actual, monitored data. All loans will be repaid within three years. By then, Utah expects to have a program in place which will encourage state agencies and other governmental entities to seek their own private financing or to take advantage of a state-run revolving loan fund capitalized with either public or private money.

Oil overcharge funds are used in other states to perform energy audits on state buildings. Once the improvements are identified through the audit process, financing could be made available. Iowa used oil overcharge funds as part of the start-up costs of its Public Facilities Program.

REVIEW OF NEBRASKA STATE BUILDINGS

Nebraska operates 2,630 buildings across the state, including the University and State Colleges systems. These buildings contain a gross square footage of 28 million square feet (Appendix CC). Energy improvement activities in state buildings come under the jurisdiction of the Task Force on Building Renewal created in 1977. The Task Force, made up of an administrator appointed by the Governor, and up to four consultants, is responsible for the oversight of state building renewal projects. It is their duty to select and prioritize maintenance projects and recommend those projects for funding to the Governor. Members of the Task Force include Harry Hoffman, administrator, Philip Kruse, John Meyer, and William Sanders.

The legislation creating the Task Force on Building Renewal also created a select legislative committee known as the Committee on Building Maintenance. The Committee's duties include monitoring the activities of the Task Force and the agencies responsible for the maintenance of state buildings. Members include: Senator Marge Higgins, chairman, Senator Lee Rupp, vice-chairman; and Senators Lowell Johnson, Frank Korshoj, Richard Peterson and Jerry Warner.

Over the past ten years, of the nearly \$35 million appropriated to the Task Force, close to \$3 million has been allocated to provide matching funds for energy projects in state hospitals and schools. Another \$4 million has been allocated for energy related projects. An example of this type of improvement would be the installation of a new roof where insulation was also done.

The Nebraska Energy Office performed walk-through energy audits in all state-owned buildings. This began in 1977 under the U.S. Department of Energy's Institutional Conservation Program (ICP), and continued through 1983 after the passage of LB 158 which mandated audits in state facilities. Many no-cost and low-cost measures were implemented as a result of the audits.

Another result of LB158 was a survey of state building managers concerning energy improvements. The survey was performed in 1983 and released in June of 1984 as part of a report to the Legislature concerning the audit program. The Energy Office found that 62% of the building managers reported their major obstacle to implementing energy improvements in buildings was a lack of funding. The report also concluded that "(b)y an overwhelming margin, respondents felt the need for 'an innovative method of financing which would not affect program funding levels.'"

In addition to the lack of funding, the study also identified problems of managing these energy projects. A total of 22% of the respondents commented that additional impediments to instituting energy improvement projects included:

1. "Too busy with my job" to organize and carry out projects,
2. "Difficulty in justifying projects to higher management," and,
3. "Deciding which projects should have a higher priority."

Clearly the survey indicated that although state building operators understood the necessity for energy improvements in their buildings, they encounter major obstacles in implementing them including funding and management.

In 1983 when the survey was done, state agency requests to the Task Force For Building Renewal (309) for energy improvement activities totalled \$17 million. The Energy Office analysis of the walk-through energy audits identified over 4,000 needed energy improvements of which approximately 1,000 were implemented. The 309 Task Force, as mentioned previously, is gradually funding energy projects. But their budget has been substantially reduced over its 10 year existence from a high of nearly \$7 million in 1979-80 to nearly \$2.5 million in 1986-87.

The audit program's conclusion still applies: "It is clear that in spite of the progress made in increasing state building's energy efficiency, a considerable need exists for additional investment."

CONCLUSIONS

The State of Nebraska is making worthwhile, but limited progress to maximize energy efficiency in state facilities. However, Nebraska, like every other state, is facing pressure on its budget because of cuts in federal funding. In addition, the international situation is likely to increase energy costs. Energy costs have already depleted the revenue needed to implement energy improvement projects.

A comprehensive alternative financing program, large enough to address the energy needs of all state buildings, is a major undertaking. It should not be entered into without careful consideration.

The Nebraska Energy Office has received \$222,562 from the U.S. Department of Energy (DOE) for the development of a financing program for energy improvements in the institutional sector. This sector includes hospitals, schools, local governmental buildings and public care facilities. DOE offered these grants to states to encourage the development of alternative financing that would offset the continuing cuts in the federal conservation programs. The Energy Office is currently negotiating with DOE to modify the scope of work under the grant to include state-owned buildings and other public facilities within the financing program.

It is the intention of the Energy Office to coordinate our planning work with the Legislature and other state government officials to develop a systematic approach to the design of a program to finance energy improvements in Nebraska. We envision working with the Task Force For Building Renewal to build on their accomplishments in this area. This planning work will be completed by June 30, 1988 with recommendations made soon after that.

The Energy Office will periodically report progress to the Legislature and will distribute a final report to the members of the Government Committee.

APPENDIX CA

LEGISLATIVE RESOLUTION 205

Introduced by Baack, 47th District; Rupp, 22nd District.

PURPOSE:

The State of Nebraska and the University of Nebraska-Lincoln spend nearly \$30 million each year for their energy costs. Whereas Nebraska imports between eighty and ninety percent of the energy it uses, the cost represents a substantial drain on the state's economy as a whole and the budget in particular. Reducing the amount of tax dollars spent on energy in state buildings would significantly improve the ability of the state to meet funding obligations in other areas.

The State of Iowa recently implemented a conservative program for state-owned buildings which is estimated to cut annual energy consumption by twenty to twenty-five percent, thereby saving Iowa \$10 million per year. This is accomplished by the Iowa State Facilities Improvement Corporation, a public sector version of an energy services company. The Iowa State Facilities Improvement Corporation issues revenue bonds to finance energy improvements which are repaid through energy savings. The type of improvements include caulking, window modification, boiler and chiller replacement, combustion analyzers, and cogeneration. The average payback is five years. This program to fight high energy costs would allow all state-owned buildings to be made more efficient in a few years. It could save millions of tax dollars and create a major public improvement project without a tax investment by the state.

The intent of this study is to examine the Iowa State Buildings Program and analyze its effectiveness and transferability to the State of Nebraska.

**NOW, THEREFORE, BE IT RESOLVED BY THE
MEMBERS OF THE NINETIETH LEGISLATURE OF
NEBRASKA, FIRST SESSION:**

1. That the Government, Military and Veterans Affairs Committee of the Legislature shall be designated to conduct an interim study to carry out the purposes of this resolution.
2. That the Government, Military and Veterans Affairs Committee of the Legislature shall upon conclusion of its study make a report of its findings, together with its recommendations, to the Legislative Council or the Legislature.

APPENDIX CB

IOWA LEGISLATION

The following represents the enabling legislation in 1986 for Iowa School Energy Bank Program.

Section 1. NEW SECTION. 279.44 ENERGY AUDITS.

Between July 1, 1986 and June 30, 1991, and on a staggered annual basis each five years thereafter, the board of directors of each school district shall file with the Iowa Department of Natural Resources (DNR), on forms prescribed by the Iowa Department of Natural Resources, the results of an energy audit of the buildings owned and leased by the school district. The energy audit shall be conducted under rules adopted by the DNR pursuant to chapter 17A. The DNR may waive the requirement for the initial and subsequent energy audits for school districts that submit evidence that energy audits were conducted prior to January 1, 1987 and energy consumption for the district is at an adjusted statewide average or below.

This section takes effect only if funds have been made available to a school district or area school to pay the costs of the energy audit.

Section 2. NEW SECTION. 93.19 ENERGY BANK PROGRAM.

The Energy Bank Program is established by the DNR. The Energy Bank Program consists of the following forms of assistance for school districts and merged area schools:

1. Providing moneys from the petroleum overcharge fund for conducting energy audits under section 279.44.
2. Providing loans, leases, and other methods of alternative financing from the energy loan fund established in section 93.20 for school districts and area schools to implement energy management improvements.
3. Serving as a source of technical support for energy conservation management.

4. Providing assistance for obtaining insurance on the energy savings expected to be realized from the implementation of energy management improvements.

For the purpose of this section and section 93.20, "energy management improvements" means construction, rehabilitation, acquisition, or modification of an installation in a building which is intended to reduce energy consumption, or energy costs, or both, or allow the use of an alternative energy source, which may contain integral control and measurement devices.

Section 3. NEW SECTION. 93.20 ENERGY LOAN FUND.

An energy loan fund is established in the office of the Treasurer of State to be administered by the energy policy council. The DRN may make loans to school districts and area schools for implementation of energy management improvements identified in a comprehensive engineering analysis. Loans shall not be made for energy management improvements that require more than an average of six years for the school district as an entity to recoup the actual or projected cost of construction and acquisition of the improvements; cost of the engineering analysis, plans, and specifications; and cost of the surety bonds securing the operation of the energy management improvement. For a school district or merged area school to receive a loan from the fund, the DNR shall require completion of an energy management plan including an energy audit and a comprehensive engineering analysis. The DNR shall approve loans made under this section.

School districts shall repay the loans from moneys in either their general fund or schoolhouse fund. Area schools shall repay the loans from their general fund.

The DNR may accept gifts, federal funds, state appropriations, and other moneys for deposit in the energy loan fund.

For the purpose of this section, "loans" means loans, leases, or alternative financing arrangements.

APPENDIX CC

SUMMARY OF STATE BUILDING INVENTORY

Department	Total Number of Buildings	Gross Sq. Feet	Number of Buildings Heated and/or Cooled
Admin. Services	20	1,824,478	17
Aeronautics.....	46	288,659	14
Board of Ag (Fair).....	50	1,046,190	18
Brand Committee	1	4,800	1
Corrections	136	1,149,313	107
Economic Dev.	3	27,698	3
Education.....	21	325,733	20
Game and Parks.....	707	1,140,223	281
Historical Society	33	246,135	19
Labor	6	89,257	6
Law Enf. Training	3	69,600	1
Military	78	798,545	57
Public Institutions.....	211	2,726,559	127
Roads.....	578	1,557,442	210
Social Services	28	167,934	24
State Colleges.....	117	3,832,172	105
State Patrol	2	15,680	2
University	588	12,346,189	409
Water Resources.....	2	3,428	2
TOTAL	2630	28,001,035	1423

This table demonstrates the potential market available for work in state-owned buildings. It is safe to assume that, considering the funding available in the past, only a small fraction of these buildings have utilized cost-effective energy improvements to their maximum degree.