Susan Montee, CPA
Missouri State Auditor

NATURAL RESOURCES and OFFICE OF ADMINSTRATION

ANALYSIS OF STATE ENERGY EFFICIENCY PROGRAMS

April 2008

Report No. 2008-25

auditor.mo.gov

Susan Montee, CPA
Missouri State Auditor

YELLOW SHEET

Missouri Is Making Efforts to Improve Energy Efficiency, But More Could Be Done

The Department of Natural Resources (DNR) and the Office of Administration (OA) are responsible for implementing the state's energy efficiency programs that impact all state agencies and provide assistance to local governments. Our audit objectives included (1) evaluating program requirements, costs, and results; (2) evaluating how Missouri's programs compare to those in place in other states; and (3) identifying improvements or changes needed in laws that could enhance the state's program efforts.

Not all state universities meeting vehicle purchase requirement

In fiscal year 2006, 4 of the applicable 13 state entities subject to the state's vehicle fleet law did not purchase the required percentage of alternative fuel vehicles. State universities represented all of the non-compliant entities. State law requires 70 percent of all new vehicle purchases by the state to be alternative fuel vehicles starting in 2008. Prior to 2008, the requirement had been 50 percent. (See page 7)

Alternative fuel vehicles placed in areas with no alternative fuel available

Our analysis of fleet vehicle locations at the end of 2007 compared to the location of E85 fueling stations showed 29 percent of E85 state fleet flex-fuel vehicles are located in areas where E85 is not readily available. Some agency officials told us they could not easily shift vehicles between divisions because of appropriation and division limitations. (See page 8)

State building energy efficiency improved

Missouri has similar energy efficiency programs to other states but differs in that Missouri's programs are part of OA practices and not codified by state law or Executive Order. Twenty-seven states have mandatory goals to reduce energy consumption within state office buildings. Missouri has a goal to reduce energy use by 15 percent, but the goal is not mandatory. Energy savings contracts have been implemented for 14 million square feet of the total 20 million square feet of state-owned office space. OA projected annual saving of $15.5 million on 5 completed or nearly complete improvement projects. (See page 10)

State not requiring Energy Star® for procurement

Missouri does not require the purchase of Energy Star® rated equipment or appliances by state agencies resulting in potentially higher energy costs. Twenty-seven other states have laws that require or encourage the use of Energy Star® rated equipment. An OA official said it is up to agency officials if they want to request Energy Star® rated items as part of their purchasing requirements. However, the official said Energy Star® equipment would have to be within comparable prices of other available products and if more expensive would likely not be chosen. Other states evaluate the life-cycle costs of the Energy Star® equipment when evaluating purchasing decisions. (See page 12)

Missouri's renewable resource utility law lags behind other states

Missouri does not require utility companies to produce energy from renewable resources. Instead, a 2007 state law only encourages Missouri utility companies to make a good faith effort to generate sufficient energy from renewable technologies. As of August 2007, 25 states including Minnesota, Illinois, Wisconsin, Texas, California, and Vermont require their utility companies to meet similar goals rather than just make an effort to meet them. (See page 13)

Loan program database needs improvement

DNR's database for its local government Energy Loan program has inconsistent data. DNR personnel told us the database records did not always match loan files because personnel had not consistently entered loan origination fees and construction interest into the database. (See page 13)

All reports are available on our Web site: www.auditor.mo.gov

Contents

Abbreviations

ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.
CSR	Code of State Regulations
DESE	Department of Elementary and Secondary Education
DNR	Department of Natural Resources
EPAct	Energy Policy Act of 1992
LEED	Leadership in Energy and Environmental Design
OA	Office of Administration
RSMo	Missouri Revised Statutes
SAO	State Auditor's Office

SUSAN MONTEE, CPA
Missouri State Auditor

Honorable Matt Blunt, Governor
and
Members of the General Assembly
and
Larry Schepker, Commissioner
Office of Administration
and
Doyle Childers, Director
Department of Natural Resources
Jefferson City, MO

The Department of Natural Resources (DNR) and the Office of Administration (OA) are responsible for implementing the state's energy efficiency programs which impact all state agencies and provide assistance to local governments. Our audit objectives included (1) evaluating program requirements, costs, and results; (2) evaluating how Missouri's programs compare to those in place in other states; and (3) identifying improvements or changes needed in laws that could enhance the state's program efforts.

Missouri has established standards for state agency use of alternative fleet vehicles and alternative fuels, but the requirements are not being fully met. This situation exists because (1) some universities do not meet the fleet requirements, (2) the state's alternative fuel law has a relatively easy exception that helps the state meet the established requirement, (3) alternative fuel vehicles are not always in locations where the fuel is available, (4) agency best practices are not communicated statewide, and (5) agency alternative fuel plans are outdated. The state's continued usage of a Biodiesel Revolving Fund needs to be evaluated along with the sale process for EPAct credits.

Missouri is making efforts to improve the energy efficiency of its state buildings and encourage local utilities to use more renewable energy sources, but these efforts do not include some programs being used in other states and are not always mandatory or specifically established in state law or Executive Order. In addition, the state's Energy Loan Program for local governments has been successful, but improvements in tracking the programs financial activity and survey results would benefit the program.

We conducted our audit in accordance with the standards applicable to performance audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform our audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides such a basis. This report was prepared under the direction of John Blattel. Key contributors to this report included Jon Halwes, Kelly Davis, Dana Wansing, Ryan Redel, and Darius Dashtaki.

Susan Montee

Susan Montee, CPA
State Auditor

Introduction

DNR and OA Use Various Programs to Improve Energy Efficiency

The Department of Natural Resources (DNR) Energy Center and Office of Administration (OA) oversee various programs related to improving the efficiency of energy usage in the state and promoting energy efficient alternatives. Each agency has certain statutory responsibilities to promote energy efficiency.

Alternative fuel vehicle purchases and fuel requirements

The General Assembly passed laws in the 1990s to reduce fuel consumption by state fleet vehicles, improve fleet management and promote the use of alternative fuels[1] in state fleet vehicles. State law required 50 percent of the state fleet vehicles purchased after fiscal year 2000 to be alternative fuel vehicles.[2] This requirement increased to 70 percent beginning January 1, 2008.[3] In addition, state law requires 30 percent of state fuel purchases be alternative fuels. These programs apply to all non-exempt[4] vehicles purchased with state funding including vehicles purchased by the state universities.[5]

In conjunction with these laws, state agencies and universities are required to submit fuel energy conservation plans to DNR. Each state agency provides the Energy Center with an annual report showing its progress towards the vehicle fleet energy conservation goals and fuel usage requirements. The Energy Center reports this information in an annual report to the General Assembly. The Energy Center is also responsible for promoting the use of alternative fuel vehicles and alternative fuels in fleet vehicles.

State energy program

DNR administers the federally funded State Energy Program that provides grants to fund state plan programs submitted to and approved by the federal Department of Energy. The federal goals of the Energy Program are (1) promote energy efficiency and diverse energy supplies to improve energy and economic security and protect the environment, (2) to advocate decisions that benefit Missouri by advancing energy efficiency, and (3) a

[1] Alternative fuel is defined in Section 414.400, RSMo, as any fuel the United States Department of Energy (DOE) determines by final rule is substantially not petroleum and would yield substantial energy security and environmental benefits including alcohol fuel containing 85 percent or more of such alcohol (E85), other alcohol derived fuel, hydrogen, and electricity if included by the Department of Energy in final rules.
[2] Section 414.410, RSMo.
[3] Section 37.455, RSMo.
[4] Exempt vehicles are defined as vehicles with special purposes such as law enforcement, medical purposes, and off-road vehicles. Vehicles over 8,500 gross vehicle weight are also considered exempt vehicles.
[5] Section 414.400.2, RSMo.

national 25 percent improvement in energy efficiency by 2012 (compared to 1990 levels).

State building energy efficiency

OA Division of Facilities Management oversees various projects designed to improve energy efficiency in state-owned buildings and reduce energy costs for the state. Since 2004, state law[6] requires OA to develop a statewide plan of energy conservation and cost savings for the buildings and facilities of the state. The plan shall be designed to implement energy conservation and cost savings on a cost-effective basis. Part of this process began in 2004, with a performance contract for two state buildings. OA's goal is to reduce energy consumption in all climate controlled facilities by an average of 15 percent[7] by 2010, relative to fiscal year 2005 levels.

To achieve this goal OA implemented several types of projects including the performance contract, in-house initiatives, and statewide energy management initiatives. OA in-house initiatives include projects such as switching Department of Corrections laundries to ozone based cleaners which allow cold water washing, establishing building cooling and heating season temperature settings, and implementing a statewide maintenance program. Energy management initiatives include integrated energy management software that allows OA to track energy use and savings throughout the state.

State law[8] also requires the Energy Center analyze all state buildings for energy efficiency. DNR received funding from 1995 to 1999 to review and create efficiency studies of state buildings; however, DNR officials said the work stopped when the General Assembly discontinued providing funding.

Biodiesel Revolving Fund

In 2001, the General Assembly created the Biodiesel Revolving Fund, which is funded by proceeds from the sale of alternative fuel vehicle (EPAct[9]) credits earned by state agencies. Agencies that earn excess EPAct credits through the purchase of alternative fuel vehicles in excess of federal requirements are allowed to sell these credits to other entities. DNR is

[6] Section 8.237, RSMo.

[7] Based on the engineering calculation per square foot per degree.

[8] Section 8.817, RSMo.

[9] The Energy Policy Act of 1992 (EPAct) requires state government entities who maintain vehicle fleets of 50 or more light duty vehicles with 20 or more of those vehicles located in major metropolitan areas to comply with alternative fuel vehicle purchasing requirements. In Missouri, the act currently applies to the Departments of Corrections, Social Services, Mental Health, Natural Resources, and Transportation, and the Universities of Missouri St. Louis and Kansas City.

responsible for any credit sales. Currently the department utilizes a broker to sell the credits.

As state agencies use biodiesel they may receive reimbursements for the incremental costs of biodiesel over regular diesel out of the revolving fund. Since inception only the Departments of Transportation and Corrections, and DNR claimed reimbursement from the fund.

Energy loan program

The Energy Center, through the Energy Loan Program, provides low-interest loans to public schools, universities, colleges, cities, counties, public hospitals, and public water treatment plants to fund projects to help reduce energy costs. Schools and local governments typically apply for loans to finance lighting upgrades and heating and cooling upgrades. Loans are to be repaid by the local governments from the energy savings gained by the energy efficient project. In 2007, interest rates for loans varied between 3.75 percent and 4.15 percent depending on the payback period (longer payback periods have higher interest rates). In addition, a 1 percent loan origination fee is charged for each loan to offset administration costs for the loan. The program has not had any loan defaults since program inception.

The program began in 1989 and has been funded since 2002 with a series of bond issuances. Since its inception, the department has approved 448 loans totaling $78 million. The department approves an average of 24 loans per year. In fiscal year 2007, DNR approved loans totaling $4.3 million.

Scope and Methodology

To determine the requirements of the various energy efficiency programs, we reviewed federal and state laws and regulations, and related DNR procedure manuals. We discussed program procedures and internal controls with DNR and OA personnel.

To determine the programs funded with State Energy Program federal grants, we discussed the programs with Energy Center personnel. In addition, we discussed one special project with the grant recipient. To compare the programs identified with programs funded by other states, we contacted energy department personnel from other states. We noted no problems with the State Energy Program federal grants.

To determine the procedures and practices of other states related to energy efficiency of state buildings, alternative vehicle and fuel use, EPAct credit sales, and low-interest loan programs, we performed Internet research on programs available in other states and contacted applicable personnel in those states to obtain more details and clarify information about the programs.

To determine trends in alternative fuel vehicle purchasing and alternative fuel usage, we reviewed the fiscal year 2005 and 2006[10] Alternative Fuel Reports produced by DNR. We contacted representatives of various agencies to evaluate the success or failure the agencies had in meeting the vehicle and fuel requirements. We also discussed with agency fleet representatives procedures used to encourage alternative fuel usage.

To determine if agencies placed purchased alternative fuel vehicles in areas where alternative fuel is available, we compared a report of the locations of state fleet vehicles as of January 2008 from all agencies that report fleet data to OA to a listing of all E85[11] fueling stations in the state as of December 2007.

To determine the use of the Biodiesel Revolving Fund, we reviewed the fluctuations in the fund balance for fiscal year 2006 and 2007. We discussed the reasons for fluctuations with DNR personnel. We also contacted various applicable agencies to discuss use of the program.

To determine the number of outstanding EPAct credits banked by state agencies, we contacted the five agencies subject to EPAct requirements to determine the agency's credit balance as of the end of 2007. In addition, to evaluate DNR's handling of biodiesel fund reimbursements and EPAct credit sales, we reviewed supporting documentation for reimbursements made in fiscal years 2006 and 2007, and sales made in 2007.

To evaluate DNR's selection and monitoring procedures for the Energy Loan Program, we reviewed program files of current and closed projects including DNR satisfaction surveys. To evaluate DNR's tracking of loan data, we compared loan file information to data maintained on the Energy Loan Program database.

To evaluate recipients' satisfaction with the loan program we contacted past and current loan recipients. We discussed their use of the loan funding, experience with DNR personnel and the loan program, and satisfaction with the results of energy efficient installations. We also visited one school district to discuss these areas and view the energy efficiency upgrades.

[10] The fiscal year 2007 report is due in 2008. The report was not available to review as of the end of fieldwork.

[11] E85 is an alcohol fuel mixture that typically contains a mixture of up to 85 percent denatured fuel ethanol and gasoline or other hydrocarbon by volume.

Missouri Is Making Efforts to Improve Energy Efficiency, But More Could Be Done

Missouri has established standards for state agency use of alternative fleet vehicles and alternative fuels, but the requirements are not being fully met. This situation exists because (1) some universities do not meet the fleet requirements, (2) the state's fuel law has a relatively easy exception that helps the state achieve the established requirement, (3) alternative fuel vehicles are not always in locations where the fuel is available, (4) agency best practices are not communicated statewide, and (5) agency alternative fuel plans are outdated. The state's continued usage of a Biodiesel Revolving Fund needs to be evaluated along with the sale process for EPAct credits.

Missouri is making efforts to improve the energy efficiency of its state buildings and encourage local utilities to use more renewable energy sources, but these efforts do not include some programs being used in other states and are not always mandatory or specifically established in state law or Executive Order. In addition, the state's Energy Loan Program for local governments has been successful, but improvements in tracking the program's financial activity and survey results would benefit the program.

Not All State Universities Meeting Vehicle Purchase Requirement

In fiscal year 2006, 4 of the applicable 13 state entities subject to the state's vehicle fleet law did not purchase the required percentage of alternative fuel vehicles. State universities (Missouri State University, Northwest Missouri State University, Southeast Missouri State University, and the University of Missouri) represented all of the non-compliant entities. DNR officials stated it is harder to make universities comply with purchasing requirements because they make their own purchasing decisions and DNR has no disciplinary power. State law[12] requires 70 percent of all new vehicle purchases by the state to be alternative fuel vehicles starting in 2008. Prior to 2008, the requirement had been 50 percent.[13] The law has no penalty for noncompliance.

Representatives from one university told us they were not purchasing alternative fuel vehicles because the fuel had not been available in their area. One university representative said his school purchased vehicles from federal surplus property and only purchased alternative fuel vehicles when available from this source.

[12] Section 37.455, RSMo.
[13] Section 414.410, RSMo.

Exception allows state to meet goal for alternative fuel purchases

Most state agencies are not meeting the statutorily[14] required 30 percent alternative fuel purchasing requirement. Eighteen of the 21[15] applicable agencies did not meet the purchasing requirement when fuel purchases for non-exempt vehicles were not included in the calculations. The state had an overall alternative fuel purchasing percentage of 18 percent in fiscal year 2006 for non-exempt vehicles.

State law allows alternative fuel purchases for exempt vehicles to be included in the calculation when evaluating the state's compliance with the 30 percent goal. When these amounts are included the state exceeds 30 percent in alternative fuel purchases. We reviewed the alternative fuel requirements for all states that included a specific fuel purchasing requirement and found no other states that allow a similar inclusion of exempt vehicle fuel purchases to achieve stated goals.

Alternative fuel vehicles placed in areas with no alternative fuel available

State agency fleet managers told us less alternative fuel had been purchased than possible because alternative fuel vehicles had been placed in areas where alternative fuels are not available. Our analysis of fleet vehicle locations at the end of 2007 compared to the location of E85 fueling stations showed 29 percent of E85 state fleet flex-fuel vehicles are located in areas where E85 is not readily available. These agencies had regular fuel fleet vehicles domiciled in areas with E85 availability.

Some agency officials told us they could not easily shift vehicles between divisions because of appropriation and division limitations. The Department of Agriculture fleet manager said his department tries to relocate vehicles as much as possible to ensure E85 vehicles are located in areas where E85 is available.

Some agencies developed their own best practices to encourage alternative fuel usage

Some state agencies are meeting the state's alternative fuel goals or increasing alternative fuel usage through the use of various best practices to promote alternative fuel usage. State agencies are using the following best practices as ways to remind employees to use alternative fuels when available:

- The Department of Agriculture, Department of Revenue, and OA send emails to employees and/or fleet managers informing them of new E85 stations.

---

[14] Section 414.400, RSMo.

[15] The Department of Labor and Industrial Relations, Department of Transportation, and OA met the fuel usage requirement.

- The Departments of Higher Education and Elementary and Secondary Education (DESE) keep lists of E85 station locations in each flex-fuel vehicle.

- DESE also places E85 stickers in vehicle logbooks to remind users to purchase E85.

- DNR, internally, places packets in fleet vehicles that identify vehicles as alternative fuel vehicles and include lists of alternative fuel stations. In addition, employees receive announcements of new E85 stations on the DNR intranet.

On a statewide basis, DNR promotes alternative fuels by organizing fleet managers' workshops, on-site demonstrations at various state agencies, emailing fleet managers about E85, and distributing hang tags and fuel door magnets to remind users they are driving alternative fuel vehicles.

Agencies do not have updated alternative fuel plans on file nor has DNR updated guidance

State agencies have either not created or not regularly updated alternative fuel plans since first required in 1993. Most plans are brief with only a one page bullet list of goals and accomplishments. We reviewed all state agencies' alternative fuel fleet plans on file with DNR and found of the 29 entities required to submit reports:

- 4 did not have plans on file with DNR
- 17 had not updated their plans since 1995
- 6 agencies last updated their plans in 2002
- Only 1 agency had updated its plan since 2002

State law[16] requires agencies to develop and submit a plan to DNR on how the agency will reduce fuel consumption and increase use of alternative fuels. The General Assembly passed this law in 1991 and updated it in 1998. The law does not require agencies to update these plans. We contacted current agency fleet managers at nine agencies, and only the Department of Conservation fleet manager had been aware his agency had an alternative fuel vehicle plan on file with DNR. Conservation is also the only agency that has updated its plan since 2002.

DNR sample plan not updated

DNR has not updated its sample alternative fuel plan and agency guidance since 2002. State law requires DNR to update the sample plan every 2 years. An Energy Center official said the plan had not been updated because no changes occurred in regulations or requirements. The official said the

[16] Section 414.403, RSMo.

department planned to update the guidance in 2008 based on changes in federal regulations and state law.

The State's Biodiesel Revolving Fund May Not Be Needed

Missouri is one of only three states that utilize a biodiesel revolving fund. Other states allow state agencies to sell EPAct credits directly and fund individual programs or provide general operating funding rather than fund biodiesel exclusively. Currently, Missouri incurs a 10 percent charge on credits sold and has paid $24,810 in fees[17] for all sold credits since inception of the program. Sources are available through the federal Department of Energy's website for states to advertise and sell credits without incurring brokerage costs. A North Carolina official told us her state stopped using the same broker Missouri uses in 2007 and began selling credits with the help of the federal website. Iowa also sells credits without a broker. The Iowa fleet manager told us his recent sale prices were similar to the prices the broker achieved for Missouri.

Federal changes impact market for the credits

Changes in federal regulations and the reduction in the incremental cost of biodiesel over regular diesel fuels have also caused less demand for EPAct credits and made the fund less useful to state agencies. In 2007, the federal Department of Energy changed EPAct regulations eliminating the alternative fuel vehicle purchasing requirement for private entities and local governments. DNR officials said this change has resulted in and will result in less demand for credits being sold, and as a result less revenue for the Biodiesel Revolving Fund. An agency fleet manager told us there is little difference in the incremental cost of biodiesel in recent years making it less worthwhile to even complete the paperwork necessary to obtain reimbursement from the revolving fund.

State Building Energy Efficiency Improved

Missouri's program to improve the energy efficiency of state buildings is as good or better than some states, but is behind efforts in other states. We compared Missouri's energy efficiency programs for state buildings to similar programs in other states. We found, overall, Missouri has similar programs to many states but differs in that Missouri's programs are part of OA practices and not codified by state law or Executive Order. We found:

- 27 states have mandatory goals to reduce energy consumption within state office buildings. Missouri has a goal to reduce energy use by 15 percent, but the goal is not mandatory. The Governor's Energy Policy Council developed the goal but it is not established by law.

[17] Total fees paid are based on a 5 percent commission. Effective January 2, 2008 the commission rate increased to 10 percent.

- 23 states require Leadership in Energy and Environmental Design (LEED) Green Building[18] or Energy Star®[19] Certification for newly constructed buildings. OA officials stated they plan to use Energy Star® standards for new building construction; however, neither this standard nor any other recent certification standard is included in state law for state building construction. A 1993 state law required, effective January 1, 1995, state building energy efficiency standards be at least as stringent as American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE) Standard 90.[20] LEED and Energy Star certification cover more energy efficiency issues than the ASHRAE standard.

Savings achieved

OA has implemented several programs in-house and through the use of contractors to meet energy savings goals. Missouri like 43 other states has implemented the use of energy savings performance contracts. These contracts are agreements between the state and contractors to perform energy audits and install agreed upon energy conservation measures. The contractor guarantees energy savings from the installations and any energy savings that are not realized are refunded to the state. Energy savings contracts have been implemented for 14 million square feet of the total 20 million square feet of state-owned office space. Other buildings are currently undergoing energy savings projects.

Table 2.1 shows the energy savings programs completed or in process as of the end of 2007 and OA's calculated savings:

Table 2.1: Annual Energy Savings from OA State Building Energy Initiatives

Initiative	Area or Department	Annual Savings
Performance Contract	Statewide	$10,210,232
Transported Natural Gas Purchases	Statewide	1,900,000
Laundry System Change	Corrections	1,365,875
Steam Trap Maintenance	Statewide	1,900,000
Facility Lighting Replacement	Corrections	143,522
Total		$15,519,629

Source: OA data.

[18] LEED Green Building Rating System, developed by the U.S. Green Building Council, provides a set of standards for environmentally sustainable construction.
[19] Energy Star® is a national labeling program developed by the federal Environmental Protection Agency to identify and promote energy efficient products.
[20] Section 8.812, RSMo and 10 CSR 140-7.010 require all new state building construction and major renovations comply with the ASHRAE 90.1 and 90.2 Energy Efficiency Design of New Buildings Except Low-Rise Residential Buildings standard.

State not requiring Energy Star® for procurement

Missouri does not require the purchase of Energy Star® rated equipment or appliances by state agencies resulting in potentially higher energy costs. Twenty-seven other states have laws that require or encourage the use of Energy Star® rated equipment. In Massachusetts, officials estimate they saved $269,000 in energy costs from the purchase of Energy Star® rated office equipment in one year. They expect to save $1.3 million over the 5 year life of the products. The state achieved this savings with the purchase of 19,920 fax machines, copiers, monitors and computers.

The Energy Center has made efforts to improve the state's purchasing of Energy Star® equipment, but no statutory changes have occurred. An Energy Center official said the department has tried to encourage OA to include more Energy Star® rated items on the state contracts. An OA official said it is up to agency officials if they want to request Energy Star® rated items as part of their purchasing requirements. However, the official said Energy Star® equipment would have to be within comparable prices of other available products and if more expensive would likely not be chosen. Other states evaluate the life-cycle costs of the Energy Star® equipment when evaluating purchasing decisions.

A report by the Consortium for Energy Efficiency[21] states the overall life-cycle costs (including energy consumption) of Energy Star® equipment can be less than non-Energy Star® equipment. The study states a key component of a successful energy efficiency purchasing program is a statute requiring energy efficiency purchasing because it helps legitimize and enforce the program.

State building laws are redundant

Redundant state laws[22] currently require the DNR Energy Center and the OA to manage the energy efficiency of state buildings. The Energy Center discontinued its work with state buildings in the late 1990s. Energy Center officials said work ceased because funding stopped and recommendations had not been implemented. In 2004, the General Assembly passed new legislation that gave OA the responsibility to improve the energy efficiency of state buildings, but did not eliminate the requirements for DNR. OA now oversees energy efficiency projects for state-owned buildings.

[21] Harris, Jeffrey, et al, "Energy-Efficient Purchasing by State and Local Government: Triggering a Landslide down the Slippery Slope to Market Transformation," 2004, http://www.cee1.org/gov/purch/2004_purchasing.pdf, accessed on December 18, 2007.
[22] Sections 8.237 and 8.817, RSMo.

Missouri's Renewable Resource Utility Law Lags Behind Other States

Missouri does not require utility companies to produce energy from renewable resources. Instead, a 2007 state law[23] only encourages Missouri utility companies to make a good faith effort to generate sufficient energy from renewable technologies. The goal is that by 2012, 4 percent of total retail electric sales by electric corporations are generated by renewable technologies; this goal is increased to 8 percent by 2015, and 11 percent by 2020. As of August 2007, 25 states including Minnesota, Illinois, Wisconsin, Texas, California, and Vermont require their utility companies to meet similar goals rather than just make an effort to meet them. In August 2007, only one other state (Virginia) with a renewable resource law had voluntary renewable energy requirements for utilities.

Loan Program Database Needs Improvement

DNR's Energy Loan Program database has inconsistent data. Personnel entered data into the database in varying ways causing loan information to not always be comparable. We compared energy loan file information to loan data maintained in the database and found inconsistencies.

Energy Center personnel told us the database records do not always match loan files because 1 percent loan origination fees had not been consistently entered into the database. Energy Center personnel also said database procedures had not been updated when the loan origination fee began in 2002. In addition, the database procedures do not address how construction interest should be documented in the database resulting in staff using various methods. The Energy Loan Program database is used for reporting loan information to the public, General Assembly and as part of the department's budget.

Loan Program Surveys Not Tracked

DNR sends out and receives satisfaction surveys to loan recipients upon completion of their loans, but does not track responses in a centralized database. Program procedures require each loan recipient receive a survey with data from returned forms to be entered into a tracking system. An Energy Center official said staff stopped compiling survey information in 2005 when DNR eliminated using the tracking system. The official said the surveys are now only reviewed and filed in individual loan files.

Our review of filed survey responses indicated some loan recipients did not realize a loan origination fee applied to their loans. Loan recipients said the information had not been communicated during discussions about the loan process. An Energy Center official said the information had been included in loan paperwork, and staff informed the concerned recipients where the information could be found.

[23] Section 393.1020, RSMo.

We also surveyed 24 loan recipients and found local officials pleased with their program results and would use the program again. Some of the recipients specifically tracked energy costs after completion of the improvement project and found significant energy savings.

Conclusions

Some state entities are not meeting state alternative vehicle purchase requirements, but the state law does not provide for any penalty for non-compliance. As a result, there is less incentive for each entity to meet the requirements. In addition, the majority of state agencies are not individually meeting the state's alternative fuel usage requirements, but overall state compliance is achieved because the state's law allows exempt vehicle alternative fuel usage to be counted towards compliance. The exception essentially guarantees overall compliance, but provides less incentive for agencies to meet the required goal. The General Assembly needs to evaluate the continued use of the exception.

In addition, alternative fuel vehicles are being placed in areas where such fuels are not available. As a result, alternative fuel purchases are further reduced. Vehicles should be placed in areas where alternative fuel usage can be maximized if that was the intent of purchasing the vehicle.

Some state agencies have created procedures to promote alternative fuel usage in their fleets. These practices are not used consistently in all state agencies. DNR should research the best practices being used and provide the information to all agencies as part of its current education and awareness programs.

Most state agencies have not updated their alternative fuel plans since 1995 or did not create one. This problem occurred because state law does not require agencies to update plans and many fleet managers are not aware their agencies ever created plans. In addition, DNR had not updated every 2 years the guidance provided state agencies on alternative fuel plans as statutorily required. As a result, agency plans are outdated and do not reflect current technologies. DNR should update agency guidance and request agencies provide updated fuel plans.

Few states have established biodiesel revolving funds and 2007 federal regulation changes and the reduction in cost of biodiesel fuel make it less likely the Missouri's fund is still needed. DNR staff should evaluate whether maintaining such a fund is cost-effective and necessary for the state and make recommendation for any needed changes to the General Assembly.

In addition, the state's use of a broker to sell EPAct credits which fund the Biodiesel Revolving Fund may no longer be needed. Other states sell the credits without the use of a broker. The current broker commission of 10 percent doubled from the previous contract. DNR staff needs to evaluate if more cost-effective options are available if the state continues to sell EPAct credits.

Missouri is making efforts to improve the energy efficiency of its state buildings and encourage local utilities to use more renewable energy sources, but these efforts do not include some programs being used in other states and are not always mandatory or specifically established in state law. Establishing and/or updating laws covering expected energy savings, and energy efficiency building standards for state building would help ensure consistency in those efforts. The current law requiring utilities make a good faith effort to meet power generation goals from renewable technology is behind other state's mandatory requirements in this area and provides less chance for goal achievement.

Missouri law does not require state agencies include Energy Star® rated equipment or appliances in bid proposals and evaluate costs on product life cycles. A majority of states currently require purchasing decisions include Energy Star® options. The General Assembly should consider including energy efficiency standards such as Energy Star® as a requirement of state procurement guidelines to ensure the state is maximizing its energy efficiency efforts.

Redundant state laws currently require both OA and DNR manage and evaluate the energy efficiency of state buildings. The General Assembly should repeal applicable laws to reflect the current responsibilities regarding state building energy efficiency.

Energy Center staff has not consistently tracked fees and interest payments in the Energy Loan Program database. Consistent recordkeeping is necessary to ensure information generated from the database accurately reports program results. Data for open loans should be updated to ensure consistent results are reported.

Loan program survey responses are no longer tracked. Survey results showed some recipients expressed concerns over charges they did not understand. Schools and local governments need a clear understanding of program costs to insure proper budgeting and funding for projects. Consistent tracking of loan recipient survey responses is necessary to ensure Energy Center staff timely address potential problems and identify trends which may not be apparent from a single survey.

Recommendations

We recommend the General Assembly:

2.1 Consider changes to the state's alternative fuel and fuel vehicle purchasing laws which may include:

- Establishing penalties for agency noncompliance
- Removing the consideration of exempt vehicle alternative fuel purchases in the compliance computation
- Amending Section 414.403, RSMo, to require state agencies to periodically update their alternative fuel plans
- Evaluating the need for the Biodiesel Revolving Fund

2.2 Establish laws requiring OA and state agencies include Energy Star® rated office equipment and appliances in bidding proposals and include life-cycle cost analysis as part of the purchasing decision.

2.3 Establish or modify laws to require a specific percentage reduction in energy use by state buildings and require achievement of specific standards for new state building construction.

2.4 Eliminate redundancy in current law regarding OA and DNR responsibilities for state energy efficiency programs.

2.5 Evaluate whether Section 393.1020, RSMo, needs to require utility compliance with renewable technology generation goals rather than require a good faith effort.

We recommend the Department of Natural Resources and Office of Administration:

2.6 Provide information to state agencies on alternative fuel vehicles located in areas without such fuel availability so vehicles could be relocated when possible.

2.7 Work with the General Assembly to implement recommendations 2.1 through 2.4, as applicable.

We recommend the Department of Natural Resources:

2.8 Update alternative fuel guidance provided to state agencies in compliance with Section 414.403, RSMo. Also request agencies periodically update their alternative fuel plans until the law is changed requiring such updates.

2.9 Collect and distribute best practices identified to encourage the use of alternative fuels.

2.10 Evaluate if the Biodiesel Revolving Fund continues to be useful for the state and recommend any changes needed to the General Assembly. Also evaluate if more cost-effective options are available if the state continues to sell EPAct credits.

2.11 Ensure fees and interest payments are consistently entered into the Energy Loan Program database and loan procedures are updated to reflect current fees. Correct the database loan information for all active loans.

2.12 Track Energy Loan Program survey responses and use the information to make program changes as needed.

Agency Comments

OA Comments

2.1 The Office of Administration enforces statutory requirements and will continue to do so if the general assembly modifies the alternative fuel vehicle statute.

2.2 The Office of Administration currently uses the Energy Star Program on many procurements. We shall strive to incorporate Energy Star Program requirements in as many requirement definitions as possible and to eliminate the need for statutory modifications.

2.3 Energy efficiency is a key component to ensuring the state manages its assets at the lowest possible cost of ownership. OA will continue monitoring Industry Best practices to ensure that the trend of reducing energy consumption in state owned buildings continues.

2.6 Fleet Management previously provided this information to the Department of Natural Resources and will make this data available to state agencies on an ongoing basis to assist with appropriate relocation of alternative fuel vehicles.

2.7 The Office of Administration, with the support of the Department of Natural Resources, will provide information and offer recommendations to the General Assembly as it considers the recommendations contained in this report.

DNR Comments

2.6 The Department of Natural Resources will continue to provide state agencies with frequent information about the locations of fueling stations for alternative fuels. This information is updated frequently as new retail alternative fuel locations appear in Missouri. The department believes state agencies and universities have sufficient information to make decisions about whether vehicles can be relocated to maximize the use of alternative fuels. To the extent allowed by existing data and limited staff availability, the department is willing to assist agencies with this comparison.

2.7 The Department of Natural Resources will bring these legislative topics to the attention of the General Assembly as we have opportunity and will work with members of the General Assembly, as requested, on recommendations 2.1 through 2.4.

2.8 Each year for the past several years, the department has asked every state agency and university to update its alternative fuel plans. With few exceptions, the agencies and universities have not responded. The department will contact fleet managers or other appropriate management staff and emphasize, to state agencies and universities, the importance of updating their alternative fuel plans. The department will provide updated guidance to state agencies and universities.

2.9 The Department of Natural Resources concurs and will do so through the annual fleet managers meeting with follow-up mailings to those agencies that do not participate.

2.10 The Department of Natural Resources concurs and will conduct the evaluation by the end of this calendar year.

2.11 The department maintains energy loan information on two databases, one identified as the Energy Loan Program and the other as the Energy Loan System. Financial information regarding energy loans, including fees, interest rates and amortization schedules, is maintained in the Energy Loan System. While the department believes that each database contains the information appropriate to each, the Energy Center will review data entry directions and protocols to ensure that information is entered consistently in the future. As staff is available, data from current loans will be reviewed for consistency and modified if appropriate.

2.12 *The Department of Natural Resources staff reads and considers all survey responses and how the responses may help us improve the Energy Loan Program. The department will establish a formal tracking system for survey responses.*