



Susan Montee, CPA
Missouri State Auditor

October 2007

TAX CREDIT

Analysis of Wood Energy Tax Credit Program



Wood Energy Tax Credit Provides Environmental and Economic Benefits, But Is More Costly than Anticipated

This audit reviewed the cost-benefit to the state for the Wood Energy tax credit. The tax credit has contributed environmental and economic benefits to Missouri; however, those benefits cost at least three times more annually than estimated. The Department of Natural Resources (DNR) manages this tax credit program. It was established as a production incentive for qualified wood producing facilities to produce processed wood products using Missouri forest product residue. As of June 30, 2007, \$28.6 million in credits had been issued and \$26.4 million redeemed. State law mandates the State Auditor's office perform cost-benefit analyses on state tax credit programs. This audit was performed as part of this ongoing work.

Emissions reduced

The Wood Energy tax credit provided financial support to charcoal producers facing increased costs from emission fees and installation of emission control devices. EPA statistics show air pollution levels caused by charcoal producers have decreased in Missouri since the mid 1990's and required installation of the emissions control devices. The Wood Energy tax credit, along with the Charcoal Producer's tax credit, were available resources for charcoal producers to offset additional funds spent on the required emissions control devices. (See page 8)

Tax credit helps wood products industry

The Wood Energy tax credit has helped support the charcoal and wood products industries in Missouri. Charcoal and wood energy firms that supplied sales data in survey responses showed increased sales and some workforce expansion since reinstatement of the tax credit in 1997. Representatives from charcoal producers responding to our survey also reported shifting production to Missouri due to the tax credit and depending on the credit to help support their operations. (See page 10)

Tax credit issuances more than expected

Actual annual tax credit issuances have been three to four times expected issuances since reinstatement of the tax credit in 1997. This result occurred because charcoal producers received a tax credit that is computed at four times the \$5 per ton compensation discussed in the legislation establishing the credit. DNR officials included this conversion factor in the regulations covering the tax credit because analysis supported it took 4 units of wood residue to produce 1 unit of charcoal. The officials concluded the tax credit's authorizing laws, which states the tax credit shall be \$5 per ton of processed material, were unclear whether processed material meant input or output material and attempted to clarify that in the regulations. (See page 11)

Performance measure does not reflect changes resulting from credit

DNR officials are using wood residue that is diverted from waterways and landfills as the performance measure to evaluate the cost-benefit of the tax credit in budgetary documents, but this measure is not accurately evaluated and fails to consider other program benefits. According to a DNR publication, the charcoal industry has traditionally used wood residue as a raw material for charcoal production. As a result, much of the diverted wood residue that was reported as a benefit would have occurred without

the credit. In addition, one of the original purposes of the credit was to create wood energy product commercial operations that at the time did not exist in the state. The performance measure does not address this purpose. (See page 12)

Limited verification of application data

DNR personnel have not adequately validated the product sales and wood residue information provided by tax credit applicants. DNR personnel limit verification of sales and wood residue information to calling one purchaser per application and have not required applicants to provide documentation of the source of wood residue claimed. (See page 14)

All reports are available on our website: auditor.mo.gov

Contents

State Auditor's Letter		3
Chapter 1		4
Introduction	Tax Credits Used and Products Produced	5
	Charcoal Production and Wood Residue Can Affect Air and Water Quality	6
	Scope and Methodology	6
Chapter 2		8
Wood Energy Tax Credit Provides Environmental and Economic Benefits, But Is More Costly Than Anticipated	Emissions Reduced	8
	Tax Credit Helps Wood Products Industry	10
	Tax Credit Issuances More Than Expected	11
	Performance Measure Does Not Reflect Changes Resulting From Credit	12
	Limited Verification of Application Data	14
	Conclusions	16
	Recommendations	17
	Agency Comments	17
Appendix I	Wood Energy Tax Credit Activity	19
Appendix II	Tax Credit Review Status	20
Appendix III	Tax Credit Redemptions	22
Figures and Tables	Figure 2.1: Percentage of Wood Residue Diverted by Product	13
	Table 1.1: Processed Wood Products Produced 1997 to 2007	5
	Table 2.1: Change in Charcoal Kiln Emissions between 1996 and 2001	8
	Table 2.2: Wood Energy Producer Economic Data	10
	Table I.1: Wood Energy Tax Credits Issued and Redeemed by Fiscal Year	19
	Table II.1: Tax Credit Programs and Review Status	20
	Table III.1: Tax Credit Redemptions by Program	22

Abbreviations

DNR	Department of Natural Resources
EPA	Environmental Protection Agency
DOR	Department of Revenue
PM10	Large Particulate Matter
RSMo	Missouri Revised Statutes
SAO	State Auditor's Office
USC	United States Code
USDA	United States Department of Agriculture
VOC	Volatile Organic Compounds



SUSAN MONTEE, CPA
Missouri State Auditor

Honorable Matt Blunt, Governor
and
Joint Committee on Tax Policy
and
Doyle Childers, Director
Department of Natural Resources
Jefferson City, MO 65102

State law mandates the State Auditor's office perform cost-benefit analyses on state tax credit programs. The audit objectives included (1) evaluating the environmental and economic impact of the Wood Energy tax credit program, and (2) reviewing the adequacy of internal controls in place to ensure compliance with statutory requirements for the tax credit program.

We found the Wood Energy tax credit provides environmental and economic benefits to Missouri; however, those benefits cost at least three times more annually than estimated. In addition, improvements are needed in the performance measure used by the Department of Natural Resources to evaluate the cost-benefit of the tax credit, because the measure does not reflect changes resulting from the credit. Improvements are also needed in the review of tax credit applications and notification regarding awarded credits.

We conducted our work in accordance with applicable standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States with the exception of the external impairment of access to redemption data from income tax returns which limited our ability to conduct our work, and included such procedures as we considered necessary in the circumstances. This report was prepared under the direction of John Blattel. Key contributors to this report included Jon Halwes, Kelly Davis, Dana Wansing, and Darius Dashtaki.

A handwritten signature in cursive script that reads "Susan Montee".

Susan Montee, CPA
State Auditor

Introduction

The Wood Energy tax credit program started in 1986. It had an initial expiration date of June 30, 1991 that a 1991 senate bill extended to June 30, 1995. A 1996 house bill reauthorized the program effective January 1, 1997. The credit is established under Sections 135.300-135.311, RSMo and has no expiration. The Department of Natural Resources (DNR), Energy Center¹ manages this tax credit program which is established as a production incentive for qualified wood producing facilities to produce processed wood products² using Missouri forest product residue.³ Our review did not identify any other states with a similar tax credit.

Tax credits can generally be broken into three categories. Some are established to create a certain economic benefit, some are established to induce certain social benefits and others are created for both an economic and social benefit. The Wood Energy tax credit program was originally created to provide an economic benefit. Since its renewal the tax credit has transitioned to both a social and economic benefit.

The wood energy producer receives \$5 per ton of processed Missouri wood material (residue). The calculation of the tax credit is \$5 per ton of wood products sold except for charcoal for which the credit is \$5 per ton of charcoal sold adjusted by a multiplier of four.⁴ The program's reauthorization in 1996 added charcoal products which had previously been excluded.⁵ The processing facility must be located in Missouri. Producers apply to the DNR for the tax credits under rules established under 10 CSR 140-4.010. The tax credit application must include:

- The number of tons of processed wood products produced during the preceding calendar year.⁶
- The name and address of the person to whom processed products were sold and the number of tons sold to each person.⁶
- Information on other state or federal financial assistance for wood energy activities during the tax year covered by the application.

¹ Formerly the Division of Energy.

² Wood pellets, cubes, flour, and any product that results from thermal, chemical, or mechanical processes that sufficiently alter the wood residue to be used as an energy source.

³ Any residue that results from normal timber harvest or production to include slash, sawdust, shavings, edgings, slabs, leaves, and bark.

⁴ Wood used is inferred at 4 tons of wood residue per ton of wood charcoal produced. The formula used to calculate the tax credit for charcoal is based on the amount of forest industry residue required to produce one ton of charcoal.

⁵ Legislative records did not explain why charcoal was excluded from the initial law and included in the reauthorized law.

⁶ Required under 135.311, RSMo.

- A listing of the processed wood products produced by the company.
- An explanation of the types of Missouri forest industry residue used and how processed.

Applications are not due by a specific date and generally cover the preceding calendar year. A DNR official said most applications come in the first quarter of each year. The department certifies to the Department of Revenue (DOR) each applicant that qualifies as a wood energy producing facility.

The tax credits are assignable under provisions of Section 135.309, RSMo, and the credits can be carried forward for 4 years to offset future tax liability. The tax credits may be redeemed against income tax due under Chapter 143, RSMo, except for payroll withholding taxes.

Section 620.1300, RSMo, requires the State Auditor's office (SAO) to analyze the cost-benefit impact to evaluate the effectiveness of all state tax credit programs.

Tax Credits Used and Products Produced

Since reauthorization in 1996, \$28.3 million in Wood Energy tax credits have been issued and \$26.1 million, redeemed leaving \$2.2 million outstanding at June 30, 2007. Table 1.1 shows the tax credits awarded and wood residue used from January 1, 1997 to June 30, 2007 by type of processed wood product.

Table 1.1: Processed Wood Products Produced 1997 to 2007

Product	Wood Residue Used in Tons	Tax Credits Awarded	Percentage of Awards
Wood Char	1,327,666	\$26,553,284	93.9
Wood Pellets	284,047	1,420,236	5.0
Wood Flour	41,962	209,814	0.8
Wood Waste	16,959	84,795	0.3
Totals	1,670,634	\$28,268,128	100.0

Source: DNR Wood Energy database and SAO analysis.

During this period, two charcoal production companies have been awarded 66 percent of issued credits. Approximately 12 wood energy producers apply for the credit annually.

Charcoal Production and Wood Residue Can Affect Air and Water Quality

Charcoal facilities release emissions which increase the amount of large particulate matter (PM10) and Volatile Organic Compounds (VOC) in the air. According to the Environmental Protection Agency (EPA) website,⁷ increased VOC levels contribute to ozone problems which can lead to health problems. Also this website⁸ reports increased PM10 levels can contribute to respiratory problems such as aggravated asthma, and development of chronic bronchitis.

In 2000, a DNR publication⁹ reported the following information regarding air pollution issues impacting the charcoal industry. The publication reported citizens in Missouri communities surrounding charcoal kilns frequently complained of health problems, smoke, and soot caused by the kiln emissions. In 1994, a group of citizens petitioned the EPA to monitor the levels of charcoal kiln pollution. These petitions led the EPA to measure particulate matter near one facility. The results showed some of the highest levels of particulate matter ever recorded in the state.

The publication also reported the EPA found larger charcoal kilns to be in violation of federal law¹⁰ and assessed penalties of \$750,000 in 1997. Later in 1997, the charcoal industry agreed to control air pollutant emissions as part of a settlement to abate the fine. Because charcoal kiln emissions are flammable, an emissions control device called an afterburner can be used to eliminate much of the charcoal smoke and emissions. Regulations¹¹ required charcoal producers to start installing afterburners in 1998 and all producers to have afterburners installed by the end of 2005.

Water pollution from wood residue

Water leaching through large sawdust piles can cause water pollution. A DNR official said such water leaching can cause changes in the color of the water, odor, an increase in the amount of organic chemicals in the water and can be harmful to fish and other aquatic life.

Scope and Methodology

To evaluate the impact of the Wood Energy tax credit program on the state, we reviewed federal and state laws, state regulations, and DNR procedures. We discussed the operation of the program and internal controls with DNR

⁷ "Health and Environment," <www.epa.gov/air/ozonepollution/health>, accessed on August 13, 2007.

⁸ "Particulate Matter," <www.epa.gov/oar/particlepollution>, accessed on August 13, 2007.

⁹ Yronwode, Peter, "From the Hills to the Grills," *Missouri Resources Magazine*, Spring 2000, <www.dnr.mo.gov/magazine/2000-spring.pdf>, accessed on June 7, 2007.

¹⁰ 42 USC 103 and 116.

¹¹ 10 CSR 10-6.330.

staff to determine if proper controls were in place to ensure compliance with state laws and regulations.

To evaluate steps other states have taken to address environmental concerns of wood residue, we performed Internet research for state laws and procedures covering this issue.

To evaluate program performance, we reviewed the cost-benefit data reported by DNR to the legislature as part of the annual state budget process. We also reviewed for other state or federal assistance programs covering wood energy activities.

To evaluate the environmental and economic impact to the state we surveyed wood energy producers¹² for information about sales, work force size, and annual emissions control costs. In addition, to evaluate the environmental impact, we discussed changes in water and air pollution in Missouri with state agency personnel. We discussed the use of forest products for charcoal production with federal agency personnel. We also analyzed EPA air emissions data.

We obtained database files from DNR officials that reported the amount of tax credits issued to wood energy producers, credits redeemed, and tons of wood residue used in products produced since the reauthorization of the tax credit in 1996. We determined this database information to be complete and reliable for purposes of our analysis. We reviewed a sample of applications submitted during fiscal years 2005 to 2007 and analyzed the documentation supporting the tax credits issued.

We obtained aggregate totals of annual tax credit redemptions from the DOR. We were not provided detailed redemption information. The Director of the department denied us access due to the department's interpretation of the Missouri Supreme Court decision in the case of Director of Revenue v. State Auditor 511 S.W.2d 779 (Mo. 1974). These external impairments limited our ability to conduct work and therefore, we could not verify the completeness and accuracy of annual redemption totals.

We requested comments on a draft of our report from the Director of the Department of Natural Resources. We conducted our work between April 2007 and July 2007.

¹² Producers applying for and receiving tax credits for fiscal years 2004 to 2007.

Wood Energy Tax Credit Provides Environmental and Economic Benefits, But Is More Costly Than Anticipated

The Wood Energy tax credit program has likely contributed environmental and economic benefits in Missouri. However, the program has cost more than originally estimated.

DNR has not established performance measures for the program which reflect changes resulting from the tax credit or considered all economic and environmental areas affected by the program. As a result, the General Assembly has not received an accurate analysis of the tax credit's impact on the state. In addition, program monitoring to ensure the accuracy of information supporting tax credit applications is limited and not well documented. Tax credit applicants also do not receive formal notification of credits awarded. These weaknesses result in less assurance awarded credits met eligibility criteria and cause an unneeded burden on tax credit recipients when they are using or assigning their tax credits.

Emissions Reduced

The Wood Energy tax credit provided financial support to charcoal producers facing increased costs from emission fees and installation of emission control devices. The emission control devices have resulted in improved air quality in the state.

EPA statistics show PM10 and VOC air pollution levels caused by charcoal producers have decreased in Missouri since the mid 1990's.¹³ Table 2.1 shows the percentage change of charcoal kiln emissions by facility reviewed between 1996 and 2001. The latest published EPA compiled air pollutant data is from 2001.

Table 2.1: Change in Charcoal Kiln Emissions between 1996 and 2001

Facility ¹	Percent Change	
	PM10 Level	VOC Level
A	-97	N/A ²
B	-69	-41
C	-74	-51
D	-87	-75
E	-85	-71
F	-91	-93
G	-72	-47
H	-98	-96
I	-21	50 ³
J	-38	-89
K	-83	-67

¹ Data used is specific to company and location.

² 2001 VOC data was not available for this facility.

³ This facility built additional kilns and increased production causing VOC levels to increase.

Source: EPA data and SAO analysis.

¹³ EPA Emission Trends database.

Total charcoal kiln PM10 emissions for the 11 facilities went from 14,574 tons per year (tpy) in 1996 to 2,653 tpy in 2001, an 82 percent decrease. Total VOC emissions for the 10 facilities went from 14,794 tpy in 1996 to 5,775 tpy in 2001, a 61 percent decrease.

Tax credits provided
financial support

The Wood Energy tax credit along with the Charcoal Producer's tax credit, were available resources for charcoal producers to offset additional funds spent on afterburners required to reduce air pollution emissions. The fiscal note for the 1998 house bill authorizing the Charcoal Producer's tax credit¹⁴ states that some of the charcoal producers eligible to receive this credit may also be eligible for the Wood Energy tax credit. The fiscal note also listed reduced emissions fees and sales tax exemptions on emissions control devices as additional incentives for charcoal producers to install devices.

In addition, a DNR publication¹⁵ states the Wood Energy tax credit was passed as an incentive for charcoal producers to install emissions control equipment. While afterburners were not required when the legislature renewed the tax credit and added charcoal as an eligible product, producers faced increasing costs from higher emissions fees and the prospect of increased emissions regulation. A DNR official said he believed the increased costs facing the charcoal industry was a factor in the introduction of charcoal as an eligible product for the Wood Energy tax credit.

Afterburner costs impact
industry

Tax credits received by charcoal producers help offset afterburner costs. Annual afterburner costs varied for charcoal producers responding to our survey. Six of eight responding charcoal producers provided information on the costs. Three producers reported estimated annual costs between approximately \$90,000 and \$140,000. Two other producers estimated costs to be as high as \$600,000 annually. One producer used a furnace instead of an afterburner for emissions controls. The producers cited the increasing costs of propane needed to run the afterburners as a significant economic hardship for the industry.

¹⁴ The Charcoal Producer's tax credit was passed in 1998 and is authorized by Section 135.313, RSMo. Charcoal producers were eligible for a tax credit on income taxes otherwise due, as an incentive to implement safe and efficient environmental controls. The tax credit was equal to 50 percent of the purchase price of the best available control technology equipment connected with the production of charcoal or, if the taxpayer manufactures the equipment, 50 percent of the manufacturing cost of the equipment, to and including the year the equipment is put into service. The credit could be claimed for a period of eight years beginning with the 1998 tax year.

¹⁵ See footnote 9.

Analysis of Wood Energy tax credit data shows the average annual tax credit received by two companies¹⁶ covered approximately 30 percent of their expenses related to emissions controls. The average tax credit for two other companies¹⁶ offset between 70 and 96 percent of their afterburner costs. For one company,¹⁶ the tax credit only offset 11 percent of the company's annual afterburner costs.

Tax Credit Helps Wood Products Industry

The Wood Energy tax credit has helped support the charcoal and wood products industries in Missouri. Even with the increasing costs of emissions control devices the Wood Energy tax credit has helped some charcoal businesses to expand and invest more in Missouri production including hiring more employees.

Charcoal and wood energy firms that supplied sales data in survey responses showed increased sales and some workforce expansion since reinstatement of the tax credit in 1997. Table 2.2 shows the change in sales and staffing for these companies.

Table 2.2: Wood Energy Producer Economic Data

Company ¹	1996 Sales	2006 Sales	Percent Change	1996 Staffing	2006 Staffing	Percent Change
A	\$33,600,000	\$111,100,000	231	117	117	0
B	39,000,000	71,817,000	84	80	300	275
C	285,000	3,425,000	1,102	10	30	200
D	525,713	2,069,763	294	8	9	13
E	1,319,400	1,903,864	44	65	65	0
F	586,444 ²	997,185	70	6	6	0
G	244,831	602,677	146	5	5	0
H ³	96,553	426,530	342	10	17	70
I	76,600	52,352	-32	n/a	n/a ⁴	n/a
J ⁵	n/a	n/a	n/a	n/a	7	n/a
K ⁵	n/a	n/a	n/a	4	15	275
Total	\$75,734,541	\$192,394,371	154	305	564	85

¹ Company letter designations do not correspond to designations in Table 2.1.

² Sales data is as of 2002 when charcoal production for the facility began.

³ Sales and staffing are as 2003, the first year of operation for the company.

⁴ Staffing information not available for only the company's wood product business.

⁵ Two firms did not wish to provide sales data.

Source: Wood Energy tax credit recipient survey responses and SAO analysis.

¹⁶ The companies covering 30 percent of the costs had estimated annual afterburner costs of \$90,000 and \$600,000. The companies covering 70 to 96 percent of their costs had estimated annual afterburner costs between \$90,000 and \$140,000. The company covering 11 percent of the costs had estimated annual afterburner costs of \$600,000.

One large charcoal producer has employed 220 more employees since 1996. All other charcoal producers surveyed maintained at least the same level of employment.

Producers report credit helped influence business decisions

Representatives from charcoal producers responding to our survey reported shifting production to Missouri due to the Wood Energy tax credit and depending on the credit to help support their operations. One representative said since the renewal of the tax credit his company had invested over \$28 million in its Missouri plant. A representative for another company said his company had moved production to Missouri to take advantage of the tax credit and wood residue in Missouri. Another survey respondent said his company would not be able to support its charcoal operation without the tax credit. One producer said without the credit his company would not have installed the required emissions control devices forcing the end of its charcoal business.

Tax Credit Issuances More Than Expected

Actual annual tax credit issuances have been three to four times expected issuances since reinstatement of the tax credit in 1997, based on analysis of DNR tax credit data. The fiscal note for the house bill reinstating the Wood Energy tax credit, passed in 1996, estimated approximately \$800,000 in issued credits would be claimed annually for 160,000 tons of charcoal products produced from wood residue. Our analysis of DNR Wood Energy tax credit data shows average annual claims, for the tax years 1997 to 2006 have been approximately 132,000 tons for charcoal products with the average annual tax credit claims being \$2.7 million. While the average actual tons claimed has been less than the fiscal note estimate the annual tax credits issued far exceeded the amount the fiscal note estimated. This result occurred because charcoal producers received a tax credit that is computed at four times the \$5 per ton compensation discussed in the legislation.

DNR established conversion factor

The legislation reinstating the tax credit did not discuss a conversion factor of four for charcoal products, but the issue is covered in the regulations¹⁷ DNR established to manage the tax credit program. The tax credit statute states the tax credit shall be \$5 per ton of processed material. However, records show DNR officials' analysis during the rulemaking process determined the statute did not define processed material. As rulemaking proceeded, records further show the officials evaluated whether the credit for charcoal should be based on the output weight of the charcoal or the input weight of the Missouri forestry industry residue.

¹⁷ 10 CSR 140-4.010.

Performance Measure Does Not Reflect Changes Resulting From Credit

The initially proposed regulation said the tax credit for charcoal would be two times the tons of charcoal sold.¹⁸ During the comment period, the charcoal industry presented EPA research showing the factor should be four times the weight of the charcoal sold to reflect the four units of wood residue required to produce one unit of charcoal. A DNR official said this research resulted in the factor of four in the final regulations. This regulation was approved by the General Assembly's Joint Committee on Administrative Rules without additional comment or hearing. Our analysis identified a 2001 EPA study that still supported this computation.

DNR is using wood residue that is diverted from waterways and landfills as the performance measure to evaluate the cost-benefit of the Wood Energy tax credit, but this measure is not accurately evaluated and fails to consider other program benefits.

Beginning with cost-benefit information in the department's 2005 budget request, DNR has annually reported the amount of wood residue used in producing wood products awarded tax credits as the program's benefit. DNR officials said this measure has been used because it reflects their believed goal of the tax credit which is to divert wood residue from Missouri waterways. However, the measure has not evaluated changes due to the tax credit. According to a DNR publication,¹⁹ the charcoal industry has traditionally used wood residue as a raw material for charcoal production. As a result, much of the diverted wood residue which was reported as a benefit would have occurred without the credit.

Performance measurement allows an organization to measure what has happened, according to an article published by the Foundation on Performance Measurement.²⁰ A performance measure that reflects what is happening helps management determine where a program is going and if changes are needed. A performance measure should also reflect the goals of the program. According to the fiscal note for the 1985 house bill establishing the Wood Energy tax credit, one of the original purposes of the credit was to create wood energy product commercial operations which at that time did not exist in the state. The performance measure does not address this purpose.

¹⁸ Based on molecular weight calculations.

¹⁹ See footnote 9.

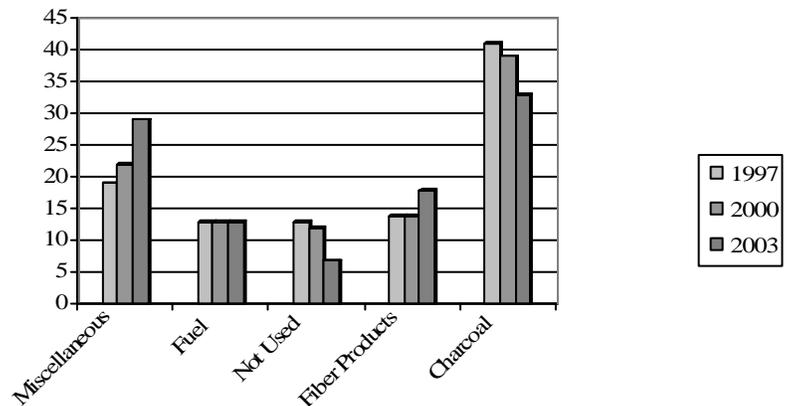
²⁰ Shaw, Alastair, "A Guide to Performance Measurement and Non-Financial Indicators," February 1, 1999, www.fpm.com/journal/mattison.htm, accessed on August 2, 2007.

**More wood residue diverted,
but not due to tax credit**

Since 1996 wood residue diverted has increased; however, the Wood Energy tax credit has not been responsible for the change. In addition, no studies exist to show the extent to which wood residue is harming Missouri waterways or any improvement since the passage and renewal of the tax credit.

Analysis of comprehensive United States Department of Agriculture (USDA) studies²¹ of the Missouri timber industry assessing the production and use of all Missouri wood products shows more wood residue has been diverted to useful products since the renewal of the tax credit. Figure 2.1 shows the percentage of wood residue diverted to various products in 1997, 2000, and 2003.²²

Figure 2.1 Percentage of Wood Residue Diverted by Product



Source: USDA data.

As shown, an increased amount of residue has been diverted to fiber products such as pulp and particle board and other products such as livestock bedding and mulch. However, these items are not eligible products for the Wood Energy tax credit. The amount of wood residue diverted to tax credit eligible charcoal products decreased by approximately 27 percent between 1997 and 2003. An official from the Missouri Department of

²¹ Piva, Ronald, Jones, Shelby G., Barnickol, Lynn W., Trieman, Thomas B.; *Missouri Timber Industry-An Assessment of Timber Product Output and Use, 1997*; USDA; Piva, Ronald and Trieman, Thomas B., *Missouri Timber Industry-An Assessment of Timber Product Output and Use, 2000*; USDA; Piva, Ronald and Trieman, Thomas B., *Missouri Timber Industry-An Assessment of Timber Product Output and Use, 2003*; USDA.

²² Data has been collected for the 2006 USDA report on the Missouri Timber Industry. The data is being compiled and is expected to be released in 2008.

Conservation who conducted the studies in conjunction with the USDA said the decrease is due to a reduced number of charcoal producers in Missouri.²³

One charcoal producer said his plant obtains wood char from a company associated plant in another state to increase charcoal production because his plant is currently producing the maximum amount of wood char possible under state emissions limits. This process may explain some of the increased sales reported by the producers in Table 2.2. The amount of wood residue diverted to tax credit eligible fuel products remained the same from 1997 to 2003 based on the USDA studies.

No studies indicate water quality improving due to wood residue diversion

No comprehensive studies have been conducted to show the extent of water quality improvement due to the diversion of wood residue. A DNR official said overall water quality in Missouri has improved with the passage of federal programs;²⁴ however, none of these programs relate specifically to water pollution from wood residue. This official said Missouri has experienced some water quality problems caused by water leaching through large sawdust piles at sawmills. However he said these problems have usually been confined to very small streams and become less of a problem as tributary inflow dilutes the contaminants.

Limited Verification of Application Data

DNR personnel have not adequately validated the product sales and wood residue information provided by tax credit applicants. State law²⁵ requires Wood Energy tax credit applicants to submit detailed information to support the amount of tons claimed including the name, address and the amount sold to each product purchaser. Tax credit applicants are also only allowed to claim the credit for Missouri wood residue. DNR personnel limit verification of sales and wood residue information to calling one purchaser per application and have not required applicants to provide documentation of the source of wood residue claimed. In addition, DNR has not maintained documentation of verification calls made.

Our review of applicant files disclosed some applicants sell to more than a hundred different organizations, while some sell to only a few. The DNR staff person responsible for reviewing the applications said the verification procedures were in place before he took over the duties and he has continued with that approach. He also said no documentation is typically

²³ A Missouri Department of Conservation official cited increased regulations as possible reason for reduced number of charcoal producers.

²⁴ 33 USC 42 "Clean Water Act" and 30 USC 1234 "Surface Mining and Reclamation Act".

²⁵ Section 135.311, RSMo.

kept of the contacts performed other than checking the item off an application review checklist completed for each applicant. Sound business practices dictate verification of a sufficient amount of the sales data and the source of wood residue used for production is critical to ensure tax credit claims meet compliance requirements.

Tax credit recipients do not receive clear documentation about awarded credits

Wood energy producers awarded tax credits have not received a certificate or other official prenumbered document acknowledging the award. Once DNR staff approve an application, a letter and the approved application are sent from DNR to the DOR stating the tax credit application has been approved. According to DNR officials, a copy of this letter is sent to the tax credit applicant to notify the applicant the tax credit application has been certified to DOR.

The Wood Energy tax credit statute is unclear as to whose responsibility it is to provide recipients documentation of the issued tax credit. The statute does not state whether any agency should provide information to the tax credit applicant. Neither DNR nor DOR officials believe it is their agency's responsibility to provide the notification. DNR officials said they believe the Wood Energy tax credit statute²⁶ only gives them authority to certify the tax credit to DOR. The statute states DNR will certify to DOR that the tax credit application has been approved.

Instructions for Missouri DOR tax form MO-TC, used for claiming tax credits, states for the Wood Energy tax credit a certificate approved by the issuing agency is to be attached to the form. DNR officials believe only DOR had the authority to directly issue award information to the applicant. A DOR official said DOR has not provided any documentation or notification to the tax credit applicants because the department's responsibility relates only to the redemption of the credits and not issuing them. The official said department staff only verifies tax credit information when someone calls to confirm credits issued are available for redemption.

Two of the 11 tax credit recipients responding to our survey said they would like to receive a certificate or other official notification when the tax credit is approved. One survey respondent said his company had experienced difficulty when trying to assign awarded tax credits because of the limited documentation provided.

²⁶ See footnote 25.

Conclusions

The Wood Energy tax credit has contributed to environmental improvements and provided some economic benefit to the wood products industry in Missouri. Air emissions from charcoal kilns in Missouri have significantly decreased, contributing to improvement in air quality in affected communities. The tax credit has helped charcoal producers offset the costs of emission control programs which may have allowed some smaller producers to remain in business. Many tax credit recipients have experienced an increase in sales and have hired additional employees since the renewal of the tax credit.

While the tax credit is providing benefits to the state, annual tax credits issued and redeemed are at least three times more than the original estimates when the General Assembly reauthorized the tax credit. This cost increase occurred because DNR officials established a higher tax credit rate for charcoal products in state regulations based on input weight to create the wood product (charcoal) rather than the output weight. The tax credit statute states the tax credit shall be \$5 per ton of processed wood material. The officials interpreted the phrase to mean the input weight, but it is not clear that was the legislative intent of the wording.

DNR's performance measure for the tax credit has not evaluated changes that have occurred with the establishment of the credit and has not considered other economic and environmental areas the credit influences. The performance measure also does not reflect the original goal of the tax credit to develop a wood products industry in Missouri. The performance measures should evaluate this goal, the change in residue diverted since reauthorization of the credit as well as consider the air quality improvements the credit has helped fund. The General Assembly needs complete and accurate performance information on the tax credit to evaluate its need or possible changes.

Sales and wood residue information reported by tax credit applicants has not adequately been verified and details of work performed have not been adequately documented. Verifying sales data by contacting a representative sample of purchasers for each applicant rather than only one would provide more assurance about the validity of reported sales. Verifying wood residue information would provide DNR more assurance only usage of Missouri wood residue is being claimed for the tax credit. Documentation of all verification work is necessary to show appropriate oversight of the application process.

Vague or incomplete statutory language and DNR interpretation of that language has resulted in tax credit applicants not receiving clear notification of awarded credits.

Recommendations

We recommend the Director of the Department of Natural Resources:

- 2.1 Work with the General Assembly to clarify in the Wood Energy tax credit law whether processed wood material is intended to be defined as input material or output material and change the program's regulations as necessary.
- 2.2 Revise performance measures used to evaluate the Wood Energy tax credit to reflect environmental and economic impact changes resulting from or contributed to by the credit.
- 2.3 Develop improved application review procedures which would include:
 - Contacting a representative sample of wood energy purchasers based on a percentage of purchasers reported by the applicant.
 - Verifying the wood residue source information provided.
 - Documenting in sufficient detail verification work performed.
- 2.4 Establish a process to issue tax credit certificates for awarded credits.

Agency Comments

2.1 *We have testified before the Joint Committee on Tax Credits regarding the Wood Energy Tax Credit and will bring this particular issue to their attention for their recommendation to the rest of the General Assembly.*

2.2 *Besides the total tonnage of wood waste diverted into other uses, the Department also tracks and reports the number of companies which make such products. In recent history this number has been relatively stable. The audit notes that a key purpose of the Wood Energy Tax Credit is to develop this industry and so tracking the number of companies should be a valid measure.*

However, we will examine other possible measurements in consultation with other professionals and academicians.

The Department believes that creating objective data to determine the environmental and economic outcomes had the tax credits not been enacted may be unusually challenging.

2.3 *Approximately .05 FTE (100 hours per year) is allocated to the administration of the Wood Energy Tax Credit program for which the department receives no funding. Expanding the job responsibilities of*

this position will reduce work being done in areas involving biomass to energy projects.

- *Contacting a representative sample of wood energy purchasers based on a percentage of purchasers reported by the applicant.*

We will work with Department auditors to establish a justifiable protocol for determining the appropriate sample size of purchases to review to ensure compliance with the law.

- *Verifying the wood residue source information provided.*

We will seek additional documentation from the companies producing processed wood products as to the source of their wood residue. Final verification that waste wood purchased from third parties in Missouri was actually harvested in Missouri may prove difficult and expensive.

- *Documenting in sufficient detail verification on work performed.*

We have implemented a new documentation protocol.

2.4 The current statutes only authorize the department to certify to the Department of Revenue that the applicant qualifies as a wood energy-producing facility and not the amount of the credit (RSMo 135.311(3)). However based on assurances from the Auditor that additional statutory authority is not essential, the Energy Center is preparing to issue the certificates.

Wood Energy Tax Credit Activity

Table I.1 lists the Wood Energy tax credits issued and redeemed July 1, 1986 to June 30, 2007.

Table I.1: Wood Energy Tax Credits Issued and Redeemed by Fiscal Year

Fiscal Year	Tax Credits	
	Issued ¹	Redeemed
1986 to 1996 ¹	\$344,919	\$303,761
1997	0	41,158
1998	698,428	70,304
1999	1,954,014	252,148
2000	5,787,844	3,869,135
2001	2,458,470	4,154,777
2002	2,185,021	2,673,412
2003	2,543,998	3,642,570
2004	2,728,651	1,205,443
2005	3,348,890	3,700,285
2006	3,462,455	3,728,100
2007	3,100,358	2,709,211
Total	\$28,613,048	\$26,350,304

¹ The final fiscal note for House Bill 1237 from 1996 reported the issuance of \$344,919 in tax credits from 1986 to 1995. No detail on redeemed credits prior to 1996 could be located by DNR or DOR staff. It is assumed all credits were redeemed, so 1986 to 1996 redeemed amount reflects the issued credits of \$344,919 less 1997 redeemed amounts. The data was not available by fiscal year.

Source: Fiscal note 1996 House Bill 1237, DNR wood energy database, and DOR.

Tax Credit Review Status

Table II.1 shows the statewide tax credit programs and the State Auditor's office review status of each program.

Table II.1: Tax Credit Programs and Review Status

Program	Administering Department	Report Number for Review
Wood Energy	Natural Resources	2007-58
New Generation Cooperative Incentive	Agriculture	2007-06
Agricultural Product Utilization Contributor	Agriculture	2007-05
Community Development Corporation/Bank	Economic Development	2005-55
(Capital) Small Business Investment	Economic Development	2005-54
Certified Capital Companies (CapCo)	Economic Development	2004-56
New Enterprise Creation	Economic Development	2004-56
Adoption (Special Needs)	Revenue	2004-13
Community College New Jobs Training Bonds	Economic Development	2003-32
Brownfield Jobs/Investment	Economic Development	2002-33
Brownfield Remediation	Economic Development	2002-33
Historic Preservation	Economic Development	2002-33
Qualified Research Expense	Economic Development	2002-33
Seed Capital	Economic Development	2002-33
Youth Opportunities and Violence Prevention	Economic Development	2002-33
Film Production	Economic Development	2001-13
Rebuilding Communities	Economic Development	2001-13
Small Business Incubator	Economic Development	2001-13
Winery and Grape Growers	Economic Development	2001-13
Affordable Housing Assistance	Economic Development	To Be Reviewed
Bank Franchise	Revenue	To Be Reviewed
Bank Tax Credit for S Corporation Shareholders	Revenue	To Be Reviewed
Brownfield Demolition	Economic Development	To Be Reviewed
BUILD Missouri Bonds	Economic Development	To Be Reviewed
Business Facility	Economic Development	To Be Reviewed
Cellulose Casings	Revenue	To Be Reviewed
Charcoal Producers	Natural Resources	To Be Reviewed
Children in Crisis	Revenue	To Be Reviewed
Development	Economic Development	To Be Reviewed
Disabled Access	Revenue	To Be Reviewed
Domestic Violence	Social Services	To Be Reviewed
Enhanced Enterprise Zone	Economic Development	To Be Reviewed
Enterprise Zone	Economic Development	To Be Reviewed
Examination Fees and Other Fees	DIFP ²	To Be Reviewed
Family Development Account	Economic Development	To Be Reviewed
Family Farm ¹	Agriculture	To Be Reviewed
Guarantee Fee	Economic Development	To Be Reviewed
Homestead Preservation	Revenue	To Be Reviewed

**Appendix II
Tax Credit Review Status**

Program	Administering Department	Report Number for Review
Life and Health Guarantee Association	DIFP ²	To Be Reviewed
Maternity Home	Social Services	To Be Reviewed
MDFB Development and Reserve	Economic Development	To Be Reviewed
MDFB Export Finance	Economic Development	To Be Reviewed
MDFB Bond Guarantee Credit	Economic Development	To Be Reviewed
MDFB Infrastructure Development	Economic Development	To Be Reviewed
Missouri Health Insurance Pool	DIFP ²	To Be Reviewed
Missouri Low Income Housing	Economic Development	To Be Reviewed
Missouri Property and Casualty Guarantee Association	DIFP ²	To Be Reviewed
Missouri Quality Jobs	Economic Development	To Be Reviewed
Neighborhood Assistance	Economic Development	To Be Reviewed
Neighborhood Preservation	Economic Development	To Be Reviewed
New Enhanced Enterprise Zone	Economic Development	To Be Reviewed
Pharmaceutical	Revenue	To Be Reviewed
Pregnancy Resource Center ¹	Social Services	To Be Reviewed
Property Tax	Revenue	To Be Reviewed
Residential Treatment Agency ¹	Social Services	To Be Reviewed
Retain Jobs	Revenue	To Be Reviewed
Shared Care	Health and Senior Services	To Be Reviewed
Sponsorship and Mentoring Program	Elementary and Secondary Education	To Be Reviewed
Transportation Development	Economic Development	To Be Reviewed

¹ New tax credit in fiscal year 2007. No activity reported on Appendix III.

² Department of Insurance, Financial Institutions and Professional Registration

Source: SAO

Tax Credit Redemptions

Table III.1 shows the redeemed tax credits for fiscal years 2004 through 2007 for all state tax credit programs. We did not audit the information.

Table III.1: Tax Credit Redemptions by Program

Program	Fiscal Year			
	2004	2005	2006	2007
Adoption (Special Needs)	\$1,995,882	2,582,546	2,460,245	2,931,967
Affordable Housing Assistance	7,554,503	7,702,860	4,080,564	10,497,793
Agricultural Product Utilization Contributor	1,964,872	1,639,541	1,857,235	2,248,989
Bank Franchise	1,596,458	2,543,523	2,413,631	1,771,165
Bank Tax Credit for S Corporation Shareholders	1,233,830	941,460	1,451,903	1,248,932
Brownfield Jobs/Investment	2,134,891	1,726,687	1,476,143	1,701,409
Brownfield Remediation/Demolition	16,101,975	10,627,870	10,611,324	16,733,274
BUILD Missouri Bonds	9,667,000	3,770,557	5,402,416	6,958,318
Business Facility	7,826,417	4,546,330	5,892,727	6,066,136
Cellulose Casings	429,480	382,540	341,315	574,180
Certified Capital Companies	13,564,932	13,371,610	13,164,904	13,121,442
Charcoal Producers ¹	0	384,609	70,151	180,987
Children in Crisis	n/a	n/a	n/a	168,128
Community Development Corporation/Bank	1,632,669	2,021,628	34,870	2,958
Community College New Jobs Training Bonds	8,061,584	6,847,304	5,771,777	4,920,374
Development	562,622	2,487,152	4,518,483	2,100,685
Disabled Access	87,401	56,761	36,549	11,813
Domestic Violence	475,283	515,035	525,348	696,670
Dry Fire Hydrant	13,169	17,228	805	3,737
Enhanced Enterprise Zone	n/a	9,809,254	5,922,720	6,646,873
Enterprise Zone	19,766,366	15,485,501	14,759,891	13,202,069
Examination Fees and Other Fees ²	5,844,206 ³	4,962,341 ³	5,413,885	4,881,750
Family Development Account	27,488	12,875	9,237	11,761
Film Production	423,857	322,079	788,596	1,240,972
Guarantee Fee	0	11,224	73,009	68,607
Historic Preservation	66,089,980	74,532,355	103,134,226	132,841,728
Homestead Preservation	n/a	n/a	n/a	2,932,514
Life and Health Guarantee Association ²	177,712	302,516	4,910	0
Maternity Home	982,747	743,636	760,674	983,509
MDFB Bond Guarantee Credit	0	594,034	0	276,241
MDFB Development and Reserve	0	1,500	0	500
MDFB Export Finance	0	0	0	0
MDFB Infrastructure Development	10,020,578	25,953,799	21,858,725	24,706,809
Missouri Business Modernization and Technology (Seed Capital)	288,174	164,894	60,313	82,977

**Appendix III
Tax Credit Redemptions**

Program	Fiscal Year			
	2004	2005	2006	2007
Missouri Health Insurance Pool ²	3,687,665	3,688,639	5,497,999	3,672,701
Missouri Low Income Housing	36,916,831	65,392,601	61,963,799	81,646,784
Missouri Property and Casualty Guarantee Association ²	16,823,462	16,959,512	6,019,763	5,754,394
Missouri Quality Jobs	n/a	n/a	0	1,715,530
Neighborhood Assistance	10,217,628	9,286,880	10,009,497	13,924,340
Neighborhood Preservation	4,001,293	8,461,503	4,627,368	5,549,062
New Enterprise Creation	3,259,307	2,504,561	1,534,647	1,048,997
New Enhanced Enterprise Zone	n/a	n/a	n/a	5,188
New Generation Cooperative Incentive	3,466,068	3,334,935	4,990,666	4,136,380
Pharmaceutical	524,527	142,373	1,672	n/a ⁴
Property Tax	95,237,314	99,455,570	96,090,703	93,118,747
Qualified Research Expense	2,038,230	1,626,864	1,006,688	487,320
Rebuilding Communities	1,415,889	1,694,006	1,764,167	1,390,803
Retain Jobs	n/a	0	2,882,995	4,285,366
Shared Care	39,109	33,574	39,247	105,757
Small Business Incubator	167,360	246,807	322,278	179,368
Small Business Investment (Capital)	49,478	109,050	58,189	66,720
Sponsorship and Mentoring Program	0	0	0	0
Transportation Development	3,678,532	3,545,219	980,806	910,421
Winery and Grape Growers	260,397	179,323	69,564	174,736
Wood Energy	1,205,443	3,700,285	3,728,100	2,709,211
Youth Opportunities and Violence Prevention	3,272,225	3,211,185	3,256,950	4,893,591
Total	\$364,784,834	418,634,136	417,741,674	485,590,683

¹ The tax credit discussed in Footnote 14 on page 9.

² Redemptions are on a calendar year rather than fiscal year and based on tax year credit was applied against.

³ Until the fiscal year 2007 budget process the amount reported by the Department of Insurance, Financial Institutions and Professional Registration for this credit was only the examination fee portion and not the other taxes and fees for which credits were also redeemed.

⁴ The Pharmaceutical tax credit expired in 2001 and tax credits are no longer being redeemed.

Source: Office of Administration, DOR, and tax credit administering agencies.