

Act 1494 of 2009

Annual Report



 **ARKANSAS**
A natural for business

**Act 1494 Energy Efficiency and
Natural Resource Conservation in
Public Buildings**

“Lead by Example”

**Implements
ASHRAE 90.1 2007 and**

**Develops an
Energy Management Program**

Important Dates and Milestones:



April 14, 2009 – Act 1494 signed into law

January 1, 2011 – Rules for Act 1494 became effective

April 1, 2011 – Amended Act with Act 803 of 2011

October 31, 2011- First Data Call for Energy Usage and Costs

December 1, 2011-Annual report due to the Legislative Council

June 30, 2014 – 20% reduction target deadline

June 30, 2017 – 30% reduction target deadline

Annual Report Requirements:



- (1) Costs of implementing** energy efficient and water-efficient building standards
- (2) Operating savings** attributable to the implementation of energy-efficient and water-efficient building standards
- (3) Impact on employee productivity** from the application of the standards
- (4) An evaluation of the effectiveness** of the application of the standards

Annual Report Requirements:



(1) **Costs of implementing** energy efficient and water-efficient building standards

- **ASHRAE 90.1 2007 estimated to increase costs less than 1% of total building costs.**
- **Training costs for Design Engineers and Architects on the new standard**
 - Training classes, \$25,000 (8 classes regionally)
 - Travel instate to speak about the Act

Annual Report Requirements:



(2) **Operating savings** attributable to the implementation of energy-efficient and water-efficient building standards

- **Study by the University of Arkansas shows the payback for ASHRAE 90.1 2007 to be from startup to about 6 years depending on building type.**
- **Act 1494 is 10% more stringent than this standard.**
- **No designs submitted so far.**

Annual Report Requirements:



(3) **Impact on employee productivity** from the application of the standards.

- Agencies and Institutions are forming **energy management teams** to monitor energy efficiency and increase awareness
- Metrics for measuring the impact of energy efficiency programs on consumers/employees are available. **A study for Act 1494 would need to be funded.**

Annual Report Requirements:



(4) An **evaluation of the effectiveness** of the application of the standards.

- It will take a long time to see the effect of the code changes.
- Both State Agencies and Higher Education are participating in developing the **Energy Management Program**.

Sustainable Buildings

Energy Management Program

Energy Management Program, State Agencies



Agencies covered by Act 1494	132
Agencies not paying utility bills	98
Agencies reporting because they pay utility bills	34
Agencies submitting Strategic Energy Plans	52
Agencies appointing Energy Managers	52
Energy Star Portfolio Manager accounts	28
Reporting baseline FY 2008 energy usage and costs	23
Agencies reporting FY2009 energy usage and costs	23
Agencies reporting FY2010 energy usage and costs	23
Agencies reporting FY2011 energy usage and costs	21

Energy Management Program



Operational Costs:

- **Development of Strategic Energy Plans (StEPs) by agencies**
 - No budget.
- **Develop Energy Managers in each agency/institution.**
 - About \$200,000 for training classes
- **Establish baseline and track energy usage and costs with Energy Star Portfolio Manager (ESPM) for over 22 million square feet and over 2500 buildings**
 - Almost \$700,000 so far for training, developing and auditing

Energy Management Program



Operational Savings

Annual Site and Weather Normalized Energy per Square Foot

Year	Total Floor Space (sq. ft.)	Site Energy Use per Square Foot (kBtu/sq. ft.)	Site Energy Use Percent Change from Baseline (%)	Weather Normalized Site Energy Use per Square Foot (kBtu/sq. ft.)	Weather Normalized Percent Change from Baseline (%)
2008	14,390,723	117.8	0.00%	121.5	0.00%
2009	12,674,552	128.9	9.43%	131.7	8.43%
2010	14,534,351	129.3	9.78%	123.9	2.02%

Over 22,000,000 total square feet and over 2500 buildings

Energy Management Program



Operational Savings

Annual Weather Normalized Total Energy and Total Costs

Year	Total Floor Area (sq. ft.)	Weather Normalized Current Total Site Energy Use (kBtu)	Weather Normalized Percent Change from Baseline (%)	Annual Energy Cost (US Dollars (\$))
2008	14,390,723	1,748,378,656	0.00%	21,440,545
2009	12,674,552	1,669,654,521	-4.50%	24,335,171
2010	14,534,351	1,773,382,949	1.43%	23,590,726

Energy Management Program



Energy Star Portfolio Manager Data through FY 2010

Reduction Goal:

20% by 2014

30% by 2017

	% Change as of FY2010
Military Department, Arkansas National Guard	-16.3
Department of Information Systems * sub metered	-16
Environmental Quality, Department of	-12.1
Educational Television Network	-11.9
Finance and Administration, Department of	-11.8
Building Authority	-11.5
Engineers and Professional Surveyors	-11.3
Workforce Services, Department of	-8.1
Heritage Commission	-7.6
Oil and Gas Commission	-6.4
Geological Survey Commission	-5.9
Real Estate Commission	-4.6
Contractors Licensing Board	-2.3
Law Enforcement Standards and Training	-1
State Police	0.2
Highway and Transportation, Department of	4.1
Education, Department of	5.6
Emergency Management, Department of	15
Bank Department	16.1
Plant Board	16.1
Career Education, Department of	20.1
Correction, Department of	29.7
Veteran's Affairs, Department of	32.7

Energy Management Program



Energy Star Portfolio Manager Data for ADEQ through FY 2011

Year	Agency	Total Floor Space (Sq. Ft.)	Baseline Energy (kBtu/Sq. Ft.)	Current Energy (kBtu/Sq. Ft.)	Percent Change from Base, %	Baseline Weather Normalized Site EUI (kBtu/Sq. Ft.)	Current Weather Normalized Site EUI (kBtu/Sq. Ft.)	Weather Normalized Percent Change from Baseline, %	Annual Energy Cost (US Dollars (\$))
2008	AR Environmental Quality	127,855	171.0	180.7	5.64%	180.7	180.7	0.00%	\$ 300,886
2009	AR Environmental Quality	129,655	171.0	201.3	17.67%	180.7	202.0	11.80%	\$ 355,507
2010	AR Environmental Quality	130,055	171.0	158.8	-7.16%	180.7	155.8	-13.75%	\$ 254,184
2011	AR Environmental Quality	130,055	171.0	127.4	-25.53%	180.7	127.1	-29.65%	\$ 234,217

Energy Management Program



Energy Star Portfolio Manager Data for Corrections through FY 2011

Year	Agency	Total Floor Space (Sq. Ft.)	Baseline Energy (kBtu/Sq. Ft.)	Current Energy (kBtu/Sq. Ft.)	Percent Change from Baseline, %	Baseline Weather Normalized Site EUI (kBtu/Sq. Ft.)	Current Weather Normalized Site EUI (kBtu/Sq. Ft.)	Weather Normalized Percent Change from Baseline, %	Annual Energy Cost (US Dollars (\$))
2008	Department Of Correction	4,469,725	169.5	169.5	0.00%	166.0	166.0	0.00%	\$ 7,602,664
2009	Department Of Correction	4,469,725	169.5	178.2	5.15%	166.0	172.1	3.69%	\$ 9,576,562
2010	Department Of Correction	4,658,083	169.5	210.9	24.45%	166.0	200.3	20.64%	\$ 8,843,129
2011	Department Of Correction	4,808,557	169.5	230.8	36.21%	166.0	236.1	42.23%	\$ 8,209,953

Energy Management Program



Energy Star Portfolio Manager Data for UAMS through FY 2011

Year	Agency	Total Floor Space (Sq. Ft.)	Baseline Energy (kBtu/Sq. Ft.)	Current Energy (kBtu/Sq. Ft.)	Percent Change from Baseline, %	Baseline Weather Normalized EUI (kBtu/Sq. Ft.)	Current Weather Normalized EUI (kBtu/Sq. Ft.)	Weather Normalized Percent Change from Baseline, %	Annual Energy Cost (US Dollars (\$))
2008	Univeristy of Arkansas for Medical Sciences	2,877,676	284.0	301.1	6.01%	305.6	305.6	0.00%	\$ 10,719,701
2009	Univeristy of Arkansas for Medical Sciences	3,488,626	284.0	260.3	-8.34%	305.6	267.1	-12.60%	\$ 12,326,322
2010	Univeristy of Arkansas for Medical Sciences	3,922,740	284.0	256.2	-9.77%	305.6	246.7	-19.28%	\$ 11,732,222
2011	Univeristy of Arkansas for Medical Sciences	3,941,972	284.0	246.2	-13.29%	305.6	247.0	-19.17%	\$ 10,020,866

Energy Management Program



Agencies still needing to report and status

Table 5. Agencies not included	Reason
Community Correction, Department of	Submitted report
Crime Laboratory	No ESPM shared accounts
Disability Determination for Social Security	Ready to include in report
Forestry Commission	Ready to include in report
Health, Department of	Finish by end of November
Human Services, Department of	Submitted report
Liquefied Gas Petroleum Board	ESPM work not finished
Lottery Commission	ESPM work not finished
Parks and Tourism	Should finish by end of February
School for the Blind, Arkansas	No ESPM shared accounts
School for the Deaf, Arkansas	No ESPM shared accounts
War Memorial Stadium Commission	ESPM work not finished
Worker's Compensation Commission	Ready to include in report

Agency reporting status



Agency/Institution	Baseline Year	FY2009	FY 2010 Year	2011 Year
AR Department of Aeronautics	0%	0%	0%	0%
Agriculture Department,	44%	48%	46%	3%
Bank Department	100%	100%	100%	100%
Building Authority	100%	100%	93%	93%
Career Education, Department of	100%	100%	100%	100%
Community Correction, Department of	73%	73%	78%	65%
Contractor's Licensing Board	100%	100%	100%	100%
Correction, Department of	100%	100%	100%	100%
Education, Department of	67%	67%	67%	100%
Educational Television Network	100%	95%	95%	95%
Emergency Management, Department of	100%	100%	100%	100%
Engineers and Pro. Surveyors, Board of Lisc	100%	100%	100%	100%
Environmental Quality, Department of	100%	83%	83%	17%
Finance and Administration, Department of	79%	77%	83%	86%
Game and Fish Commission	0%	0%	6%	0%
Geological Survey	100%	100%	100%	100%
Health, Department of	50%	100%	100%	100%
Heritage, Department of	80%	100%	100%	100%
Highway and Transportation Department	45%	48%	56%	51%
Human Services, Department of	77%	77%	81%	89%

Agency reporting status



Agency/Institution	FY2008	FY2009	FY2010	FY2011
Information Systems, Arkansas Department of	100%	100%	100%	100%
Law Enforcement Standards and Training, Commission	0%	0%	50%	100%
Military Department, Arkansas National Guard	93%	94%	93%	90%
Oil and Gas Commission	100%	100%	100%	100%
Parks and Tourism, Arkansas Department of	69%	78%	66%	4%
Real Estate Commission, Arkansas	100%	100%	100%	100%
School for the Blind, Arkansas	0%	0%	0%	0%
School for the Deaf, Arkansas	0%	0%	0%	0%
State Police, Arkansas	65%	65%	15%	14%
Veteran Affairs, Arkansas Department of	100%	100%	100%	100%
Workers' Compensation Commission, Arkansas	100%	100%	100%	100%
Workforce Services, Arkansas Department of	89%	95%	89%	87%

Recommendations

Recommendations:



Recommendation: Establish an **Energy Manager position** at the Arkansas Energy Office to continue implementation of Act 1494. Current funding ends March, 2012.

Recommendation: Continue working with agencies and institutions to implement **StEPs** and **ESPM**.

Recommendation: Work with **AASIS** and **major utilities** to make collection of data for Energy Star Portfolio Manager easier.

Recommendations:



Recommendation: Begin to **work with the other 98 agencies** to develop Strategic Energy Plans (StEPs) and tracking of energy usage using Energy Star Portfolio Manager (ESPM).

Recommendation: Engage the **Arkansas Energy Efficient State Government Working Group** in expanding StEPs to other agencies.

Recommendation: Work with ABA to develop wording for **lease agreements** that require ESPM accounts to qualify for contracts by State Agencies.

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