

# Strategic Energy Plan



## Fiscal Year 2012

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## Executive Summary

Act 1494 of the 87<sup>th</sup> General Assembly Regular Session – 2009, promotes the conservation of energy and natural resources in buildings owned by public agencies and institutions of higher education with primary goals to reduce total energy consumption by 20% by 2014 and 30% by 2017 when compared to Fiscal Year 2008 (July 1, 2007 through June 30, 2008). Under its own governance, each institution of higher education shall develop and administer policies, procedures, and methods for compliance with the criteria, performance standards, and goals as detailed in Act 1494. The specific strategies and efforts by each higher education institution to achieve these goals should be documented in a Strategic Energy Plan (StEP). This StEP is hereby submitted on behalf of the University of Arkansas at Monticello (UAM), an institution of higher education, to document its compliance with the requirements of Act 1494.

The University of Arkansas at Monticello is an institution of higher education, whose main campus is located in Monticello, Arkansas. The University celebrated its Centennial year in 2009 and as an institution embarking on its second century has many older buildings in its inventory.

UAM has been actively working since 1999 to renovate and modernize the older buildings on campus. A district cooling loop was put into service for the center part of campus with the completion of the Library and Technology Center. A total of four hundred tons of cooling capacity served three buildings in the first phase. The district cooling loop has been expanded twice since then, now totaling eight hundred tons of capacity and serves eight campus buildings totaling 246,199 square feet. This has allowed for the replacement of well over a hundred window air conditioners and two older air cooled stand-alone chillers, greatly improving the overall efficiency and management of the campus cooling load.

The University has completed nearly four million dollars worth of projects devoted to energy conservation since 2009. The last of these projects was completed in January of 2011 and consisted of a campus wide lighting retrofit, the installation of four (96%) high efficiency boilers and two new chillers using the newest technology to employ oil free, frictionless drives. Additionally, three campus buildings had complete control upgrades, replacing obsolete pneumatic controls with new direct digital control systems.

UAM has begun a program of performance monitoring of its energy use, utilizing the EPA program known as Portfolio Manager. Energy consumption has been reduced ten percent as of the September, 2011 billing date when compared to the FY 2008 baseline. The University expects that this number will continue to improve as the anniversary of our first cycle since the last project completion approaches in January 2012.

## **Goals and Strategies**

UAM is committed to pursuing energy conservation for both its new and existing facilities as demonstrated by over a decade of projects designed to further this end. The goals of Act 1494 as stated below are achievable if the University is able to obtain the funds for additional capital projects to renovate more of our existing buildings.

### **Act 1494 Performance Goals**

- Reduce total energy use per gross square foot by twenty percent (20%) by the end of Fiscal Year 2014 (June 30, 2014).
- Reduce total energy use per gross square foot by thirty percent (30%) by the end of Fiscal Year 2017 (June 30, 2017).

## **Projects in Progress**

The University is currently constructing a 15,100 square foot annex to the Forest Resources Building and is also in the process of renovating 31,156 square feet of existing space there with a projected completion date of September, 2012. The design of this project follows the guidelines set forth in Act 1494 and should result in an energy efficient building.

The replacement of the original air cooled chiller at the Agri Building addition installed in 1986 has just been completed. The new chiller uses six percent less energy at full load and the part load performance is rated at 15.5 EER.

The University participated in a program sponsored by CenterPoint Energy to retrofit 173 faucets in public use areas with low flow aerators. This program accomplishes the dual purpose of reducing water consumption and the energy required to produce warm water for hand washing.

The Physical Plant staff has begun the process of installing programmable digital thermostats throughout various campus buildings where connection to the energy management system has not been made. Parameters of operation for the HVAC equipment are set to include minimum and maximum thermostat settings. Provisions are also made for night set-back when the building is unoccupied. Three buildings, the Fine Arts Center, the Red Barn and Steelman Field House so far have been retrofitted with these thermostats.

Many of the buildings at UAM are master metered making it difficult to determine the performance of individual buildings. The University is committed to installing sub-meters on campus buildings as funds are available to rectify this situation. The first submeter has been installed on the electrical service at Memorial Classroom Building as a pilot program to explore one possible option to achieve this goal.

## Facility Listing

Facility	Year Built	Floor Area
Administration Building	1975	10,040
Agriculture Building	1975	22,483
Babin Business Building	1910	37,114
Bankston Hall	1968	47,694
Central Heating Plant	1984	19,143
Central Warehouse	1949	7,774
End Zone Facility	1999	11,699
Fine Arts Center	1976	27,442
Forest Resources	1957	31,156
Forestry Work Center	2008	7,600
Gibson University Center	1983	76,725
Grounds/Recycling Shop	1997	13,500
Harris Hall	1933	33,136
Horsfall Hall	1934	35,125
Indoor Practice Facility	2008	34,160
Math and Science Center	1964	48,887
Maxwell Hall	1961	28,451
Memorial Classroom Building	1939	40,422
Music Building	1934	11,591
Neal Museum	1978	9,800
Public Safety	2001	1,080
Red Barn	1966	4,194
Royer Hall	1966	33,027
Sorrells Hall	1910	14,024
Steelman Field House	1960	35,609
Taylor Library and Tech Center	1999	51,631
University Apartments A & B	1999	54,630
Visual and Performing Arts Center	1953	41,018
Weight Room	1948	2,880
Wells Hall	1910	14,586
Willard Hall	1912	20,161