



*Southern Growth Policies Board presents
Southern Energy: Abundant, Affordable and American –
2009 Innovator Award Winner*

Alternative Energy Program

Northwest Missouri State University

Objective: Utilize alternative fuel sources to reduce the University's dependence on fossil fuels and purchase regionally produced renewable energy sources which create economic benefits for the region.



In 1982 Northwest Missouri State University established a biomass energy system that utilized renewable sources generated within the region. A thriving wood products industry used its surplus of wood waste to provide wood chips as a fuel. This resulted in a unique value added product for the industry.

A state mandate in 1990 to reduce by 40 percent the amount of waste accepted by state landfills motivated the University and local government partners to pelletize discarded newspaper, corrugated cardboard boxes, magazines and other clean paper as a fuel. Utilizing wood chips and pelletized waste paper reduced the University's fuel costs and saved money for the State of Missouri. After 25 years of operation, approximately \$12,500,000 in savings has resulted from the use of alternative fuel sources as compared to purchasing natural gas and oil.



Later in the 1990s, pellets made from solid waste from the University's swine and dairy operations mixed with dry agricultural feedstocks were added to the energy system. The University acquired a patent for this animal waste to energy production process in November 2000. Along with wood chips and paper pellets this fuel source reduced the University's dependence on fossil fuels by 80-85 percent.

The result of this green energy model has yielded a savings of millions by eliminating the need to purchase imported fossil fuel. Instead, those dollars purchase regionally produced renewable energy sources which create employment opportunities and economic benefits for the region.



1. Loader and storage silo for wood chips.
2. Pellets from waste paper and corrugated materials.
3. Northwest Power Plant employee cleaning bottom ash off of inclined grate in the wood fired boiler.
4. Wood chips being fed into a wood-fired boiler by a metered screw.