

# Transforming an Environmental Liability Into an Energy Asset

Two Pine Landfill is turning yesterday's waste into tomorrow's energy. The landfill, located in Pulaski County, operates a state-of-the-art gas conversion plant that supplies electricity to approximately 4,500 homes in North Little Rock.

According to the Environmental Protection Agency (EPA), every American produces, on average, 4.6 pounds of garbage a day. Much of the trash ends up in landfills, where it decomposes and produces methane and carbon dioxide. Both are greenhouse gases, which are widely believed to contribute to climate change.

"Methane gas, a component of natural gas, is a potent gas that remains in the atmosphere for about 9 to 15 years. Methane is about 21 times more powerful at warming the atmosphere than carbon dioxide. If landfills can capture methane and use it as an energy source, it makes sense to do so," said Suzanne Hirrel, associate professor and waste management specialist at the University of Arkansas' Cooperative Extension Service.

Federal and state environmental laws mandate that landfills must monitor their methane production and prevent landfill gases from being released into the atmosphere when

they exceed permitted levels. The Solid Waste Management Division of the Arkansas Department of Environmental Quality (ADEQ) regulates activities and facilities involved in the processing and/or disposing of

solid waste. Most landfills use a flare system or other combustion device for disposing of landfill gases. This process reduces odors, addresses safety concerns, reduces methane emissions and air pollution but does not provide energy benefits.

There are many ways to generate energy from landfill gas. The gas from the landfill can generate electricity, heat water into steam, be converted to fuel for vehicles or purified to be used in natural gas pipelines. The Department of Energy Act of 1977 created the U.S. Department of Energy, which was authorized to fund and regulate waste-to-energy research

projects and energy research. Federal tax credits enacted in 1980 encouraged the development of private enterprises



(top) The Two Pine Landfill accepts waste from Jacksonville, Sherwood, Cabot, Conway, rural Pulaski County and as far away as Garland County. (bottom) Six engines convert 500,000 tons of waste annually into electricity for North Little Rock residents.