NEWS From GEORGIA TECH'S
ENGINEERING EXPERIMENT STATION
Atlanta, Georgia 30332

Contact: Peggy Simcic Brønn/Ray Moore
(404) 894-3405

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WOOD BURNING DEVICE PRODUCES CLEAN, CHEAPER FUEL

For Immediate Release

ATLANTA, GA...A combustion device that can produce clean energy from wood two and a half times cheaper than with fuel oil is being built by Georgia Tech's Engineering Experiment Station.

It is part of Georgia Tech's effort to help the Department of Energy find alternate energy sources for U.S. industry.

A new design on an old idea, the device is called a gasifier. It is the first to be built at Tech, and it is one of few in existence in the country, says its designer Tom McGowan of EES.

The gasifier is a 10-foot tall cylindrical metal vessel in which wood or other forms of biomass are burned with very little air. The end product is a gas that can be used as a fuel for industrial boilers or for direct heating and drying applications. The ash by-product can be used as a soil conditioner and fertilizer.

McGowan says that gasifiers have been around since the early 1800's but have been plagued with problems that have made them previously undesirable for industry. The main problems have been with impurities in the gas, such as tars and acids, which tend to condense in pipes and burners. Other problems have been with ash melting and plugging the grates with a substance called slag, and with the grates overheating and burning out.

The Tech-designed gasifier eliminates some of these problems, says the engineer. For instance, putting the gasifier's burner very close to the unit avoids condensation of tars and acids, and a tubular, air-cooled grate

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avoids ash slagging and grate burnout.

The economical nature of the gasifier, however, is its main attraction. "This gasifier will be able to produce around half a million Btu's per hour from wood at a cost two and a half times cheaper than with fuel oil," says McGowan.

These figures are based on using three and a half gallons of number two fuel oil per hour versus 80 pounds of wood per hour.

McGowan sees industry retrofitting present coal or oil boilers with wood gasifiers as a standard practice in the very near future.

The advantages are that retrofitting is cheaper than buying a new wood-fired boiler, and the gasifier can be located away from the boiler. That second advantage is important for industrial operations which do not have room adjacent to the boiler to install a gasifier, and for industries which don't want to disrupt existing plant layout.

In addition to the gasifier, Georgia Tech has recently begun a number of research projects regarding the use of wood for energy. As part of this research they have found that the state of Georgia produces woody biomass at a rate greater than any other state.

McGowan says that the waste from forest operations alone could provide the primary source of the wood for industrial purposes.

The Tech researchers also found that industry is quite anxious to make the switch to cheaper wood energy as long as they could be assured that wood boilers and gasifiers worked well.

The gasifier at Tech, which is expected to be furnished in two to three months, will be used for experimental purposes on the Tech campus. Its first job will be drying textiles. Tech is also monitoring the construction