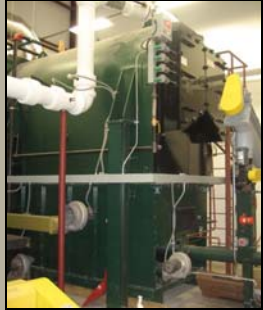


Kane BioMass Boiler System

Kane Area School District
Kane, PA



The Project:

The Kane Area School District obtained a Department of Energy grant to install a 6 million BTU BioMass Hot Water Boiler System to serve the Senior High School. CJL Engineering designed the installation which utilizes lumber yard waste as its primary fuel source. The design included a combustion unit with an Automated Auger Fuel Feeding System. The BioMass Plant is housed in a new building remote from the school. The payback for this system installation will be less than seven (7) years by utilizing sawdust produced from local lumber yards in North Central Pennsylvania vs. the current natural gas fuel source. Fuel for the plant will also be provided by the Allegheny National Forest Initiative. This National Program has been established to provide for the long term health of the Forest by clean out of scrub debris.

CJL Engineering Design Solutions:

- This combustion unit utilizes a series of air induction fans controlled by VFD'S (Variable Frequency Drives) to maintain a burn chamber temperature of 1800° F. A fire tube boiler unit fits atop the combustion unit and provides the heat transfer means to generate hot water.
- A large exhaust fan draws the products of combustion from the combustion unit through a waste heat boiler which produces hot water for the School. The hot water is used for the building Heating System.
- The combustion by-products are then drawn through a cyclone separator, removing particulates prior to exhausting to the atmosphere. This cyclone separation process significantly reduces particulate emissions thereby satisfying the requirements of the Pennsylvania Department of Environmental Protection.
- Since the new plant was remote to the High School, pipe had to be routed underground up through the Vo-Ag building, and then back underground and into the existing boiler room.