TECHNOLOGY IN SERVICE OF COMMUNITY AND ENVIRONMENT •

Plumas County HHSC

The Plumas County Health and Human Services Center in Plumas County, California made the switch to wood energy in an effort to utilize their existing heat pump system to heat the 53,000 square foot building while supporting local employment and enhancing forest restoration on the surrounding landscape. The biomass combined heat and power (CHP) system housed in California's first full CLT building also produces electricity to offset the facility's energy use via an Organic Rankine Cycle (ORC) unit.

WISEWOOD ENERGY

Plumas County HHSC

A Green Solution to a Failing System

As of mid-2018, the biomass energy system has been providing heat to the HHSC building via a network of buried, pre-insulated steel and PEX pipes carrying hot water to the building's heat pumps. The project is intended to alleviate reliance on HHSC's geothermal system which was not providing adequate heat due to being undersized for the facility's needs, requiring the use of electric space heaters throughout the building. The building's occupants now report being very satisfied with the biomass heat and the increased comfort afforded by the system.

Wood Fuel Directly from Local Forests

HHSC's is among the few biomass district energy systems of its kind in the Western US because it can directly utilize "hog fuel", a coarsely ground woody material that is produced from forest management and restoration activities. Hog fuel can be produced in a single pass through a large chipper or grinder and requires no additional processing. Additionally, it can use a higher moisture content than tolerated by most other wood boiler systems, as high as 55%. This robustness allows the facility to source its biomass fuel from a wide variety of vendors, including existing local forest products businesses and others that are expected to become established locally. The community was clear from the outset that pellets would not have the same economic or ecologic impact as a system that could utilize wood chips directly from the surrounding forest. Wisewood Energy brought together the technology to make this happen.

The biomass boiler is modeled to use 200-300 tons per year of woody biomass to heat HHSC and the system is currently being optimized to provide electric power at a level strategically designed to decrease the facility's electrical demand charge.

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