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OUR VIEW

Pyrolysis could emerge as solution for forest biomass

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Ridding our forests of biomass, or wood waste, long has been the goal of foresters.

Spring slash burns once were common, until air quality became more important. Opening the forest to wood cutters helped to clear some of the debris, but they took only the best wood, leaving limbs and branches behind. And, over the years, the use of wood-burning stoves has declined, again for air-quality purposes.

Allowing biomass to accumulate in the forest creates a fire hazard, so for resource protection purposes, foresters are eager to eliminate it.

Now a new technology - fast pyrolysis - is emerging that could be an answer. Scientists estimate that by chipping wood waste to a fine material and feeding it into a \$3.5 million pyrolysis unit, operators could eliminate nearly 22 tons of wood waste daily while creating energy.

The secret is the pyrolysis, which means decomposing the wood waste into bio-oil, syngas, charcoal and tar in the absence of oxygen. After the unit is heated with propane, it begins burning the gas created during pyrolysis to feed itself.

The output from the process is 57 percent bio-oil, 27 percent charcoal, 15 percent gas and 1 percent tar. The oil can be burned or refined. The charcoal, which comes out like powdered sugar, is good for the soil, scientists say. It may be reapplied to the site where the biomass was removed or perhaps used on agricultural crops.

Scientists have calculated such a machine would begin to pay for itself in the second year of operation. During its 10-year lifespan it would generate an average of \$66,383 annually in after-tax cash flow.

One group plans to set up a fast pyrolysis unit in Baker County this winter and begin chipping and turning stockpiled biomass into energy products. It'll be an interesting experiment to watch. It's success could lead to more widespread use of this emerging technology.

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