



Recycling Energy and Creating Power at Hancock's Bethel Sawmill

Hancock Lumber is making more lumber than ever—however, they are using much less electricity to do it. See how.

Over the past 10 years, Hancock Lumber has worked hard to successfully reduce its consumption of electricity by installing energy efficient LED lighting and high efficiency electrical motors. Hancock is making more lumber than ever—however, they are using much less electricity to do it.

As of Saturday, October 21, Hancock Lumber's Bethel Sawmill is generating its own power with a newly installed steam turbine generator. The project, years in the making, includes a new system that converts energy waste into high-value electricity, which Hancock Lumber will use to offset energy costs at the facility. The installation of this new backpressure turbine in Bethel represents a huge leap in energy conservation for Hancock Lumber.

How does the system work? Steam turbines generate electricity from steam produced in a boiler by converting its thermal energy into mechanical energy, which is then converted into electrical energy in the generator. High-pressure steam rotates the turbine blades that turn the generator and create the electrical energy.

In Hancock's Bethel facility, the system is creating electricity from otherwise wasted steam to provide heat for the dry kilns where their 'green' Eastern White Pine boards will be dried for 7-10 days. Therefore, the steam is used twice—once to generate power and a second time to heat the dry kilns—a process called cogeneration. The system converts the steam into energy that will power nearly a third of the entire Bethel facility.

Cool facts about the project:

- Annual energy savings estimated at 2,330,000 kWh/year, or 30% of the Bethel facility's total usage
- Annual power generated is energy enough to power 215 average households for a year
- Efficiency Maine rebate to offset cost by nearly 50%
- Complete skid weight: 17,500 lbs



The Hancock team leveraged Efficiency Maine and applied for rebate money to offset the capital-intensive project's costs by nearly 50%. Efficiency Maine is the independent administrator for energy efficiency programs in Maine. Their mission is to lower the cost and environmental impacts of energy in our state by promoting cost-effective energy efficiency and alternative energy systems.

Sawmill managers throughout the company are able to connect to the new interface - completely built in-house - to access how the system is running and see how much power has been generated. Many people from Hancock's team worked on this project and it is so exciting to have the system 100% installed and creating power!

Sawmill Division COO, Kevin Hynes, commented on the project, "It's amazing to me how simple the technology is which allows us to convert high pressure steam from our biomass boiler into valuable electricity to help run our mills. We burn waste sawdust in our boiler, which makes steam. This steam then flows through the turbine generator making electricity. The steam continues onto the dry kilns to dry our lumber. The electricity, which is generated by the turbine, provides power to fans in the dry kilns, which is essential for the kiln drying process. It is amazing and exciting."

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