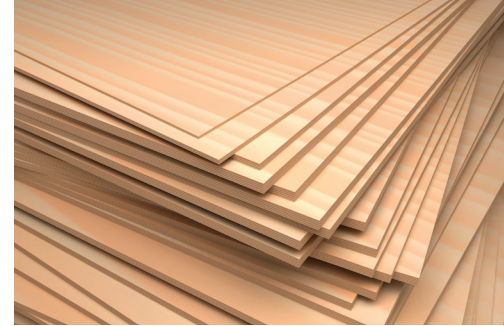


BOISE CASCADE saving more than \$24,000 annually with air compressor energy upgrades.



Compressed air is an important component of plywood manufacturing. In addition to driving the steam systems that facilitate log conditioning, glue preparation, veneer drying and hot pressing, air compressors fuel many of the saws, planers, stackers and other machinery found in the plants.

“Compressed air,” says Scott Noble, Environmental Engineer and Electronics Specialist for Boise Cascade, “is absolutely integral to our operations.”

The second largest softwood plywood manufacturer in North America, Boise Cascade uses western softwood species to manufacture structural, appearance and industrial panels at its plywood plant in Elgin, Oregon.

“BPA [Bonneville Power Administration] had been helping us with some air compressor leaks,” Noble recalls, “and they indicated they could help us improve our energy efficiency.”

Two separate compressors were on opposite ends of Boise Cascade’s plywood facility. The aging compressors had independent modulation controls and ran virtually nonstop. Making matters worse, the distribution header system wasn’t looped and was undersized for the existing air demand.

“There was ad-hoc piping everywhere and multiple dead-ends,” explains Noble. “It was like trying to blow through an 800 foot straw. You can imagine the amount of energy it took to meet demand and maintain adequate pressure.”

Enter BPA’s Energy Smart Industrial (ESI) program, which works with public utilities and their industrial customers to advance energy efficiency throughout the Pacific Northwest. The ESI program provides project management, technical assistance in acquiring utility-based financial incentives for electric energy reductions. In conjunction with Oregon Trail Electric Consumers Cooperative (OTEC), the ESI team helped determine baseline energy consumption at Boise Cascade’s plywood plant and identified several opportunities for efficiency improvements.

TRADE ALLY

Rogers Machinery

UTILITY

Oregon Trail Electric Consumers Cooperative (OTEC)

PROJECT

Air Compression System Energy Efficiency

ENERGY SAVINGS (KWH)

725,000 kWh/yr (22% less)

ENERGY SAVINGS (\$)

\$24,000 annually

PROJECT COST

\$246,031

INCENTIVE

\$132,591

PAYBACK

Before incentive: 9.2 years
After incentive: 4.2 years

“With better modulation, drying and pressure control, we’re so much more efficient. And we’ve seen significant savings as a result.”

Scott Noble,

Environmental Engineer and Electronics Specialist, Boise Cascade

IMPROVING MODULATION, DRYING AND PRESSURE CONTROL

With financial incentives from OTEC and support from the ESI program, Boise Cascade built a new compressor room at the Elgin plywood plant. In addition to centralizing and consolidating equipment that was previously on opposite ends of the facility, the company was able to reduce the amount of piping and improve redundancy to the compressed air system.

Boise Cascade replaced one of the older compressors with a new, variable frequency drive (VFD) air compressor that can handle swings in air demand while providing increased capacity, better efficiency and modulation control for the entire system.

“We used to have two compressors running continuously, regardless of demand,” says Noble. “Today, we have one of our old compressors running at 100 percent capacity and the new VFD compressor controlling the whole system. Beyond modulation and capacity control, the new VFD compressor only kicks in when needed.”

In addition to saving energy, these upgrades also improved drying efficiency. Instead of routine purging to clear moisture out of the compressed air system, new dew point controls provide monitoring and intelligence to the drying operations. Purges are now automated based on actual moisture conditions versus fixed time schedules. Boise Cascade also increased the size of its distribution header system and installed two new air receivers to help with pressure regulation and consistency.

“With better modulation, drying and pressure control, we’re so much more efficient,” says Noble. “And we’ve seen significant savings as a result.”

SAVING ROUGHLY 725,000 KILOWATT-HOURS PER YEAR

Based on the compressed air energy upgrades at its Elgin plywood plant, Boise Cascade is saving approximately 725,000 kilowatt-hours per year (kWh/yr), power consumption dropped from 2.78 to 2.06 million kWh/yr, saving Boise Cascade more than \$24,000 annually.

“BPA was fabulous to work with,” says Noble. “They clearly explained the project and the process. They worked hand-in-hand with OTEC. And most importantly, they saved us a bunch of money and helped bring our compressed air system into the 21st century. We couldn’t be happier.”

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For information about BPA ESI:

Visit www.energysmartindustrial.com
or contact your local utility provider.