

MALHEUR LUMBER retrofits air compressor for new pellet mill, saving nearly \$10,000 on annual energy costs and receiving full project payback in just over a year.



A progressive company in a long-established industry, Malheur Lumber has a history of implementing energy-efficient equipment upgrades and exploring renewable energy opportunities. This type of forward thinking has allowed the company to take advantage of new technologies and respond to the changing supply issues that continually impact the lumber industry.

Malheur's resource consciousness was exemplified in December 2010, when the company established a new pellet mill in John Day, Ore., that could transform small-diameter logs and lumber by-products of little value into a more marketable and profitable product.

"We built the pellet mill to expand and evolve our business," says Art Andrews, General Manager of Malheur Lumber. "We just needed an air compression system to support the processing equipment."

Malheur had two options: purchase a new air compressor and incur high costs, or purchase and rebuild a used air compressor from a nearby lumber plant that had recently gone out of business.

"At half the cost, we couldn't pass up the used compressor," explains Andrews. "But we were apprehensive about its large size and what it would take to run it."

Rogers Machinery, which helped acquire and refurbish the compressor for Malheur, had a plan. They recommended using the oversized compressor for the company's boiler, kiln and stacker equipment in addition to pellet mill operations. This approach would not only meet the new pellet mill's needs, but also replace three pre-existing compressors at Malheur's primary plant, two of which had become obsolete and one that was too small.

"We were able to kill multiple birds with one stone," says Andrews. "But it was still more than we needed. With only inlet modulation control and the compressor running full time, it would have been a big, inefficient power drain."

Rogers suggested Malheur get in touch with its local utility, Oregon Trail Electric Consumers Cooperative (OTEC), to discuss opportunities and incentives for energy efficiency improvements. Soon after, OTEC introduced Malheur to representatives of the

TRADE ALLY

Rogers Machinery

UTILITY

Oregon Trail Electric Consumers Cooperative (OTEC)

PROJECT

Refurbished 200 hp Inlet Modulating Air Compressor

ENERGY SAVINGS (kWh)

291,981 kWh/yr (22% less)

ENERGY SAVINGS (\$)

Nearly \$10,000 annually

PROJECT COST

\$35,984.58

INCENTIVE

\$25,189.21

PAYBACK

Just over 1 year

"We needed to get the new pellet mill up and running, so we were under the gun time-wise. BPA's ESI program team was extremely helpful. They guided us through the entire project, answered a lot of questions, provided technical support and handled most of the paperwork. It was a remarkably seamless process."

Art Andrews,
General Manager, Malheur Lumber

Bonneville Power Administration (BPA) Energy Smart Industrial (ESI) program. BPA's ESI program works with Northwest public utilities and their industrial customers—offering program management, technical assistance and financial incentives—to advance energy efficiency throughout the region.

RETROFITTING AN OVERSIZED, INEFFICIENT AIR COMPRESSOR

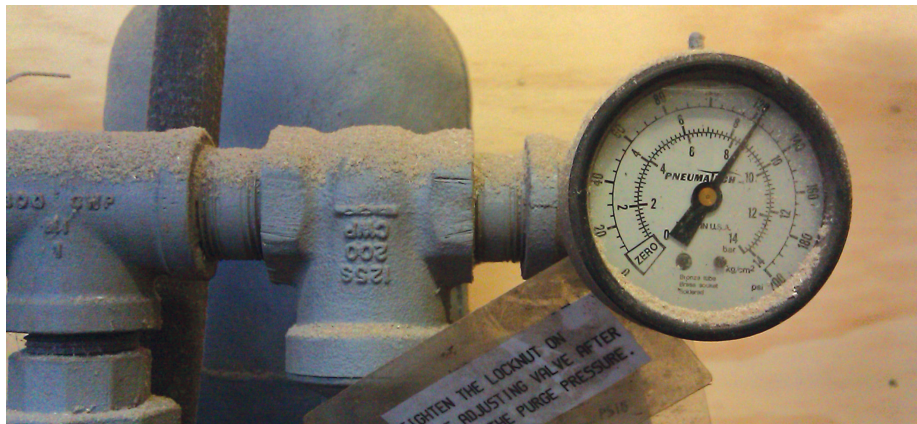
With the help of the ESI program team, OTEC and Rogers Machinery, Malheur began retrofitting the oversized air compressor and improving the energy efficiency of the system. Outdated inlet modulation equipment was replaced with a high-efficiency load/unload (L/UL) controller, two receivers were installed for additional storage and a variable frequency drive (VFD) cooling fan was added. Instead of running continuously, the system now functions in response to actual demand.

“With automated controls and additional storage capacity, the compressor only produces what we need,” says Mike Billman, Project Manager for Malheur. “Instead of running nonstop, it stores compressed air in the receivers and goes into an idle state whenever possible.”

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DRYER PRESSURE



Dew point controls were also added to the two drying towers. Instead of drying system desiccant on a fixed cycle—and consuming 20 percent of available air in the process—moisture sensors determine when drying is actually needed. According to Billman, a full day or more can pass between drying cycles, saving considerable compressed air and the energy needed to produce it.

Due to the efficiency upgrades on its refurbished compressor, Malheur's compressed air system is consuming 22 percent less power and saving roughly 300,000 kilowatt-hours per year (kWh/y). This equates to an annual savings of nearly \$10,000 in energy costs.

Malheur spent \$36,000 on energy efficiency upgrades for the refurbished compressor, but more than \$25,000 of this cost was offset by incentives provided by OTEC through the ESI program. With the annual energy cost savings created by this project, Malheur will receive full return on its capital investment in just over a year.

“We needed to get the new pellet mill up and running, so we were under the gun time-wise,” says Andrews. “BPA's ESI program team was extremely helpful. They guided us through the entire project, answered a lot of questions, provided technical support and handled most of the paperwork. It was a remarkably seamless process.”

For information about BPA ESI:

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