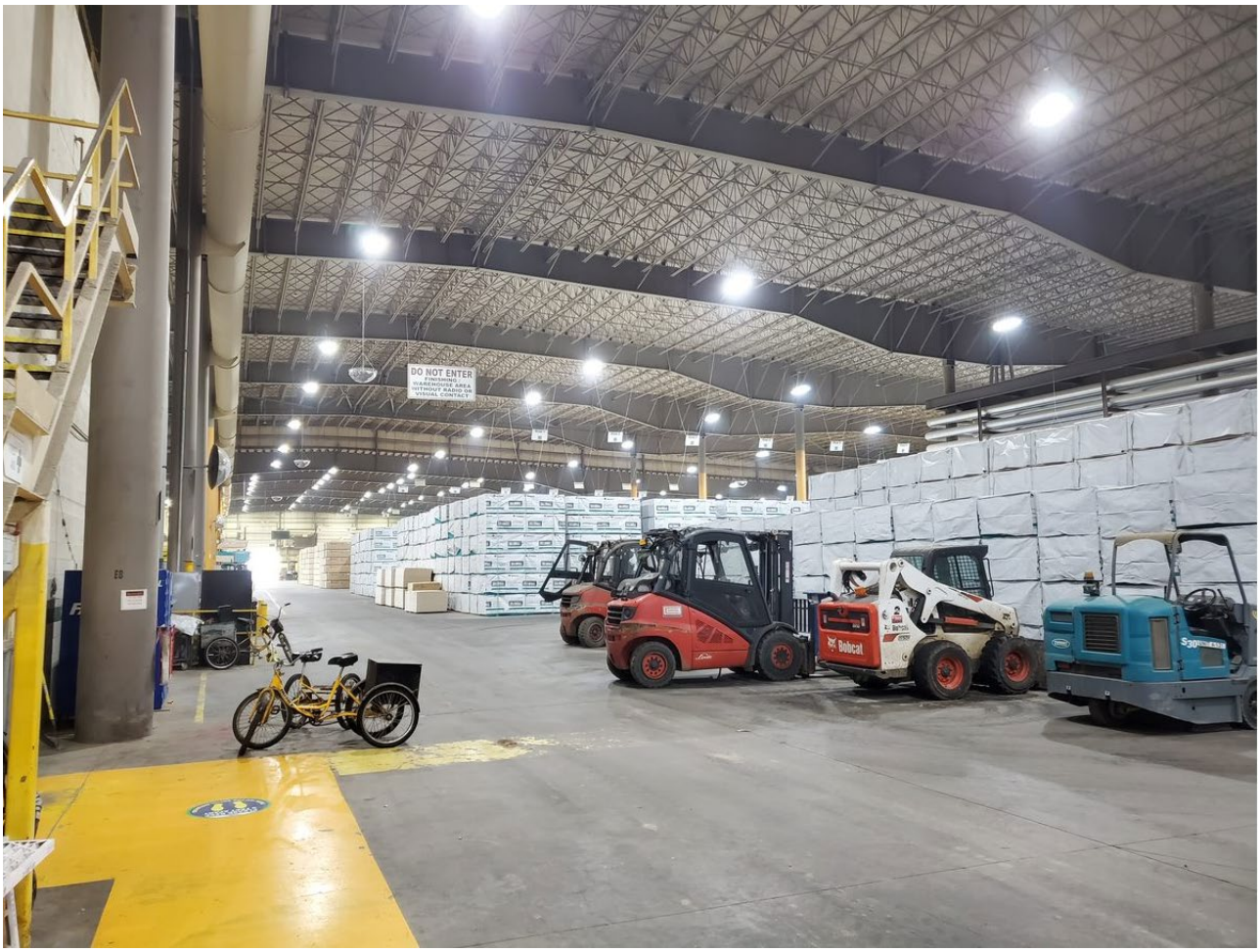
Higher mill output with lower energy use

Norbord achieves power and emissions reductions by refining its processes



A holistic review of processes and systems

Engineered wood products are critical for the construction industry—and keeping the industry supplied is big business. At its huge Alberta mill, a leading manufacturer is finding clever ways to produce more product with the same amount of energy.

An in-demand product

Commanding an ever-increasing share of the structural building products market, oriented strand board (OSB) is made from wood strands that are resin bonded under heat and high pressure. The boards are highly used in home building as sheathing for floors, walls and roof decking. Norbord, a leading international manufacturer of OSB, operates a 10-acre mill in High Level, Alberta. The company employs 150 people and can produce up to 860 million square feet of OSB annually.

Looking to find efficiencies and reduce the mill's greenhouse gas (GHG) output, Norbord joined the Strategic Energy Management program in April 2019. The mill began by implementing a large-scale lighting retrofit—530 old high bay lights were replaced with low-usage LEDs, which provide brighter, better quality light. Norbord also upgraded office air conditioning equipment with more efficient models and has been replacing smooth belts on all belt-driven equipment with more energy-efficient notched belts.

Process improvements for the win

While the equipment upgrades made a difference, the biggest drivers of efficiency gains have come from process improvements. A key step was fine-tuning the mill's saw system to operate reliably at higher rates. These adjustments allowed higher speed on the press, thereby increasing overall volume. Norbord also used outside resources to examine its system holistically, looking for areas of process improvement which, in turn, provided additional opportunities for energy efficiency.

So far, the Norbord mill has saved an impressive 2,274,000 kilowatt hours (kWh) – enough to supply the electricity needs of over 316 average Alberta homes for a year, and a savings to its bottom line of about $181,000. And what about Norbord's GHG reduction goals? In the first year alone, the mill reduced its GHG electricity emissions by 1,138 tonnes of CO2 equivalent (a 2.5 per cent reduction) which is just the beginning of their expected year-over-year reductions.

Evan Kamrath shows a cogged (or notched) belt, which are more efficient than smooth belts.

"The SEM program has had a positive impact in highlighting energy efficiency and energy reduction possibilities, as well as demonstrating how impactful these are to the environment and our business at large. We have therefore become more attentive to how our energy is being used and how we can use it better." – Mark Bonnell, Chief Power Engineer

What's next?

Norbord plans to continue reducing its energy consumption per unit of production by assessing its compressed air use and working to build increased interest in energy management amongst its employees. Larger scale power generation opportunities are also being explored (such as solar

and combined heat and power) which could become an exciting next step in Norbord's energy conservation journey.

Joe Barth stands beneath the new and more energy efficient LED high bay lights.