



Meadow Lake Megawatts

As the result of a recent upgrade project, NorSask Forest Products is now getting more value from the lumber produced at its Meadow Lake sawmill, and it will soon be breaking ground on a 40 megawatt bio-energy plant.

By Tony Kryzanowski

NorSask Forest Products in Meadow Lake, Saskatchewan wants to capture maximum potential value from its lumber while generating minimal waste as part of its strategy to remain competitive as a medium size Canadian sawmill. Its recent \$4 million planer mill investment and a plan to build a 40-megawatt bio-energy plant later this year address both those goals.

The company is owned by the Meadow Lake Tribal Council (MLTC) and is a partnership consisting of nine First Nations communities. It is one of Canada's largest First Nations-owned forestry companies.

The investment it has made to modernize its planer mill to include completely computer-based lumber grading will allow the stud mill to pull many more grades as it significantly ramps up annual production from 72 million board feet to 160 million board feet.

With lumber prices rebounding, NorSask is in the process of returning the stud mill to a two-shift operation. Staffing will increase from 95 to 140 employees.

The stud mill is a three-line operation with a large, medium and small log production line featuring Optimil processing equipment on all three lines. The primarily white spruce and jackpine logs that supply the mill are cut-to-length in 17' and 18' lengths. Once the stud mill ramps up to two shifts this fall, the mill will consume about 700,000 cubic metres annually.

Right now, NorSask directly markets about 75 per cent of its lumber to the U.S., with the remainder in Canada. But that could change because of the variety of grades the company will now be able to pull from its modernized planer mill.

Not only is the stud mill returning to two shifts, but they are expected to break ground on the biomass plant this fall. A symbolic red flag stands on the exact spot where MLTC intends to construct its bio-energy plant near the stud mill. The owners are currently arranging for an equity partner as well as selecting the engineering, procurement and construction providers for this project. MLTC has a 25 year power purchase agreement with SaskPower for the power generated by the plant.

MLTC is also operating an experimental wood pellet production plant on the stud mill site, using its planer mill shavings as feedstock. Some of the pellets currently provide fuel to boilers that heat the stud mill. As part of the pellet plant project, MLTC is also engaged in pilot projects, providing pellets for fuel to heat residences within the First Nations communities that make up the partnership. The plan is to ramp up the pellet plant to an industrial scale and eventually provide a total heating solution, right down to stoves and boilers that burn the pellets.



The partnership even plans to market the ash generated by its power plant.

Regarding the stud mill, Dave Neufeld, NorSask Forest Products' general manager, says they identified the planer mill as their first capital investment target. They needed to increase production flow at the planer and there was a strong desire to attempt to capture more value from the wood resource.

"The timber quality here is excellent and the grade out-turn has been pretty good," Neufeld says. "We thought that there was a good opportunity to add value to our lumber through using today's technology to reduce the trim loss and improve the grade out-turn, while eventually speeding up the planer mill."

The existing Coast planer is still in place as is the lumber strapper, but a new Win-Jet lumber stamp printer has been added. Several new optimizing components have also been added to the planer mill. These include a new computer-based, lineal grade optimizer with a warp module and moisture meter provided by VAB Solutions. Carbotech International provided a lug loader, positioning fence, 14-saw high speed trimmer, 15 additional sort bins, unscrambler and high speed stacker. The control system was provided by Do2 Controle. All are Canadian companies based in Quebec. The 15 additional sort bins complement the 15 already in place.

To accommodate the new equipment and bins, the planer mill building was partially remodeled. Wolftek Industries Inc. was selected to manage the installation of the equipment. It recently entered into an exclusive representation agreement with VAB Solutions for Western Canada.

MLTC expects to achieve a one-year payback on its planer mill investment based on single shift production, but with the stud mill expanding to two shifts this fall, Neufeld says the payback will likely take a lot less time.

Prior to the planer mill upgrade, NorSask Forest Products essentially produced two lumber grades: stud grade and economy. Neufeld says with the new computer-based grading system, they will be able to pull higher grades such as wane-free, select, two-and-better, decking and J-grade lumber from their production flow, which will also potentially open up new markets to the company.

NorSask is looking forward to finding out just how much of each lumber grade it can pull from its production flow as it discovers the full capabilities of its new planer mill equipment; even before the installation of the new equipment, they were only producing between five and 10 per cent economy grade lumber.

"That VAB grade optimizer allows us to mark each piece to the highest grade that it can possibly be, and it trims a little lumber from each piece to make the best possible product," says Neufeld. "Now, there really is no barrier. We could pull any grade that we felt we had a good market for."

He adds that the ability to change the grade pull profile in the planer mill is also very quick. "It allows you to change the recipe from one day to the next in terms of how much you want to be pulling of a premium grade."

The equipment suppliers conducted a detailed analysis of what the stud mill was producing in its grade output prior to the capital investment, suggested a system and what the mill could expect in grade output once that system was installed. This helped NorSask calculate how long it would take to achieve their return on investment.



The installation took about three weeks, but in anticipation of taking planer mill downtime and then ramping up with the new equipment, the company stockpiled finished lumber in its yard by running extra shifts to ensure that customer orders could be filled during that time.

While the new system has been described as not overly complicated, Neufeld says that it did require a fair amount of training for the stud mill's personnel to understand the technology, and that training is ongoing. There will still be a human grader monitoring the system on each shift, as the lumber grading authority requires a grader on site at all time for quality control. All three current graders will continue to be employed. As part of the transition to computer-based grading, NorSask has decided to add the eyes of an experienced grader to its stacking position as a final check to ensure that each piece of finished lumber meets the specs as it is being stacked.

Neufeld adds that even with its new grade optimizing capabilities, NorSask has assured its existing loyal customers that it will continue to supply their needs with the quality they have come to expect. The company believes that with higher production volumes, it will be able to continue to fill orders for its regular customers and pull higher value grades in pursuit of new markets.

NorSask took its time with the selection of its computer-based grading system and Neufeld says the team did a lot of homework investigating the systems available. Company representatives toured facilities where VAB Solutions systems were in operation. Ultimately, they chose VAB as their systems supplier because NorSask felt they were the best fit for their operation. They felt that VAB Solutions provided the best cost-competitive solution. Neufeld adds that they are very satisfied with the system's performance so far and that VAB Solutions has provided outstanding after-sales support, with the company owner dropping in several times just to see how well the system is working and to answer any questions they may have.

NorSask Forest Products is also satisfied with its selection of Carbotech International as its trim saw and high speed mainline end stacker supplier. While still in their start-up curve, Neufeld says NorSask expects to achieve all of the targets it set prior to initiating this project and that the equipment suppliers have worked hard to resolve any issues with the equipment as they arise.

Some forest companies and mills shuttered facilities for years through the very lean times after the American housing crash in 2008. While NorSask had its share of curtailments, MLTC management is proud that it never took more than two or three months of downtime when lumber prices hit bottom, making sure that it continued to provide employment in the community. Now, it is focused on the future.

NorSask has a list of capital projects that it will likely implement over the next five years as part of its program to return the stud mill to a two-shift operation in the 160 million board foot annual production range. Other priorities are the addition of a dry kiln to keep up with improved production and they may upgrade or replace their existing planer depending on the performance they are getting as a result of the current capital investment. Other priorities include improved scanning and optimizing capabilities within the stud mill and rubber-tired yard equipment.