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Logging & Sawmilling Journal

September/October 2020

TOLKO'S NEW
pellet and energy
plant in Alberta

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Wood pellet PARTNERSHIP ...

Forest company Tolko Industries has partnered with wood pellet producer Pinnacle Renewable Energy on a \$64 million wood pellet plant at Tolko's High Level, Alberta sawmill.

A bird's eye view of the Northern Pellet Limited Partnership pellet plant under construction shows the footprint of the plant on the same property as Tolko's sawmill, and its favorable proximity to rail transport.



By Tony Kryzanowski

On the heels of their successful partnership constructing a wood pellet plant in Lavington, B.C., Tolko Industries and Pinnacle Renewable Energy have partnered on a new 200,000 metric tonne softwood pellet plant located adjacent to Tolko's sawmill in High Level, Alberta. It is about to begin production in the fourth quarter of 2020.

The companies have entered into a joint venture called Northern Pellet Limited Partnership and shared equally in

the \$63.8 million cost to build the facility. Each has a 50 per cent interest in it. The plant will be operated by Pinnacle, and Tolko will provide the wood shavings, sawdust, and bark needed for pellet production.

Operating the pellet plant will create 25 or more full time, long term, and sustainable jobs in a community that has seen its share of economic ups and downs.

Tolko has also invested another \$33 million into a thermal oil energy plant, using surplus hog material as fuel, and \$18 million in a major switch from the use of batch to continuous flow dry kilns.

Total all these projects up and you have a very impressive investment figure, approaching \$115 million.

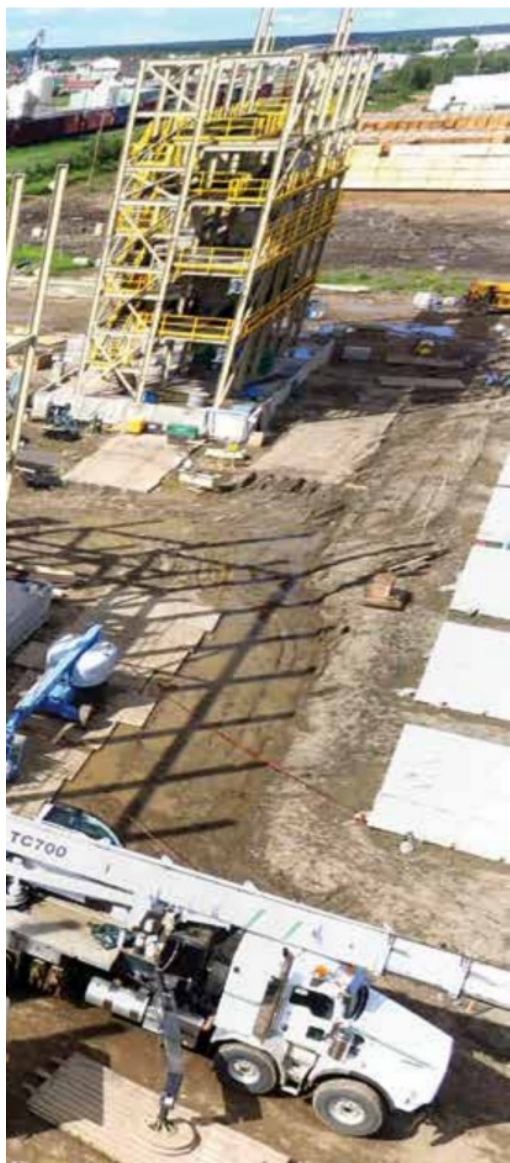
All these projects tie together. The heat generated by the sawmill's new energy plant will be used in the dry kilns and for the manufacture of wood pellets. Its recent commissioning brought to an end the burning of wood biomass in the onsite beehive burner in High Level. All employees onsite are among the happiest to witness the decommissioning of this burner in favour of the new energy plant. Its emissions are barely evident as compared to the output from the old beehive burner.

The pellet plant will consume about 200,000 oven dried metric tonnes of softwood residuals generated by the Tolko sawmill annually. Final product will be transported by rail to Vancouver or Prince Rupert for shipment primarily to Pinnacle's customers in Asia, where the company has signed numerous, long term, take-or-pay off-take contracts.

Scott Bax, Chief Operating Officer at Pinnacle, says that the wood pellets they produce are typically used by customers as the sole fuel or mixed with pulverized coal to generate power. The benefit is that wood pellets are a renewable and sustainable source compared to non-renewable coal, thus delivering an environmental benefit by keeping stored non-renewable coal in the ground.

High Level's reasonable proximity to West Coast shipping and access to good rail transportation helped to drive the economics of the joint venture with Tolko.

"There is growing customer demand in Asia so our opportunity to fill that demand with a project like the one that is occurring in High Level was a really strong fit."



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ring in High Level was a really strong fit," says Bax. "Our partnerships with Tolko work well as there is a great deal of mutual respect—we understand each other's

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provided by Bliss Industries. The combined and size-reduced material is then pelletized using pressure and heat through one of six pelletizers provided by Andritz.

"Pinnacle is the world's largest owner of biomass pelletizers from Andritz," says Bax.

The pelletizing process liquefies the lignin within the wood residuals, which glues the material together into a pellet. After that, the pellets are cooled and processed through sieves to remove any fine material. The final step is loading into railcars for shipping to market.

There is an existing CN rail spur attached to the Tolko sawmill but additions and modifications were required to accommodate production from the pellet plant.

All pneumatic blower systems from the sawmill to the pellet plant and within the pellet plant itself were provided by Allied Blower. Allied manufactured and installed the air systems for the hammermill and cooler systems at the pellet plant. In addition, Allied manufactured and installed the high-pressure line and dust collector which supplies all the pellet mill fibre from the adjacent Tolko mill. The equipment

Allied supplied included: fan, dust and fittings, dust collector and support tower, rotary valves, chuting, GreCon System, high pressure blower, abort gate, cooler isolation gates, hammermill plenum, and pipe supports and brackets. The services supplied by Allied included: installation of all items listed above, design of all items above, engineer's certification of NFPA compliance, and installation of customer supplied explosion suppression system.

CV Technology supplied the explosion detection and isolation equipment, while GreCon Inc supplied the spark detection system. Some of the plant's mobile transport equipment was supplied by John Deere.

KTC Industrial Engineering Ltd. was the main engineering firm with a number of other engineering firms involved on the pellet plant project. Civil and mechanical construction was handled by Kaynic Construction, and Milltron Electric was the contractor for electrical work and automation.

The High Level sawmill normally

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newprojects



Construction of the Northern Pellet Limited Partnership plant in High Level, a joint venture between Tolko and Pinnacle Renewable Energy, has provided a source close to home for residuals generated by Tolko's sizeable sawmill located in the community.

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produces about 420 million board feet of dimension lumber annually from 2 x 4 to 2 x 10. It is the largest employer in this community of 3,000 residents.

At present, it is operating at full capacity with 352 employees to process a high volume of wood salvaged from a massive burn known as the Chuckegg Creek fire that hit the area in 2019. It burned over 350,000 hectares of timber southwest of High Level, and also destroyed 16 buildings and a CN rail bridge. At one point, it came within five kilometres of High Level, and forced the evacuation of a number of nearby communities.

"For this year and probably for the next couple of years, we've increased our shift capacity here," says Ross. "We are running all three of our canter lines on a three-shift basis, trying to take advantage of salvage from the Chuckegg Creek fire, and were strongly encouraged to do so by the Alberta government."

This year's production in High Level is expected to be in the 500 million board feet range.

Originally, Tolko operated nine batch dry kilns in High Level, but Wellons Canada designed, supplied and installed on a turnkey basis a new continuous flow dry kiln and converted another newer, batch dry kiln to a continuous flow system. At

present, the sawmill operates two continuous flow dry kilns, and two batch kilns converted to thermal oil. The site also has one natural gas batch kiln as a backup for use during peak periods.

"We built our first continuous flow dry kiln in Lavington in 2017 and very quickly saw what the benefits in efficiency and overall quality of drying were with a continuous flow dry kiln over a conventional batch kiln," says Ross. "So plans were put in place here in High Level to build the two largest continuous flow dry kilns in North America in annual throughput."

Wellons Canada also built the \$33 million thermal oil energy plant.

Pinnacle now operates two wood pellet plants in Alberta, one in High Level and one in Entwistle, about an hour west of Edmonton. In terms of opportunities to



build even more plants in the province, Bax says that it really depends on areas having a sustainable, long term supply of wood residuals, access to market and customers for the wood pellet production.

"Our sales contracts are typically longer than 10 years, so you really need to be able to look out, not just at the moment, and understand who you are partnering with in terms of a sustainable supply and that they have a well-run business, capitalized appropriately, and that they are going to be there well into the future so that we can meet our obligations to our customers," Bax says.

