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The Last Word

The ethanol market is looking likea smart bet for the forest industry

By Tony Kryzanowski

Making ethanol from wood fibre is nothing new. But making enough ethanol to meet the world's growing demand? Now, that's a new chapter in this story that seems to be getting better and better every day for the Canadian forest industry. That's especially so after the recent drought in the American Midwest corn belt and with new ethanol production technology using wood fibre as the main feedstock on the horizon.

But why should the forest industry care about this commodity?

One of the main reasons is that an upcoming change in the American renewable fuel standard will require the ethanol component in a gallon of gas be increased from 10 to 15 per cent. The current market for ethanol in the U.S. alone is worth a staggering $30 billion per year. That is expected to increase to $90 billion per year by 2022.

The knock on ethanol production from corn has long been the use of a potential food product to produce energy. Another complaint has been the amount of energy it takes to ferment one litre of ethanol from corn.

Many have argued that the American government's support of ethanol production in the corn belt is uneconomical, and is nothing more than a subsidy to farmers to win votes.

However, ethanol production from wood fibre addresses both the food and energy argument. Many Canadian forestry operations have invested in bio-energy plants, using their own waste materials to generate power. By consuming their own bio-energy and using wood fibre—a non-food raw material—to produce ethanol, there is no doubt in my mind that forest companies should be global leaders in ethanol production.

A knock against cellulosic ethanol production has been the cost of production versus producing ethanol from corn. Well, an Ontario-based company, Woodland Biofuels, has an answer for that.

Woodland Biofuels has developed an ethanol production process—that avoids the expensive fermentation process—using all types of wood fibre as its main feedstock. The company's chief executive officer recently told me that Woodland Biofuels expects its production cost to be lower than the cost of producing gasoline at today's prices. They are putting the final touches on a $12 million demonstration plant in Sarnia, Ontario and are looking for forest industry partners to help commercialize their technology.

A growing market for ethanol and the arrival of new technology are both good arguments for more use of wood fibre in ethanol production, but there is also another, more fundamental reason why wood fibre should be the foundational raw material of this industry: it would be plain foolish to base the entire production of ethanol on corn. Why? The simple answer is weather. The drought in the American Midwest last year helps to prove my point.

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Another good example of how dangerous it is to base a non-food industry on an agriculture feedstock is a straw fibre, panelboard plant built years ago in a place called Wanham near Grande Prairie, Alberta. The science was lined up so that it became technically and economically feasible to make a panelboard product by mixing resins with straw to compete with wood fibre-based panelboard like medium density fibreboard (MDF). It's the material often found in cupboards and kitchen counter tops.

What happened? About six years of drought in the Peace River area resulted in very little local straw for the panelboard plant to use. It eventually did switch to wood fibre, but the transitional cost of investing in new equipment and trying to mesh the manufacturing equipment intended for agriculture fibre processing with wood processing equipment eventually proved too daunting.

So the evidence strongly suggests that using agricultural commodities as a supplement to biochemical production of something like ethanol is fine, but it's silly and irresponsible to base an entire industry on an expectation that the agricultural feedstock will be available consistently, like wood chips, which are available on a regular basis.

While I have no doubt that logic will eventually prevail as it relates to the foundational raw material used in ethanol production, this puts the forest industry in a rather interesting position. It's becoming obvious that wood fibre in all its forms is becoming more and more valuable. The work done to demonstrate just how many renewable, sustainable, and recyclable products can be derived from a tree has opened a lot of eyes. The quandary industry executives now face is how to divvy up that tree to maximize profit. What size, species, and percentage should go to solid wood, engineered wood products, pulp and paper, bio-energy and bio-chemicals?

The wood construction market is still a very good bet for solid wood and panelboard producers, but it seems to me that over the medium to long term, it makes a lot more sense for the pulp and paper industry to transition as quickly as possible to more bio-energy and bio-chemical production.