

Bruce Johnstone, Leader-Post

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In many respects, Saskatchewan is already a leader in the renewable fuels or biofuels industry in Canada.

Saskatchewan was the first province to mandate the use of ethanol in gasoline in 2001. Recently, Deputy Premier Clay Serby lobbied Ottawa to make the province a "centre of excellence" for renewable fuels research.

Production has increased more than 10-fold in the last five years -- from 12.5 million litres per year (from the Poundmaker AgVentures ethanol plant in Lanigan) to more than 165 million litres (with completion of the 130-million-litre Husky Energy plant in Lloydminster plant this fall). That could nearly double when the 150-million-litre Terra Grain Fuels plant at Belle Plaine comes on stream in late 2007.

But Regina agri-business consultant Ron Witherspoon believes we have only scratched the surface in exploiting our biofuels potential.

"I see the opportunity for Saskatchewan being bigger (as an energy producer) than Alberta because we have more biofuels potential," said Witherspoon, a consultant with International Management Group Ltd. of Regina.

In fact, Witherspoon believes biomass -- any organic matter that can be converted into biofuel or biogas -- will eventually overtake conventional energy sources in terms of importance in our energy mix.

Combined with Saskatchewan's abundant uranium resources, biomass also has the potential to substantially reduce Canada's greenhouse gas (GHG) emissions. "We're going to see a dramatic shift away from CO₂-producing energies to energies like nuclear (and biomass), which means Saskatchewan will be richer (in energy) than Alberta in the post-Kyoto era," Witherspoon said.

Witherspoon, who spent 27 years working with Farm Credit Canada and managed the province's venture capital fund for the agriculture industry, the Agri-Food Equity Fund, believes that renewable fuels, like ethanol and biodiesel, will have the greatest impact on Saskatchewan agriculture, next to China.

After a rocky start in the 1980s, U.S. ethanol producers are now making an "embarrassing amount of profit" for their owners, Witherspoon said. "The rate of growth in ethanol is so large that it will consume all the exportable corn produced in the U.S. in three years."

Canada is even better positioned to profit from the biofuels boom than the U.S., which is rapidly running out of land that can be used to produce corn for ethanol production, Witherspoon said.

That's certainly the view of Gary Drummond, chairman of Terra Grain Fuels, which is building a \$140-million, 150-million-litre-a-year plant at Belle Plaine. Drummond, a former Regina lawyer who made his fortune in Calgary in natural gas direct sales with Direct Energy, says he decided to get into the ethanol business after a conversation with his business partner last January.

Drummond was chatting with Reg Gross, who was involved in the abortive Broe Companies' ethanol project at Belle Plaine, which collapsed in early 2004 due to lack of financing. Drummond and Gross, who are partners in a farm operation near Regina, got talking about the economics of ethanol production, with sky-high oil prices and rock-bottom wheat prices.

As a result of that discussion, Drummond decided to ask another business partner, Tim LaFrance, to study the feasibility of producing ethanol from Prairie grain. As a veteran of the commodity business, Drummond was particularly interested in the competitiveness of wheat-based ethanol production versus U.S. corn-based ethanol.

"We had to determine in our own minds whether -- if we built this plant and couldn't market the ethanol in Saskatchewan or Western Canada -- we could compete with midwest (U.S.) corn plants." Drummond also wanted to be able to forward sell ethanol and "hedge" against the risk of fluctuating prices in the commodity market.

Drummond and LaFrance also ran "worst-case scenarios" -- in which wheat prices skyrocketed and oil and gasoline prices plummeted -- but they couldn't find that one "perfect storm" that would make a wheat-based ethanol plant unviable.

So this spring Drummond and a handful of investors decided to take the plunge and build an ethanol plant on the site where Denver-based Broe Companies tried and failed just two years earlier.

This time, however, it would be different. Where the Broe deal hinged on government equity participation of 40 per cent, Terra Grain Fuels sought and received no government equity position in the project. And while the Broe deal ultimately foundered for lack of financial backing, Terra Grain had no problem raising financing for its project.

In fact, Saskatchewan-based venture capital funds and financial institutions were lining up to support the project. A consortium led by Investment Saskatchewan and PFM Capital Inc. raised \$40 million in subordinated debt, while \$50 million in senior debt was provided by a group of investors led by Conexus Credit Union, Farm Credit Canada and Concentra Financial Services.

Drummond and his partners, mainly "family, friends and business associates," put up another \$50 million in equity capital, which shows considerable confidence in the project. In fact, Drummond is more convinced than ever that the project will be successful.

While construction costs are 15 to 20 per cent higher than a U.S. corn ethanol plant, lower operating costs -- in terms of utilities and higher-value byproducts -- more than offset the higher capital cost of a wheat-based ethanol plant. Even recent increases in construction costs, which inflated the estimated project price from the original estimate of \$115 million-\$130 million to \$140 million-plus haven't dampened Drummond's enthusiasm for the project.

"We feel, long-term, we can be very competitively priced against the U.S. ethanol market," Drummond said.

With the federal government's new biofuel strategy now taking shape, the economics of producing ethanol from wheat have rarely, if ever, been better.

And, as a long-term buyer of 15 million bushels (410,000 tonnes) of wheat a year, the plant will be good news for local producers. And, of course, burning ethanol is better for the environment than burning gasoline.

We're not philanthropists," Drummond said. "But the fact is it's good for the farm economy and good for the environment."

While Terra Grain Fuels will be one of the largest wheat-based ethanol plants in Canada when completed in late 2007, it is by no means the only ethanol plant in the works in Saskatchewan.

In fact, Lionel LaBelle of the Saskatchewan Ethanol Development Council says there are 30 plants, either under construction or in the planning stages in Saskatchewan, which all together would produce more than 1.7 billion litres of ethanol annually.

Of course, not all of them will be built. Even if they were, LaBelle says Canada would still be short of the two billion litres of ethanol required to meet the federal RFS of five per cent by 2010. That means 10 or 12 more plants similar in size to that being built by Terra Grain. LaBelle says this province could easily produce one billion litres -- three billion litres, if it really tries hard.

"Saskatchewan can be Canada's largest producer of renewable energy in Canada," LaBelle told the Prairie Policy Centre, a Saskatoon-based think-tank, in September. That's because Saskatchewan not only has 47 per cent of the farmland in Canada, it has the most efficient producers and the largest biomass resource in the country.

But LaBelle would like to see a lot of smaller plants -- 15 million to 25 million litres in size -- preferably integrated with a 20,000- to 25,000-head cattle feedlot to utilize the distiller's grain byproduct of the ethanol process, similar to the Lanigan plant.

The proposed 25-million-litre plant at North West Terminal, a producer-owned inland terminal at Unity, is one of the province's more advanced projects. The company recently announced it had raised \$16.4 million in a share offering, which will be used to build an

ethanol plant costing about \$35 million. Construction is expected to begin in May with completion set for summer of 2008.

Jason Skinner, general manager of NWT, said the shareholders were "pleasantly surprised" at the take-up of shares in the Unity area. "We've received quite a lot of local support. We're definitely pleased with the interest in the project," he said.

Part of the attraction of buying shares in the plant was the ability of producers to sign five-year contracts to supply the 68,000 tonnes of grain the plant requires annually. NWT is also using the screenings or dockage from the grain terminal as fuel to run the ethanol plant.

"It's a nice fit. We have grainhandling facilities, so we don't need to duplicate those, and we can use the screenings as biomass in the ethanol plant. Those are good synergies."

Ethanol is the most advanced biofuel industry in the province, but it's not the only one. Biodiesel, which uses canola oil as a replacement for sulphur up to a 20-per-cent blend, is a small, but growing, industry, with huge potential in Saskatchewan.

The first and, to date, the only biodiesel producer in the province, Milligan Bio-Tech of Foam Lake, was incorporated in 1996 by a group of entrepreneurs working with the Saskatchewan Canola Development Commission, Agriculture and Agri-Food Canada, the University of Saskatchewan and Saskatchewan Canola Growers Association.

Production of biodiesel and other products began in 2001, with sales nearly doubling every year. A crushing plant was added in 2006 to provide canola feedstock for the production of biodiesel. Nevertheless, of the 100 million litres of biodiesel produced in Canada, very little is produced on the Prairies. That may change with the announcement of two canola crushing plants for the Yorkton area -- a \$100-million, 840,000-tonne-a-year plant by James Richardson International and \$90-million, 850,000-tonne plant by Louis Dreyfus Canada.

But ethanol and biodiesel are not the only renewable fuels in Saskatchewan's energy future -- synthetic gas from forestry waste and cellulose from wheat straw and other forms of biomass, such as pelletized switchgrass, could make Saskatchewan the Saudi Arabia of biofuels.

Witherspoon says biomass, mainly from agriculture, but also forestry, will supplant oil, gas, hydro, nuclear, and wind power in the next 50 years. That's good news for farmers, the forestry industry, as well as every resident of the province.

"It means that Saskatchewan will be richer than Alberta in all the green (energy) areas -- nuclear, biomass, clean-coal technology."

THE FACTS ...

- Saskatchewan was the first province to mandate the use of ethanol in gasoline in 2001.
- There are 30 plants, either under construction or in the planning stages in Saskatchewan, which would produce more than 1.7 billion litres of ethanol annually.
- The federal government is promising \$345 million in incentives for biofuels research and development, to reach five-per-cent ethanol content in gasoline by 2010 and two-per-cent biodiesel content in diesel and heating oil by 2012.
- Saskatchewan's bio products strengths include bio-fuels and energy (ethanol, bio-gas - diesel and -oils, lubricants) and bio-materials (strawboard, insulation, bio-composites).

Source: federal and provincial governments



Craig Weisbrod, with Clifton and Associates Ltd., works on one of the 218 piles needed for a silo at Terra Grains Fuels ethanol plant.

Photograph by : Don Healy, Leader-Post