

Ontario to become hub for “green” jet fuel

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If you're someone who regularly flies to Europe, expect to be hit next year with a new carbon charge.

As of Jan. 1, 2012, the European Union will require that all 2,000 or so airlines travelling to Europe be part of the region's carbon cap-and-trade scheme, which is expected to add between \$1 billion and \$2 billion annually to international airline costs.

This will be passed along to airline customers in the form of higher fares or extra fees. It's no shocker that The United States, Japan and China are among several countries protesting. But the EU is determined, in the absence of meaningful international action through the United Nations, to tackle a source of emissions that represent up to 3 percent of the global total.

Confronted with the coming requirements, airlines face two choices: pay the extra charge or use alternative fuels that are exempt from the charge. Unlike cars and trains, electrification isn't an option for airplanes.

Choosing the cleaner-fuel route means securing a reliable source, and this is where Los Angeles-based Rentech Inc. enters the picture. The company announced earlier this week that it plans to build a \$500 million renewable jet fuel refinery in Sault St. Marie, which would create up to 400 jobs. The refinery will be called the Olympiad Renewable Energy Centre and produce more than 85 million litres a year.

Rentech wants to turn forest waste and certain unmarketable tree species into jet fuel by turning the biomass into a synthesis gas, and converting that into biofuel that could replace kerosene jet fuel.

The syngas conversion will be based on a Fischer-Tropsch process, which for all you trivia lovers out there was used by the Nazis during World War II to turn coal into liquid fuel.

The news last week, which got surprisingly little coverage, is that the Ontario government will give Rentech access to 1.1 million cubic meters of crown timber in the Sault St. Marie area. With this biomass available, Rentech has enough supply to justify building its refinery,

which could be operating by the end of 2015.

“This project is significant,” said Hunt Ramsbottom, the company’s chief executive. “This is the largest crown award ever in Ontario.”

The key to all this is to make sure the timber is sustainably harvested and that Rentech’s process is efficient and returns sufficiently more energy than it consumes. Otherwise, claims the fuel is “renewable” are dubious.

“This will be an extremely low-carbon fuel,” Ramsbottom assured.

Rentech’s jet fuel has already been certified for use as a commercial aviation fuel replacement when supplied as a 50-50 blend with kerosene. Ramsbottom expects he’ll get certification to use the fuel as a 100-per-cent replacement within the next two years.

The company is counting on the EU carbon charge to create domestic demand. A CN Rail line runs past the planned refinery and it could deliver renewable jet fuel directly to Pearson International Airport, easily accessible to Europe-bound flights.

“We fully expect to be sending this product to Pearson,” said Ramsbottom. Renewable jet fuel can come from a variety of sources, including algae, camelina, jatropha and wood.

At BIO World Congress, an industrial biotechnology conference held this week in Toronto, panellists on an aviation fuel panel generally agreed that jet fuel can be made sustainably and economically from plant materials. Michael Lakeman, a director of biofuel strategy for Boeing Co.’s commercial airplane business, expects 1 per cent of global jet fuel to come from biofuel sources by 2015.

He suggested growth could rise significantly after that. “The first one per cent is the most difficult one per cent,” said Lakeman, adding that volatile oil prices are causing pain in the market. At the same time, making kerosene out of heavy oil, such as from shale or tar sands, is more difficult and becoming less attractive for refiners.

“In some ways it really is an existential crisis for aviation,” he said. “Sustainable biofuels are critical to the health of our aviation customers.”

The U.S. Navy echoed that view. Chris Tindal, director of operational energy, said the navy’s goal is to have 50 per cent of its energy from alternative sources by 2020. By 2012 it wants all airplanes and ships in its fleet to be certified to run on biofuels, and within a few months the navy will start seeking bids from suppliers. “We need to send that demand signal,” said Tindal.

This bodes well for Rentech, and Ontario’s role in helping meet demand. But there are hurdles. Charles Fishel, chairman of Barbados-based BioJet Corp., said the problem isn’t that the market can’t produce a significant amount of renewable jet fuels; it’s that the market would rather turn wood, algae, jatropha and other materials into higher-value products, such as green chemicals and pharmaceuticals.

Fuel, in the grand scheme of things, is a low-value product. “My concern is not that we can’t produce the oil, it’s that the oil will go toward a non-fuel use,” said Fishel. “There’s no reason for companies to lower their prices, and sacrifice profits, just to service the aviation market.”

The good news? We’re no longer talking about whether we can make this stuff. The debate has shifted to how it will be used.

As for Rentech, its deal with Ontario must still be formalized. The company is also hoping to get up to \$200 million in funding from Sustainable Development Technology Canada to help build the plant. (The funding is more like a loan, as a percentage of the plant’s future cash flow will go toward repaying the federal agency).

If all goes well, Pearson airport could be getting its first commercial delivery of renewable, Ontario-made jet fuel within five years.