

Ethanol's sweet success

Brazil is driving a revival in sugar cane fuel

By Carolyn Wiclan

For Ronaldo Silveira Ribeiro, the future is here, and it's called ethanol. The São Paulo-based cab driver switched last year from gasoline and cannot see himself going back soon. The sugar-based fuel's price is more than one-third below what gasoline now sells for.

Silveira Ribeiro is not alone in his enthusiasm. Henry Joseph, who manages engine test development and the emissions lab at Volkswagen Brazil, is travelling the world to speak about Brazil's ethanol successes and how others might copy them elsewhere.

Brazil is the world's biggest ethanol maker and exporter, and delegations from Australia, Canada, Colombia, England, Germany, Japan, Thailand, Sweden and South Africa have paid visits to learn more about the fuel.

"We have 25 years' experience with ethanol," Joseph said. "We can export the technology, engine parts, and have plants in Brazil and China."

President Hu Jintao of China underscored his country's interest in Brazilian ethanol during a visit to the country last month. And in May in Shanghai, the Brazilian president, Luiz Inácio Lula da Silva, made part of an ethanol-fueled Fiat to the mayor of the city during a trade mission to China. Sales of passenger cars in China were up 17 percent in the first 11 months of 2004, compared with a year earlier, and although sales have slumped recently amid efforts to cool the economy, industry observers figure there is plenty of pent-up demand.

"Ethanol is a hot topic on our trade agenda," said Flavio Damico, head of the agriculture and commodities division in Brazil's Foreign Ministry. With China, which he describes as a "strategic partner," Brazil has established a joint working group on ethanol, with technical talks due to start next month. "Brazil could play a leading role in the Asian ethanol fuel market," Damico said.

The buzz around ethanol today may

'We see signs of a real boom in ethanol exports from Brazil and Latin America.'

come as a surprise, or perhaps as déjà vu, to those who remember when the alternative fuel first emerged as a viable substitute for newly scarce foreign gasoline in the 1970s. Distilled from sugar cane into alcohol through fermentation, ethanol is appealing because it burns cleaner than oil and is a renewable fuel.

But the moment was short-lived. Ethanol was written off by 1990 because high production costs made its price at the pump higher than oil.

Why ethanol is making a comeback is a simple matter of economics. With world oil prices topping \$40 a barrel, driving up inflation and curbing corporate profits and hiring, cheaper fuels become more attractive to develop. Alternative energy experts figure that ethanol is competitive when oil prices are above \$30 a barrel. In many countries, ethanol also complements gasoline through a 10 percent blend to cut pollution.

Given the geopolitical climate and the likelihood that oil prices will stay high, ethanol watchers say there is more upside to come. E.O. Licht, a commodities research concern in Germany, says that world ethanol production should more than double by 2012,

to 17.2 billion gallons from 8.2 gallons this year.

"Countries are desperately looking for alternatives to oil," said Lew Fulton, an economist at the Paris-based International Energy Agency.

This is where Brazil comes in. Experts say the world's fifth-biggest country is uniquely positioned to fuel a boom in ethanol as an alternative to gasoline, thanks to a combination of technology, high sugar-crop yields, and low costs for land and labor.

Brazilian ethanol exports are expected to rise to 2.4 billion liters, or 638 million gallons, this year, more than triple the 656 million liters that Brazil sold abroad in 2003, primarily to India, the United States, South Korea, Japan and Sweden. Brazil now accounts for nearly 40 percent of world production.

"We see signs of a real boom in ethanol exports from Brazil and Latin America," Fulton said.

In addition to setting itself up as the world's ethanol pump, Brazil is gearing much of its domestic energy economy around the fuel:

- Ethanol soaks up almost half of Brazil's annual sugar cane production of 390 million tons.

- Sales in Brazil of dual-fuel cars, which allow drivers to choose between ethanol and gasoline depending on fuel prices, shot up to 284,500 in the year through November, compared with 48,100 a year earlier. The share of such "flex fuel" cars, which cost about the same as gasoline-only cars, is projected to double again in 2005 to reach 40 percent of car sales in Brazil. In contrast to the 1970s, the fuel is widely available, thanks to a nationwide network of ethanol service stations.

- In October the Brazilian jet maker Embraer announced the first mass-produced airplane to be powered by ethanol. More engine power, lower maintenance costs, and fuel prices of a quarter the price of aviation fuel were cited as the benefits of using ethanol in the cropduster aircraft.

- Transpetro, the logistics unit of Petróleo Brasileiro, the leading Brazilian oil producer, handles the piping and delivery of ethanol around the country. In time, some oil industry analysts say, it could get involved in



ethanol exports to big countries because of its links with overseas fuel buyers.

Brazil is also carving out a niche supplying consulting services to countries considering ethanol for their own use or export. The fuel is viewed as ideal for developing economies in tropical zones with low land and labor costs.

"China is looking at ethanol to help ease pollution in big cities, employ its farmers and clean up the environment prior to the 2008 Olympic Games in Beijing," said Piliro Nastari, president of Datagro, a sugar and ethanol consulting firm in Brazil.

Australia and Thailand are also looking at developing their ethanol industries to feed demand for energy in the region, especially from China.

Penalties or tempting tax breaks from new international accords like the Kyoto Protocol on global warming

sugar cane being harvested in Brazil to be made into ethanol, an alternative to gasoline. Brazil, the world's biggest ethanol maker and exporter, is benefiting from renewed demand for the fuel as oil prices have soared. At left, a lab technician at one of Brazil's ethanol plants.

are pushing many countries in Europe and Asia to consider ethanol again. And a European sugar industry in search of greener pastures before subsidies end to comply with new global trade laws also has French sugar processors like Beghin Say and Tereos expanding into Brazil.

Brazil is even helping other countries build their ethanol industries. India, the world's No. 2 sugar producer, is studying wider use of ethanol to reduce its reliance on oil and to offset rising fuel costs for an auto fleet that is growing along with its middle class.

"Energy security is a big issue for us," said Amitava Tripathi, the Indian ambassador to Brazil. "We get 70 percent of our oil from outside." Dedini, the leading Brazilian maker of ethanol distillery machinery, has already sold to several distilleries in India.

With the important issues of cost, supply and infrastructure already sorted out, Brazil looks likely to hold its lead in ethanol production. But there are limiting factors, including duties and quota systems in the United States and Europe that, as Fulton of the International Energy Association said, are "keeping a lid on ethanol trade today."

Ethanol producers are undeterred. "With gas prices so high, even with a 54-cents-on-the-gallon U.S. import duty and 2.5 percent value added tax on Brazilian ethanol, the fuel is attractive for the U.S. market," Nastari said.

Against this backdrop, it is not surprising that venture capital firms have

single out ethanol for alternative energy investments. Ecoinvest, a financial adviser in São Paulo, introduced a fund during the summer for which it expects annual returns of as much as 15 percent from investments in renewable energy plants, including those for ethanol.

For individual investors, the opportunity to profit directly from renewed interest are limited — for now.

Most ethanol suppliers are private, but there are some brokers and technology makers that should see a lift from the swing to sugar-based fuels.

One way to invest is through sugar certificates, which are essentially shares in a fund that buys sugar futures. Buying the shares lets the owner benefit from movements in sugar prices without the volatility or risk associated with holding commodity futures. Minimum investment is \$10,000. Sugar prices soared in November but may pull back along with other commodity prices over the coming months, said Marc Faber, a Hong Kong-based contrarian investor who runs his own fund. But he still finds sugar attractively priced.

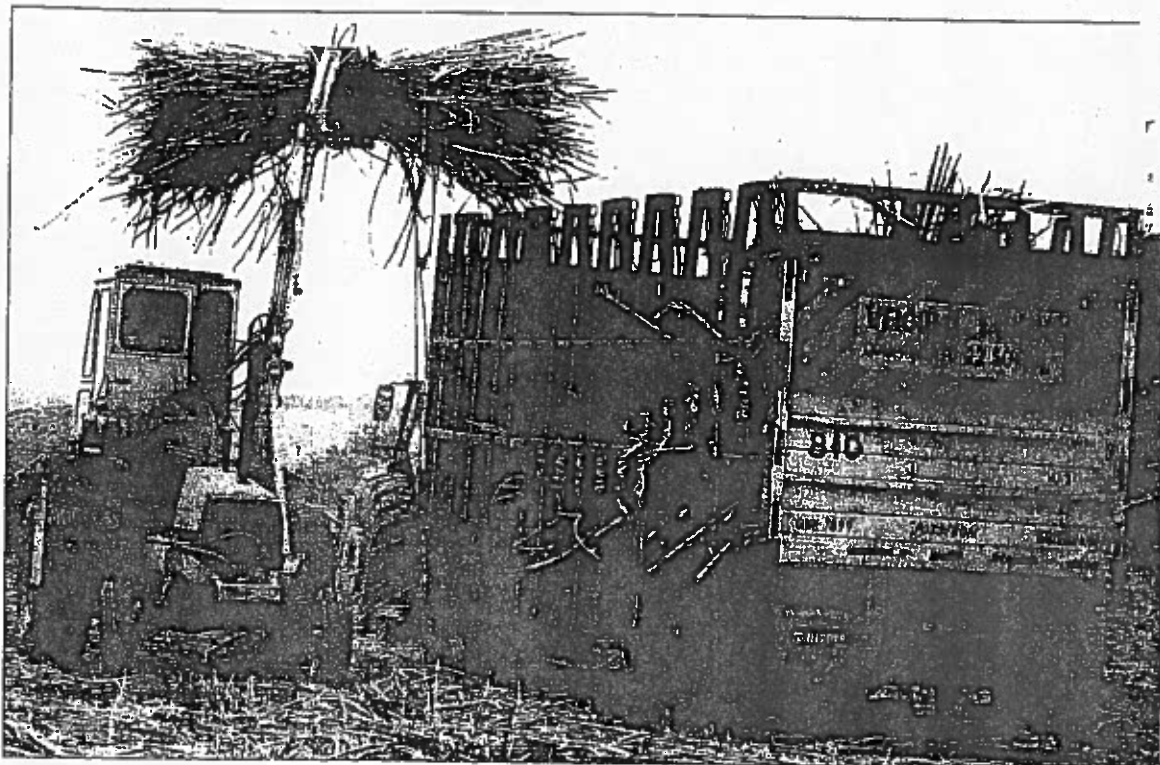
"If oil prices rise, they will probably drive some demand for ethanol production," Faber said.

For equity investors, farming machinery makers like Bardella should see a lift from the growing global appetite for ethanol, which requires more sugar harvesters. The company trades on Brazil's Bovespa exchange.

And bonds are another way. Am. Cossin, a privately held company that operates port terminals and sugar mills across Brazil, has just released \$200 million in bonds to finance expansion. Traders say similar companies are likely to follow suit.

"There are no restrictions on foreign capital investments in ethanol," Nastari said. "We see an increasing presence of international capital in this industry."

International Herald Tribune



Photographs by John Mauer for the International Herald Tribune