

Brazil leading world in effort to boost use of ethanol

Friday, March 10, 2006 Posted: 1822 GMT (0222 HKT) CNN

<http://edition.cnn.com/2006/WORLD/americas/03/10/brazil.ethanol.example.ap/>

In agro industrial complex ringed by fields of 12-foot-high sugarcane, a giant mechanical claw dumps stalks by the tons into an even larger crushing machine. Here's where the renewable fuel used to power seven of every 10 new Brazilian cars gets its start.

Sugary slurry flows into a row of gleaming stainless steel distilling tanks, transforming cane harvested only hours earlier by machete-wielding farm laborers into ethanol, the alternative fuel now promoted by President George Bush to end what he calls America's addiction to imported oil.

While Bush set 2025 as the target date for replacing three-fourths of the oil imported from the Middle East with American ethanol, Brazil already satisfies nearly half of its domestic passenger vehicle fuel demand with ethanol.

After decades of government intervention and subsidies, the industry here is a thriving free market business, complete with ethanol pumps at every filling station in Latin America's largest country. Millions of cars run on either ethanol, gas or any combination of the two. And there's plenty more land available for sugarcane cultivation as the planet's biggest sugar producer gears up to become its undisputed long-term ethanol supplier.

Brazilian ethanol producers and international energy experts agree that the United States will probably never come close to reaching Brazil's potential as an ethanol superpower. But they say Brazil offers clear lessons on how to boost domestic ethanol use.

What the United States needs most, they say, are more cars that run on the fuel, and filling stations that offer it.

"Petroleum is almost history," warned Celso dos Santos, commercial director of the Cocamar farmers cooperative that owns the Sao Tome distillery. "People stopped using wood for fuel and replaced it with coal. Then came petroleum, but we're getting to the end of the petroleum era."

With the sickly scent of pure alcohol wafting through the air around the Cocamar plant, a thousand workers toil around the clock during the March to November cane harvest season, distilling 92,500 gallons of ethanol daily that is trucked away for immediate sale at the pumps.

Sugarcane waste is burned to generate steam for the turbines, meeting all the plant's electricity needs. Excess power will soon light up half the homes in Sao Tome, a southern Brazilian town of 6,000 people.

The technology isn't even cutting edge, but the industry is making profits like never before and has a bright future thanks to a 1970s decision by Brazil's former military dictators to subsidize ethanol production and require distribution at every gas station.

A 1980s Brazilian fad with cars that ran only on ethanol petered out when oil prices fell in the early 1990s. But the fuel came back into vogue in 2003 when automakers started rolling out cars that run on gasoline, ethanol or any combination of the two. With international oil prices reaching record highs, Brazilian drivers turned to "flex-fuel" cars, buying ethanol at half the price of gas until late last year.

Some experts predict flex-fuel car sales will reach 90 percent of Brazil's new car market within several years, while others say recent ethanol price hikes could keep penetration at the current level.

Getting a fraction of that acceptance in the United States could take decades, analysts say, even with new incentives and regulations.

"Since the government does not dictate what happens in the marketplace, the process will be much slower than what Brazil experienced," said Amani Elobeid, an economist and international sugar analyst at Iowa State University.

A small but growing percentage of American-made vehicles are manufactured to run on the U.S. version of ethanol called E85, which is 85 percent alcohol distilled from corn and 15 percent gasoline. But many American drivers don't even know their vehicles can run on E85, and the fuel is available at only 610 American filling stations.

Brazil's state-imposed pump price for gasoline includes much higher taxes than the price U.S. consumers pay. Gas in Brazil now costs the equivalent of \$4.69 per gallon. Pure ethanol -- taxed at slightly lower levels and cheaper to produce -- goes for about \$3.59 per gallon at all of the nation's 30,000 stations. It fueled 48 percent of Brazil's passenger vehicles last year.

Meanwhile, Brazil is trying to encourage ethanol use in countries from Asia to Europe.

President Luiz Inacio Lula da Silva said in Britain this week that Brazil wants "to plant the oil of the future" and promote radical changes in how world generates energy.

Brazilian ethanol makers intent on boosting exports have been beaming ever since Bush used his January State of the Union address to plug ethanol.

"We felt that in our share price," said a smiling Paulo Diniz, chief financial officer of Grupo Cosan, Brazil's largest ethanol producer and the world's second largest after the U.S.-based Archer Daniels Midland Co.

A few years ago, Cosan was lucky to host a tour every four or five months for big foreign investors. Now the firm gets visits every two weeks, including a VIP tour in February for Google Inc. billionaires Larry Page and Sergey Brin.

Cosan is considering an initial public offering on Wall Street within the next year and a half, Diniz said. Other foreign companies may consider jumping on the bandwagon by buying Brazilian ethanol firms.

"Phones have been ringing all over the world after Mr. Bush spoke," said Cristoph Berg, an ethanol analyst with Germany's F.O. Licht, a commodities research firm. Investors "are waking up to the notion that ethanol really seems to have entered the mainstream."

Brazil's ethanol experience hasn't been so rosy for consumers in recent months. Prices surged during the annual November-March production lull while the cane grew. Ethanol remains cheaper than gas, but flex-fuel car drivers can get better fuel efficiency with gas when the price difference between the two narrows significantly.

In Sao Tome, the cooperative that owns the ethanol distillery is betting on its best profits since it bought the operation in 1993. Cocamar's production cost is \$1.10 per gallon, and wholesalers are buying the fuel for \$2.68 -- up from \$1.44 last year.

About the only thing that could hurt Brazil's ethanol industry now would be an almost unimaginable plunge in international crude oil prices, currently trading above \$60 per barrel, said Almir Hawthorne, the distillery's industrial manager.

"Oil could drop to \$35 or \$40 per barrel, and ethanol producers would still make money."

March 13, 2006

Editorial: Seeing ethanol as the future

<http://www.lasvegassun.com/sunbin/stories/sun/2006/mar/13/566668790.html?Seeing%20ethanol%20as%20the%20future>

We should not be pessimistic about replacing oil with ethanol - Brazil has already done it

What the United States is attempting to do in replacing gasoline with ethanol has already been accomplished in Brazil - and then some. President Bush, in his State of the Union speech, set 2025 as the target date for cutting Middle East oil imports by three-quarters through increased domestic production of ethanol. Brazil is already long past that stage. It no longer imports any oil and is using the resultant savings to revitalize its rural areas.

Brazil's accomplishment serves as an example of what can be done if a nation is serious about energy change. The beginnings were not especially enviable - its dictatorial government ordered the revving up of an ethanol industry and its population was forced to drive ethanol-only vehicles.

Nearly 30 years later, though, under a more democratic government, ethanol is a booming free-market industry in Brazil, a South American country with a population exceeding 185 million. According to a recent Associated Press story, seven of every 10 new Brazilian cars have flex-fuel technology, enabling them to use either gasoline or ethanol. The story quoted experts as saying 90 percent of the new cars in Brazil will have that technology within several years.

In the United States, only about 5 million vehicles out of more than 240 million on the road have the flex-fuel technology. But all indications are that this statistic will change soon and for a much saner reason than governmental dictate - a profit motive.

Brazil has the advantage of having the most perfect climate and soil in the world for sugar cane, the best plant on Earth for distilling into ethanol. But the United States is no slouch - we have corn, prairie grass, wood chips and other organic materials in abundance that are also ideal for producing ethanol.

The American ethanol plants in operation today, especially the one in Decatur, Ill., run by Archer Daniels Midland, are in full production mode. Investors are pouring money into ethanol, as they see it someday becoming the dominant automotive fuel. And with today's technology, which combines it with 15 percent regular gasoline, consumers are finding that it is easy on their vehicles and pocketbooks.

Ethanol is also easy on the environment, as it emits a fraction of the greenhouse gases that gasoline does, and can be produced using steam generated by the clean burning of waste plant material. If American consumers can dream of a day when the hazards of oil - its expense, environmental damage and largely Middle East origins - are no longer major issues, then our country can meet or hopefully even beat the 2025 goal.

[Problems or questions?](#)

[Read our policy](#) on privacy and cookies.

All contents © 1996 - 2007 Las Vegas Sun, Inc.

April 17, 2006

Editorial: The rush for ethanol is on

<http://www.lasvegassun.com/sunbin/stories/sun/2006/apr/17/566620088.html?Seeing%20ethanol%20as%20the%20future>

For the first time in the United States, it appears a renewable fuel is challenging oil

A farm tractor hauling five large wagons full of sugar cane was pictured April 10 in the business section of the Los Angeles Times. The photo, taken in the South American country of Colombia, accompanied a story about the burgeoning ethanol industry in that country. Although ethanol can be made from corn, prairie grass, wood chips and other organic sources, sugar is considered the best plant in the world for distilling into ethanol.

It seems that nearly every magazine, newspaper, wire service and TV and radio station, not to mention the Internet, is reporting these days about ethanol and its probable future as a major substitute for gasoline in countries around the world. Additionally they are reporting about the surge in sugar and corn production. A recent radio report said Cuba is upping its sugar production in response to its new demand as a source of ethanol.

An April 13 story in the Wall Street Journal was headlined, "Ethanol shifts share prices into overdrive." The lengthy article mentioned several U.S. companies expanding into the ethanol market, including the leaders, Archer-Daniels-Midland (better known as ADM) in Decatur, Ill., VeraSun Energy in Brookings, S.D., Aventine Renewable Energy Holdings in Pekin, Ill., and Cargill in Minneapolis. The Journal quoted one analyst as saying of the ethanol craze, "It looks like a rush to me" - as in gold rush.

The rush includes Microsoft co-founder Bill Gates. His investment company, Cascade Investment, agreed last November to put \$84 million into Pacific Ethanol in Fresno, Calif., after the company announced plans to build five ethanol plants on the West Coast. There are always risks involved in investing, but more and more investors are taking those risks with ethanol.

An Associated Press article in March reported on Brazil's ethanol industry, which is so successful that the country has weaned itself entirely from imported oil, needing only that which is produced domestically. A key to Brazil's success is flex-fuel vehicles, which enable their owners to choose either gasoline or ethanol. So many Brazilians are freely choosing ethanol that millions in savings from oil imports are being spent to revitalize the country's rural areas.

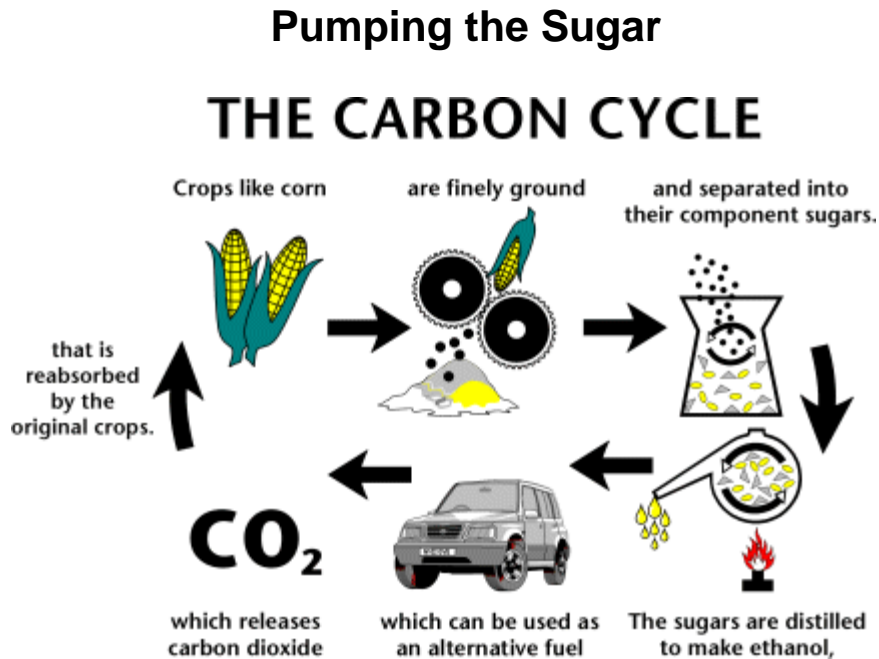
It appears that we are seeing, for the first time in the United States, a serious challenge to the dominance of oil-based gasoline to power our cars and trucks. We hope American car manufacturers see the possibilities as clearly as the ethanol companies, and rise to the challenge by producing large quantities of flex-fuel cars in the coming years.

Problems or questions?

Read our policy on privacy and cookies.

All contents © 1996 - 2007 Las Vegas Sun, Inc.

THOMAS FRIEDMAN: THE ENERGY HARVEST - ETHANOL ALTERNATIVE TO OIL
by [jo swift](#) at 02:19PM (CEST) on September 15, 2006 | [Permanent Link](#) | [Cosmos](#)
<http://www.radicalleft.net/blog/archives/2006/9/15/2328893.html>
http://spot.colorado.edu/~kaplan/Current_Events/Brazil-Freidman.html



*I came to Brazil to try to better grasp
what is real and what is not in the ethanol story,
because no country has done more
to pioneer sugar ethanol than Brazil
Not only is ethanol for real,
but we have not even begun to tap its full potential*

São Paulo, Brazil - Any time that OPEC got a little too overzealous in pushing up oil prices back in the 1970's, the legendary Saudi oil minister Sheik Ahmed Zaki Yamani was fond of telling his colleagues: Remember, the Stone Age didn't end because we ran out of stones.

What he meant was that the Stone Age ended because people invented alternative tools. The oil age is also not going to end because we run out of oil.

It will end because the price of oil goes so high that people invent alternatives. Mr. Yamani

was warning his colleagues not to get too greedy and stimulate those alternatives.

Too late - oil at \$70 a barrel has done just that. One of the most promising of those alternatives is ethanol, an alcohol fuel made from corn, sugar cane or any biomass.

I came to Brazil to try to better grasp what is real and what is not in the ethanol story, because no country has done more to pioneer sugar ethanol than Brazil.

My impression, after talking to a range of Brazilian experts, is that not only is ethanol for real, but we have not even begun to tap its full potential.

With just a few technological breakthroughs, Brazil really could be the Saudi Arabia of sugar and we could actually achieve that energy dream of getting "barrels from bushels."

Since the 1970's oil shocks, Brazil has, with lots of trial and error, made ethanol part of its daily life.

It hits you the minute you drive into a gas station in São Paulo, where you need two things: a credit card and a calculator.

In rough numbers, sugar ethanol now sells here at a little over \$2 a gallon and gasoline at a little more than \$4 a gallon.

Because sugar ethanol gets only about 70 percent of the mileage of gasoline, drivers here do the math each day and figure out if ethanol is at least 30 percent less than the price of gasoline. If it is, many will fill 'er up with sugar cane.

Brazilians have that luxury because there are 34,000 gas stations here that offer both gasoline and ethanol (compared with around 700 in the U.S.) and because 70 percent of new cars sold here can run on either gasoline or sugar ethanol. As a result, Brazil has replaced about 40 percent of its gasoline consumption with sugar ethanol.

I visited the Cosan sugar mill northwest of São Paulo, Brazil's largest, where you fly in over an ocean of green sugar cane. The cane is harvested onto big lorries and trucked to the Cosan distillery.

There, the juice is extracted and converted to either crystal sugar or ethanol. The remaining cane waste - called bagasse - is used to fuel huge steam boilers that produce enough

electricity to both power the refining process and leave a surplus to be sold back to the grid.

It's important to understand this process to appreciate just how "much more energy we could get from sugar cane" with just a few more breakthroughs, explained Plinio Mario Nastari, one of Brazil's top ethanol consultants.

Think of each stalk of sugar cane as containing three sources of energy. First, the juice extracted from the cane is already giving us ethanol and sugar.

Second, the bagasse is already heating very low-technology, low-pressure boilers, giving us electricity. But if Brazil's refiners converted to new high-pressure boilers, you could get three times as much electricity.

Finally, when the cane is harvested the tops and leaves are often just left in the field. But this biomass is rich in cellulose, the carbohydrate that makes up the walls of plant cells.

If the sugar locked away in cellulose also could be unlocked - cheaply and easily by a chemical process - this biomass could also produce tons of sugar ethanol. There is now a race on to find that process.

A breakthrough is expected within five years, and when that happens it will be possible to extract "more than double" the amount of ethanol from each sugar stalk, said José Luiz Oliverio, a senior V.P. at Dedini, the Brazilian industrial giant, which has a pilot cellulosic ethanol project.

I asked Brazilian experts what they'd do if they were the U.S. president. The consensus answer: Require U.S. oil companies to provide ethanol fuel pumps at all their gas stations, require U.S. auto companies to make all their new cars flex-fuel and improve mileage standards, and get rid of the crazy 54-cent tariff we've imposed on imported sugar ethanol (to protect our farmers). And then let the market work.

Demand for ethanol would soar. This would push us faster down the innovation curve, so we'd solve the cellulosic ethanol problem quicker, and that would strengthen the democrats in our hemisphere and weaken the petrocrats in the Middle East. If only we were as smart as Brazil ...

[Thomas Friedman/NYT via Ed Strong](#)

Keywords: [ethanol](#), [oil](#), [alternative](#), [sugar](#), [friedman](#), [energy](#)
Technorati Tags: [ethanol](#), [oil](#), [alternative](#), [sugar](#), [friedman](#), [energy](#)

