

Report takes look at short- and long-term renewable fuel issues

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Washington Insight: German Report Finds Biofuels Poised to Cut World's Dependence on Oil

The future for biofuels in global transportation appears to be bright, according to a report released last week by the Worldwatch Institute and German Agencies for Technical Cooperation and Renewable Resources. The report, "Biofuels for Transportation: Global Potential and Implications for Sustainable Agriculture and Energy in the 21st Century," was sponsored by the German Agriculture Ministry.

Biofuels currently have almost no place to go but up. As the report notes, world biofuel production last year totaled only 670,000 barrels per day, the equivalent of about 1 percent of the global transport fuel market. However, in selected countries, that is hardly the situation.

An around-the-world update, according to the report's findings:

- **The European Union.** The EU has set a goal of obtaining 5.75 percent of transportation fuel needs from biofuels by 2010 in all member states. Earlier this year, the EU adopted an ambitious strategy for biofuels that includes a number of market-based, legislative and research measures to increase the production and use of biofuels. Germany and France, in particular, have announced plans to rapidly expand both ethanol and biodiesel production, with the aim of reaching the EU targets before the deadline.

- **Canada.** In Canada, the government aims for 45 percent of the country's gasoline consumption to contain 10 percent ethanol by 2010. Ontario will be the center of the ethanol program, where the government expects all fuel to be a 5 percent blend of ethanol by 2007.

- **Brazil.** The government hopes to build on the past success of the Proálcool ethanol program by expanding the production of biodiesel. All diesel fuel must contain 2 percent biodiesel by 2008, increasing to 5 percent by 2013.

- **Southeast Asia.** Thailand, eager to reduce the cost of oil imports while supporting domestic sugar and cassava growers, has mandated an ambitious 10 percent ethanol mix in gasoline starting in 2007. For similar reasons, the Philippines will soon mandate 2 percent biodiesel to support coconut growers, and 5 percent ethanol, likely beginning in 2007. The palm oil industry plans to supply an increasing portion of national diesel fuel requirements in Malaysia and Indonesia.

- **China and India.** In India, a rejuvenated sugar ethanol program calls for E5 blends throughout most of the country; the government plans soon, depending on ethanol availability, to raise this requirement to E10 and then E20. In China, the government is making E10 blends mandatory in five provinces that account for 16 percent of the nation's passenger cars.

- **United States.** Congress has passed a renewable fuels standard that will require the use of 7.5 billion gallons of biofuels for transportation by 2012. In addition, current law requires many government vehicles that run on diesel fuel to use B20 (20 percent biodiesel) blends.

Among the report's other findings:

- • **Brazil is the world's biofuel leader**, with half of its sugar cane crop providing more than 40 percent of its non-diesel transport fuel. In the United States, where 15 percent of the corn crop provides about 2 percent of the non-diesel transport fuel, ethanol production is growing even more rapidly.

- • **Biofuels could provide 37 percent of U.S. transport fuel and 20 to 30 percent of the oil used in EU countries within the next 25 years.**

- • **Large-scale use of biofuels carries significant agricultural and ecological risks.** "It is essential that government incentives be used to minimize competition between food and fuel crops and to discourage expansion onto ecologically valuable lands," says Worldwatch Biofuels Project Manager Suzanne Hunt. However, the report also finds that biofuels

have the potential to increase energy security, create new economic opportunities in rural areas, and reduce local pollution and emissions of greenhouse gases.

-- • **The long-term potential of biofuels is in the use of non-food feedstock** that include agricultural, municipal and forestry wastes as well as fast-growing, cellulose-rich energy crops such as switchgrass. It is expected that the combination of cellulosic biomass resources and "next-generation" biofuel conversion technologies — including ethanol production using enzymes, or synthetic diesel production — will compete with conventional gasoline and diesel fuel without subsidies in the medium term.

-- • **It is critical to expedite the transition to the next generation of biofuel feedstock and technologies**, which will allow for dramatically increased production at lower cost, while minimizing effects on the environment.

-- • **Continued rapid growth of biofuels will require the development of a true international market in these fuels, unimpeded by the trade restrictions in place today.**

-- • **Even with subsidies, the economic savings with biofuels from avoided oil imports can be considerable:** between 1975 and 1987, ethanol saved Brazil \$10.4 billion in foreign exchange while costing the government \$9 billion in subsidies. This investment paid off even more in subsequent years: studies show that from 1976-2004, Brazil's ethanol production substituted for oil imports worth \$60.7 billion — or as much as \$121.3 billion including the avoided interest that would have been paid on foreign debt — based on debt previously incurred importing oil.