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ENVIRONMENT

## Commentary: Ethanol Is Not The Only Green In Town

### Memo to Feds: Make subsidies available to the whole field of biofuel innovation

If John G. Melo is right, America's fuel policy is heading down the wrong road. Melo is chief executive of Amyris Biotechnologies in Emeryville, Calif. The startup adds genes to microbes so the bugs convert sugar into useful stuff—such as green fuels. Amyris figures it can make a diesel and a gasoline-like product that offer major advantages over ethanol and biodiesel, today's alternative-fuel darlings. "Why not look for better solutions?" says Melo. "There is a second generation of fuels coming that could be very helpful to the country."

But not with the current mix of energy subsidies. Thanks to years of lobbying by ethanol and biodiesel producers, those two fuels get the big breaks (see BusinessWeek.com, 2/19/07, "[Ethanol: Too Much Hype—and Corn](#)"). A number of states mandate that ethanol or biodiesel be blended with oil-based fuels, and Congress has locked in tax subsidies of 51 cents per gallon of ethanol and \$1 per gallon of biodiesel. The laws also narrowly define biodiesel in terms of a specific process, shutting out innovations and improvements.

Which leaves out not just Amyris but others working on better green fuels. DuPont ([DD](#)) and BP PLC ([BP](#)) have a joint venture to make bio-butanol, a relative of ethanol, while startup LS9 Inc. mimics an ingredient in gasoline. State and federal rules create hurdles for both approaches. "Policies should not discourage new technologies," says Louis Burke, manager of alternative energy and programs at ConocoPhillips ([COP](#)).

There are legitimate arguments about whether subsidies are needed at all, but with the White House and Congress rushing to promote alternatives to fossil fuels, incentives are almost inevitable. So the subsidies need to be smarter. "We need a level playing field for all the processes," says Henrik Erametsa, president of the U.S. subsidiary of Finland's Neste Oil, which has a new plant making renewable diesel—not classed as biodiesel—from animal fat.

Both ethanol and biodiesel have problems. Biodiesel goes rancid and can freeze, making it hard to start cars in the winter. Ethanol can't be used in high concentrations in existing pipelines and pumps. It also contains about 30% less energy than gasoline, causing mileage to drop. The rush to make ethanol from corn has already doubled corn prices and raised food prices. And it does little to slow global warming. "From an environmental standpoint, ethanol is a deal with the devil," says Amyris marketing vice-president Rahul Shendure.

#### CONOCO'S BIG FAT CREDIT

So when DuPont decided to get into the biofuel game, "we sat down with BP and asked what's better," says John Pierce, DuPont vice-president for bio-based technology. The two companies picked butanol, which has more energy per gallon than ethanol and is compatible with today's pipelines and pumps. So are the fuels from startups like Amyris, Gevo, and LS9. "In the circles I move in, no one thinks we'll still be using ethanol in 25 years," says Stanford biologist Chris Somerville.

Companies will invest big bucks once the subsidies are no longer tilted. ConocoPhillips and others fought with the National Biodiesel Board over whether fats turned into fuel with heat and catalysts also qualify for the green diesel credit. In early April, the IRS ruled in favor of Conoco. Two weeks later, Conoco and Tyson Foods Inc. ([TSN](#)) announced plans to refine diesel from leftover poultry, pork, and beef fat. In addition to offering a better fuel than biodiesel, the operation will be a boon to livestock producers hurt by

ethanol-boosted corn prices. "It's a technology that turns their waste products into fuel," says Conoco's Burke.

Ethanol and biodiesel aren't all bad. Added to petroleum-based fuels, they are cutting oil use and paving the way for renewables. But Congress should avoid locking in specific fuels, by applying any subsidies equally to all contenders. "It is likely that we will end up with better fuels," says venture capitalist Vinod Khosla, who is backing Amyris and others. "That is what innovation is all about."

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By John Carey

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