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PATH-UTC 2007 Research Conference: "*Sustainable Biofuels*," *Alex Farrell* (500 K PDF)

When Technology Outruns Policy: *Biofuels Policy Must Go Beyond the Agribusiness Model*

The director of the Transportation Sustainability Research Center told transportation planners and engineers at last month's PATH-UTC conference that the biofuel industry is undergoing rapid transformation and that public policies need to catch up.

"Current policies are **simply agricultural policies with a new name**," said Associate Professor **Alex Farrell**, referring to federal subsidies for ethanol production. He noted that other industries can't rely on subsidies and mandates, but those in the biofuel industry "assume they'll be helped out."

Ethanol, the biofuel that accounts for about three percent of the nation's fuel, has powerful partisans: President Bush has predicted that ethanol will replace gasoline, and Congress has mandated doubling its production. The **corn lobby** has successfully wangled from Congress some $5.7 billion in federal tax credits for Midwest corn growers over the next five years.

Ethanol, or moonshine, seemed a quick fix back in the 1970s when oil prices skyrocketed and long gas lines formed. But moonshine, said Farrell, is "not the answer today."

"My answer is, I like the molecules we have today—**hydrocarbons**. I could take you right now to 10 or 11 different laboratories right here where they are trying to derive hydrocarbons, not ethanol, from biofuels.

Farrell cited the environmental destruction caused by growing corn, both directly and indirectly. He ticked off **soil erosion**, the **loss of biodiversity**, even a large **increase in greenhouse gas emissions**.

While tailpipe emissions may go down with ethanol, he explained, burning rain forests to make more land available for corn production creates greenhouse gases. "So many greenhouse gases, in fact, that the use of corn-based ethanol leads to higher concentrations, not lower concentrations, of greenhouse gases over an extended period, maybe 30 to 50 years."

Farrell said the global competition for land use will not permit the large-scale production of corn ethanol. Rather, it will be necessary to create fuel from feedstock grown on **degraded or marginal land** that cannot be used for growing food.

"What we're going for is an industry that produces biofuels with no or little arable land."

As examples, he pointed to the use of **stover** (the leaves and stalks of corn or soybean plants left in fields after harvest) and municipal solid waste as biofuels that can be produced without using land needed for growing food. He predicted that with advanced production technologies using feedstocks other than corn or sugar cane, the costs of feedstock will go down, but capital costs will go up, at least initially.

"The technological drive is in exactly the right direction and one in which policy should be going," he added.

Some European countries have moved more quickly to apply **biofuel mandates** and require sustainable biofuel **sourcing requirements**. Even in the U.S. there have been several bills in Congress aimed at implementing better rules and policies.

He concluded by telling the audience

- that the **biofuel industry** will probably become much **larger** but be quite **different** from what it is today;
- that today's biofuel producers have opportunities to begin the **transition to a sustainable industry**;
- that advanced biofuel research will rely on **wastes and residues, cellulosic crops** suited to degraded land, and factory-produced biofuels such as **algae**; and
- that public policies are beginning to move from agricultural support to **environmental performance and rural development**.

