

# DOE publishes research roadmap for developing cleaner fuels

July 7 2006

---

The U.S. Department of Energy (DOE) today released an ambitious new research agenda for the development of cellulosic ethanol as an alternative to gasoline. The 200-page scientific "roadmap" cites recent advances in biotechnology that have made cost-effective production of ethanol from cellulose, or inedible plant fiber, an attainable goal. The report outlines a detailed research plan for developing new technologies to transform cellulosic ethanol--a renewable, cleaner-burning, and carbon-neutral alternative to gasoline--into an economically viable transportation fuel.

"Cellulosic ethanol has the potential to be a major source for transportation fuel for America's energy future," Under Secretary for Science Raymond L. Orbach said. "Low production cost and high efficiency require transformational changes in processing cellulose to ethanol. DOE's Genomics: GTL program is poised to help do just that."

The roadmap responds directly to the goal recently announced by Secretary of Energy Samuel W. Bodman of displacing 30 percent of 2004 transportation fuel consumption with biofuels by 2030. This goal was set in response to the President's Advanced Energy Initiative.

The roadmap identifies the research required for overcoming challenges to the large-scale production of cellulosic ethanol to help meet this goal, including maximizing biomass feedstock productivity, developing better processes by which to break down cellulosic materials into sugars, and optimizing the fermentation process to convert sugars to ethanol.

Cellulosic ethanol is derived from the fibrous, woody and generally inedible portions of plant matter (biomass).

The focus of the research plan is to use advances in biotechnology -- first developed in the Human Genome Project and continued in the Genomics: GTL program in the Department's Office of Science -- to jump-start a new fuel industry whose products can be transported, stored and distributed with only modest modifications to the existing infrastructure and can fuel many of today's vehicles.

The new roadmap was developed during a December 2005 workshop hosted jointly by the Office of Biological and Environmental Research in the Office of Science and the Office of the Biomass Program in the Office of Energy Efficiency and Renewable Energy. The success of the plan relies heavily on the continuation of the partnership between the two offices established at that workshop.

"Biofuels represent a tremendous opportunity to move our nation toward a reduced dependence on imported oil," DOE Assistant Secretary for Energy Efficiency and Renewable Energy Alexander Karsner said. "We fully intend to use all of our resources and talent to support the President's goal of breaking our addiction to oil, while also enhancing our energy security."

Source: DOE/US Department of Energy

Citation: DOE publishes research roadmap for developing cleaner fuels (2006, July 7) retrieved 11 May 2024 from <https://phys.org/news/2006-07-doe-publishes-roadmap-cleaner-fuels.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is</p>
--

provided for information purposes only.