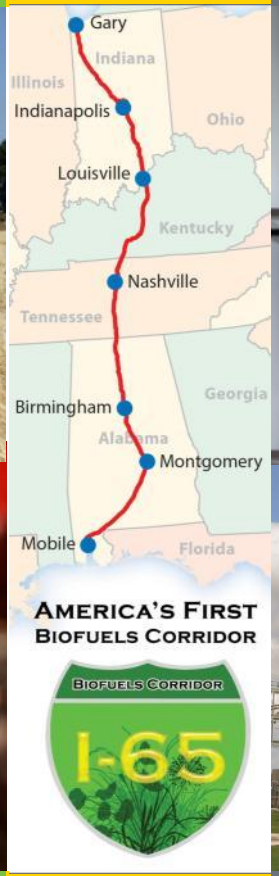
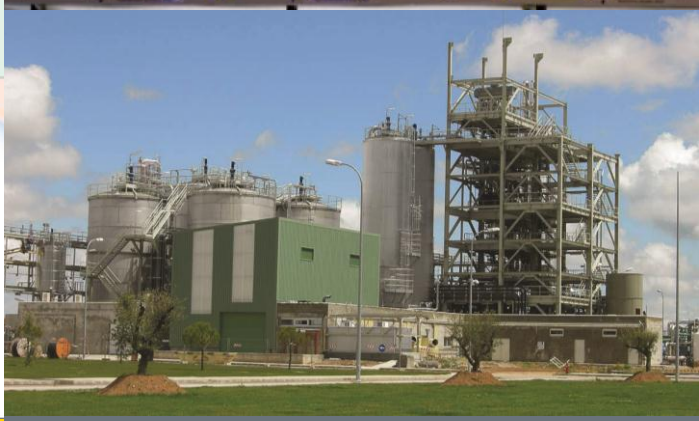
OFFICE OF BIOMASS PROGRAM

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy





Educational Opportunities in Bioenergy

April 23, 2012

The Role of Biomass

1. The need to reduce dependence on foreign oil and lower greenhouse gas (GHG) emissions has renewed the urgency for developing sustainable biofuels, bioproducts, and biopower.

2. The transportation sector accounts for about two-thirds of U.S. oil consumption and contributes to one-third of the nation's GHG emissions.

3. Near term, biomass is the only renewable resource that can supplement petroleum-based liquid transportation fuels, while reducing GHG emissions.

Bioenergy Basics

- Biomass is one of the most promising renewable energy sources for transportation. DOE is focusing on new and better ways to use non-food feedstocks to make liquid transportation fuels or “biofuels.”

- DOE and its partners are making sure that biomass and biofuels are produced in ways that do not harm people or the environment.

- The Biomass Program is investing in strategic research, development, and deployment projects that will improve the efficiency and lower the cost of producing biofuels so that they can become an increasing part of our fuel supply.

Administration Priorities

Developing and securing America's energy resources

- Expand safe and responsible domestic oil and gas development and production
- Lead the world toward safer and more secure energy supplies

Innovating our way to a clean energy future

- Harness America's clean energy potential through supporting industry in commercializing new biofuels technologies
- Win the future through clean energy research, development, and deployment activities that reduce barriers to increased biofuel, bioproduct, and biopower use

Provide consumers with choices to reduce costs and save energy

- Reduce consumer costs at the pump with more efficient, fuel-flexible cars and trucks

Biomass Program Strategy Spans Supply Chain

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The Program's portfolio is organized to reflect the biomass-to-bioenergy supply chain—from the source to the end user.

Feedstock Supply

Biomass Conversion

Bioenergy Distribution

Bioenergy End Use

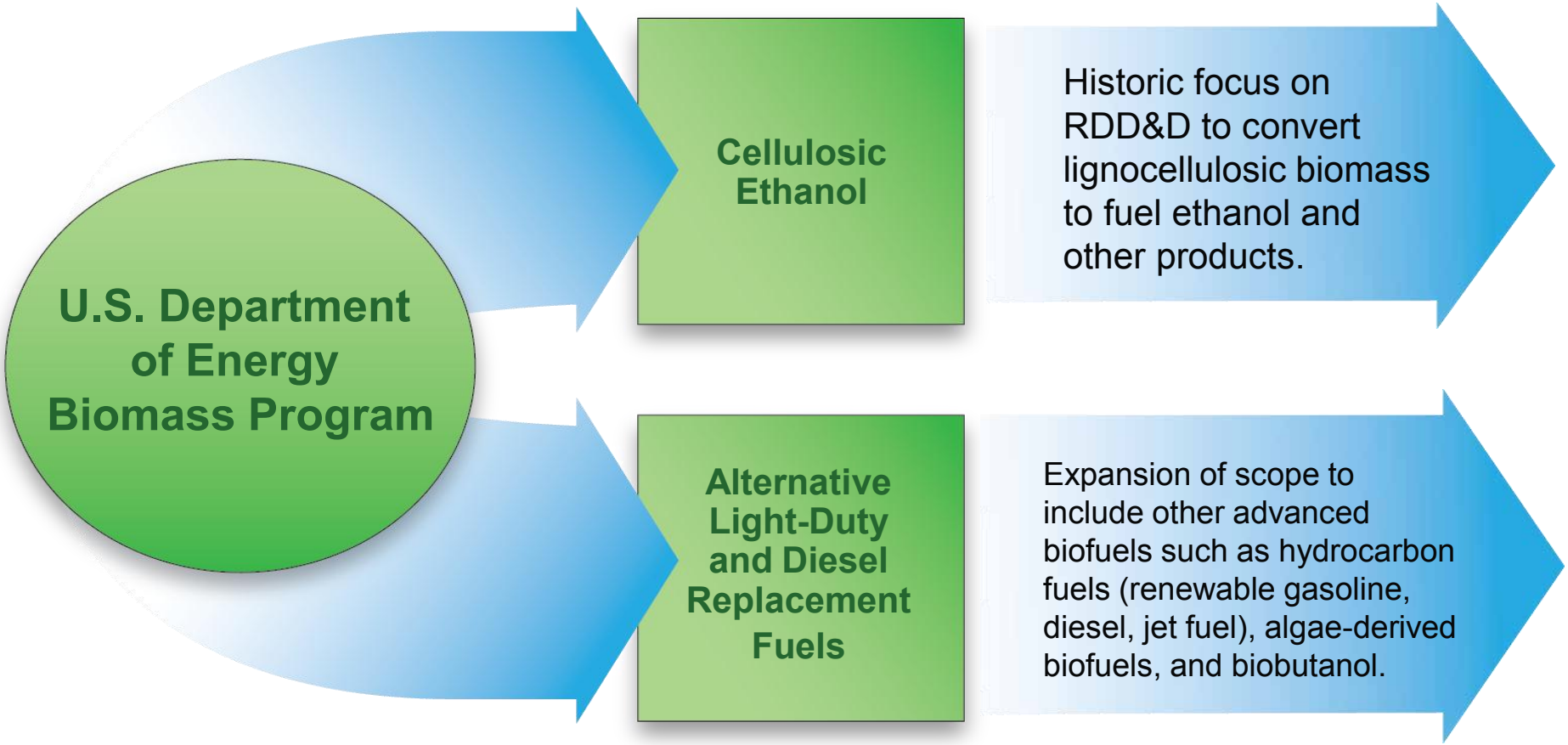
Feedstocks Supply — Develop sustainable technologies to provide a secure, reliable, and affordable biomass feedstock supply for the U.S. bioenergy industry

Conversion R&D — Develop technologies for converting feedstocks into commercially viable liquid transportation fuels, as well as bioproducts and biopower

Integrated Biorefineries — Demonstrate and validate integrated technologies to achieve commercially acceptable performance and cost targets

Distribution, Infrastructure, and End — Support efforts to ensure that biofuels can safely, cost-effectively, and sustainably reach their market and be used by consumers as a replacement for petroleum fuels

Expanding Scope



The Biomass Program forms cost-share partnerships with key stakeholders to develop, demonstrate, and deploy technologies for advanced biofuels, bioproducts, and biopower from lignocellulosic and algal biomass.

Replacing the Whole Barrel

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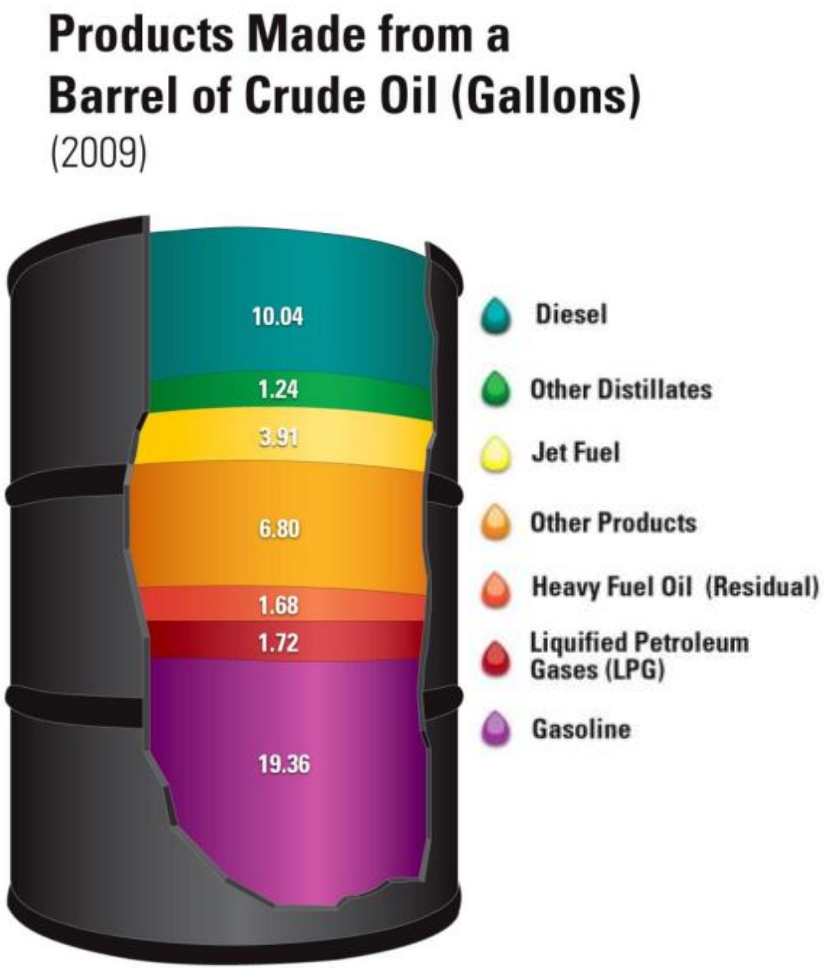

- The United States currently spends about $1 billion each day on oil imports, with more than 70% consumed by the U.S. transportation sector.
- Only about 40% of a barrel of crude oil is used to produce gasoline. The rest is used to produce a host of products including jet fuel, diesel, plastics and many industrial chemicals.
- The DOE, national labs, universities and industry partners are making strides in developing the latest technology in drop-in biofuels and bioproducts that can replace all of the products we get from a barrel of crude oil today, and that can also be compatible with existing refining, distribution and vehicle infrastructure

Source: Energy Information Administration, “Oil: Crude Oil and Petroleum Products Explained” and AEO2009, Updated February 2010, Reference Case.
*American Petroleum Institute.

Biomass 2012: Call for Posters

- The Biomass Program invites submissions for posters to be presented at our fifth annual conference, *Biomass 2012: Confronting Challenges, Creating Opportunities – Sustaining a Commitment to Bioenergy*, on July 10-11 in Washington, D.C.

- Selected posters will be prominently displayed and presented during select breaks and the conference reception.

- Abstract submissions are due May 15th to Biomass2012_info@bcs-hq.com. Additional information can be found at the Biomass Program Website at the following address: http://www1.eere.energy.gov/biomass/bio2012_posters.html

Educational Opportunities in Bioenergy

Webinar Agenda

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- Introduction to the Biomass Program – Barbara Twigg
- Introduction of the Webinar – Ashley Rose

Oak Ridge National Laboratory Presentation:

- Summary of bioenergy educational opportunities – Tim Theiss, Interim Laboratory Relationship Manager, and Erin Webb, Engineer
- First-hand description of experience – Scott Curran, Former Post-Graduate Research Student and Kevin Caffrey, Current Student

National Renewable Energy Laboratory Presentation:

- Summary of bioenergy educational opportunities – Linda Lung, Educational Programs Coordinator
- First-hand description of experience – Jessica Olstad, Engineer and Former Intern
- Question and Answer session