

Biofuels for the Environment and Communities

April 22, 2015

Bioenergy Technologies Office (BETO)

Agenda

- Introduction and BETO Overview
 - Kristen Johnson, BETO Technology Manager
- Biofuels for the Environment and Communities
 - Virginia Dale, Oak Ridge National Laboratory
 - Cristina Negri, Argonne National Laboratory

Questions and Comments

Please record any questions and comment you may have during the webinar and send them to eere_bioenergy@ee.doe.gov

As a follow-up to the webinar, the presenter(s) will provide responses to selected questions.

All slides from this presentation will be posted online:
<http://www.energy.gov/eere/bioenergy/webinars>

For general questions regarding the Bioenergy Technologies Office, please email eere_bioenergy@ee.doe.gov

Bioenergy Technologies Office Webinar Series

Started in May 2010 to highlight “hot topics” in biomass and bioenergy industry.

Find past webinars and today's slides on the Office's website:
<http://www.energy.gov/ere/bioenergy/webinars>

The screenshot shows the ENERGY.GOV website with the following structure:

- Header:** ENERGY.GOV Office of Energy Efficiency & Renewable Energy. Search bar: Search Energy.gov
- Navigation:** SERVICES, EFFICIENCY, RENEWABLES, TRANSPORTATION, ABOUT US, OFFICES >
- Breadcrumbs:** Home > Information Resources > Webinars
- Section:** WEBINARS
- Left Sidebar (Information Resources):**
 - Home
 - About the Bioenergy Technologies Office
 - Research & Development
 - Education & Workforce Development
 - Financial Opportunities
 - Information Resources
 - Publications
 - Key Publications
 - Newsletter
 - Biomass Basics
 - Multimedia
 - Webinars** (highlighted)
 - Bioenergy & Clean Cities
 - Databases
- Main Content:**
 - UPCOMING WEBINARS:** Check out our [Events](#) page to find out more about our upcoming webinars.
 - RECENT WEBINARS:**
 - June 11, 2014 – “Algal Biofuels Consortium Releases Groundbreaking Research Results”**

Dr. Jose Olivares of Los Alamos National Laboratory (LANL) presented the results of algal biofuels research conducted by the National Center for Advanced Biofuels and Bioproducts (NAABB). NAABB is the largest advanced biofuels consortium ever funded, consisting of 39 institutions from national laboratories, academia, and industry.

 - [Algal Biofuels Consortium Releases Groundbreaking Research Results](#)
 - February 6, 2014 – “The Potential for Natural Gas to Enhance Biomass Technologies”**

The Department of Energy's (DOE's) Bioenergy Technologies Office hosted a webinar in conjunction with the Office of Fossil Energy, Energy Technology Laboratory, and Advanced Research Projects Agency-Energy to provide an overview of Natural Gas-Biomass to Liquid technology, advantages of using natural gas, and key themes that were established at the September [Natural Gas-Biomass to Liquid](#)

Bioenergy Technologies Office



Mission

Accelerate the commercialization of advanced biofuels and bioproducts through targeted research, development, and demonstration supported by public and private partnerships

Strategic Goal

Develop technologies to enable the sustainable, nationwide production of biofuels compatible with today's transportation infrastructure

Performance Goal

By 2017, validate a least one pathway for \$3/GGE hydrocarbon biofuel (with $\geq 50\%$ reduction in GHG emissions relative to petroleum)*

*Mature modeled price at pilot scale.

BETO's Core Focus Areas

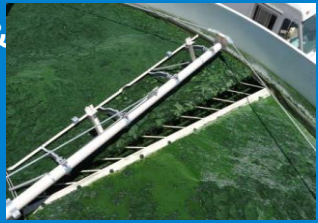
Program Portfolio Management

- Planning
- Systems-Level Analysis
- Performance Validation and Assessment
- MYPP
- Peer Review
- Merit Review
- Quarterly Portfolio Review
- Competitive
- Non-competitive
- Lab Capabilities Matrix

Research, Development, Demonstration, & Market Transformation

Feedstock Supply & Logistics R&D

- Terrestrial
- Algae
- Product Preprocessing



Conversion R&D

- Biochemical
- Thermochemical
- Deconstruction
- Biointermediate
- Upgrading



Demonstration & Market Transformation

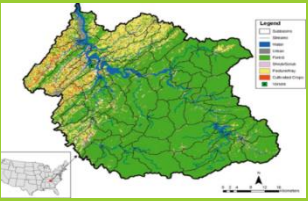
- Integrated
- Biorefineries
- Biofuels
- Distribution
- Infrastructure



Cross Cutting

Sustainability

- Sustainability Analysis
- Sustainable System Design



Strategic Analysis

- Technology and Resource Assessment
- Market & Impact Analysis
- Model Development & Data compilation



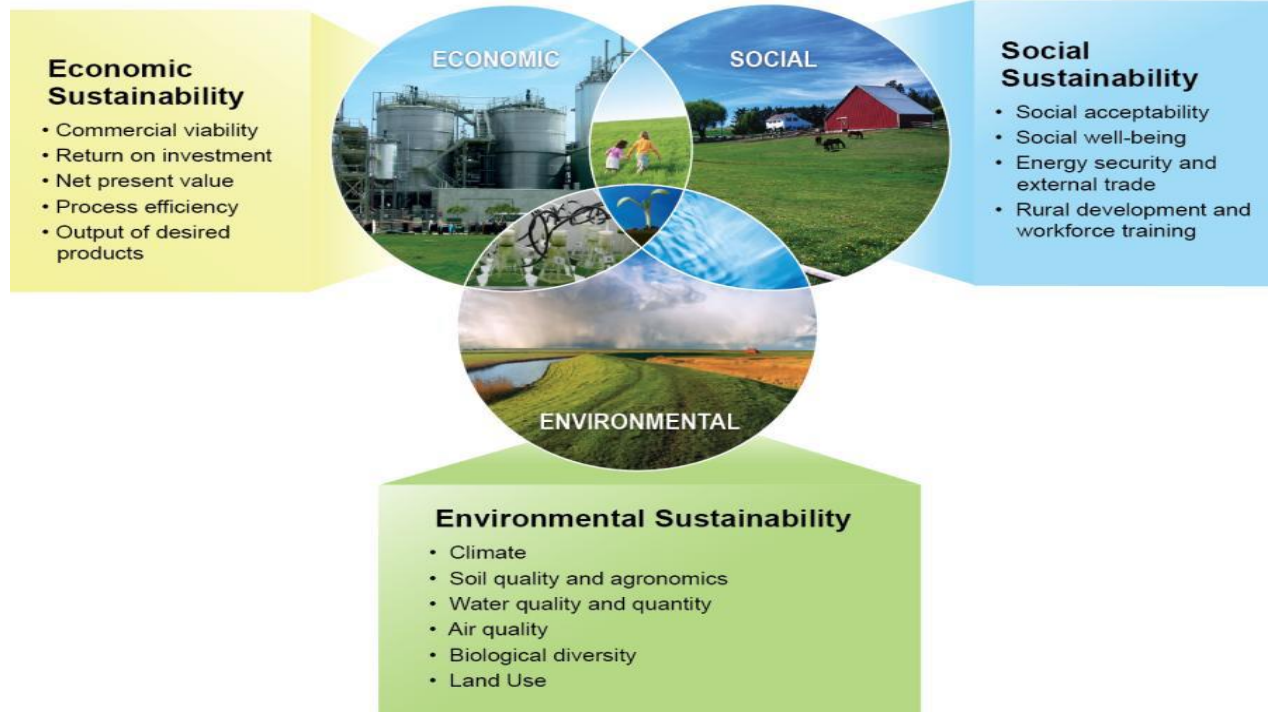
Strategic Communications

- New Communications Vehicles & Outlets
- Awareness and Support of Office
- Benefits of Bioenergy/Bioproducts



BETO's Commitment to Sustainability

Sustainability Strategic Goal: to understand and promote the positive economic, social, and environmental effects and reduce the potential negative impacts of bioenergy production activities.



Enhancing Environmental Sustainability

Climate Change and Air Quality



Analyzing biofuel pathways to quantify progress towards reducing [lifecycle greenhouse gases](#), [regulated emissions](#), and [fossil energy use](#).

Soil Quality



[Developing strategies and tools](#) for producing biomass feedstocks while maintaining or enhancing soil quality.

Land Use and Productivity



Advancing landscape design approaches that increase biomass production while maintaining or enhancing ecosystem services and food, feed, and fiber production.

Water Quantity and Quality



Assessing the [water resource use and water quality](#) of bioenergy production, and investigating opportunities for bioenergy crops [to improve water quality](#).

Biological Diversity



Investigating relationships between [bioenergy crops and biodiversity](#), and engaging with diverse experts to understand and promote practices that conserve wildlife and biodiversity.

Efforts also include evaluating [sustainability indicators](#) across the bioenergy supply chain, contributing to [global scientific dialogues](#) on bioenergy sustainability, and engaging with [international organizations](#) to understand and promote more sustainable outcomes.

Closing

Bioenergy should be considered as part of a portfolio of energy efficiency and renewable energy options.



Through design, we can intentionally enhance sustainable outcomes.

Questions?

Email eere_bioenergy@ee.doe.gov

Please include “Biofuel Sustainability” in
Subject Line

Thank you!