BIOMASS RESEARCH & DEVELOPMENT BOARD

# Federal Activities Report on the Bioeconomy

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# Before we get started…

- Federal Activities Reports on the Bioeconomy are available for TAC members and one-page summaries of the Report available

- You are invited to email all written questions and additional comments to EERE_bioenergy@ee.doe.gov

# Developing a 'Grand Challenge'

- In 2013, Assistant Secretary Danielson charged the Biomass R&D Board and Operations Committee (OpsCo) with establishing a larger initiative that could move the bioenergy industry forward.
  - This idea for a 'grand challenge' was inspired by the success of other DOE initiatives, SunShot out of the EERE Solar Office, and EV Everywhere out of the Vehicle Technologies Office.
- The TAC received a similar charge from Assistant Secretary Danielson and developed the 2013 Grand Challenge report.
- Mirroring the thinking of the TAC, the OpsCo conceptualized a large initiative based on the DOE/USDA *Billion Ton Update*, which began the "Billion Ton Bioeconomy."
  - Unlike the current DOE initiatives, the Board has developed this plan and will continue to lead the initiative as a major interagency activity.

# Developing a 'Grand Challenge'

- Since first requested to develop the initiative, the Board OpsCo, Interagency Working Groups, and/or smaller task teams have worked to refine the vision including:
  - ✓ Initial concept development – Fall 2013
  - ✓ Conducting initial analysis based on the Billion Ton Report – Spring-Fall 2014
  - ✓ Drafting initial scoping plan for the Initiative – Summer of 2014
  - ✓ Conducting two workshops (external and internal) – Summer of 2014
  - ✓ Developing a 'Strawman Plan' for Board approval – Winter of 2014
  - ✓ Holding a larger Bioeconomy Federal Strategy Workshop – May 2015
  - ✓ Release the Federal Activities Report on the Bioeconomy – February 2016
- The next steps are; input from stakeholder workshops, development of common goals to enable the vision, and a coordinated implementation plan.

# Federal Activities Report on the Bioeconomy

- On February 18th, the Biomass R&D Board released the Federal Activities Report on the Bioeconomy (FARB).
- This report aims to educate the public on the wide-ranging, federally funded activities that are helping to bolster the bioeconomy.
- The FARB details a vision for a Billion Ton Bioeconomy—tripling the size of today's bioeconomy by 2030.
- Achieving this vision would provide economic, environmental, and social benefits, including a considerable reduction in GHG emissions.

# Vision and Goal of the Billion Ton Bioeconomy

**The vision** for the Billion Ton Bioeconomy is to sustainably reach the full potential of biomass-derived products as a way of expanding our nation's economy. In doing so, the bioeconomy will provide multiple economic, environmental, and social benefits to the Nation.

**The goal** of the Billion Ton Bioeconomy is to develop and provide innovative ways to remove barriers to expanding the sustainable use of Nation's abundant biomass resources for biofuels, bioproducts, and biopower, while maximizing economic, social, and environmental outcomes.

# A BILLION DRY TONS OF SUSTAINABLE BIOMASS

*HAS THE POTENTIAL TO PRODUCE*

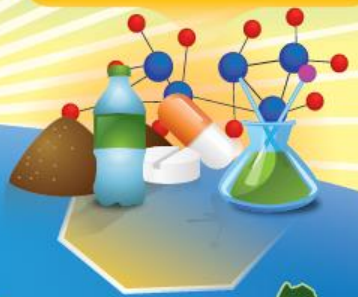
**1.1 MILLION Direct Jobs**
and keeps about
**$250 BILLION**
in the U.S.
(direct contribution and inflation adjusted)

**85 BILLION***
kWh of electricity
to power
**6 MILLION**
households. Plus
**1050 TRILLION BTUs**
of thermal energy.

**50 BILLION**
gallons of biofuels
displacing almost
**25%**
of all transportation fuels.

**50 BILLION POUNDS**
of biobased chemicals and bio-products, replacing a significant portion of the chemical market.

**400 MILLION TONS**
of $CO_2e$ reductions every year.




## STEPS TO BUILDING THE BIOECONOMY

1. Accelerate research & technology development
2. Develop production, conversion and distribution infrastructure
3. Deploy technology
4. Create markets and delivery systems

**Projections based on:**

- 2016 Billion Ton Study Report (Forthcoming)
- EIA 2015 AEO
- 2015 USDA Long-Term Forecast
- Various data sources

* Includes 27 billion kWh and 90 TBtu from livestock anaerobic digestion

# Overview of Agency Activities


| Agency | Feedstock Supply | Biomass Conversion | Bioenergy Distribution | Bioenergy End Use |
|---|---|---|---|---|
| DOE | ● ● ● ● | ● ● ● ● ● | ● ● ● | ● ● ● ● ● |
| USDA | ● ● ● ● ● | ● ● ● ● | ● ● ● ● ● | ● ● ● ● |
| DOT | ● ● ● ● | ● ● ● | ● ● ● ● ● | ● ● ● ● ● |
| EPA | ● ● ● ● ● | ● ● ● ● ● | ● ● ● ● ● | ● ● ● ● |
| DOI | ● ● | ● | | |
| NSF | ● ● ● | ● ● ● ● | ● | |
| DoD | | ● ● | ● ● ● ● | ● ● ● ● |

● Use an integrated systems approach

● Provide the science and the technology

● Public and private collaboration to overcome barriers and accelerate deployment

● Develop a workforce for the future bioeconomy

● Understand and inform policy

# Discussion

The OpsCo is interested in feedback from the TAC to help further shape our vision and move forward to a tangible initiative. Below are some initial questions for feedback:

- Is a Billion Ton Bioeconomy feasible?
- What can federal agencies do to increase the likelihood of private financing?
- Working to develop a new Bioeconomy Initiative, what aspects of the federal activities in the Bioeconomy should be prioritized?
- What should the government's role be in developing higher value products?
  - Won't industry pursue chemicals on their own due to potential profits?
- How do biomass-derived feedstocks become tradable national commodities?
- Do you perceive a lack of qualified individuals to support a growing bioeconomy?
  - If so what can be done to address this gap?

# Who else should we talk to?

- We are planning other listening sessions and workshops in the next three months, what other topics need to be covered?
- Who else is needed?