BR&DB
BIOMASS RESEARCH & DEVELOPMENT BOARD

The Bioeconomy Initiative:

A National Strategy for the Billion Ton Vision

Briefing Hosted by the Environmental and Energy Study Institute

Valerie Sarisky-Reed, Senior Advisor, Bioenergy
Office of the Chief Scientist

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Bioeconomy Definition

The bioeconomy is defined as: The global industrial transition of sustainably utilizing renewable aquatic and terrestrial biomass resources in energy, intermediate, and final products for economic, environmental, social, and national security benefits.

--From 2014 Report: Why Biobased? Opportunities in the Emerging Bioeconomy: Why BioPreferred

Billion Ton Studies History and Accomplishments

Billion-Ton Study (BTS), 2005

- Technical assessment of agricultural and forestry systems to supply low-valued biomass for new markets
- Identified adequate supply to displace 30% of petroleum consumption; i.e. physical availability

Billion-Ton Update (BT2), 2011

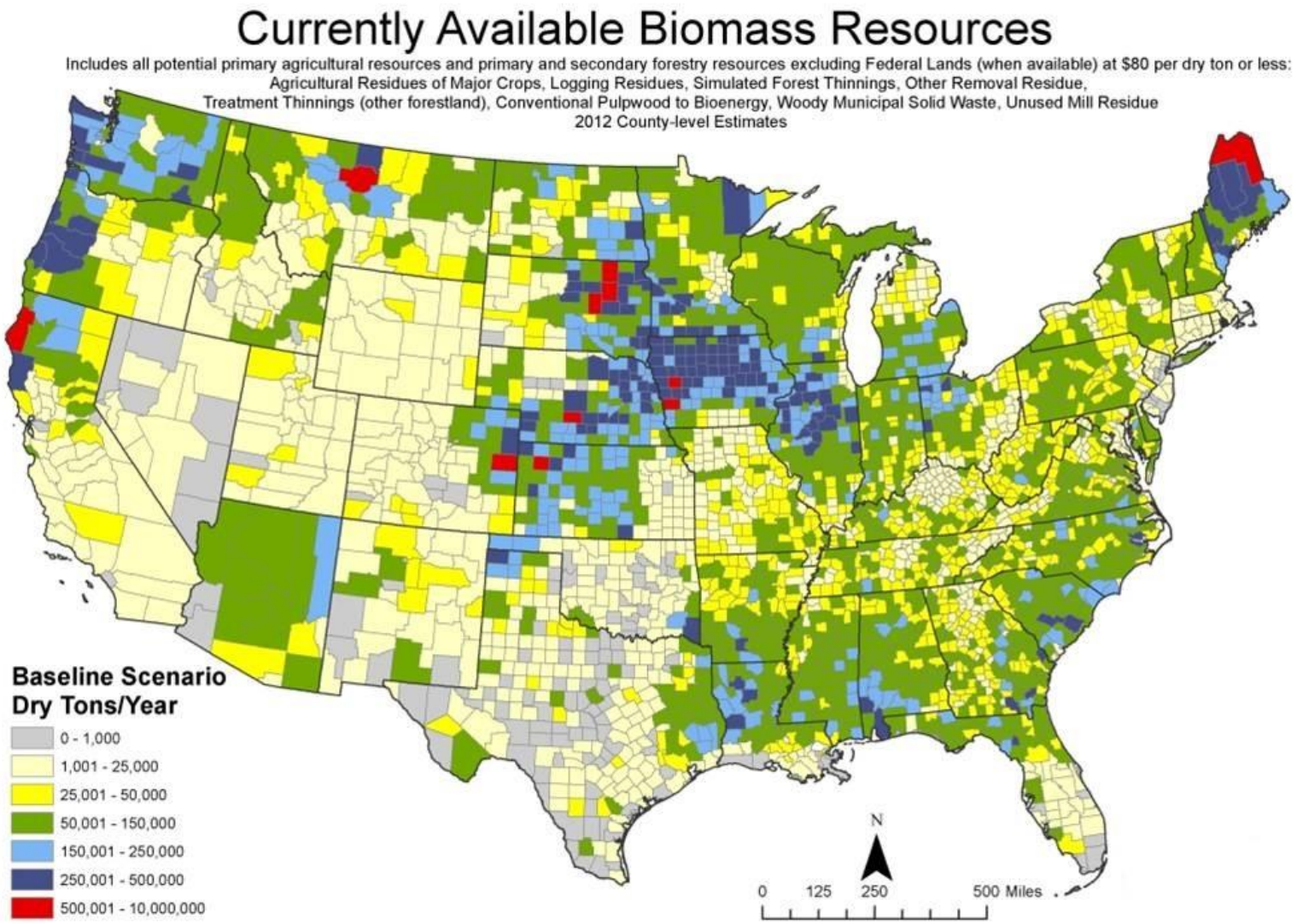
- Quantified potential economic availability of feedstocks for 20-year projection
- Publicly released county-level supply curves for 23 candidate biomass feedstocks through Bioenergy Knowledge Discovery Framework.

2016 Billion-Ton Report (BT16), 2016

- Expansion of resource assessment to include additional feedstocks and delivered supply
- Two-volume approach

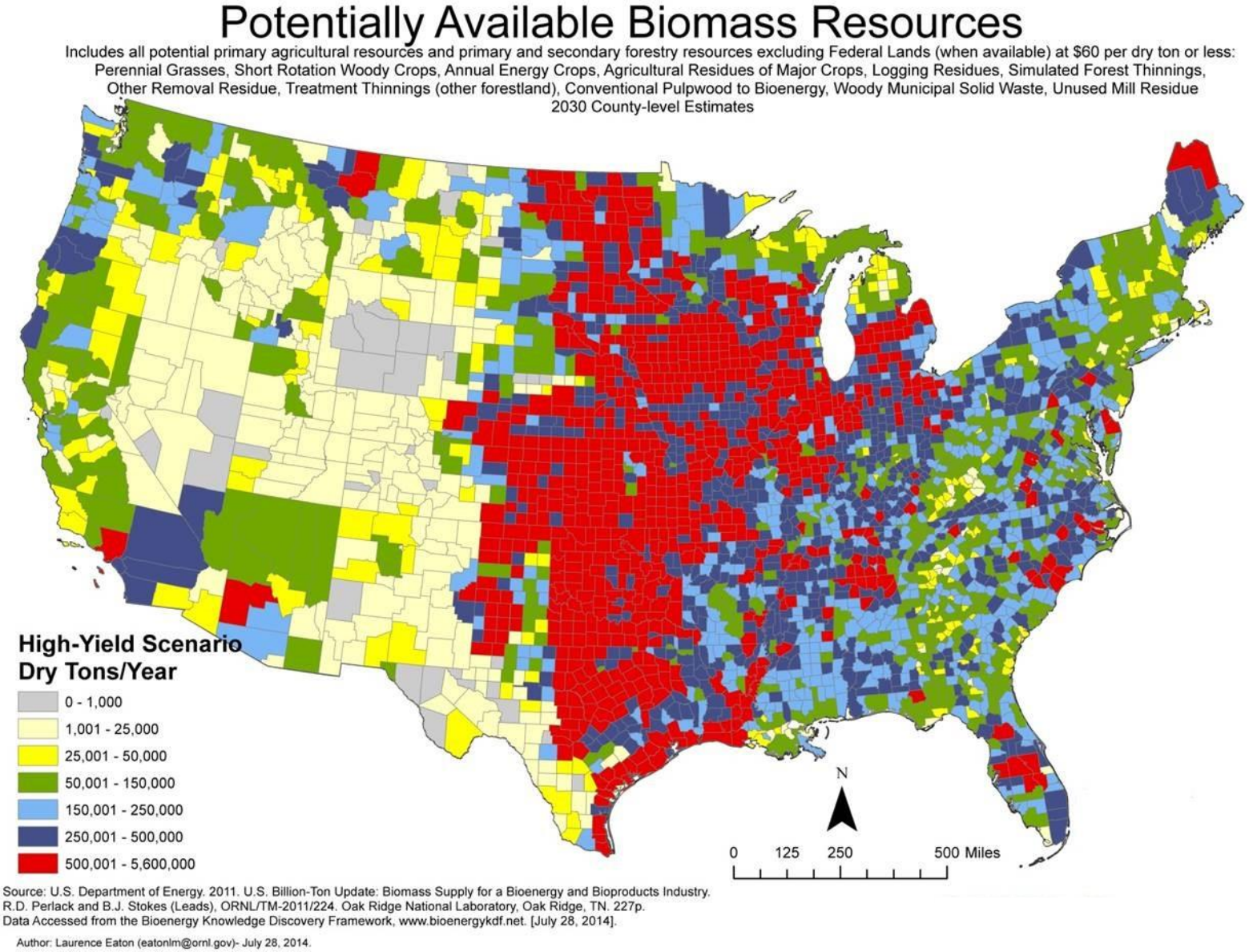
Supply Curve Results

2012 Baseline scenario at $80 per dry ton



Supply Curve Results

2030 Baseline scenario at $60 per dry ton



Biomass Research and Development Board

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

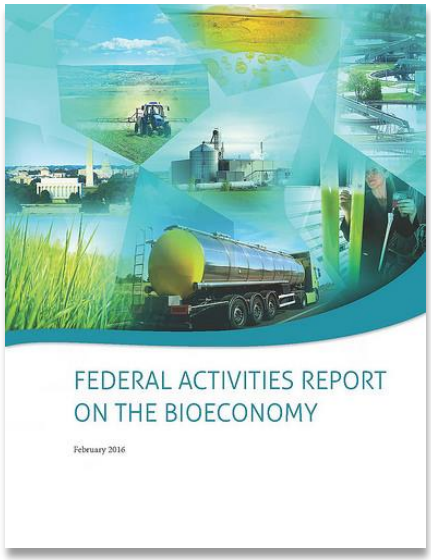
● Provide the science and the technology

● Public and private collaboration to overcome barriers and accelerate deployment

● Develop a workforce for the future bioeconomy

● Understand and inform policy

Bioeconomy Initiative Reports Plan

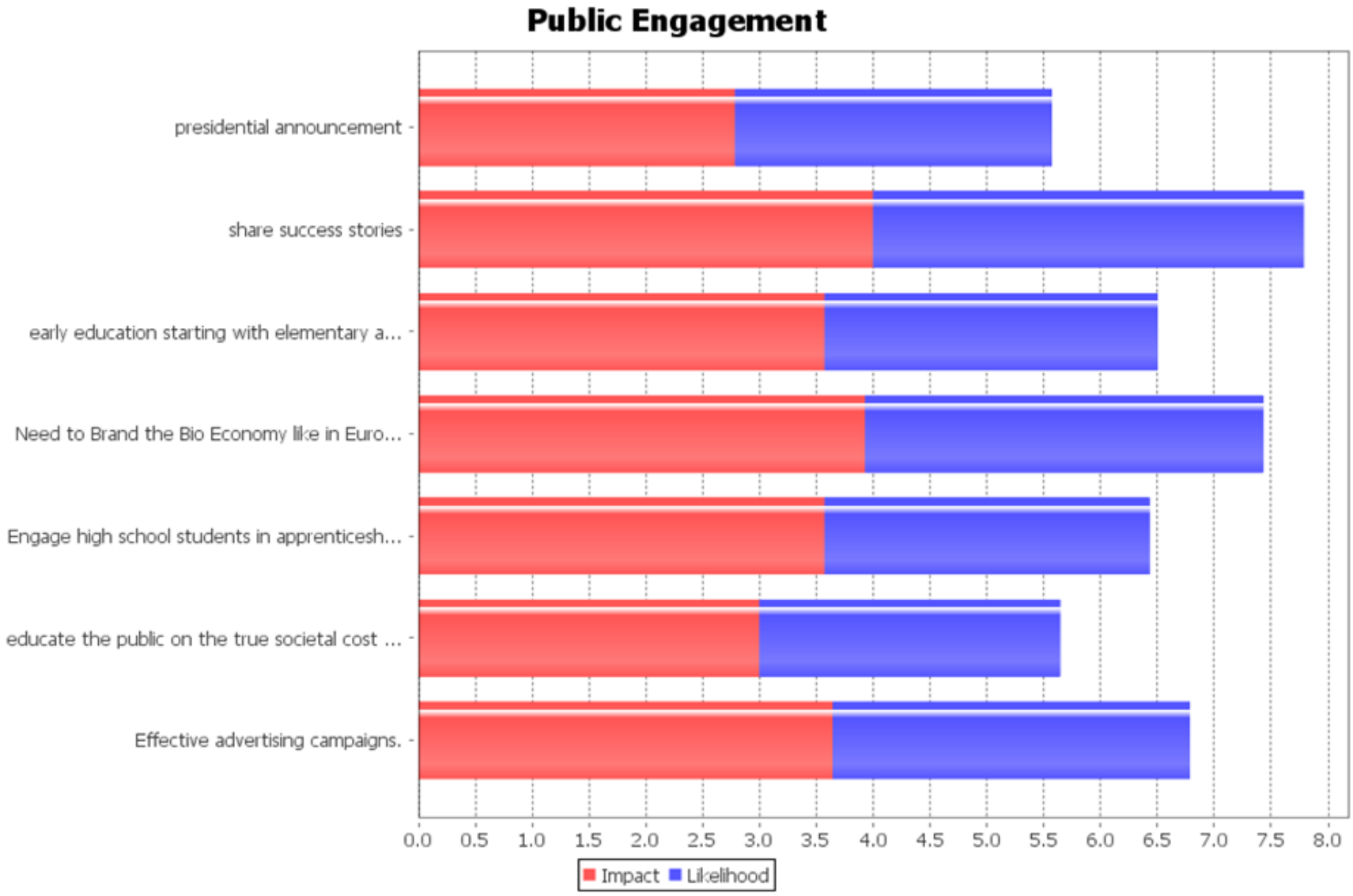


The Bioeconomy Initiative: *Challenges and Opportunities for a Billion Ton Vision*
Target Release Date
Aug, 2016

The Bioeconomy Initiative: Action Plan
Target Release date:
Dec., 2016

- Three reports in the series: FARB – released in February, 2016
- Stakeholder engagement
  - Over 400 participants involved in 5 sessions.
    - 4 in-person Listening Sessions were held in conjunction with major bioenergy industry events.
    - 1 public webinar held on May 5th.
- This report will be the second part of a staggered release of the Initiative.
- An 'Action Plan' will follow that will result from collaborative meetings of the Federal Agencies involved

How can we best engage the interested public in the process of developing a Billion Ton Bioeconomy?



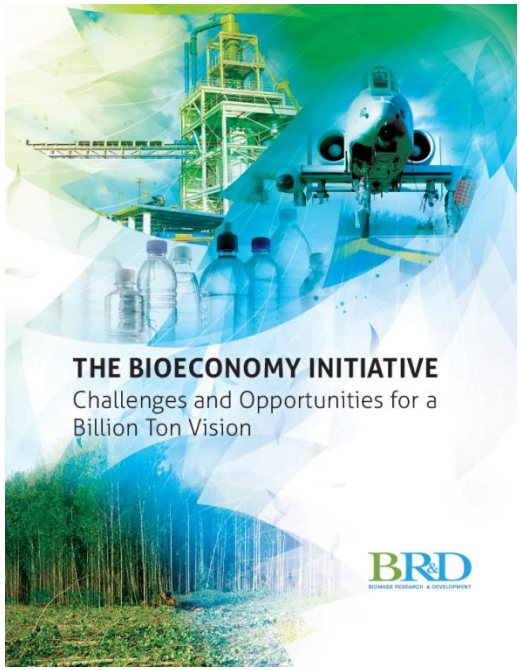
Challenges and Opportunities

- Challenge Areas (as identified by Stakeholders)
- Ongoing Interagency Areas of

Importance and Growth for the Initiative

Food Energy Water Nexus

- Next Steps/Path Forward
  - How to move from the Strategy Report to an Action/Implementation Plan
  - Additional Stakeholder Involvement
    - State and Economic Development Agencies
    - 3-5 meetings in different regions of the country
  - Call for partners from industry/research community to 'Join the Initiative'



ATIP Foundation Workshops – Regional Forums

- These workshops, organized by the ATIP Foundation, will focus on regional issues and their specific bioeconomy-related industries by partnering with the states rather than conferences geared to a specific industry. These workshops will take place in the late July through October timeframe.

- The feedback gathered from these formal workshops will be used to solidify and support the Action Plan that is planned for release in December of 2016.

Path Forward

The Bioeconomy Initiative: Action Plan
Target Release date: Dec., 2016

- **A transition priority for the next Administration**

CONTACTS

THANK YOU!

Harry S. Baumes, Director, Office of Energy Policy and New Uses, USDA
Hbaumes@oce.usda.gov
Valerie Sarisky-Reed, Senior Energy Advisor, Office of the Chief Scientist, USDA
Valerie.s.reed@osec.usda.gov
Alison Goss Eng, Program Manager, Bioenergy Technology Office, Board and Operations Liaison to the Biomass Research and Development Board, DOE
Alison.GossEng@ee.doe.gov