CAAIFI
Biennial General Meeting
June 2022
USDA
Goals

“Increase economic opportunity and improve quality of life”

“Innovation, Partnerships, Infrastructure”
Bioeconomy Roadmap

Biotechnology & Bioenergy Opportunities
Sustainability
Climate Change
Technological Innovation
Partnerships: Private-Public, National Laboratories, Academia
USDA BIOECONOMY SUPPLY CHAIN

FEEDSTOCK PRODUCTION AND DEVELOPMENT

- Feedstock Development
- Feedstock Production
- Feedstock Logistics
- Conversion

INTEGRATION – SCALE UP COMMERCIAL PRODUCTION

- Conversion Process
- Scale-up/Integration
- Product Testing/Approval
- Performance
- Environment Assessment

ENABLE PRODUCTION – END MARKETS

- Enable Production
- End User Markets

DATA – POLICY ANALYSES & EVALUATION – OUTREACH
FEEDSTOCKS

Purpose Grown Crops:
- Trees
- Oil seeds
- Grasses
- Algae

- Forest residue
- Construction Debris
- Crop residue
- Agriculture waste
- Municipal solid waste
- Wastewater
CONVERSION TECHNOLOGIES

Biological
Biochemical
Thermochemical
Electrochemical
Hybrids
Biofuels

- Sustainable Aviation Biofuel
- Biodiesel
- Renewable Diesel
- Renewable Hydrogen
- Biogas
- Ethanol
Renewable Chemicals & Bioproducts

- Pharmaceuticals
- Nutraceuticals
- Soil amendments
- Bioplastics
- Pigments
- Adhesives
- Lubricants
Protein

Food
Feed:
Fish
Dairy
Poultry
Swine
Pets
Technical Strategy

Public – Private Partnership
Risk Mitigation
Scaling
Construction
How it works

Bench
Pilot
Integrated Demonstration Unit
First Commercial Facility
Commercial replication
Challenges

Pre-processing technologies
Feedstock delivery systems
Performance guarantees
Equity
Tools

Loan Guarantees – Credit Enhancement
Grants
Payment programs
Rural Business Cooperative Service – Energy Programs

1. Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program (9003)
2. Rural Energy for America Program (REAP 9007)
3. Biorefinery Program Advanced Biofuels (9005)
4. BioPreferred
5. Business and Industry Guaranteed Loan Program (B&I)
Applications Include:

• Executive Project Summary
• Feasibility Study
• Business Plan
• Technical Report
• Environmental Assessment
9003 Biorefineries

Eligible projects are the development, construction, or retrofitting of a Commercial-Scale Biorefineries using Eligible Technology.

- Advanced biofuel
- Renewable Chemicals
- Biobased products manufacturing
Sustainable Aviation Fuels

- LanzaJet
- ReadiFuels
- Aemetis
- AIC SAFx
- Wellington
- New Energy Blue
• Technology Providers

ARA
LanzaTech
InEnTech
RE Energy
Alfa Laval
Haldor Topsoe
NREL, PNNL, INL, SNL, LBL, JBEI
BioMADE
Innovation

• Origin Materials
• Renewable Energy CA
Thank You

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