Purpose of this webinar

• High level overview of the Bioenergy Technologies Office (BETO) and its participation in the Small Business Vouchers (SBV) Pilot
  – To address BETO-specific questions (taking Q&A at the end)

• Logistic, procedural, process, and general questions that pertain beyond BETO will be addressed by the upcoming SBV webinar
  – next Tuesday October 25, 2016 (see SBV website: https://www.sbv.org)

• This presentation along with BETO-specific FAQs will be posted on the BETO website
Small Business Vouchers (SBV) Pilot Program - Bioenergy

- **Purpose:** To help small businesses bring clean energy technologies to market faster by enabling access to national lab expertise and tools *easily* and *affordably.*

- SBV ([www.sbv.org](http://www.sbv.org)) is a pilot program coordinated by EERE that matches selected clean energy small businesses with experts from the national labs and awards the businesses vouchers valued at $50K to $300K that they can exchange for national lab technical assistance.
  - 5 lead national laboratories (ORNL, NREL, LBNL, PNNL, and Sandia)
  - All DOE national laboratories are eligible to participate

- **BETO has allocated $1.6 million in FY16,** spread over two rounds.
  - Lygos (LBNL/NREL)
  - Visolis (NREL/PNNL)
  - Avatar Sustainable Technologies (NREL)
  - HelioBioSys (LBNL-Sandia)
  - Mango Materials (LBNL)
  - Virent (ANL)
  - Zymochem (LBNL)
Bioenergy Technologies Office (BETO)

Vision

A thriving and sustainable bioeconomy fueled by innovative technologies

Mission

Developing and demonstrating transformative and revolutionary bioenergy technologies for a sustainable nation

Performance Goals

• By 2017, validate at least one pathway for $3/GGE* hydrocarbon biofuel with ≥ 50% reduction in GHG emissions
• By 2022, validate at least two additional pathways at pilot or demonstration scale (>1 ton/day)

*BETO reduces risks and costs to commercialization through RD&D*
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 feedstocks
- Advanced Algal Systems
- Supply, Production, and Logistics

Conversion R&D
- Deconstruction and Fractionation
- Synthesis and Upgrading

Demonstration & Market Transformation
- Integrated Biorefineries
- Biofuels Distribution Infrastructure

Crosscutting

Sustainability
- Sustainability Analysis and Communication
- Sustainable System Design

Strategic Analysis
- Technology and Resource Assessment
- Market and Impact Analysis
- Model Development and Data Compilation

Strategic Communications
- Public Awareness and Support of Office Goals
- New Communications Vehicles and Outlets
- Benefits of Bioenergy/Bioproducts
Multi Year Program Plan (MYPP)

- Articulate BETO’s mission and goals to internal and external stakeholders
- Provide budget request justification
  - Explain how pieces fit together and build to long term goals
- Operational guide
  - To help the Office manage and coordinate its activities
- 5-10 year planning horizon (2022 goals and beyond)
  - Office goals
  - Technology Area/Program Plans
  - Integrated across programs
  - Regularly updated using change control
MYPP March 2016 Update

Key Changes:

- Revised BETO vision and mission
- Added Algae Farm design case
- Added new IBR strategy & related analysis results
- Added and updated program milestones
- Updated costs to 2014$

MYPP 2017 Future Plans:

- Integrate changes from new BETO strategic plan and bioeconomy
- Expand wet waste-to-energy as strategy clarifies
- Continue to incorporate learning from RD&D portfolios into direction and goals
- Incorporation of goals and milestones for co-optimization of fuels and vehicles
- Next update planned for March 2017

The MYPP 2016 Update is available at:
[energy.gov/sites/prod/files/2016/03/f30/mypp_beto_march2016_2.pdf](energy.gov/sites/prod/files/2016/03/f30/mypp_beto_march2016_2.pdf)
Bioenergy Technologies Office – Summary

Accelerate the commercialization of first-of-a-kind technologies designed to utilize the Nation’s abundant biomass resources for the production of advanced biofuels and biobased products.

Portfolio with Strategies on:

- **Terrestrial Feedstock Supply**: By 2022, validate FSL systems to supply 285 million dry tons/year to a biorefinery at a cost of $84/dry ton.
- **Conversion R&D**: By 2022, validate an n\textsuperscript{th} plant modeled cost of $3/GGE for a total of 3 pathways to hydrocarbon fuels with GHG emissions of >50% compared to petroleum.
- **Demonstration and Market Transformation**: By 2027, validate mature modeled performance goals for hydrocarbon fuels using data from an operating biorefinery.

**Challenges**

- Feedstock Availability and Cost
- Risk of first-of-a-kind technology
- Inadequate distribution infrastructure
- Production costs and market uncertainty
- Public acceptance of bioenergy

**Opportunities**

- RD&D to reduce feedstock logistics costs
- Cost-shared pilot and demonstration-scale facilities
- Focus on infrastructure-compatible hydrocarbon fuels
- Co-products to improve economics of biofuels
- Robust communications strategy and engagement with public stakeholders

*Fast Pyrolysis of Woody Biomass Pathway*

*60% cost reduction in 6 years*
Questions?

- [https://www.sbv.org/contact.html](https://www.sbv.org/contact.html)
- [info@sbv.org](mailto:info@sbv.org)