



# Sustainable Aviation Fuel Research and Development at DOE

**DOE Bioenergy Technologies Office**

**ASCENT Fall 2022**

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# SAF Roadmap Released!!

## Secretary Granholm at GCEAF on Sept. 23

- DOE press release  
<https://www.energy.gov/eere/bioenergy/articles/sustainable-aviation-fuel-grand-challenge-roadmap-flight-plan-sustainable>
- Dept of Transportation press release  
<https://www.transportation.gov/briefing-room/dot-joins-energy-and-agriculture-sustainable-aviation-fuel-grand-challenge-roadmap>
- Roadmap implementation process and stakeholder engagement strategy are being formulated



# Life Cycle Analysis Working Group

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- Goal of LCA working group - “...define and agree on the appropriate science-based methodology for establishing lifecycle emissions reductions, recognizing the need for credibility and taking note of consistency with international criteria.”
- Scope
  - The working group will focus on domestic needs for lifecycle GHG emissions analysis.
  - Identify best practices and to understand why different methods give different estimates of life cycle GHG emissions.
  - Examination of different approaches being used for life cycle analysis, both domestically, and internationally.
  - Identifying commonalities and areas of difference in the methodologies and tools that are being used. Identify best practices and to understand why different methods give different estimates of life cycle GHG emissions.
- Membership – Federal government agencies and national laboratory subject matter experts.
- As required, the SAF Life Cycle WG will reach out to experts from non-governmental organizations, industry, academia and stakeholders to advance its work.

# Inflation Reduction Act Provisions of Interest

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## **Section 13203. Sustainable Aviation Fuel Credit**

- Incentive for SAF (40B Tax Credit)
- LCA based on CORSIA or RFS
- Applies to fuels sold or used after December 31, 2022

## **Section 13704. Clean Fuel Production Credit**

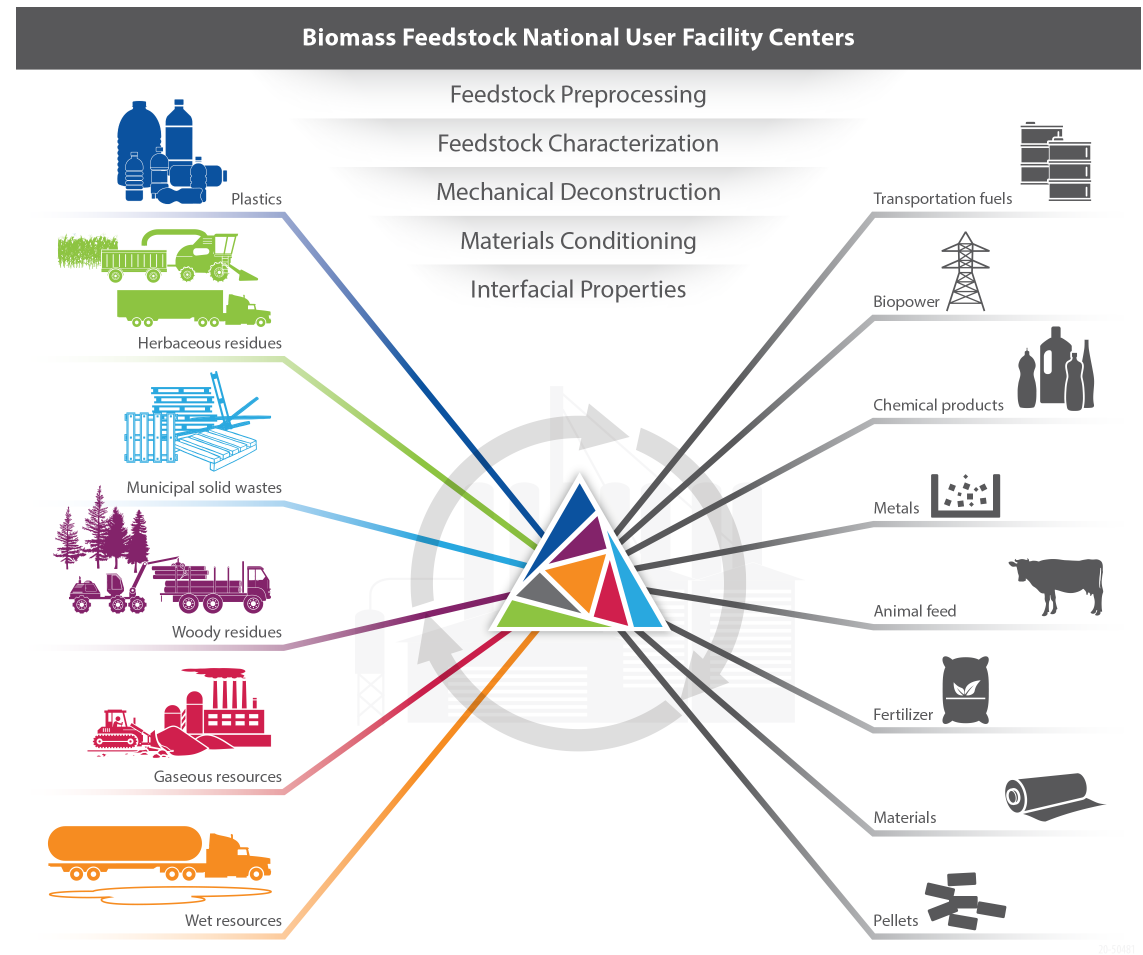
- Incentivize for clean transportation fuels, including SAF (45Z Tax Credit)
- LCA based on CORSIA or RFS (for SAF) and GREET (for other clean transportation fuels)
- Applies to fuels sold or used after December 31, 2024

## **Section 13204. Clean Hydrogen**

- Incentivize for clean hydrogen (45V Tax Credit))
- LCA based on GREET
- Need regulations/guidance by Aug 16, 2023 (1 year from enactment)

# Diversity of Feedstocks for SAF Production

- The Biomass Feedstock National User Facility at Idaho National Laboratory was established to solve challenges associated with feeding and handling and preprocessing
- Creates flexible processes while solving flowability challenges at a variety of scales
- Produces feedstocks that meet conversion specifications using wide ranging characterization and fractionation capabilities





# Affordable Bioenergy Fuels, Products, and Power

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- Feedstock costs contribute to **30% of the total costs** of a cellulosic-based biorefinery
- Feedstock quality specifications are critical to **maximizing predictability** of conversion
- As DOE moves to more diverse resources such as MSW, wet wastes, and gaseous feedstocks to **support a circular carbon economy**, more emphasis is needed to reduce **variability** in:
  - Flowability and Handling
  - Fractionation (*critical to maximizing revenue*)
  - Stability

**Feedstock management is critical to biorefinery performance**

# INL's Biomass Feedstock National User Facility

*Feedstock logistics, preprocessing, and modeling capabilities spanning bioenergy supply chain*

