

# Oregon Department of **ENERGY**

## State Policies to Enable Bioenergy and Alternative Fuels Investments

November 19, 2025





# OREGON DEPARTMENT OF ENERGY

Leading Oregon to a safe, equitable, clean, and sustainable energy future.

## Our Mission

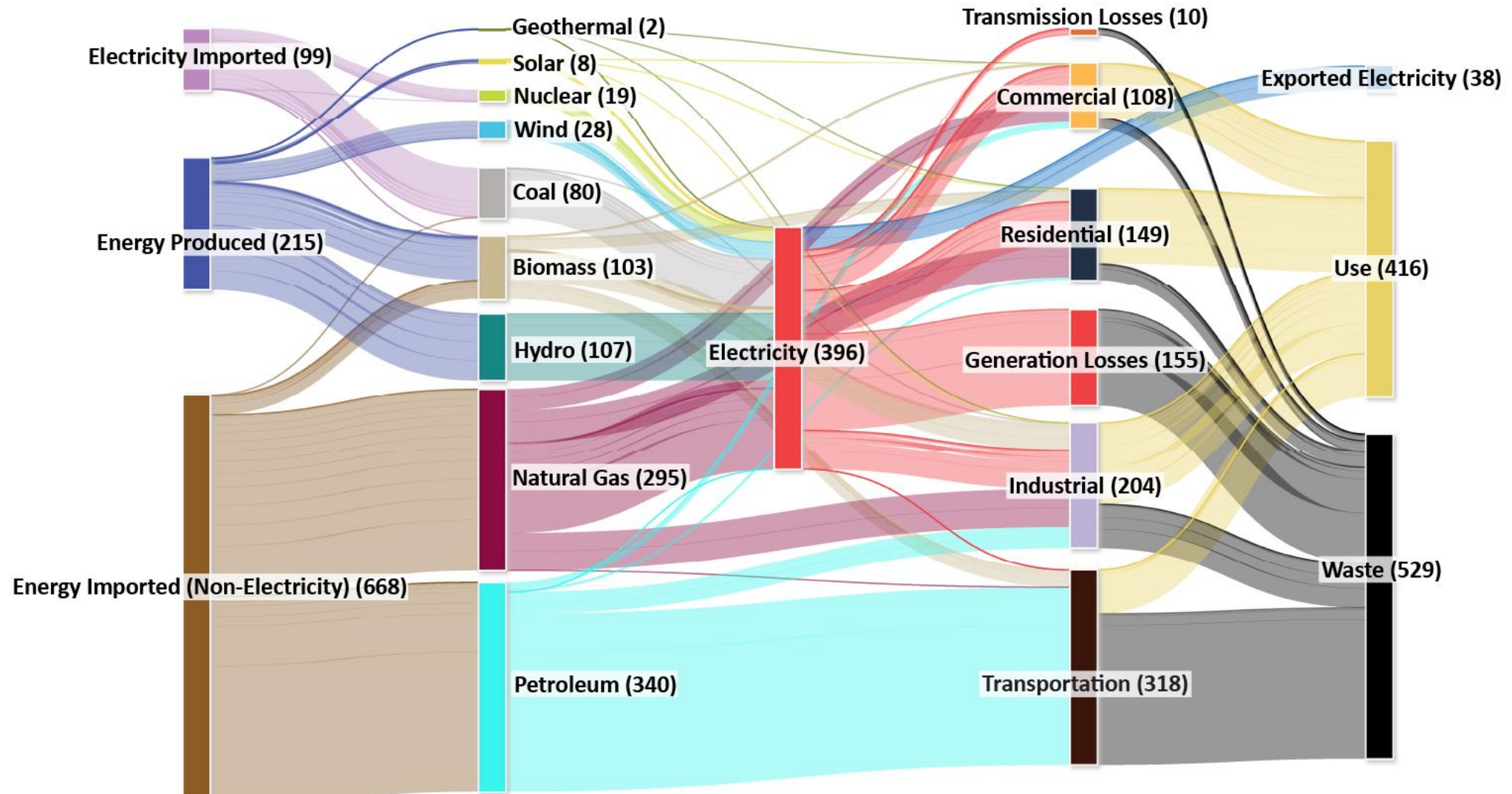
The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

## What We Do

On behalf of Oregonians across the state, the Oregon Department of Energy achieves its mission by providing:

- A Central Repository of Energy Data, Information, and Analysis
- A Venue for Problem-Solving Oregon's Energy Challenges
- Energy Education and Technical Assistance
- Regulation and Oversight
- Energy Programs and Activities

# OREGON'S ENERGY FLOW

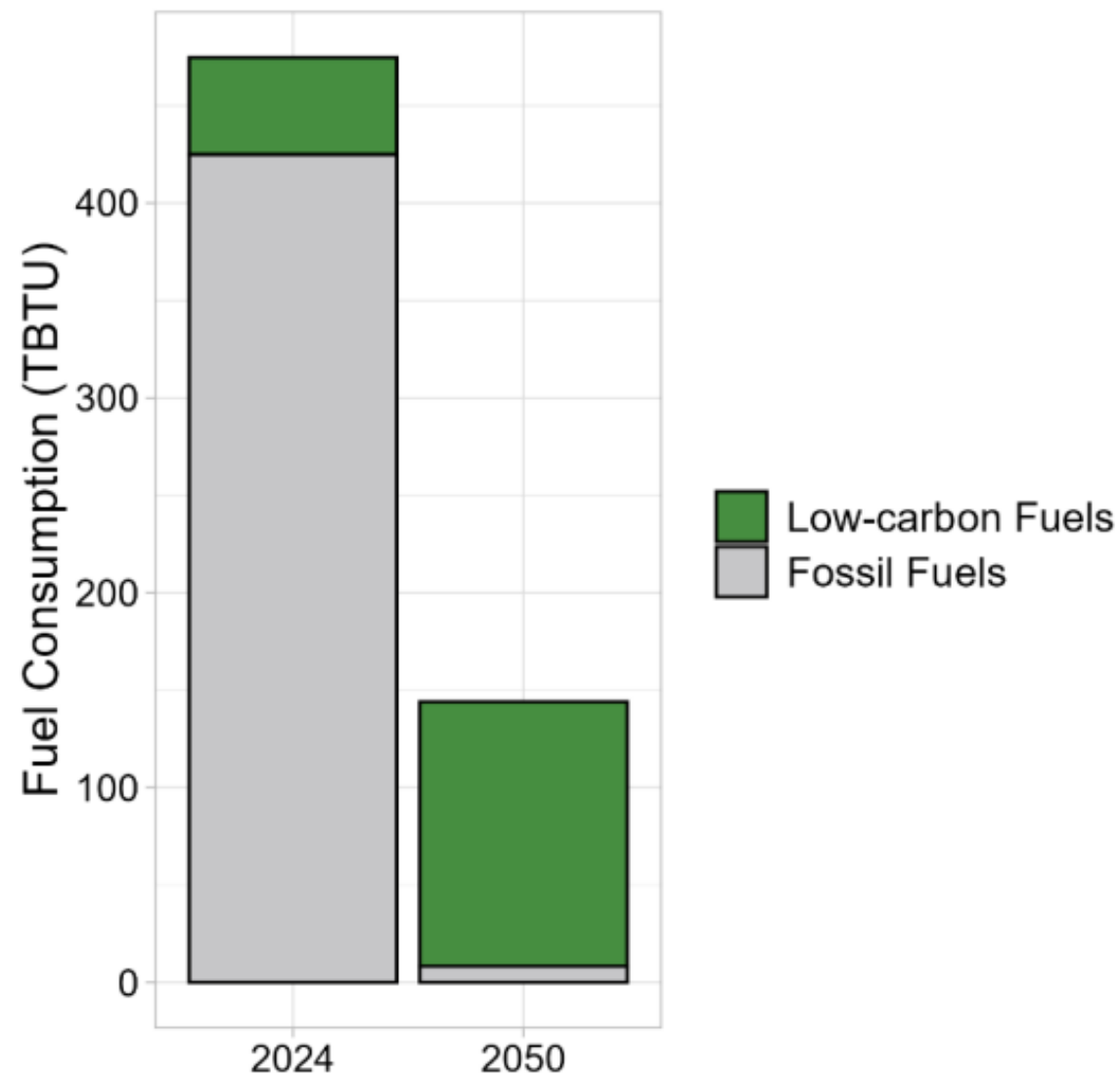


# OREGON POLICIES

---

- Decarbonization
  - [EO 20-04](#)
  - [Climate Protection Program](#)
- Transportation Fuels
  - [Clean Fuels Program](#)
- Electrification
  - [Advanced Clean Cars II](#)
  - [Advanced Clean Trucks](#)
  - [EV Rebates](#) and [EV Charging Infrastructure](#)
- Low-Carbon Fuels
  - [Biogas and Renewable Natural Gas Inventory](#)
  - [SB 98](#)
  - [PNWH2](#) and [Renewable Hydrogen Study](#)
  - [Renewable Portfolio Standard](#)

# OREGON ENERGY STRATEGY



# CHALLENGES

---

- Fuel Supply
- Siting facilities and infrastructure
- Competition from other states
- Feedstocks
- Affordability
- Resilience

Potential Solutions: [Oregon Energy Strategy](#)

# State Policy at the Forefront: Clean Fuel Standards

*Robin Vercruse*

*Executive Director, Low Carbon Fuels Coalition*



Low Carbon  
Fuels Coalition

# Low Carbon Fuels Coalition

---

Broad industry trade association to build consensus for Clean Fuel Standards

---

Advocate for all-of-the-above foundational policies to augment targeted incentives

---

Advocate for state clean fuel standards wherever opportunities arise

---

Encourage bipartisan support by highlighting the demonstrated across-the-board policy benefits (not just climate!)

## Members include:

- ✓ Producers
- ✓ Feedstock Providers
- ✓ Technology Providers
- ✓ Service Providers
- ✓ Market Participants
- ✓ Large End Users
- ✓ Vertical Industry Trade Associations



# Clean Fuel Standard Policy Snapshot

## FEATURES:

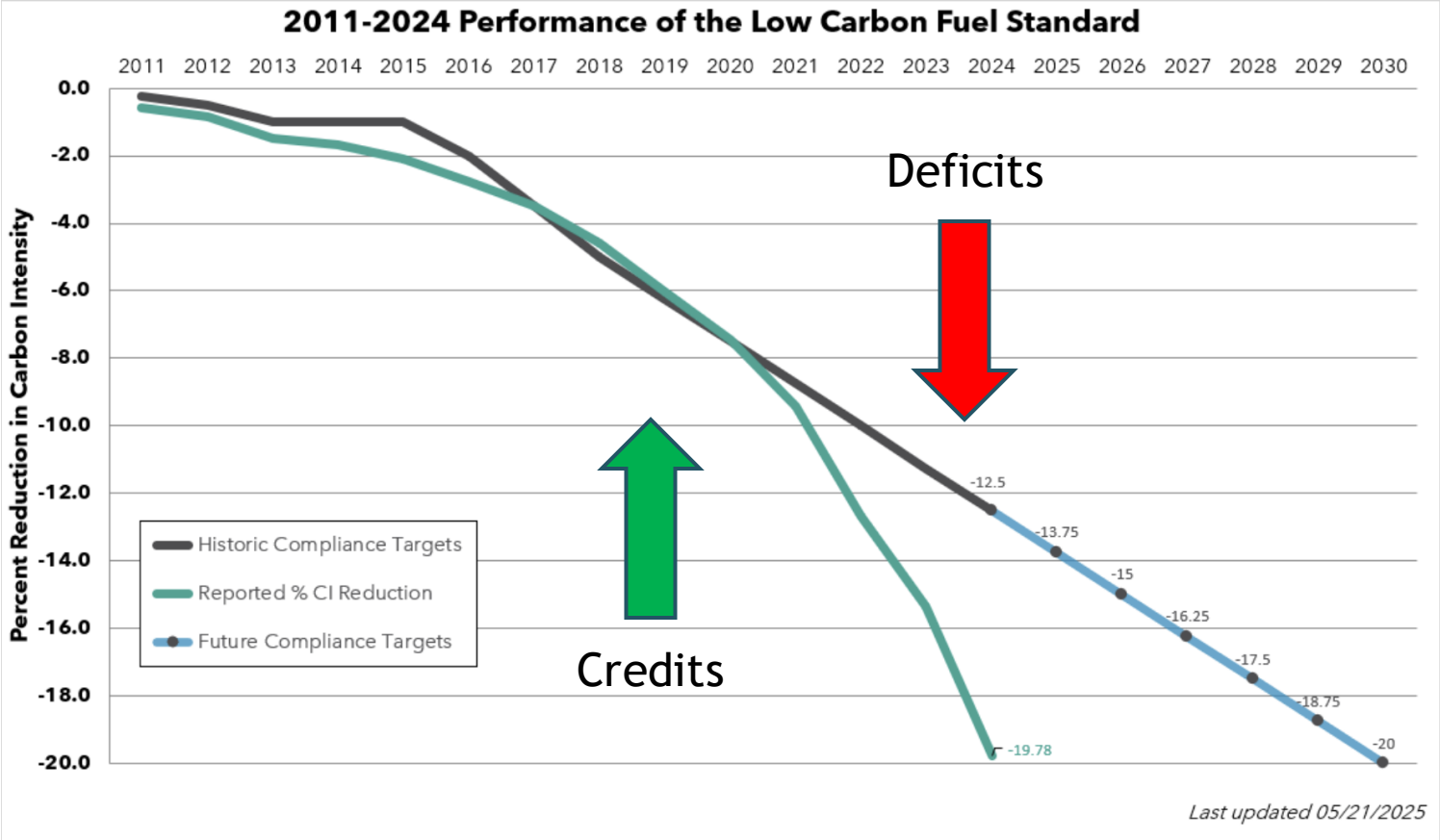
- ▶ All-of-the-Above Approach
  - ▶ *Doesn't pick winners & losers*
- ▶ Market-based
  - ▶ *Transfer buyers ↔ sellers vs. state budget appropriations*
- ▶ Performance-based
  - ▶ *All fuels measured against the same standard*
- ▶ Science-based
  - ▶ *Credit ALL carbon reductions warranted by high-integrity assessment*

## BENEFITS:

- ▶ Promotes economic development in rural & ag communities
- ▶ Provides long-term certainty for financing
- ▶ Minimizes market disruption & cost
- ▶ Reduces air pollution & associated health effects/costs
- ▶ Facilitates fuels/feedstocks transition to new uses (e.g. methanol→shipping, biofuels→SAF)



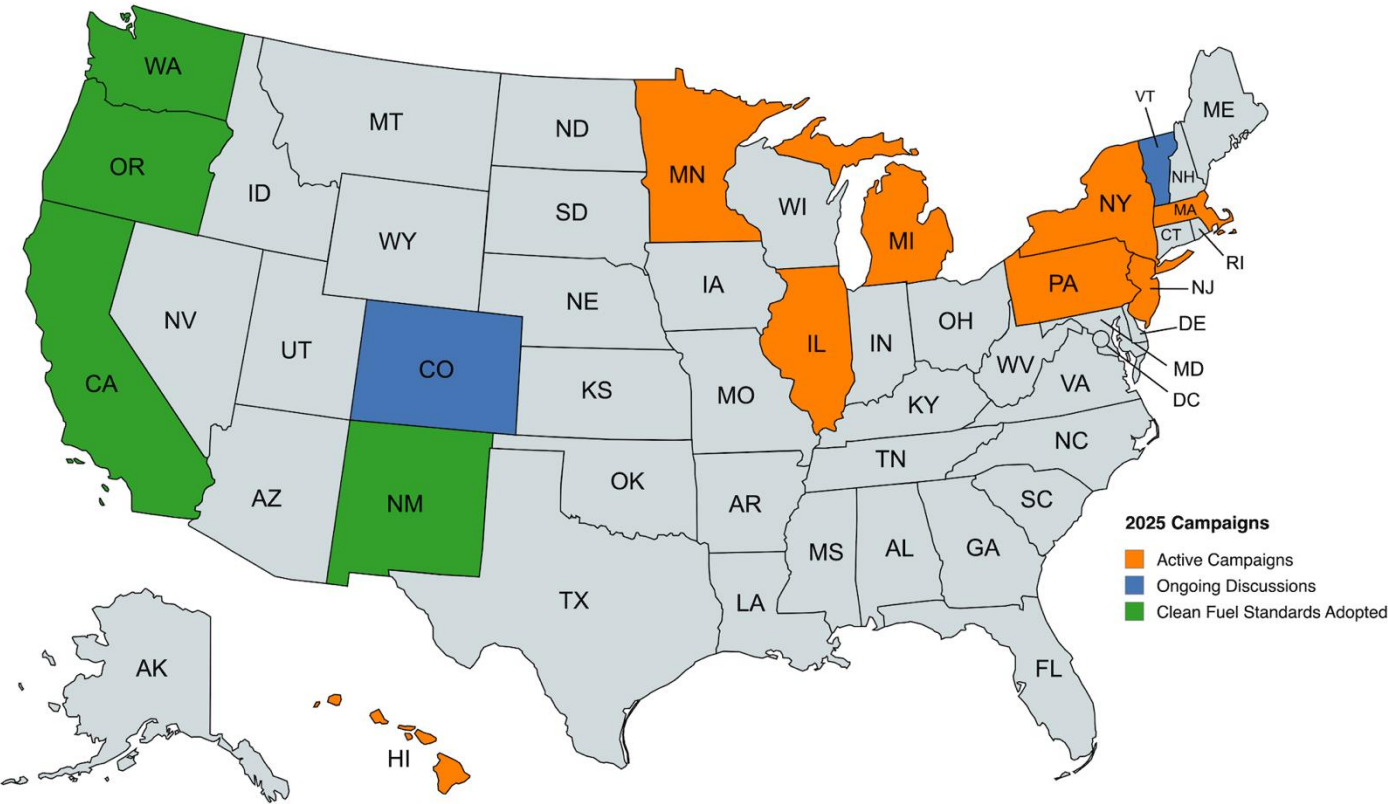
# Program Design + CA LCFS Snapshot



# CFS Policies Supplement Federal Incentives

- ▶ The LCFS provides fundamental structure and long-term stability
- ▶ Complements programs to advance particular clean fuels:
  - ▶ U.S. Renewable Fuel Standard
  - ▶ U.S. federal tax credits
- ▶ Credits and incentives stack together

# Current States of Play



# Thank You

*Robin Vercruse*

[robin@lcfcoalition.com](mailto:robin@lcfcoalition.com)



Low Carbon  
Fuels Coalition



## Connecting with Agriculture & Rural Communities to Foster Energy Security & Economic Opportunity

**Tim Hughes, Project Director, CAAFI & Midwest Regional Biomass Lead, Idaho National Laboratory**



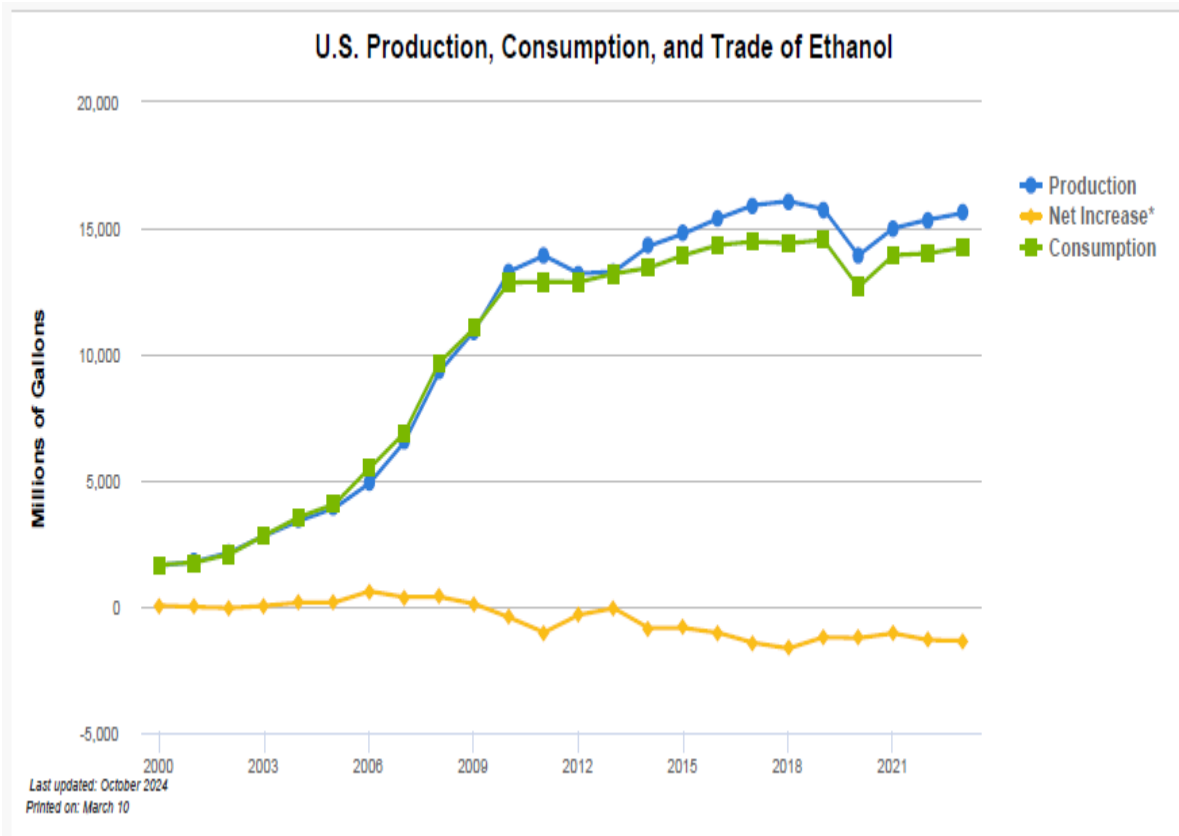
***Goal is development of non-petroleum, drop-in, jet fuel production with:***

- ❖ Equivalent safety & performance***
- ❖ Comparable cost***
- ❖ Environmental improvement***
- ❖ Security of energy supply for aviation***

***Enables its diverse stakeholders:***

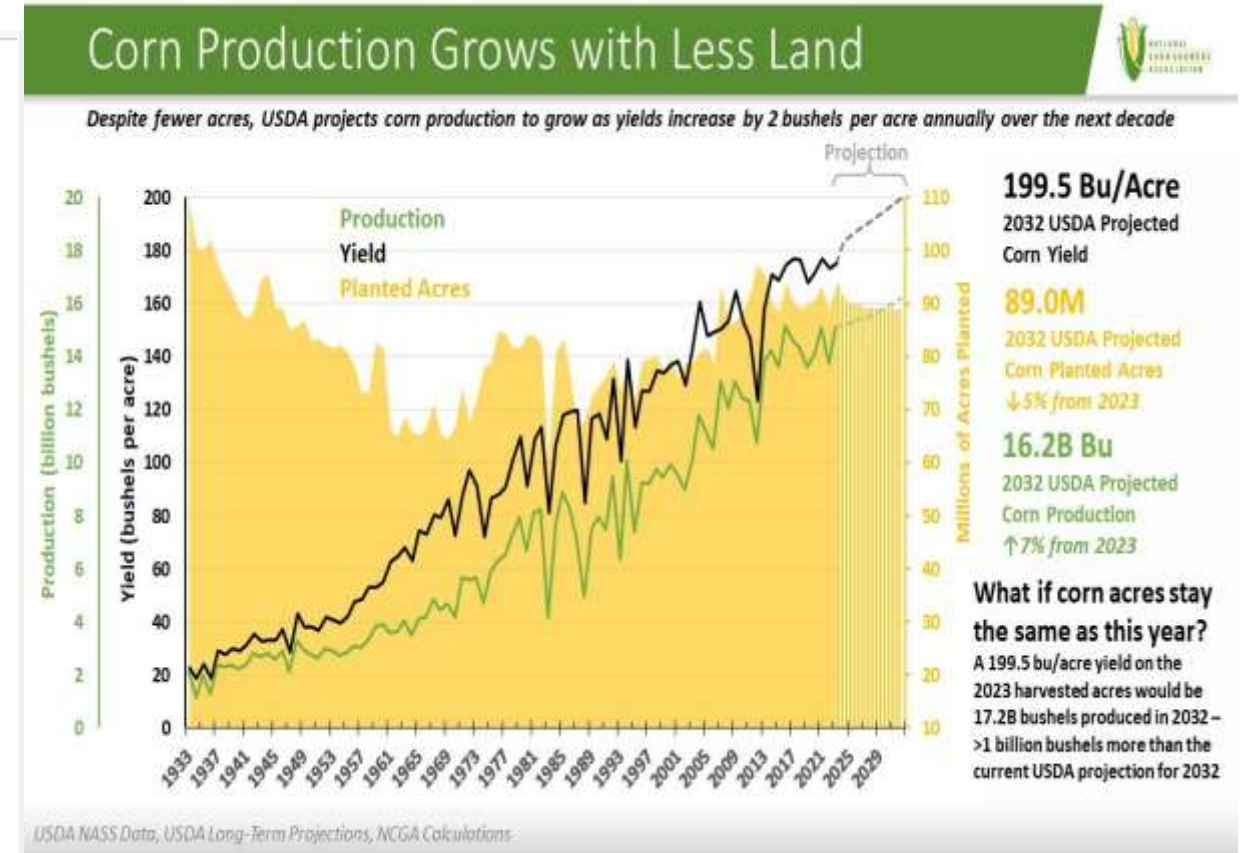
- ❖ to build relationships***
- ❖ share and collect data***
- ❖ identify resources, and***
- ❖ direct research, development and deployment of alternative jet fuels***

# Biofuels - Ethanol



<https://afdc.energy.gov/data/10323>

November 19, 2025



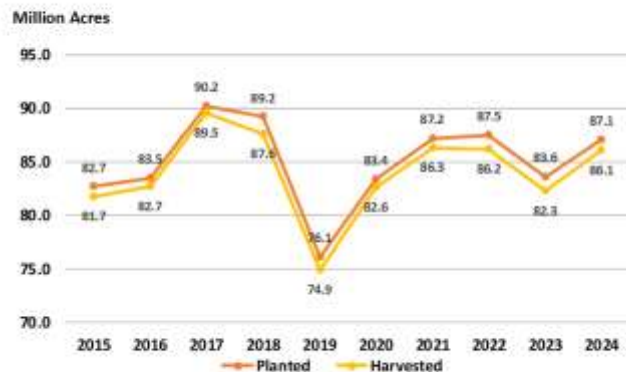
<https://www.agrimarketing.com/newsroom/storyimages/116412241864f66df8b6265.jpg>

3

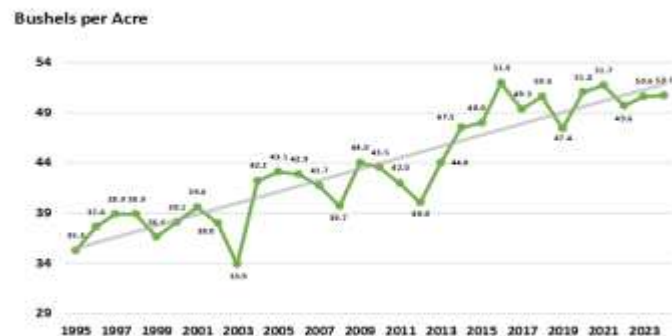
# Biofuels – Biodiesel & Renewable Diesel



**Soybean Acres  
United States**



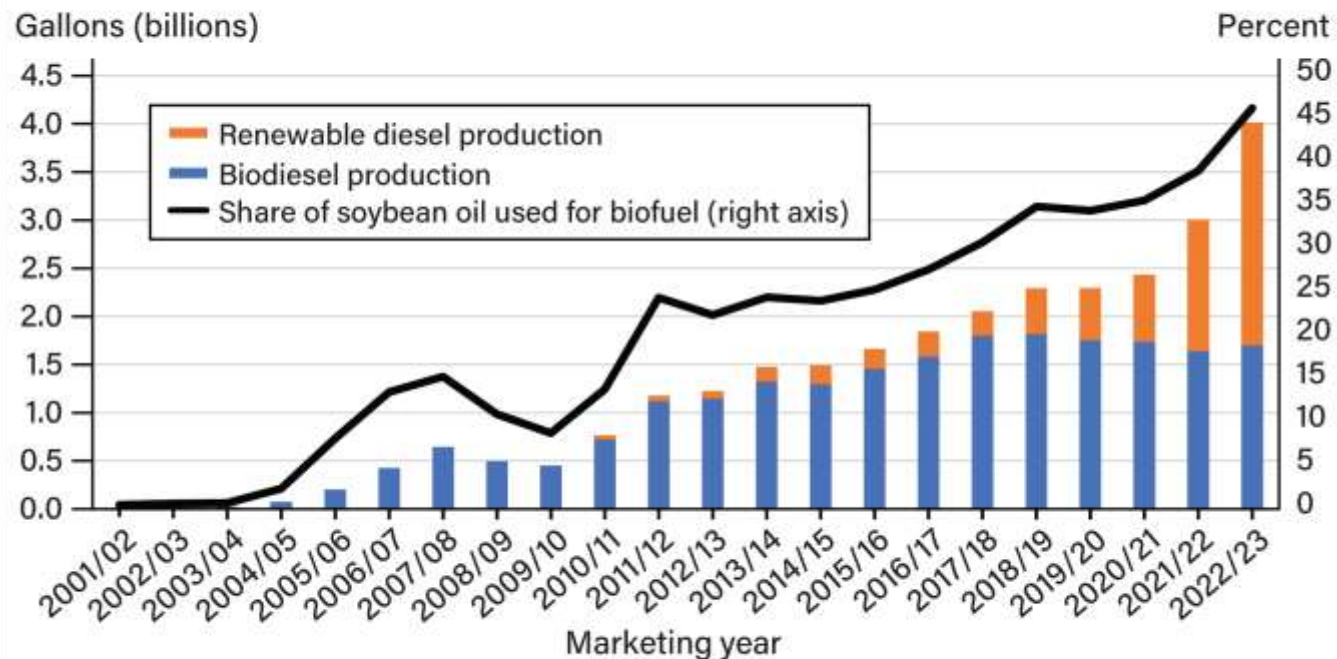
**Soybean Yield  
United States**



**U.S. production of biofuels and share of  
soybean oil used for biofuel, 2001/02–2022/23**



Economic Research Service  
U.S. DEPARTMENT OF AGRICULTURE



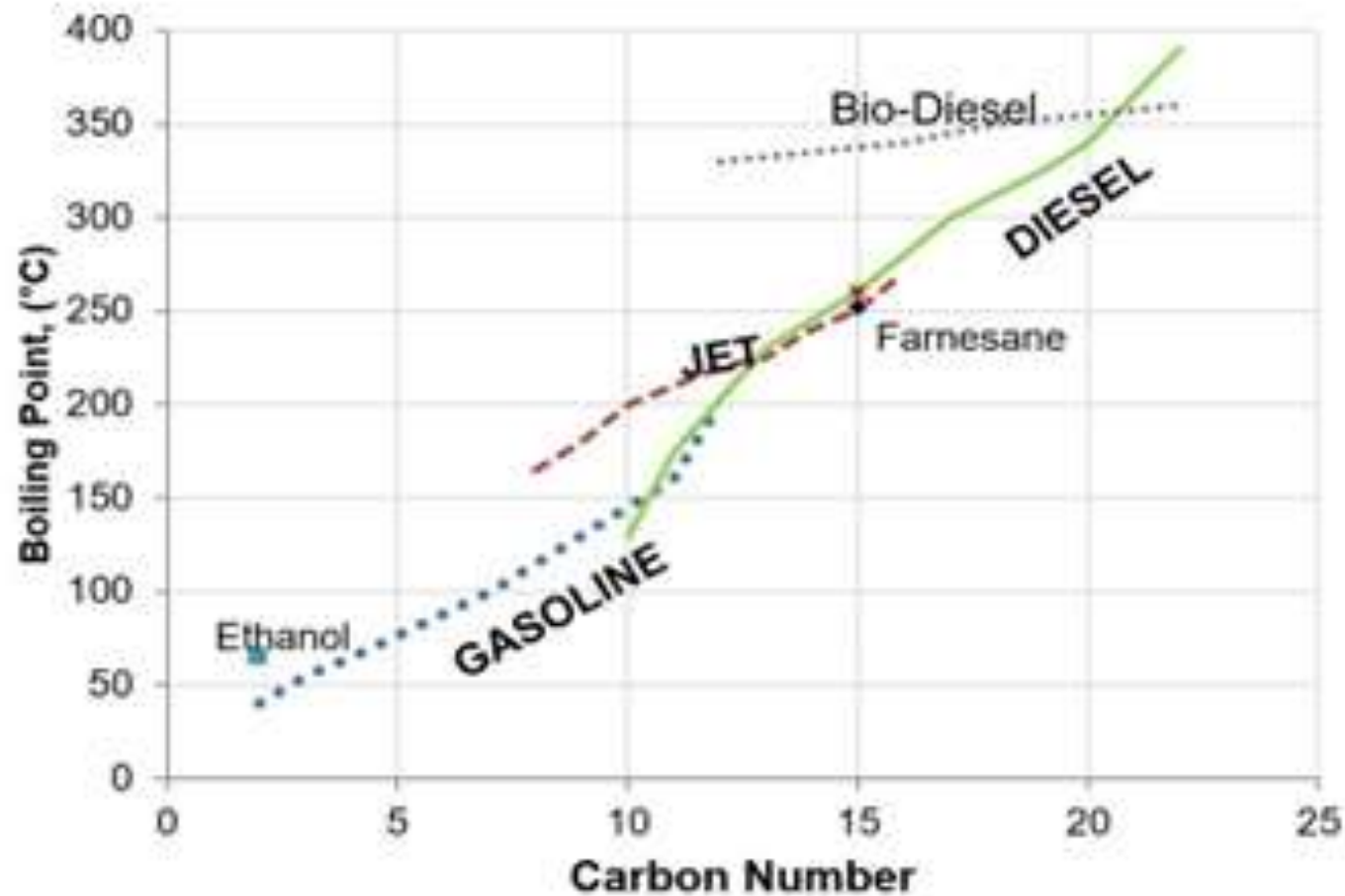
Note: Marketing years shown are for soybean oil, which spans from October to September.

Source: USDA, Economic Research Service, Bioenergy Statistics.

CHARTS of NOTE



# Figure 3. Carbon numbers and boiling points for gasoline, jet, and diesel fuels [1]



# Approved ASTM D7566 & D1655 Pathways

<https://www.caafi.org/fuel-qualifications>

| Annex | Conversion Process                                        | Approval Date | Maximum Blend | Feedstocks                               |
|-------|-----------------------------------------------------------|---------------|---------------|------------------------------------------|
| 1     | Fisher-Tropsch [FT] - Synthetic Paraffinic Kerosene [SPK] | June 2009     | 50%           | Syngas from natural gas, coal or biomass |
| 2     | Hydroprocessed Esters and Fatty Acids [HEFA-SPK]          | July 2011     | 50%           | Fats, oils, & greases (FOGs)             |
| 3     | Hydroprocessed Fermented Sugar - Synthetic Isoparaffins)  | June 2014     | 10%           | Sugars                                   |
| 4     | FT - SPK/A                                                | November 2015 | 50%           | Biomass                                  |
|       |                                                           | April 2016    | 30%           | Isobutanol                               |
| 5     | Alcohol to Jet [A2J] - SPK]                               | April 2018    | 50%           | Ethanol                                  |
| 6     | Catalytic Hydrothermolysis Jet)                           | January 2020  | 50%           | Lipids                                   |
| 7     | Hydroprocessed Hydrocarbons [HC- HEFA]                    | 2020          | 10%           | Algae                                    |
| 8     | ATJ - SKA                                                 | June 2023     | 50%           | C2 to C5 Alcohols                        |

| Annex | Conversion Process                               | Approval Date | Maximum Blend                                                     | Feedstocks  |
|-------|--------------------------------------------------|---------------|-------------------------------------------------------------------|-------------|
| 1     | FOG Co-Processing                                |               | 5%                                                                | FOGs        |
| 1     | FT Co-Processing                                 |               | 5%                                                                | FT Biocrude |
|       | Hydrocarbons derived from hydroprocessed biomass |               | 24% (with up to 10% of synthetic hydrocarbons in the jet product) | FOGs        |



## SAF Progress: Safety, Acceptance, & Future Growth

**909,299**

Commercial flights  
have been operated  
using sustainable  
aviation fuel since 2011  
(updated daily)

**69**

Number of airports  
currently regularly  
supplied with SAF

**20 Mt**

SAF uptake by 2030  
could be possible  
under industry  
proposed and  
committed policies

**45 bn**

Dollars in current  
forward purchase  
agreements for SAF by  
airlines, operators and  
corporate partners  
(compared to \$6 billion  
pre-Covid)

**50**

Airlines have  
committed to 2030 SAF  
goals ranging from 5-  
30% of their total fuel  
usage, with most of  
them committing to  
10% use

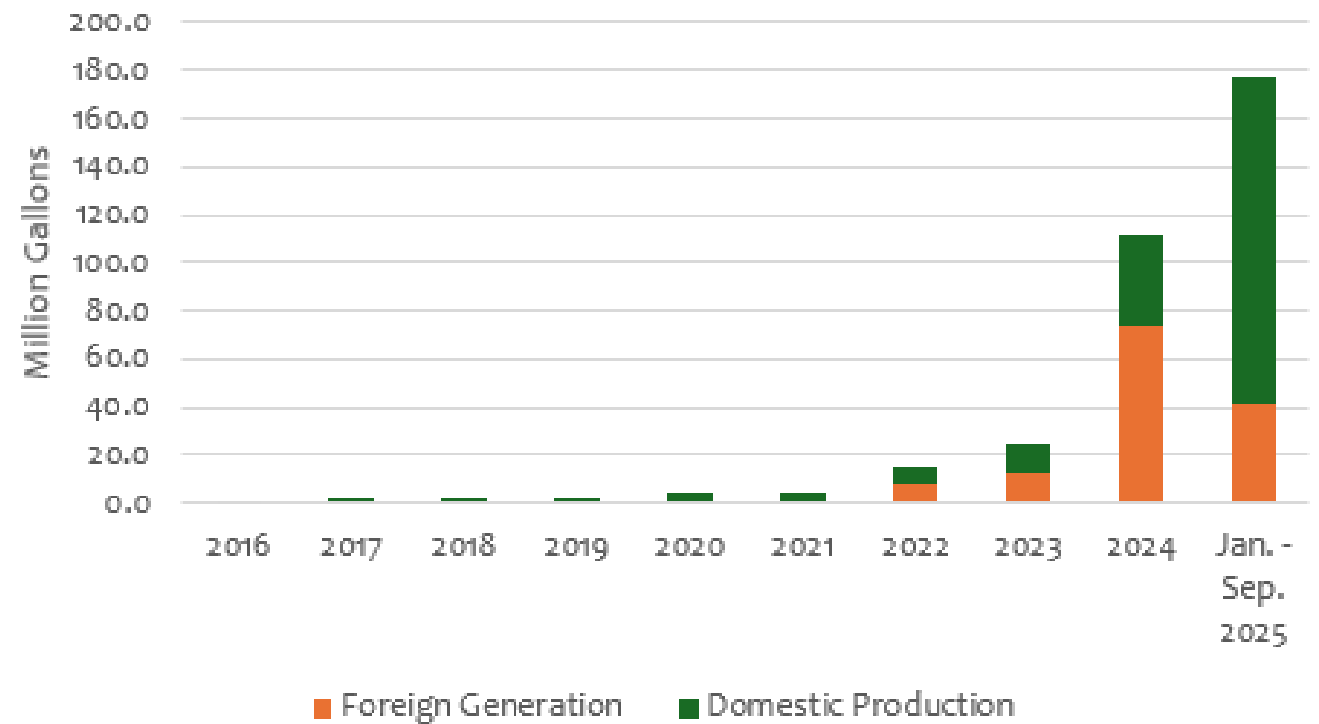
**11**

Approved pathways for  
producing SAF so far  
(including 3 for co-  
processing)

# Current Status



United States SAF Volume



[https://www.epa.gov/system/files/other-files/2025-02/generationbreakout\\_jan2025.csv](https://www.epa.gov/system/files/other-files/2025-02/generationbreakout_jan2025.csv)

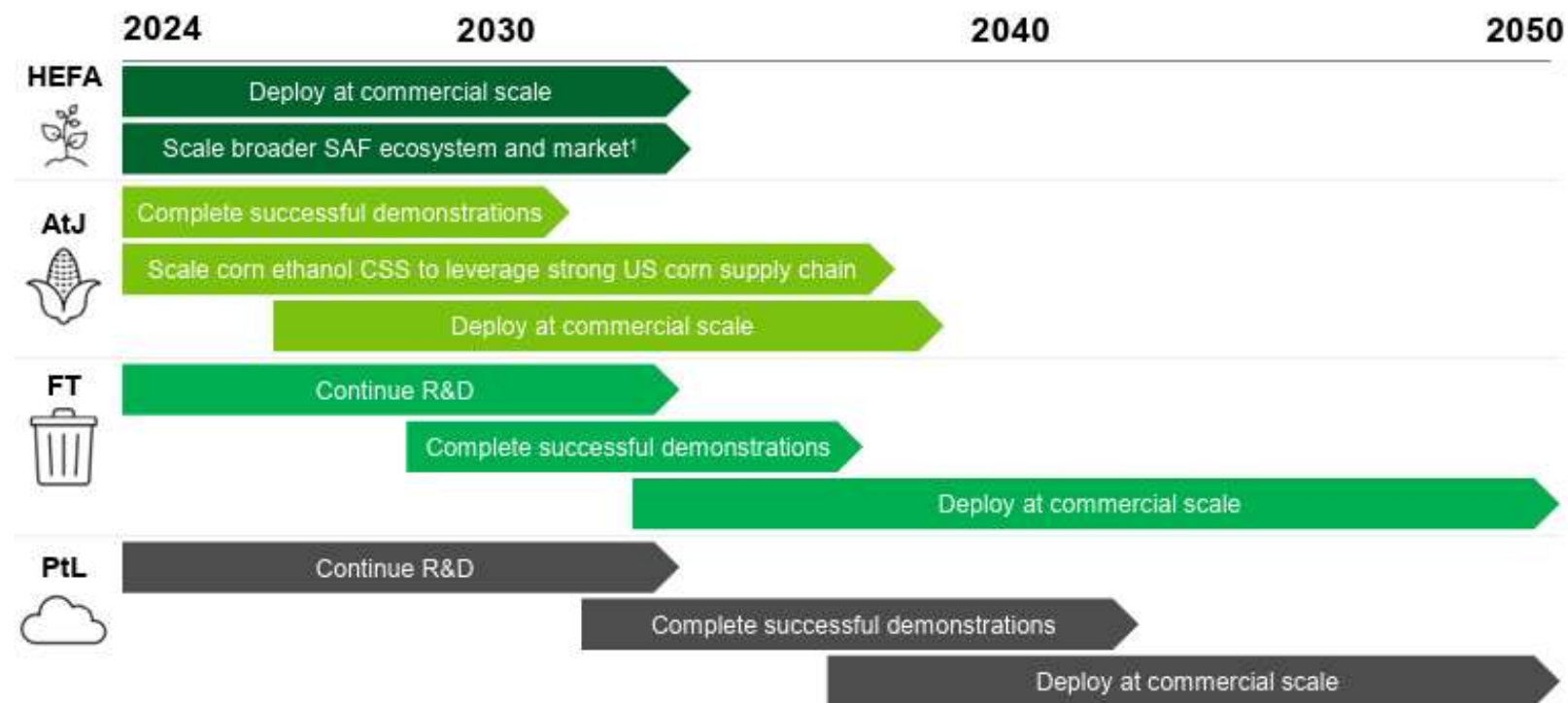
# SAF: from a diverse set of world-wide feedstocks

## Wastes, residues, purpose grown, circular-economy byproducts



# Potential:

Figure 20: Timeline for potential commercialization of different SAF production pathways.



**Figure Footnotes:** 1. Represents the buildout of feedstock collection and transport infrastructure, pipelines and trucking pathways, SAF blending facilities.

# State & Regional SAF Initiatives



SUSTAINABLE AVIATION FUEL (SAF)

## Massachusetts and New England Regional SAF Hub

The future of clean aviation is taking off in New England



KENTUCKY  
**Sustainable Aviation Fuel**  
COALITION



**CASCADIA**  
SUSTAINABLE AVIATION ACCELERATOR



# SAF Economic Impact Studies

## Soaring to New Heights

The Economic Impacts of Building  
an American SAF Industry

IEC



THIRD WAY



EVOLVED  
ENERGY  
RESEARCH



**Sustainable Aviation Fuel  
Targeted Opportunity Region**

Great Lakes Region

## Sustainable Aviation Fuel for the Future: What Does the Midwest Have to Gain?

*January 2024*

Prepared For:



**Iowa Renewable  
Fuels Association**

Prepared By:



**Decision  
Innovation  
Solutions**

## Cacophony to symphony

Successfully scaling sustainable aviation fuel.



Bringing  
Ingenuity  
to Life.

IN PARTNERSHIP WITH

SUSTAINABLE  
AVIATION FUEL



<https://www.caafi.org/state-initiatives>



**CAAFI Identified Academic, Industrial, Governmental, and Natural Resources by State to aid in the progress of SAF Development**

November 19, 2025

13

**Tim Hughes**

**+1-270-791-8520**

[hughes.caafi.pm@gmail.com](mailto:hughes.caafi.pm@gmail.com)

[agtim1965@outlook.com](mailto:agtim1965@outlook.com)

[www.caafi.org](http://www.caafi.org)

[info@caafi.org](mailto:info@caafi.org)

