

# Decarbonize Today with Biodiesel

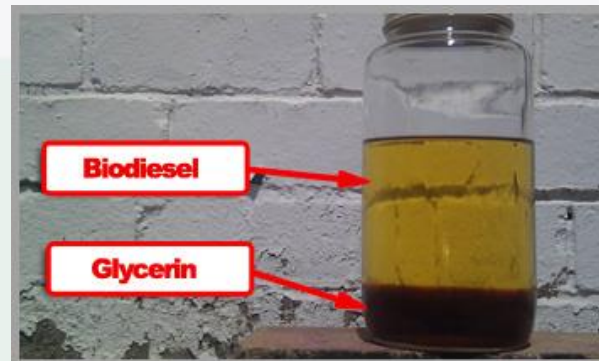
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# Biodiesel Production

## Transesterification

Feedstock + Methanol + Lye = "Biodiesel" + Glycerin

The product is not considered biodiesel unless it meets all parameters of ASTM D6751 for B100



# Renewable Diesel Production

Several pathways, most common is hydrotreating

Same feedstocks as biodiesel but produced in a refinery similar to diesel

Meets ASTM D975 for diesel

80% of renewable diesel goes to California



# Biodiesel Benefits - Renewable and Clean

Average 74% carbon reduction with B100

Reduces particulate matter by 49% with B100

Better lubricity

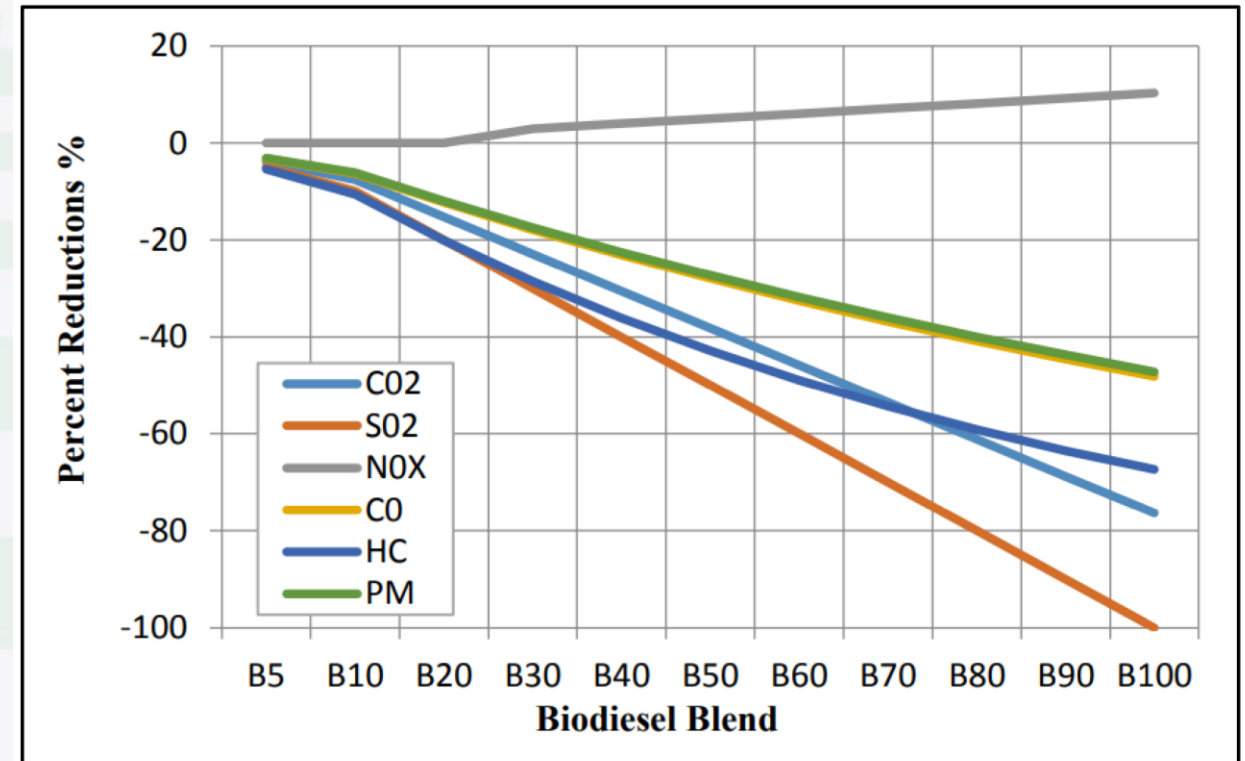
Higher cetane

Non-toxic

Biodegradable

Higher flash point than diesel, safer to handle

NOx may increase depending on engine type and duty cycle



Source: Groen Solutions based on NREL and EPA data.

# Biodiesel Benefits - Available now for heavy duty

Can be used in any diesel engine immediately

Uses existing infrastructure

B20 blend **instantly** achieves a 15% carbon reduction





# EPA Approved Biodiesel Feedstocks



Feedstock Composition in 2022

**BBD Production:**

**2023:** 3.5 billion gallons

**Future Goals:**

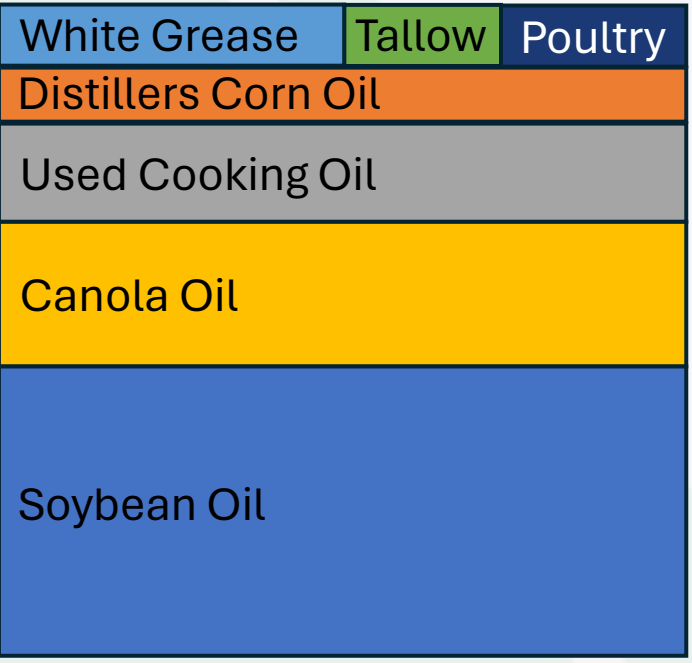
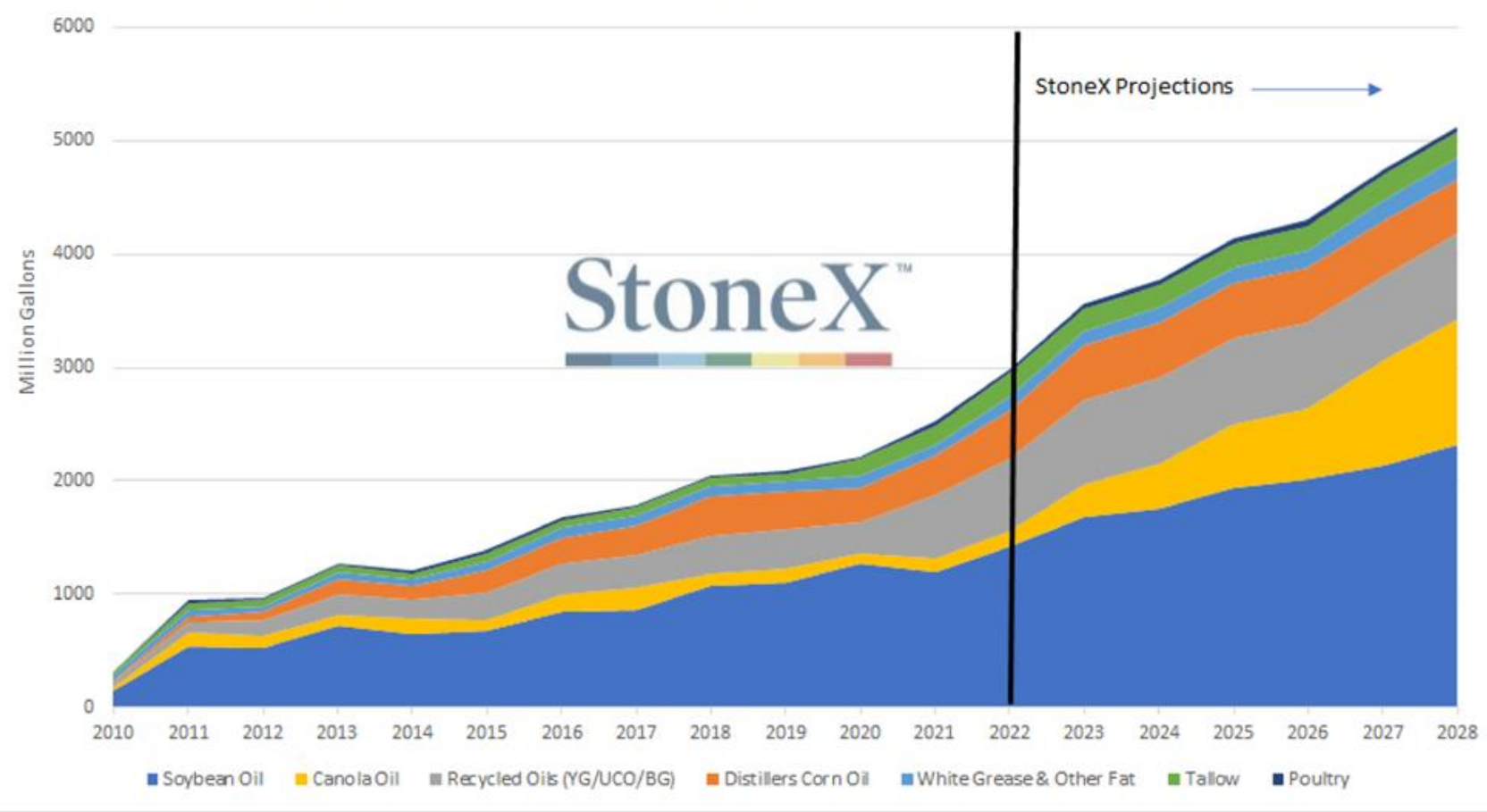
**2030:** 6 billion gallons

**2050:** 15 billion gallons

# Biomass Based Diesel - Projections



US Biodiesel and Renewable Diesel Historic/ Projected Feedstock Supply



# Can we grow more feedstock?

## Canola Oil

- Recently approved pathway for renewable diesel
- Can be grown as a winter crop

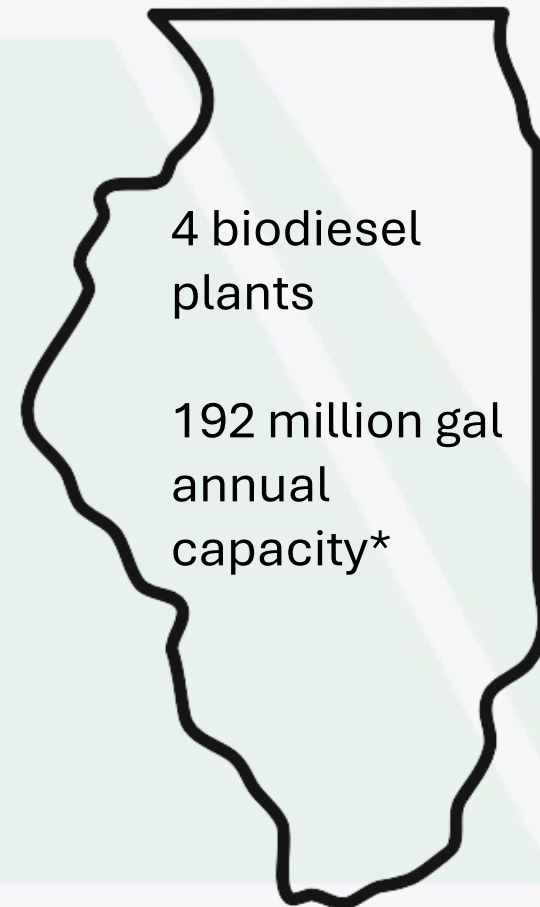
## Soybean Oil

- Currently around 50% of US soybeans get exported
- 1 billion gallons of US crush capacity coming online in the near future
- Steadily increasing yields = more bushels of beans on the same acreage

# IL Biodiesel - Availability

## 6.25% sales tax is exempt for certain blend thresholds

- B10 since 2003
- B13 tax incentive started April 1, 2024
- B16 starting April 1, 2025
- B19 starting April 1, 2026
- B11 in winter (December through March)
- Around 85% of retailers sell biodiesel blends year round to get the tax credit



\*Source: EIA



# IL Biodiesel Pricing: 3 year average in Chicago Area terminals



Source: OPIS Wholesale Price Reports

# IL Biodiesel - B20 and Beyond

- B20 Club of Illinois just celebrated their 10th year
- 30+ Members with a variety of fleet types
  - Mass transit
  - Fuel suppliers
  - Construction
  - Marine vessels
  - Municipalities
  - Park Districts
- Must use at least B20 for 6 months per year



Source: [ilsoy.org/b20-club](http://ilsoy.org/b20-club)

# Thank you!



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