



# ETHANOL UNLEASHED

2026 POCKET GUIDE TO ETHANOL

An aerial photograph of an ethanol processing plant occupies the bottom half of the image. The plant features several large, cylindrical, corrugated metal silos in the foreground, connected by a network of pipes and walkways. In the background, there are several industrial buildings, more silos, and a long train of railcars. The surrounding area includes green fields and a road.



## A NOTE FROM OUR CEO

This Pocket Guide offers visual, data-driven snapshots of the U.S. ethanol industry. It distills key statistics and trends from the Renewable Fuels Association's **2026 Ethanol Industry Outlook**, available in print and digital formats.

RFA is the leading trade association for the U.S. ethanol industry. Discover our members, initiatives, and resources at **[EthanolRFA.org](https://EthanolRFA.org)**.

### RFA President and CEO

Geoff Cooper, Renewable Fuels Association

A handwritten signature of Geoff Cooper in black ink, written in a cursive style. The signature is positioned below the printed name and title.

# AN EXTRAORDINARY BIOFUEL

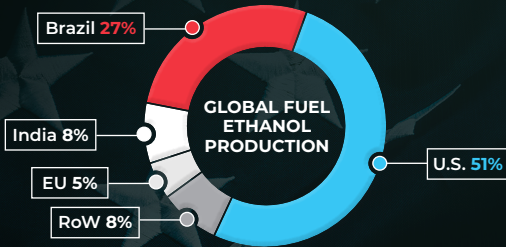
Ethanol, or ethyl alcohol ( $C_2H_5OH$ ), is a renewable fuel produced from plants—organic materials containing starches, sugars, or cellulosic matter. In the U.S., nearly all ethanol is processed by dry mills using field corn not intended for human consumption via milling, cooking, enzymatic breakdown, fermentation, distillation, and dehydration.

**Ethanol used as a fuel source checks several notable boxes:**

- ✓ **Renewable and Sustainable**
- ✓ **Reduces Greenhouse Gases**
- ✓ **Boosts Octane Levels**
- ✓ **Improves Combustion Efficiency**
- ✓ **Supports Energy Independence**
- ✓ **Stimulates Rural Economies**
- ✓ **Offers Savings to Refiners and Consumers**

# A U.S. POWERHOUSE

The United States is the world's dominant ethanol producer, accounting for over half of output. Global fuel ethanol production hit a record **31.9 billion gallons** in 2025.

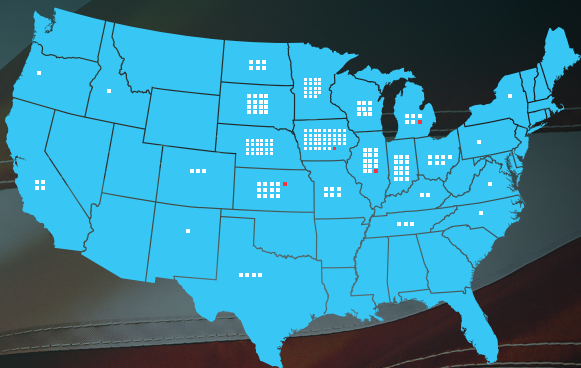


Nearly **200 biorefineries** across **24 states** have a cumulative total capacity of **18.5 billion gallons**—**93 million gallons** per plant on average per year.

## HISTORICAL ETHANOL BIOREFINERY COUNT & PRODUCTION CAPACITY

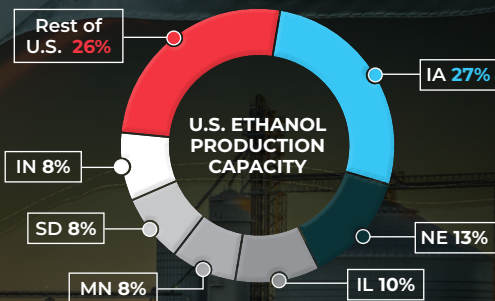
Year	Installed Ethanol Biorefineries	Total Installed Production Capacity (MGY)	Average Capacity per Biorefinery (MGY)
2000	56	2,007	36
2005	95	4,294	45
2010	204	14,073	69
2015	214	15,594	73
2020	208	17,436	84
2025	198	18,489	93

# U.S. FUEL ETHANOL BIOREFINERIES BY STATE



■ Installed Ethanol Biorefinery ■ New Biorefinery/Under Construction

**Half** of U.S. production capacity is concentrated in Iowa, Nebraska, and Illinois, the largest corn states.

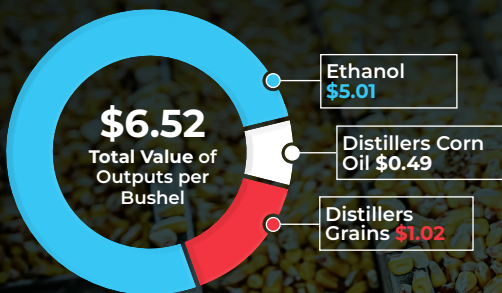


# FUELING THE ECONOMY

Ethanol is the largest value-added market for U.S. corn. In 2025, biorefineries processed a record **5.7 billion** bushels, transforming **\$24 billion** in grain into **\$36 billion** of fuel and coproducts—a **50%** boost in value.

## ETHANOL'S VALUE-ADDED PROPOSITION

A typical dry-mill plant generated **\$2.25** per bushel in additional value—over **50%** above raw corn prices.



Corn Cost per Bushel: **\$4.27**

## ETHANOL AND THE 2025 ECONOMY



**79,228**

Direct Jobs



**\$28.3 Billion**

Household Income



**237,292**

Indirect/Induced Jobs



**\$9.0 Billion**

Tax Revenues

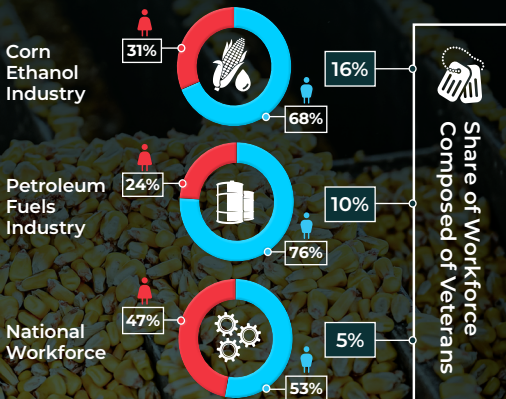


**\$50.4 Billion**

GDP Contribution

The ethanol industry supports **high-quality rural jobs** with **competitive wages**.

## WORKFORCE DEMOGRAPHICS



# FUEL AND FOOD

U.S. ethanol biorefineries are a **global source** of high-protein animal feed. In 2025, the industry produced **35 mmt** of distillers grains and related feed products.

On average, **1 bushel of corn** yields:



**2.9 GALLONS** of denatured fuel ethanol



**14.0 POUNDS** of distillers grains animal feed (10% moisture)

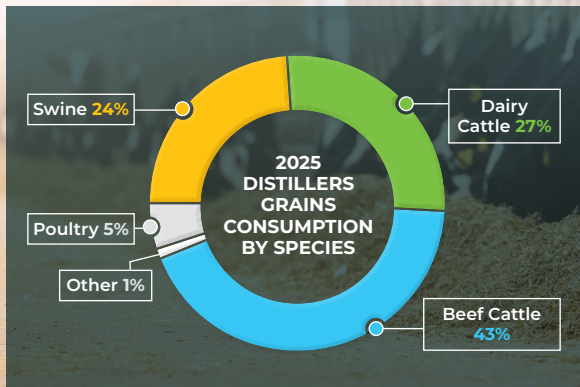


**1.0 POUND** of distillers corn oil

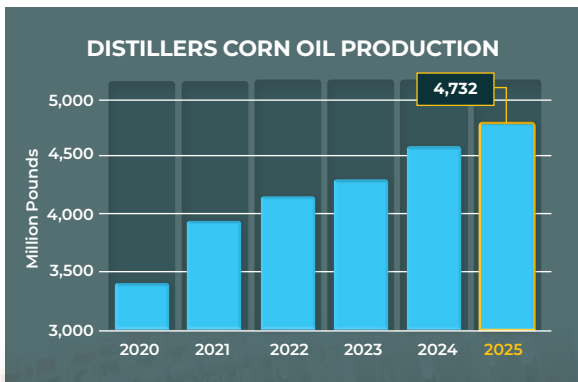


**16.0 POUNDS** of captured biogenic carbon dioxide (CO<sub>2</sub>)

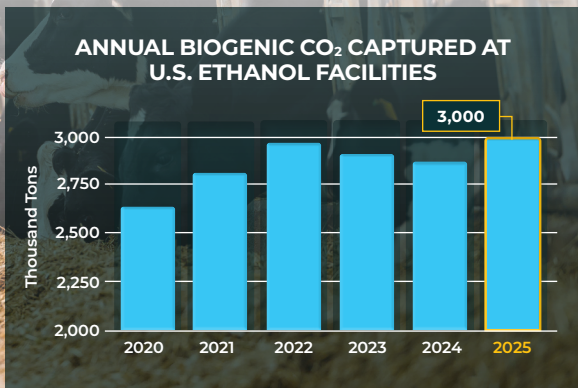
**Distillers grains** demand in 2025 was dominated by ruminants (70%), followed by pigs, poultry, and other animals.



Biorefineries generated **4.7 billion** pounds of **distillers corn oil**, supporting biobased diesel, SAF, and feed markets.

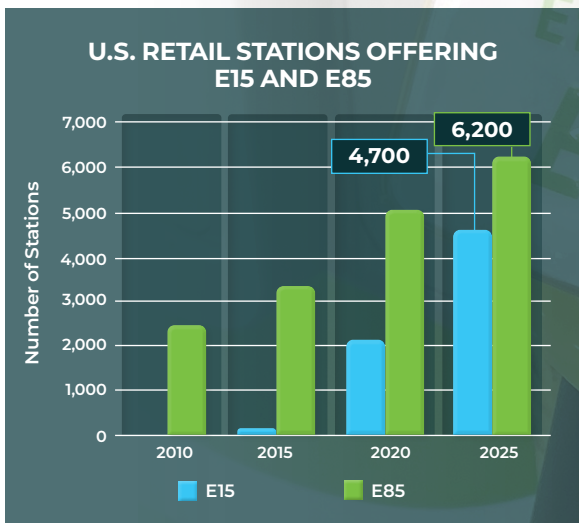


These facilities also captured a record **3.0 million** tons of high-purity CO<sub>2</sub> for food, beverage, and industrial uses.



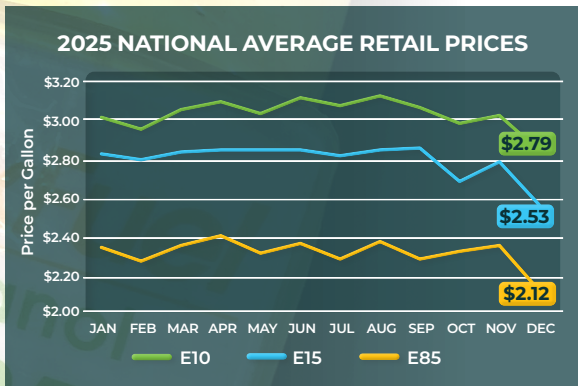
# HIGHER ETHANOL BLENDS

While E10 is ubiquitous in the market, higher ethanol blends are widely approved, increasingly available, and cost-competitive. EPA approves E15 in **100%** of cars and light trucks built in 2001 or later. Automakers endorse E15 in **95%** of newer models. About **21 million** flex fuel vehicles on the road today can use blends with up to 85% ethanol.

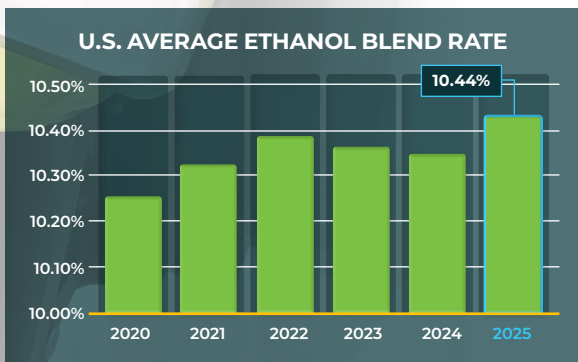


Higher ethanol blends infrastructure expansion is escalating. Consumers have **23%** greater access to E85 and **twice** as many E15 stations than what they did five years ago.

Higher blends are economically favorable. In 2025, E15 was priced **7%** less than E10, while E85 averaged **22%** less.

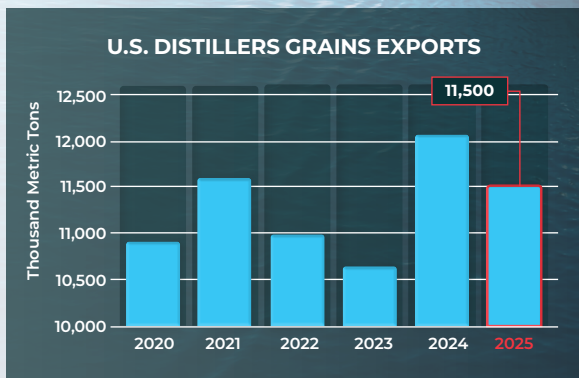
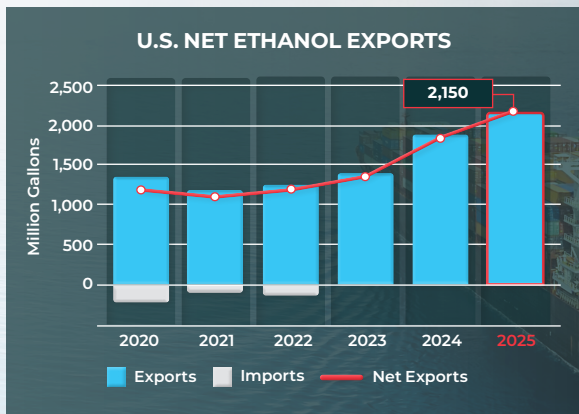


Expanding use of higher blends has put to rest the myth of the “10% Blend Wall.” The national average blend rate reached **10.44%** in 2025, with October exceeding **11%** for the first time.



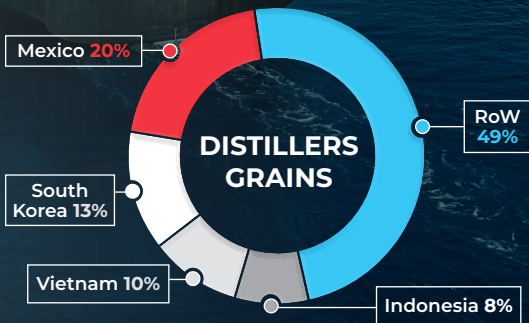
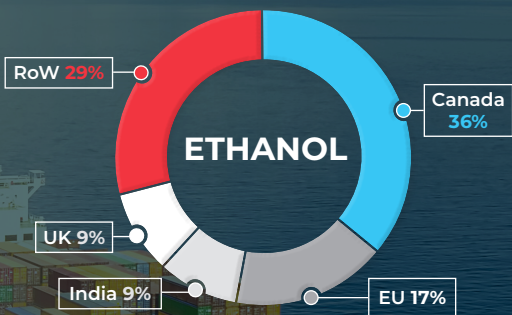
# A GLOBAL MARKET

Ethanol and coproducts serve a diverse global marketplace. Record 2025 exports accounted for **13%** of U.S. ethanol production and **\$4.7 billion** in sales to nearly 90 countries.



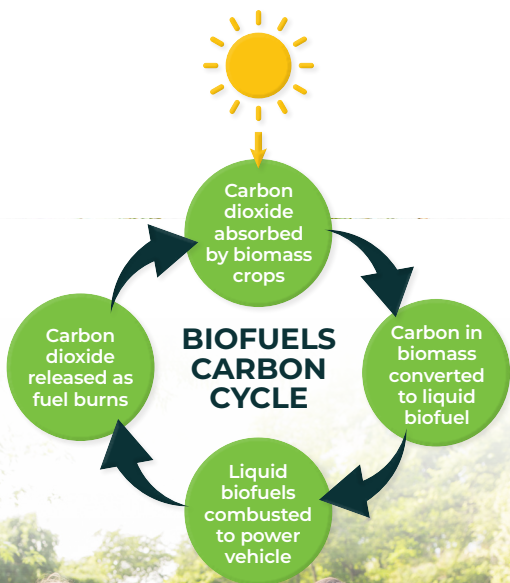
Meanwhile, **36%** of distillers grains production was exported to **50+** countries.

## 2025 TOP U.S. EXPORT MARKETS

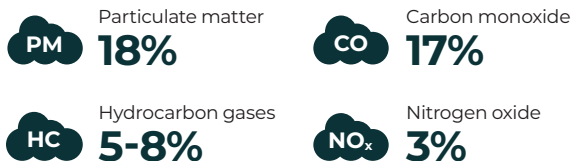


# PROVEN CLEANER AIR

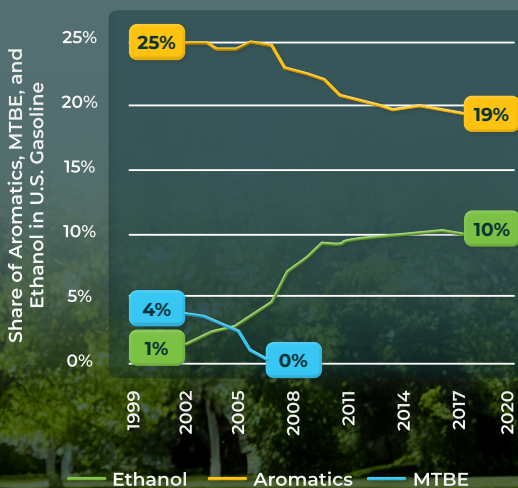
Ethanol delivers immediate climate and air-quality benefits. In 2025, ethanol reduced transportation GHG emissions by **54.3 mmt**—equivalent to removing **12 million** cars from the road for one year.



Higher ethanol blends also significantly reduce harmful tailpipe pollutants. Replacing E10 with E15 cuts pollutants linked to respiratory and cardiovascular disease:

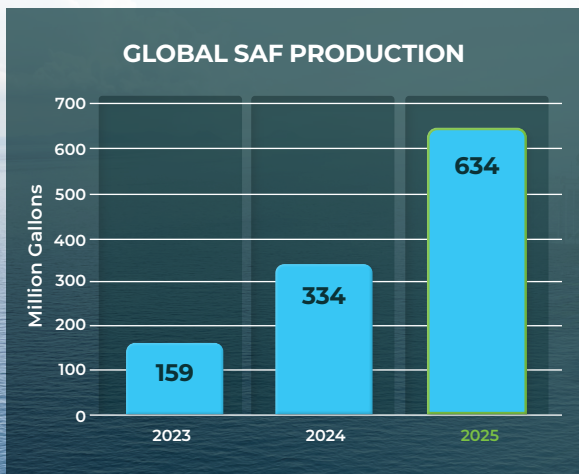


## MORE ETHANOL MEANS LESS HARMFUL AROMATICS AND MTBE



# ETHANOL BY AIR & SEA

Sustainable aviation fuel (SAF) can reduce aviation fuel greenhouse gas emissions by **50-80% or more**. In 2025, global SAF production nearly doubled from **334 million** gallons to just over **634 million** gallons, according to the International Air Transport Association.



Today, ethanol also is gaining momentum as a practical, cost-effective marine fuel. Manufacturers of marine engines like Everllence, WinGD and Wärtsilä are investing in dual-fuel ethanol-powered engines and conducting sea trials.

# THE POWER OF OCTANE

## WHERE'S THE BUZZ AROUND OCTANE?



**Automakers:** Turbocharged, higher-compression engines thrive on high-octane gas to maximize performance.

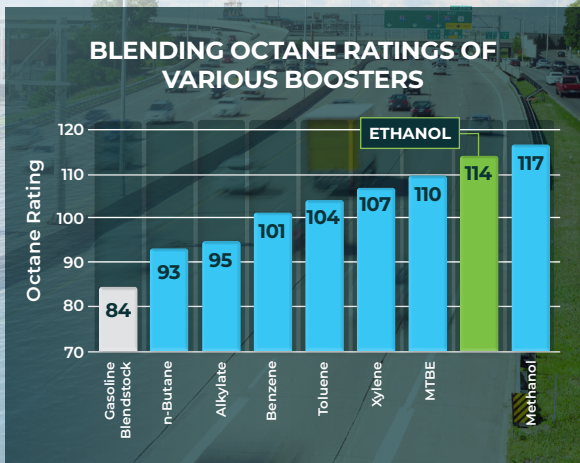


**Consumers:** Sales of premium (high-octane) fuel has seen exponential growth for the last 15 years.



**Refiners:** Sub-octane gasoline blendstock gets a boost from cost-effective octane additives, creating the 87 AKI fuel drivers know and love.

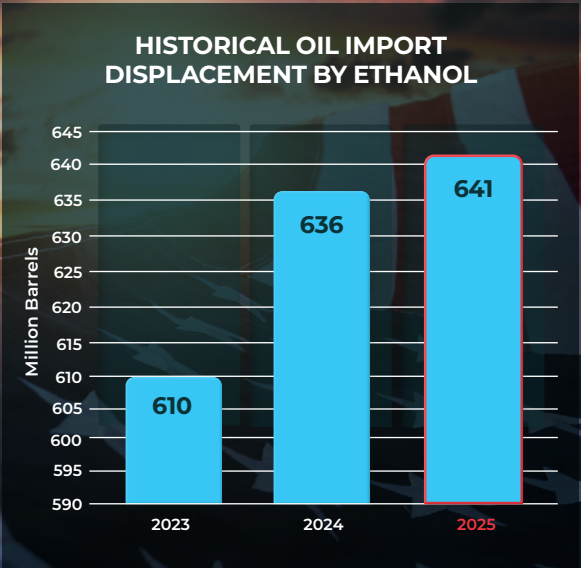
Ethanol is the **lowest-cost, safest source** of octane, with refinery-derived octane costing **4.5 times** more.



# ENERGY INDEPENDENCE

A December 2025 survey by Morning Consult found:

- **79%** believe it is important for America to be energy independent
- **78%** believe renewable fuels like ethanol are important to energy independence



The U.S. currently imports **one-third** of its crude oil. In 2025, Americans sent **\$23 billion** to OPEC—**\$171** per household. Fortunately, ethanol displaced over **641 million** barrels of foreign oil in 2025.

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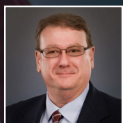
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