

NET-ZERO TAKES ROOT

Four years ago, RFA's producer members pledged that the ethanol they produce will achieve net-zero emissions by 2050 or sooner. The following year, RFA issued a landmark study that identified multiple technology pathways to achieve the net-zero goal. In fact, with the right policy and market conditions, the study found the industry could hit its net-zero aspiration around 2040—or 10 years ahead of schedule. Today, ethanol producers are already well on the way there, with nearly eight out of ten RFA member facilities reporting they are on track to achieve net zero by 2050 or sooner.

Nevertheless, there are some barriers that remain to be overcome, such as securing capital with favorable terms for decarbonization projects, permitting challenges, policy and regulatory uncertainty, and a lack of clear return on investment for certain technologies and approaches.

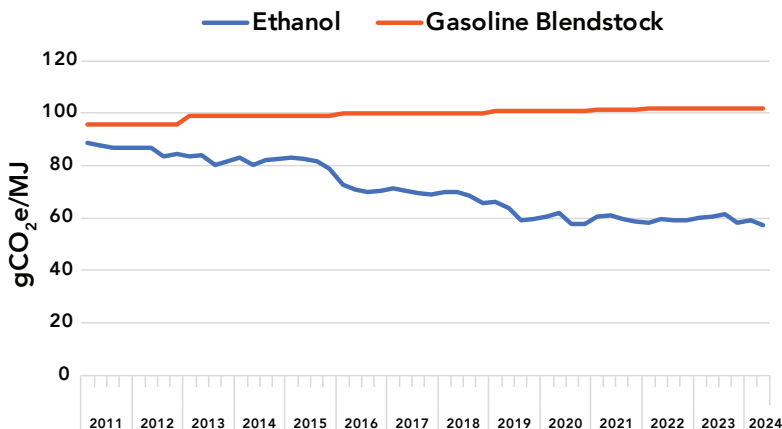
Permanent storage or utilization of biogenic CO₂ captured from fermentation is the quickest, most cost-effective way for ethanol producers to lower carbon intensity. Ethanol CO₂ transportation infrastructure remains a hurdle, yet 2024 saw promising progress toward developing a comprehensive pipeline network. In the year ahead, RFA will continue to support this pivotal strategy for the ethanol industry's transition to net-zero emissions.

American farmers are a critical part of this effort as well. In November 2024, a new report initiated by U.S. Farmers & Ranchers in Action concluded that U.S. agriculture, with enhanced implementation of conservation practices and emerging technologies, has an opportunity to more than offset its carbon footprint while increasing farmer profitability and farm resilience. Farmers also made great strides in 2024 toward broader

adoption of climate-smart agriculture practices that can help lower ethanol's carbon footprint.

The U.S. ethanol industry recognizes its pivotal role in reducing carbon emissions over the long term. Ethanol producers are making progress, and their success is taking root.

CARBON INTENSITY OF ETHANOL IN CALIFORNIA GASOLINE

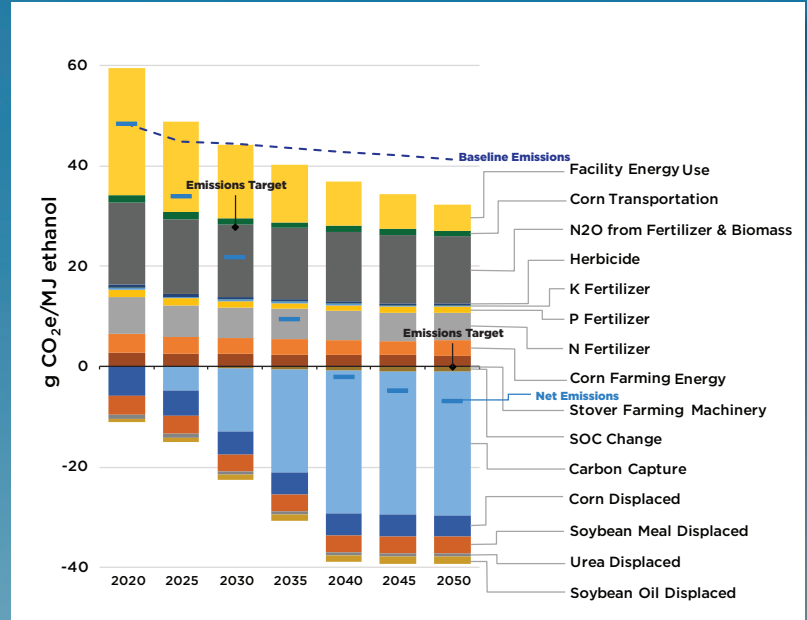


Source: California Air Resources Board

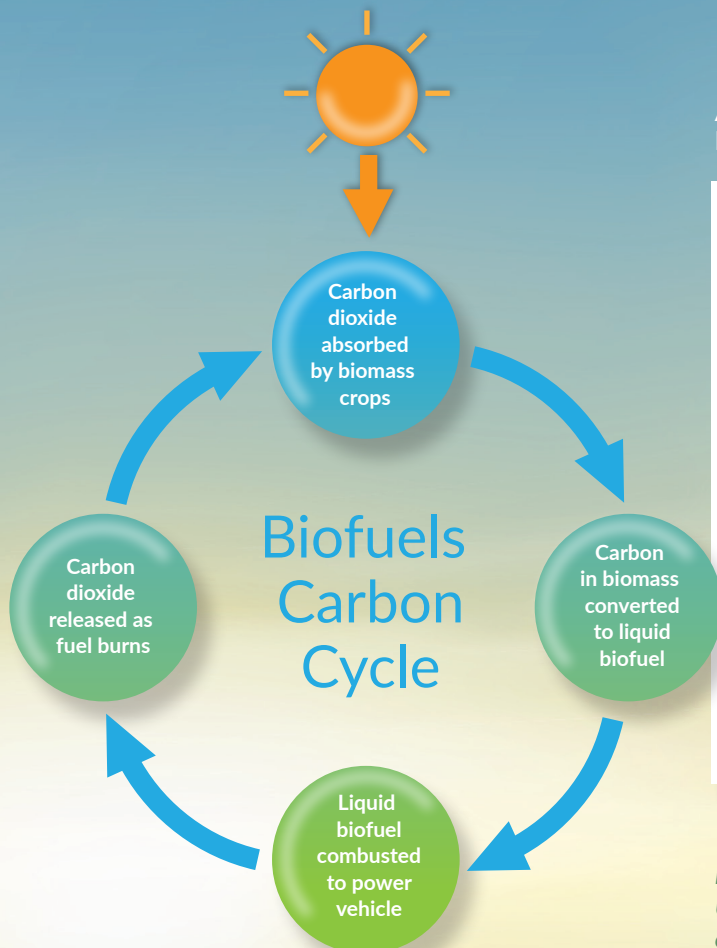
The use of ethanol in gasoline in 2024 reduced CO₂-equivalent greenhouse gas emissions from the transportation sector by 54.3 million metric tons. That's equivalent to eliminating:

- 12 million cars from the road for an entire year
- Annual emissions from 14 coal-fired power plants
- Emissions from 313,000 roundtrip flights from LA to NYC

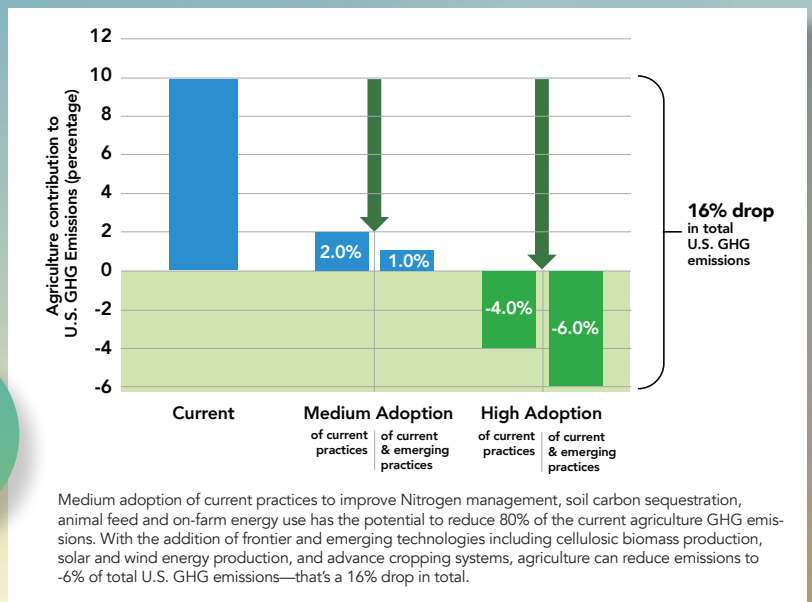
CORE PATHWAY TO NET-ZERO EMISSIONS



Source: Informed Sustainability Consulting LLC (2022), Pathways to Net-Zero Ethanol: Scenarios for Ethanol Producers to Achieve Carbon Neutrality by 2050



AGRICULTURE HAS THE POTENTIAL TO REDUCE ITS FOOTPRINT TO -6% OF TOTAL GHG EMISSIONS



Source: U.S. Farmers and Ranchers in Action

Even with medium adoption of current practices, U.S. agriculture can significantly reduce its greenhouse gas emissions.