

ETHANOL IS A LOW CARBON SOLUTION



States and localities are increasingly exploring public policy options to lower the carbon emissions of their transportation fuels and systems. Biofuels can immediately contribute to lowering greenhouse gas emissions, reduce harmful air toxics, and provide affordable solutions for consumers and policymakers alike.

ETHANOL'S ENVIRONMENTAL BENEFITS

According to the U.S. Department of Agriculture (USDA), ethanol reduces greenhouse gas (GHG) emissions by 39% compared to traditional gasoline¹:

- By 2022, USDA anticipates that corn ethanol's relative carbon benefits could reach up to 70% thanks to continued innovation in the ethanol process
- Techniques include reduced tillage, cover crops, and efficiency improvements at ethanol plants
- University of California – Riverside study² found ethanol blends reduce toxic emissions by up to 50%, including smog and ultra-fine particulates
- University of Illinois at Chicago study³ found replacing traditional gasoline with E10 reduces toxic emissions by 15%, while E20 could reduce toxins by 31.7%

California's Low Carbon Fuel Standard has been in place for nearly a decade and has relied heavily on biofuels like ethanol to achieve meaningful GHG reductions. In fact, 70% of the credits generated originate from biofuels.

REPORT: SELECT COMMITTEES ON THE CLIMATE CRISIS

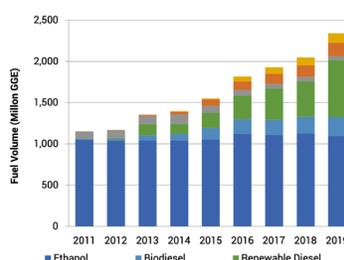
The special climate committees in the House and Senate tasked with making policy proposals to combat climate change released their reports this summer and recognized ethanol's role in combating climate change. Specifically, these recommended:

- Developing a federal LCFS
- Increasing R&D funding for next generation biofuels
- Issuing tax incentives for low-emission aviation alternative fuels
- Encouraging carbon capture technologies

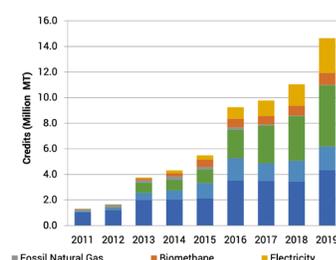
¹ USDA (<https://www.usda.gov/media/press-releases/2019/04/02/usda-study-shows-significant-greenhouse-gas-benefits-ethanol>)
² University of California – Riverside (<https://fixourfuel.com/wp-content/uploads/2018/04/UC-Riverside-Study.pdf>)
³ University of Illinois at Chicago (<https://grains.org/wp-content/uploads/2018/11/Complete-Study-Summary.pdf>)

CALIFORNIA'S LOW CARBON FUEL STANDARD

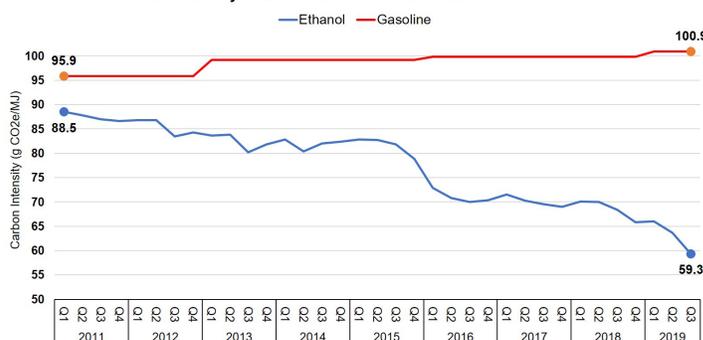
Alternative Fuel Volumes (Million GGE)



Credit Generation (Million MT)



Carbon Intensity of Gasoline and Ethanol Under California LCFS



SOURCE: [California Air Resources Board](https://www.arb.ca.gov/airquality/California%20Air%20Resources%20Board)

OUR ASK:

- Biofuels like ethanol must be part of any solution to decarbonize the transportation sector.
- Biofuels should be used as a low-cost solution towards meeting federal and state carbon reduction goals.
- Support S. 3986, a bill to provide a pathway for biofuels innovation.