

# ETHANOL IS A LOW CARBON SOLUTION



States and localities are increasingly exploring public policy options to lower carbon emissions of their transportation fuels and systems. Biofuels can immediately contribute to lowering greenhouse gas emissions, reduce other 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 gasoline<sup>1</sup>:

- By 2022, USDA anticipates that corn ethanol's relative carbon benefits could reach up to 70% thanks to continued innovation in the ethanol process

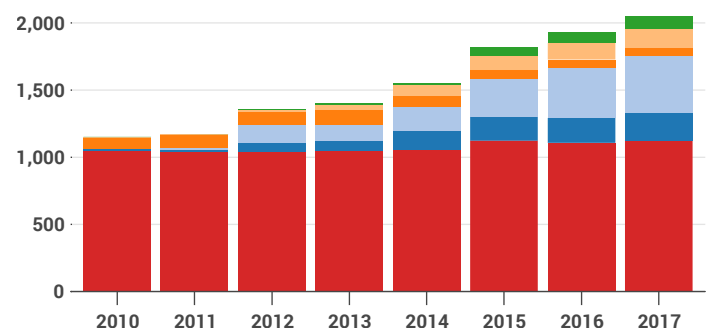
Techniques include reduced tillage, cover crops, and efficiency improvements at ethanol plants

- University of California – Riverside study<sup>2</sup> found ethanol blends reduce toxic emissions by up to 50%, including smog and ultra-fine particulates
- University of Illinois at Chicago study<sup>3</sup> found replacing traditional gasoline with E10 reduces toxic emissions by 15%, while E20 could reduce toxins by 31.7%

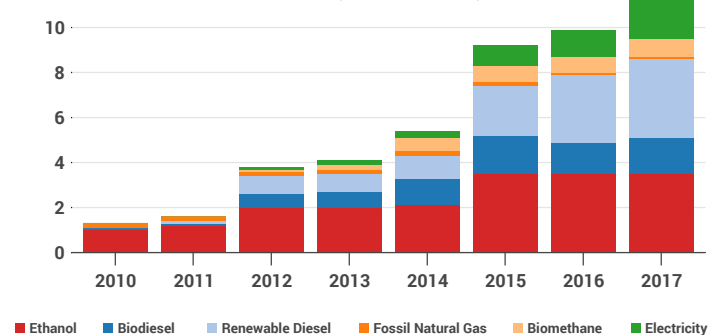
California's Low Carbon Fuel Standard has been in place for nearly a decade and has relied heavily on biofuels like ethanol to achieve meaningful GHG reductions.

## CALIFORNIA'S LOW CARBON FUEL STANDARD

### Alternative Fuel Volumes (Million GGE)



### Credit Generation (Million MT)



SOURCE: California Air Resources Board

## OUR ASK:

- Ethanol must be part of any solution to decarbonize the transportation sector
- Biofuels are a readily available, low-cost solution towards meeting federal and state carbon reduction goals

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