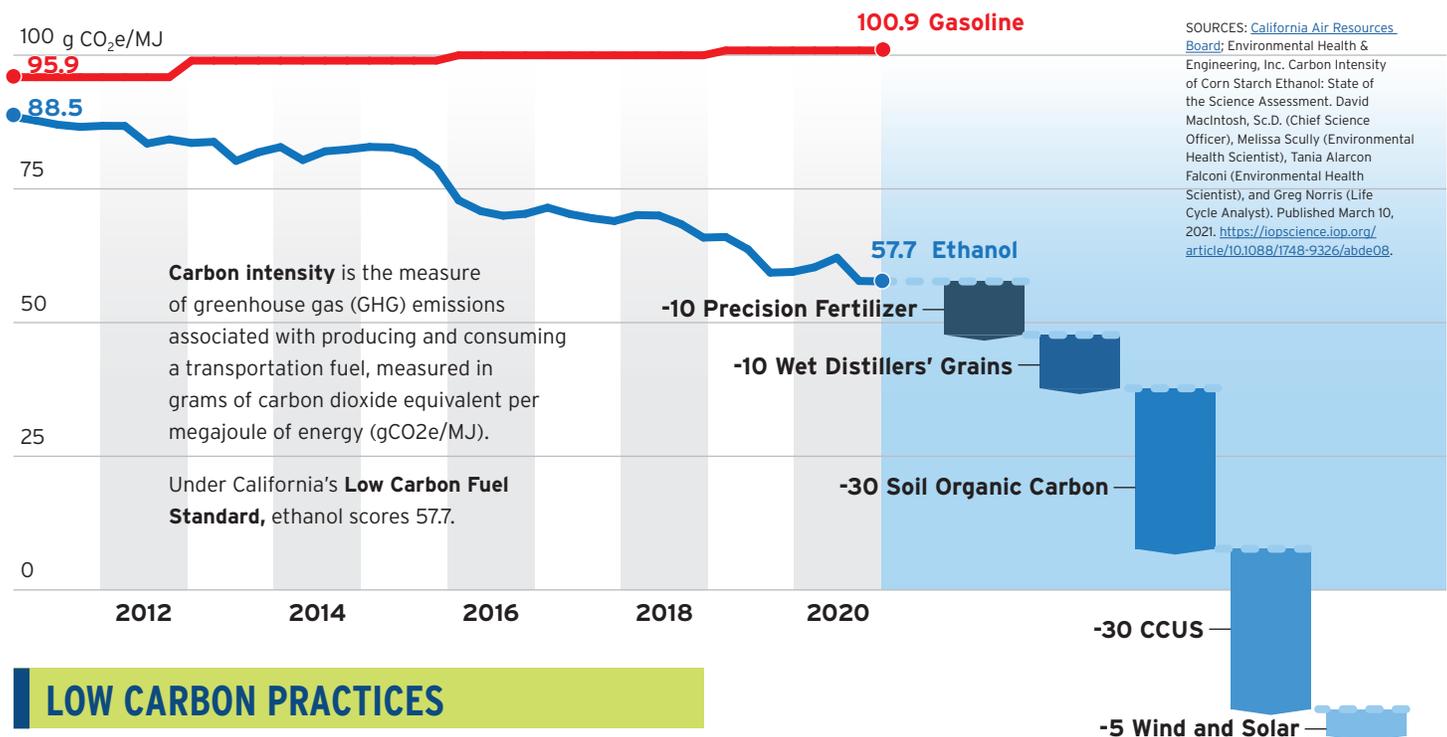


ACHIEVING NET-ZERO ETHANOL

For years biofuel producers have been at the forefront of decarbonizing the transportation sector. That's why they're consistently making technological improvements to reduce the carbon intensity (CI) of ethanol. According to California regulators, ethanol's CI has dropped 33% in the last ten years. **We can reach net-zero ethanol and achieve negative carbon emissions with today's technology.**

CARBON INTENSITY OF ETHANOL CONTINUES TO APPROACH NET-ZERO



SOURCES: [California Air Resources Board](#); Environmental Health & Engineering, Inc. Carbon Intensity of Corn Starch Ethanol: State of the Science Assessment. David MacIntosh, Sc.D. (Chief Science Officer), Melissa Scully (Environmental Health Scientist), Tania Alarcon Falconi (Environmental Health Scientist), and Greg Norris (Life Cycle Analyst). Published March 10, 2021. <https://iopscience.iop.org/article/10.1088/1748-9326/abde08>.

LOW CARBON PRACTICES

PRECISION FERTILIZER: Fertilizer intensity has dropped significantly in the last 20 years. Using less fertilizer through precision agriculture technologies lowers nitrogen use and improves ethanol's CI score.

100% WET DRIED DISTILLERS' GRAINS: Drying DDGs, an ethanol coproduct used for livestock feed, requires burning natural gas. Ethanol plants can reduce their CI by reducing or eliminating the use of these dryers.

SOIL ORGANIC CARBON: The CI of ethanol can be further improved through the use of updated, accurate modeling, which accurately reflect carbon sequestered with the planting of corn. Further improvements can be made by feedstock producers

adopting techniques like no-till and planting cover crops which help keep nutrients in farm soil.

CARBON CAPTURE, UTILIZATION, AND STORAGE (CCUS):

At least 25% of the ethanol industry captures carbon dioxide. Whether through utilization or permanent sequestration, increased CCUS use throughout the industry significantly lowers CI.

WIND AND SOLAR: Energy intensity (megajoules per bushel of corn) has dropped. More use of renewable energy sources like wind and solar at biorefineries will bring further CI benefits to ethanol.

GROWTH ENERGY'S ASKS:

- Cosponsor S. 799 or H.R. 1992 (SCALE Act, CO₂ infrastructure investments)
- Cosponsor H.R. 1062 (Direct pay and 10-year extension of Sec. 45Q tax credit)