

LOW CARBON FUEL REGULATIONS

ETHANOL'S CARBON CREDENTIALS

Low carbon fuel policies were back in the headlines in 2015, as California re-adopted its LCFS and Oregon, Washington, and British Columbia took steps to advance their own programs. These regulations seek to reduce the carbon intensity (CI) of transportation fuels by requiring fuel suppliers to substitute lower-carbon fuels for petroleum.

Under the LCFS structure, each different fuel type is assigned a CI “score” based on its estimated lifecycle greenhouse gas (GHG) emissions. When fair and consistent analytical boundaries are used to determine CI scores, ethanol emerges as an attractive fuel option for meeting compliance obligations. However, when hypothetical “indirect emissions” are unfairly added to the CI scores for crop-based biofuels—but not for any other fuels—the scales are wrongly tipped toward other fuel options. Unfortunately, California’s LCFS continues to penalize grain ethanol for emissions from supposed indirect land use changes (ILUC), despite a lack of evidence that such land conversions are occurring.

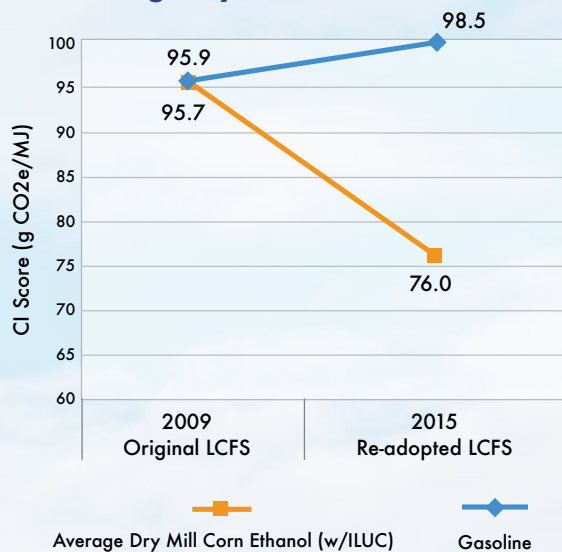
Still, even with a discriminatory ILUC penalty, grain-based ethanol has made a huge contribution to compliance with the California LCFS. When the LCFS was adopted in 2009, California regulators believed corn ethanol would soon be pushed out of the state due to its assigned CI score and the ILUC penalty. However, U.S. producers have demonstrated that the actual CI of their ethanol is much lower than California regulators anticipated, and grain ethanol has accounted for 48% of the carbon credits generated under the LCFS. Moving forward, however, compliance with the California LCFS becomes much harder, as CI reduction requirements ramp up quickly.

Meanwhile, Oregon adopted regulations in 2015 that will begin the enforcement phase of its program in 2017. Oregon also broke from California by adopting a much lower ILUC penalty for corn ethanol, based on analysis by several universities and the Department of Energy. Washington regulators released a draft LCFS proposal, but the state’s legislature voted to suspend the program. And British Columbia continued to enforce an LCFS that pragmatically does not include any indirect emissions penalties at all.



CALIFORNIA LCFS

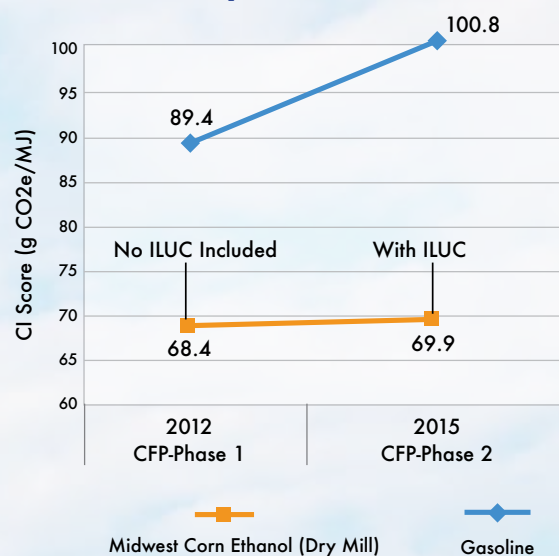
Changes to Assumed CI Scores for Gasoline and Average Dry Mill Corn Ethanol



Source: California Air Resources Board
(2015 Corn Ethanol based on Temporary Fuel Pathway Code)

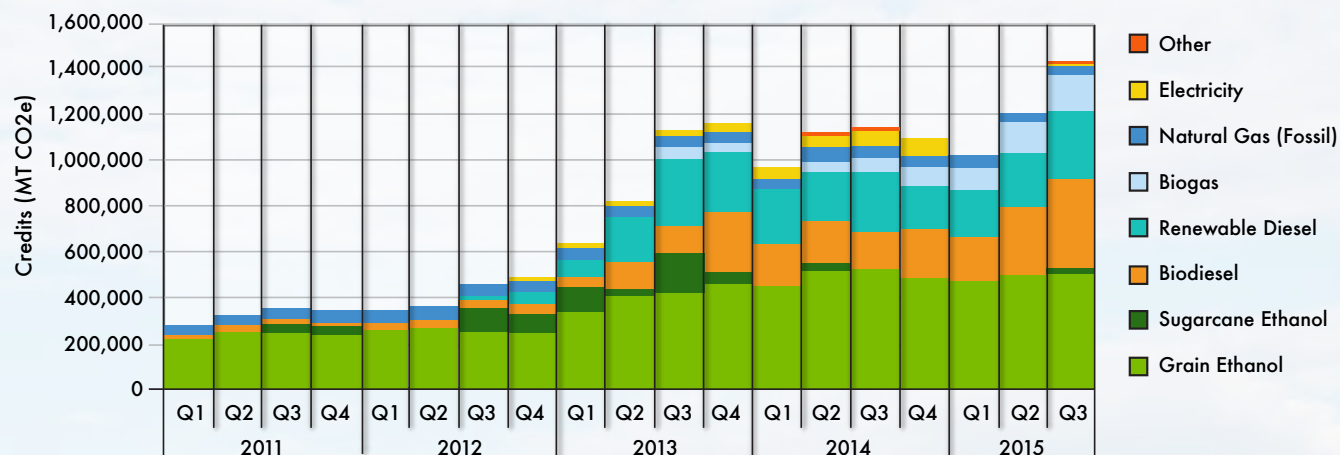
OREGON CFP

Changes to Assumed CI Scores for Gasoline and Midwest Dry Mill Corn Ethanol



Source: Oregon Dept. of Environmental Quality

California LCFS Credit Generation by Fuel Type



Source: California Air Resources Board