Consumer Reports

BASICS OF LOW CARBON FUEL STANDARDS

WHAT IS A LOW CARBON FUEL (LCF)?

Low carbon fuels (LCFs) are transportation fuels which have lower carbon intensity (CI), or produce less carbon dioxide, than regular gasoline or diesel. Carbon dioxide is a greenhouse gas (GHG) and it contributes to extreme weather and other effects of climate change. These effects cost consumers billions in damage and increased insurance costs.

- **Carbon intensity (CI)** is the lifecycle carbon dioxide emission of a fuel. It is estimated through a Life Cycle Assessment (LCA) that evaluates carbon dioxide emissions of a fuel related to extraction, cultivation, land-use conversion processing, transportation, and distribution, and fuel use and recycling and disposal.

Commercially available LCFs can include:

BIOFUELS

- Bio-CNG (compressed natural gas), bio-LNG (liquified natural gas), or bio-L-CNG (liquified compressed natural gas)
- Gasoline blended with 10% or higher ethanol
- 100% ethanol ("E100")
- Diesel blended with biomass-based diesel
- Biomass-based diesel ("B100")
- Sustainable Aviation Fuel (SAF)

OTHER LCFs

- Natural gas
- Propane
- Electricity
- Hydrogen
- Any other liquid or non-liquid fuel with a CI that is lower than regular fuel

WHAT IS A LOW CARBON FUEL STANDARD (LCFS)?

Low Carbon Fuel Standards are policies aimed at increasing the share of fuels with lower carbon intensity in transportation in order to reduce carbon dioxide emissions.

WHY IS A LOW CARBON FUEL STANDARD IMPORTANT?

- The transportation sector accounts for 27% of GHG emissions and is the main contributor to climate change in the United States. Low Carbon Fuel Standards are designed to reduce these emissions over the entire life cycle of the fuel, and can play an essential role toward achieving climate change mitigation goals.
- Greenhouse gases like carbon dioxide lead to extreme weather events which cost consumers billions in damage.[1]
- Adverse climate effects impact overburdened communities the most.
- 61% of Americans say the environment is an important consideration when purchasing or buying a vehicle.[2]
- 67% of Americans said they would be very likely or somewhat likely to use LCFs in their personal vehicles if they were priced the same as traditional fuel.[2]

1 NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2022). https://www.ncei.noaa.gov/access/billions/

2 Consumer Reports survey, January/February 2022: https://advocacy.consumerreports.org/research/consumer-reports-survey-low-carbon-fuels/

LOW CARBON FUEL STANDARD SUCCESS:

The implementation of an LCFS in California has:[3]

- Reduced carbon emissions by over 28 million tons over 11 years
- Increased clean fuel use by 74%

The implementation of an LCFS in Oregon has:[4]

- Reduced greenhouse gas emissions by over 6.8 million tons over 6 years
- Introduced new cost-effective LCFs to the Oregon transportation fuel market

POLICY CONSIDERATIONS

Low Carbon Fuel Standards both at state and national levels could be essential tools in mitigating the financial impacts of climate change on consumers.

LCFS policies should set clear and stringent GHG reduction targets.

LCF policies should not conflict with other greenhouse gas and pollution reduction policies, goals and strategies.

LCFSs should remain technology- and fuel-neutral, as long as the outcome is a lower CI of fuels.

The full lifecycle CI of any LCF included in a LCFS should be significantly lower than the CI of traditional fuels.

The lifecycle CI of a LCF should be transparent, traceable, and measured in a standard and uniform way.

In recognition that low-income communities spend disproportionately more of their income on transportation fuel, policymakers should ensure that any LCF policy does not significantly raise the cost of transportation fuel, whether LCFs or traditional transportation fuels.

LCF policies must ensure the best possible technology is being used to support carbon intensity reduction, including with respect to life cycle analysis and standardization of applicable verification and reporting.

To prioritize justice and equity, LCF policies should identify opportunities to invest a significant portion of credit revenues from an LCFS into overburdened communities to fund infrastructure projects to support the adoption of more LCFs.

3 LCFS Data Dashboard, California Air Resources Board: https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard

4 Clean Fuels Program, Oregon Department of Environmental Quality: https://www.oregon.gov/deq/ghgp/cfp/Pages/default.aspx