

California's Low Carbon Fuel Standard

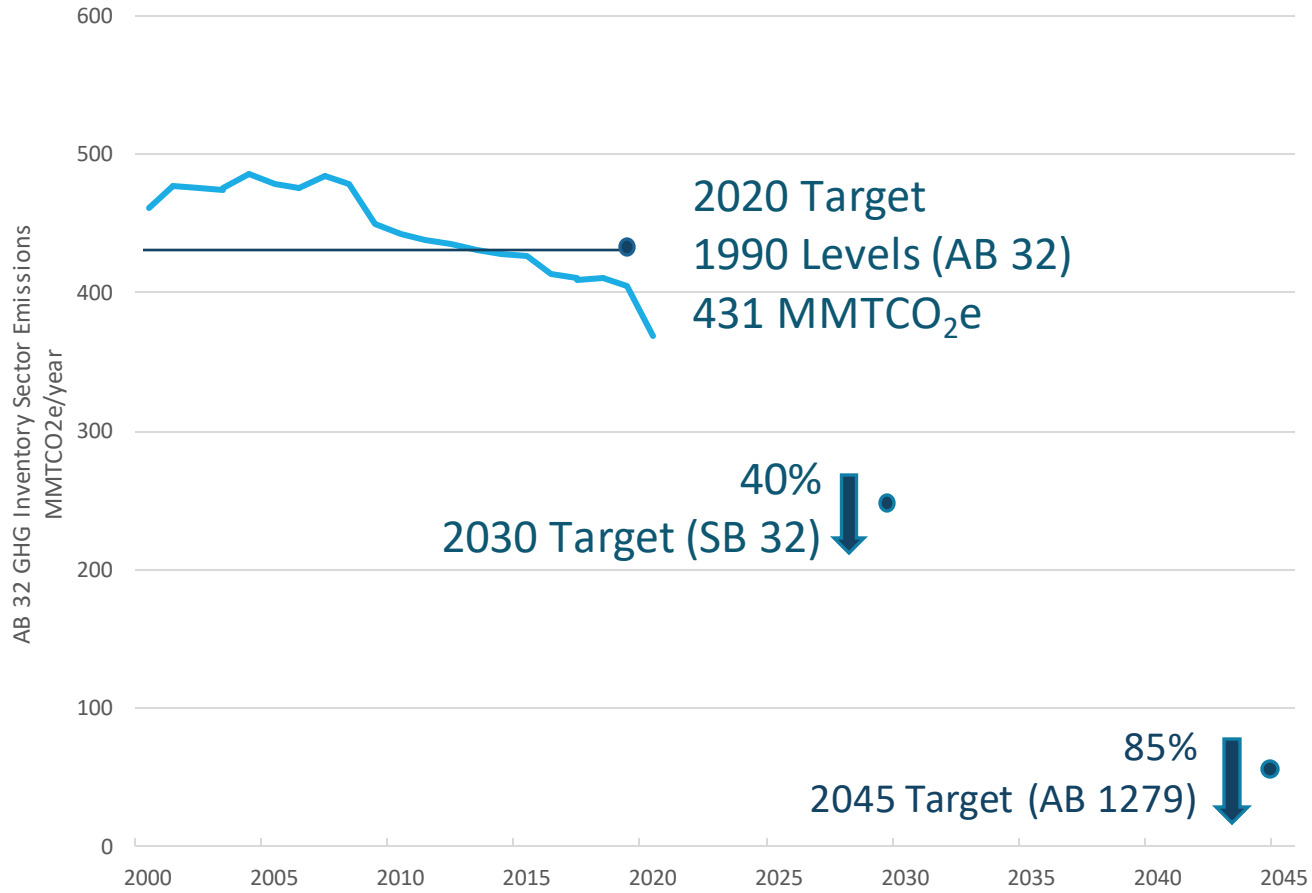
INFORMATIONAL HEARING FOR THE JOINT EJAC/CARB BOARD
MEETING

SEPTEMBER 14, 2023



GHG Reduction Targets

Achieved AB 32 target in 2014



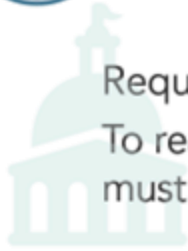
ACHIEVING
CARBON
NEUTRALITY
BY **2045**

GHGs included in statute: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFC), Perfluorocarbons (PFC), Sulfur hexafluoride (SF₆), Nitrogen trifluoride (NF₃).

The Road to Zero Emissions

CARB has put a roadmap in place to drastically reduce our dependence on petroleum in the transportation sector by 2045.

AB 32



Requires we cut GHGs. To reach goals, fuel use must be cut by 94%.

How cuts happen?
Zero emission cars, trucks and fuels.



ACT ACC ACF

CARB rules that make that possible:
Advanced Clean Trucks, Advanced Clean Cars, Advanced Clean Fleets

- ACT: Phases out sale of most fuel-powered trucks by 2035
- ACC: 100% ZEV sales requirement by 2035
- ACF: Requires that trucks in CA be zero emissions by 2045

LCFS



All together, these actions will help us build a cleaner, healthier California for current and future generations.

Governor Newsom creates new oversight committee to monitor oil companies



Makes fuel less polluting and encourages production of cleaner alternatives

How it works:



LCFS Supports an Energy Transition

12.6% reduction in the carbon intensity of California's transportation fuels

Over 25 billion gallons of petroleum fuels displaced by low-carbon fuels

50% biomass-based diesel in Q1 2023, resulting in PM and NOx benefits

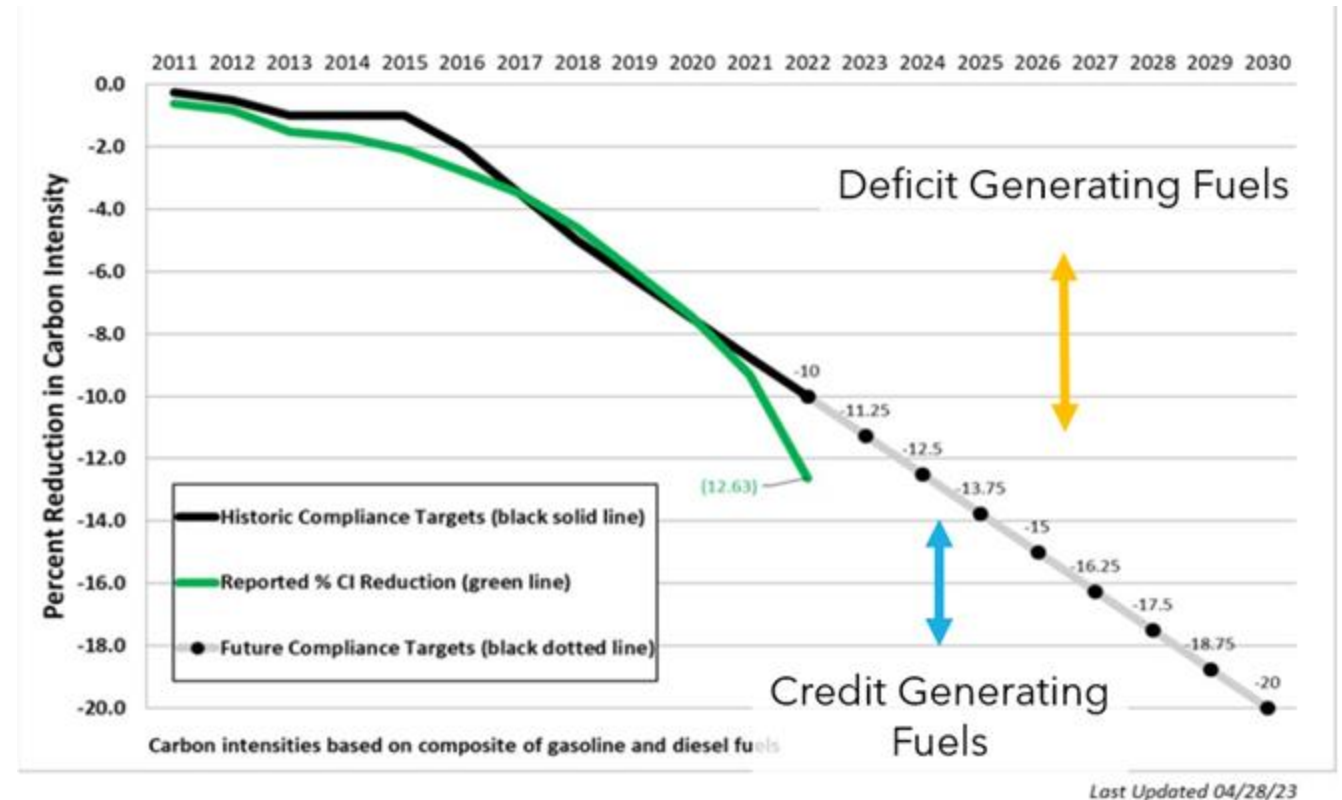
\$4 billion annually to support low-carbon investments

Supports many State programs and goals, including cars and trucks going to zero-emission vehicles

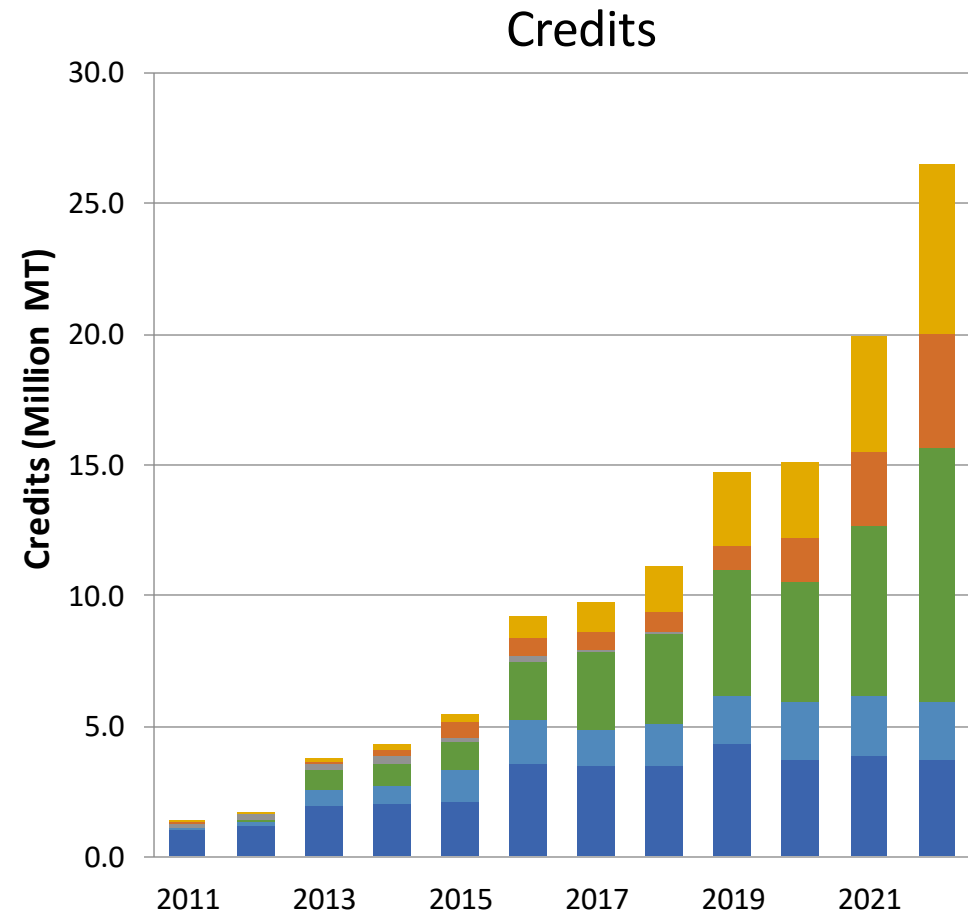
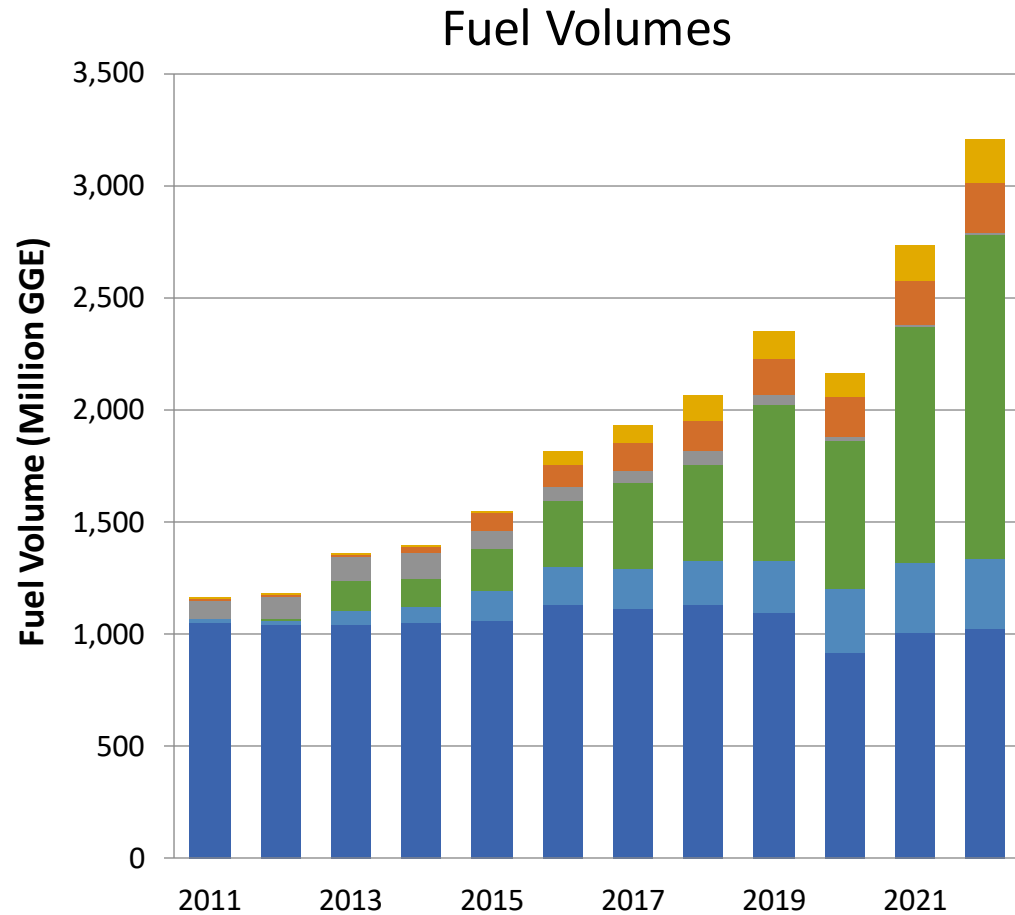
Rebates for vehicle purchases at the state and local level

How the LCFS Works

- Establishes an annual, declining carbon intensity (CI) target for transportation fuels used in California
- Carbon intensity is the measure of life cycle GHG emissions
- The lower carbon a fuel is, the more credits can be generated
- Program increases cost of high-carbon fossil fuels and supports low-carbon fuels



LCFS Drives Investment & Fuel Diversification

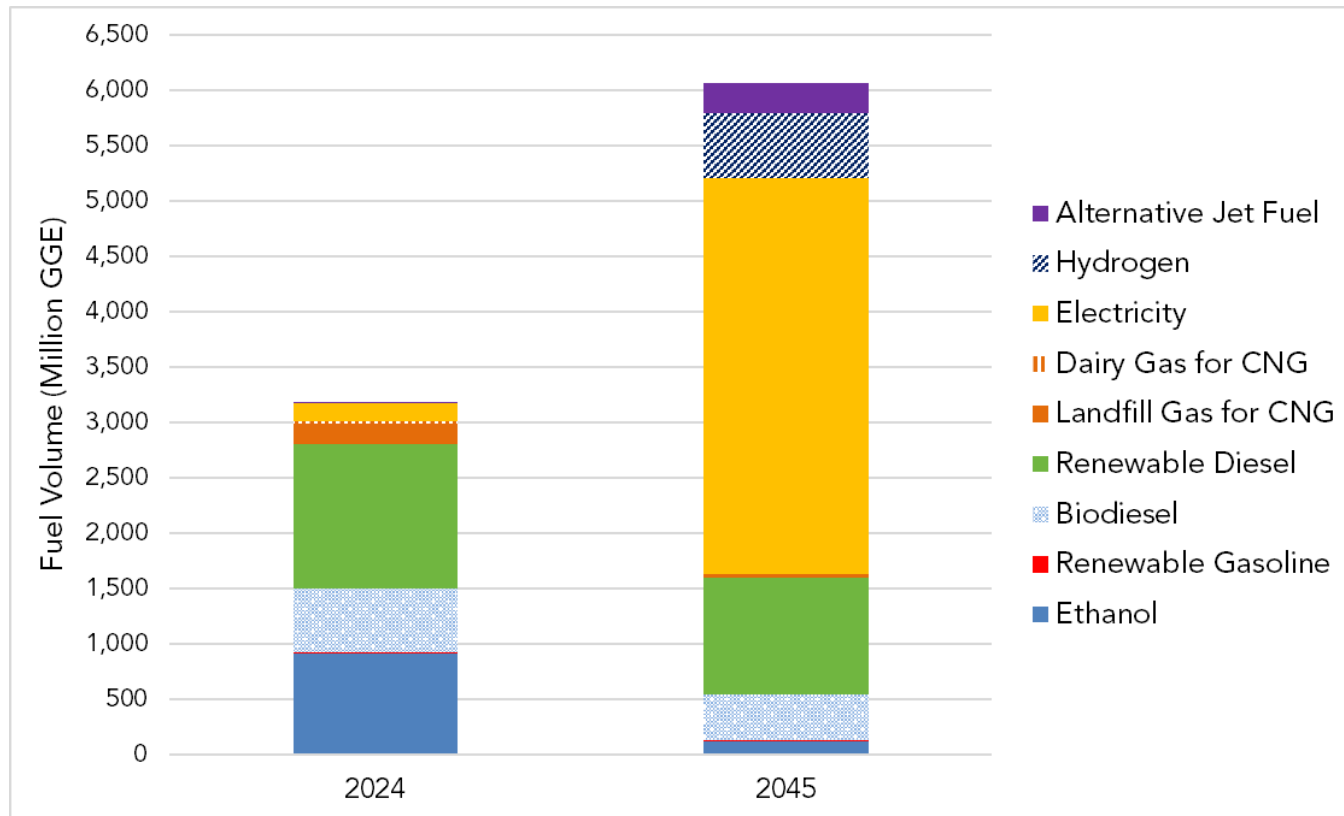


■ Ethanol
 ■ Biodiesel
 ■ Renewable Diesel
 ■ Fossil Natural Gas
 ■ Biomethane
 ■ Electricity

Key Concepts for Rulemaking

- Increase the stringency of the program to displace fossil fuels
- Strengthen equity provisions to promote investment in disadvantaged, low-income and rural communities
- Support electric and hydrogen truck refueling
- Include fossil jet fuel as a deficit generator
- Incentivize more production of clean fuels needed in future, such as low-carbon hydrogen
- Support methane emissions reductions and deploy biomethane for best uses across transportation and other sectors

Example of Transport Fuel Changes Under 30% CI Scenario



- Reflects strong LCFS support for zero-emission vehicles (electricity and hydrogen)
- Continued role for alternative fuels on path to carbon neutrality

Example of AQ/Health benefits Under 30% CI Scenario

- Implementation of rulemaking concepts results in public health benefits for California
- Reduction in criteria pollutant emissions
 - 17,000 tons of NOx reductions
 - 4,100 tons of PM2.5 reductions
- Monetized health savings from avoided health outcomes: \$5 billion
 - Avoided health outcomes include cardiopulmonary mortality, cardiovascular illness, cases of asthma onset, lung cancer incidence, and more

Incentivizing Zero-Emission Infrastructure

- Since 2019 LCFS has supported light duty ZEV refueling infrastructure
 - 3800 fast chargers, 67 hydrogen stations approved to date
- Refueling infrastructure will be essential to successfully implementing Advanced Clean Fleets (ACF) and Advanced Clean Trucks (ACT)*
- 2022 Scoping Plan Update calls on LCFS to support necessary refueling infrastructure
- CARB's Low Carbon Transportation Funding Plan emphasizes need for equity investments
- LCFS concepts:
 - Create an infrastructure crediting provision for Medium- and heavy-duty refueling for zero-emission vehicles (electricity and hydrogen)
 - Extend existing light-duty vehicle provision with focus on equity

*ACF Board Resolution: <https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2023/res23-13.pdf>

General Feedback We've Received

- Strengthen carbon intensity targets
- Provide long-term price signals and maximize crediting opportunities
- Concentrate health and economic benefits in communities burdened by current transportation system
- Support medium and heavy-duty fueling/charging needed for public transit and near key freight hub and ports.
- Increase flexibility for utilities to spend credit proceeds on equity projects
- Provide a variety of low-carbon transportation incentives to communities

Upcoming Milestones

Q3 2023:

SRIA published and available to public

Q4 2023:

Rulemaking Package released, 45-day comment period begins

Q1 2024:

Board consideration and vote on Regulatory Proposal

2024:

Targeted effective date