

# OVERVIEW OF LOW CARBON FUEL STANDARD



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# CARB's Climate Portfolio for 2030 Target

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Double building efficiency



60% renewable power



More clean, renewable fuels



Slash potent "super-pollutants" from dairies, landfills and refrigerants



Cleaner zero or near-zero emission cars, trucks, and buses



Cap emissions from transportation, industry, natural gas, and electricity



Walkable/bikeable communities with transit



Invest in communities to reduce emissions

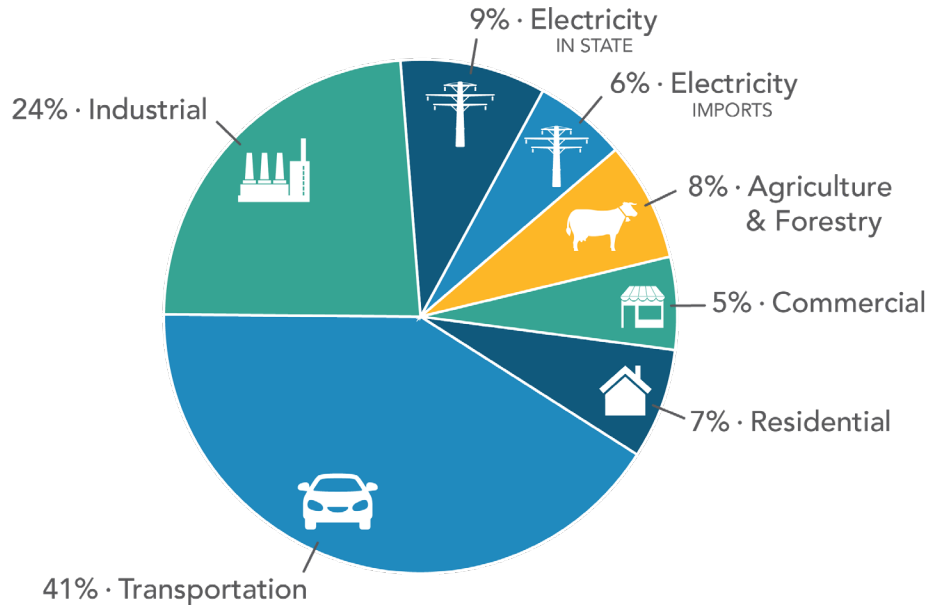


Cleaner freight and goods movement



Protect and manage natural and working lands

# California's GHG Emissions



425.3 MMT CO<sub>2</sub>e  
2018 TOTAL CA EMISSIONS

Transportation sector accounts for 50% of State's GHG inventory when industrial emissions from refining and oil production are included

# Low Carbon Fuel Standard (LCFS)

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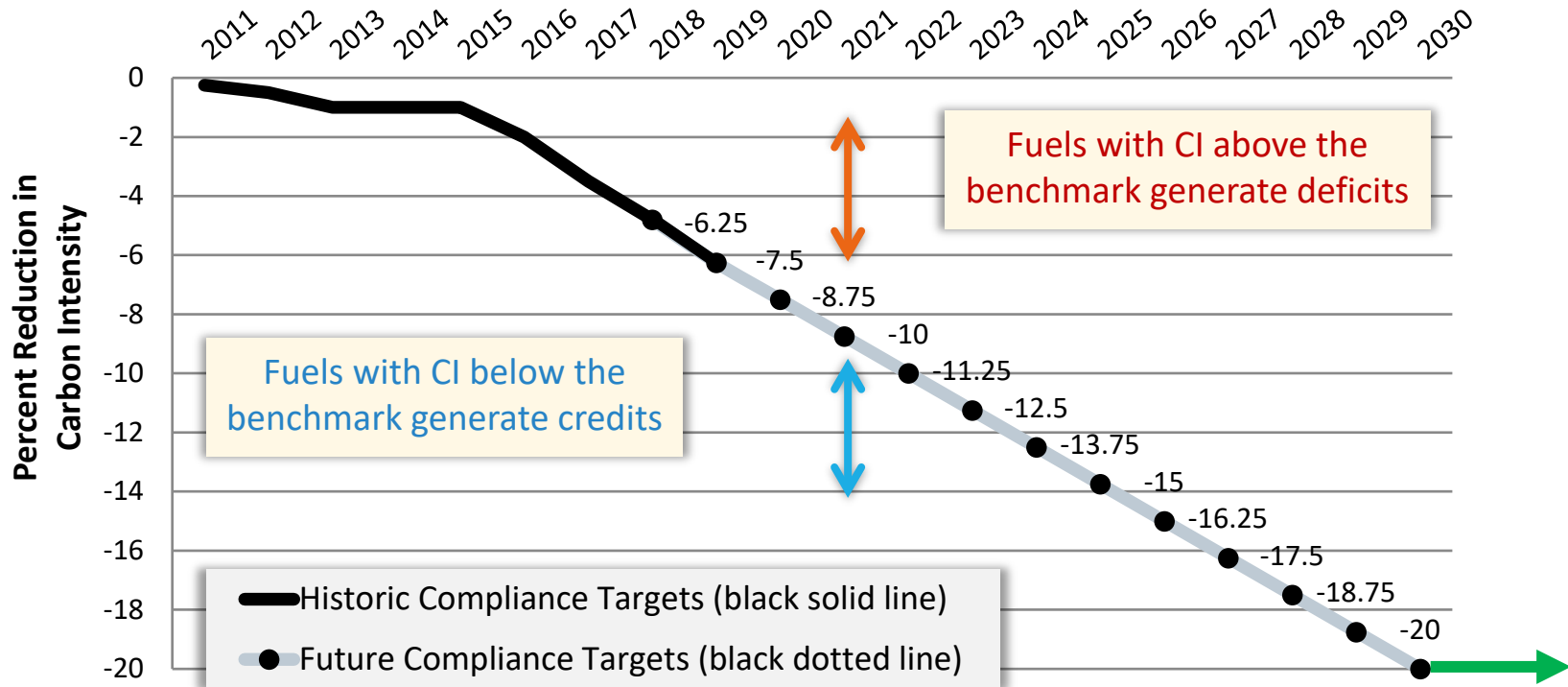


**Goal:** Reduce carbon intensity of transportation fuels and diversify the fuel mix

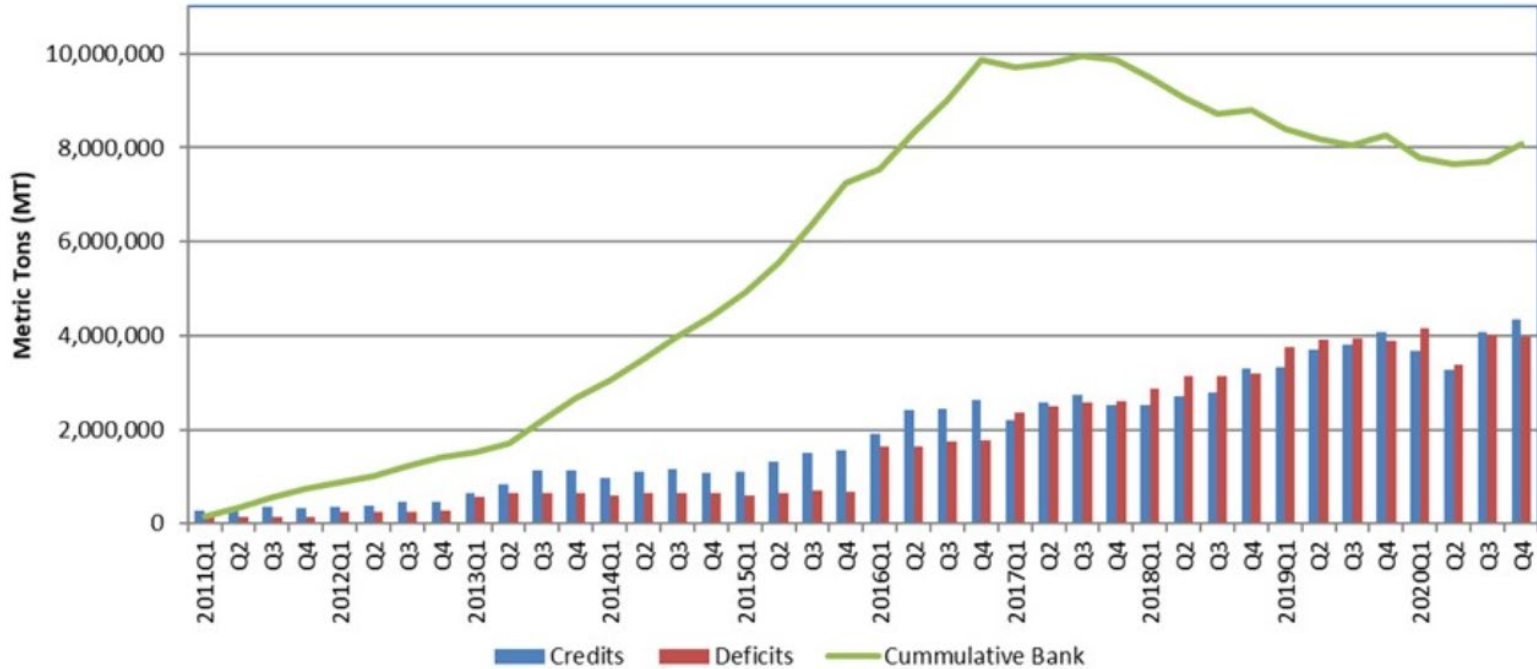
**Expected benefits:**

- Reduce greenhouse gases
- Transform and diversify fuel pool
- Reduce petroleum dependency
- Reduce emissions of criteria pollutants and toxics

# How LCFS Works – Credit and Deficit Generation



# LCFS Credits and Deficits



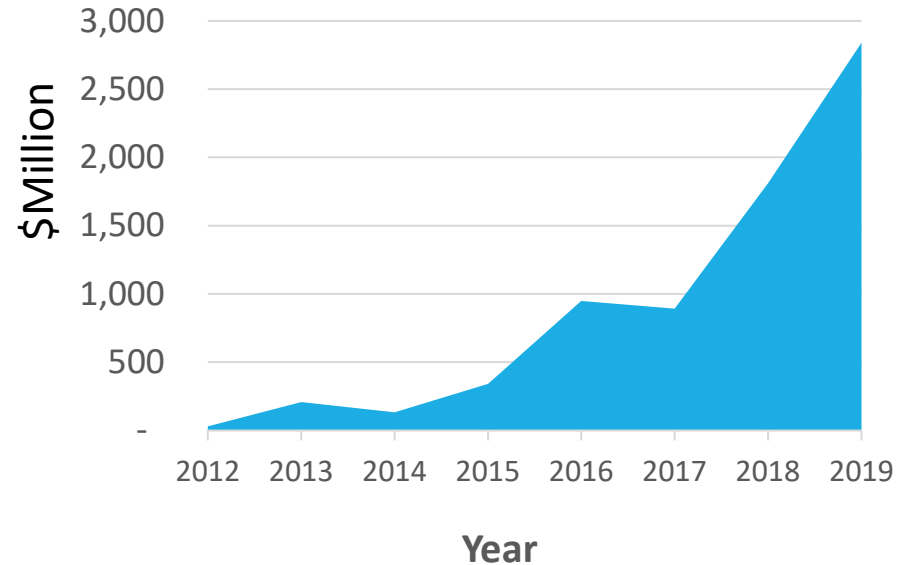
# LCFS Promotes Investment in Low Carbon Fuels

## LCFS Average Spot Price (\$/MT)



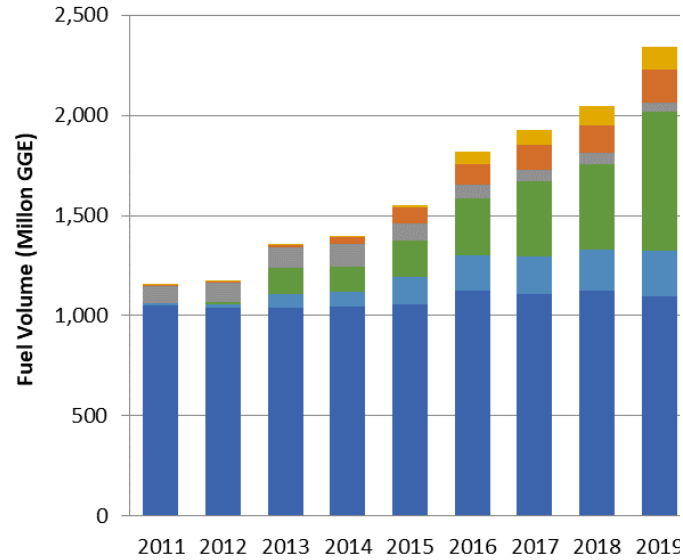
Source: OPIS,  
Updated 3/8/2021

## Annual LCFS Value Created

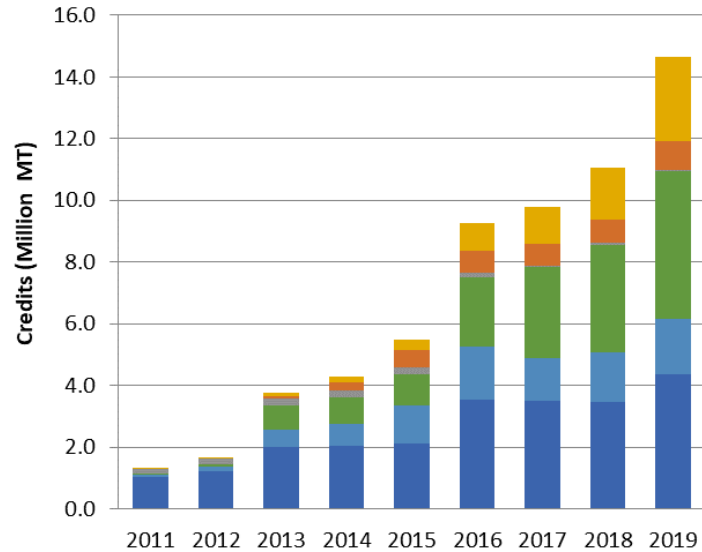


# LCFS Progress

VOLUMES



CREDITS



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



# LCFS Program - 2018 Rulemaking

- Established a 2030 target of 20% reduction in carbon intensity
- LCA models revised; third-party verification requirements added
- Additional crediting opportunities added starting 2019

## Fuel Pathway Crediting

- Renewable Diesel
- Biodiesel
- Ethanol
- Renewable Natural Gas
- Hydrogen
- Electricity



- Alternative Jet Fuel
- Propane
- Electricity (Incremental crediting and Off-road)

## Project-based Crediting

- Refinery Investment
- Innovative Crude
- Renewable Hydrogen for Refineries
- Low-Complexity/Low-Energy-Use Refinery



- Carbon Capture and Sequestration (CCS)

## ZEV Infrastructure Crediting

- Hydrogen Refueling Infrastructure (HRI)
- Fast Charging Infrastructure (FCI)



# RESOURCES

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## [CARB LCFS Website](#)

<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard>

## [CARB Data Dashboard](#)

<https://ww3.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm>

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