



SEPTEMBER 27, 2018
BOARD HEARING
SACRAMENTO, CA

2018 Proposed Amendments
to the

Low Carbon Fuel Standard Regulation

and to the

Regulation on Commercialization of Alternative Diesel Fuels

Low Carbon Fuel Standard (LCFS) Background

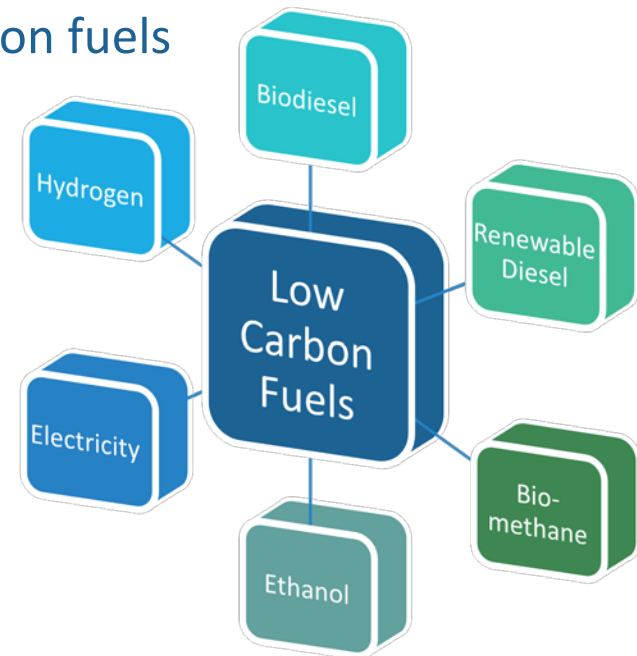
California's primary program to promote cleaner alternative fuel use in-line with 2030 greenhouse gas reduction goals.

Key Milestones: Original adoption in 2009, first compliance year in 2011, re-adopted in 2015 to address legal challenge

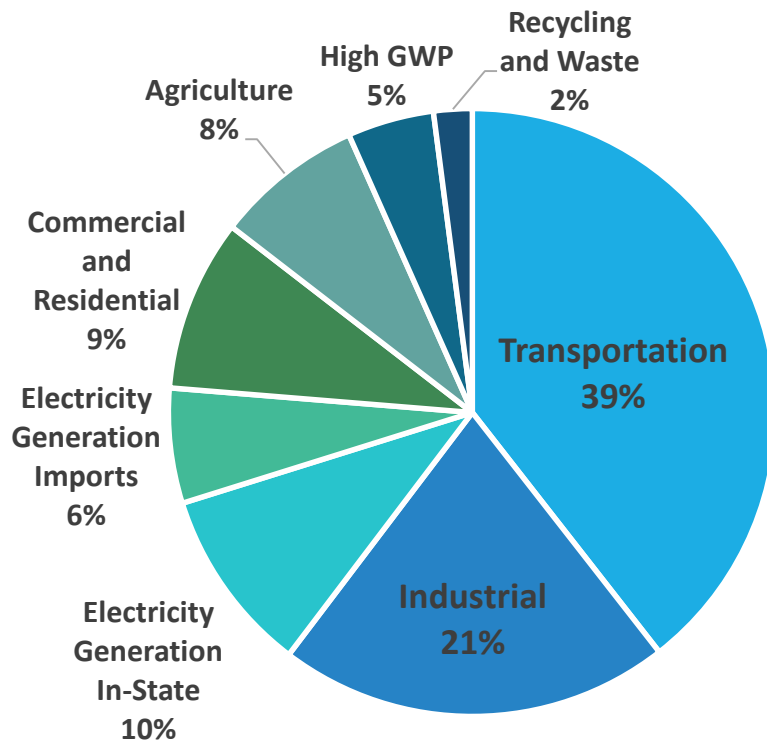
Goal: Reduce carbon intensity (CI) of transportation fuels

Benefits:

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



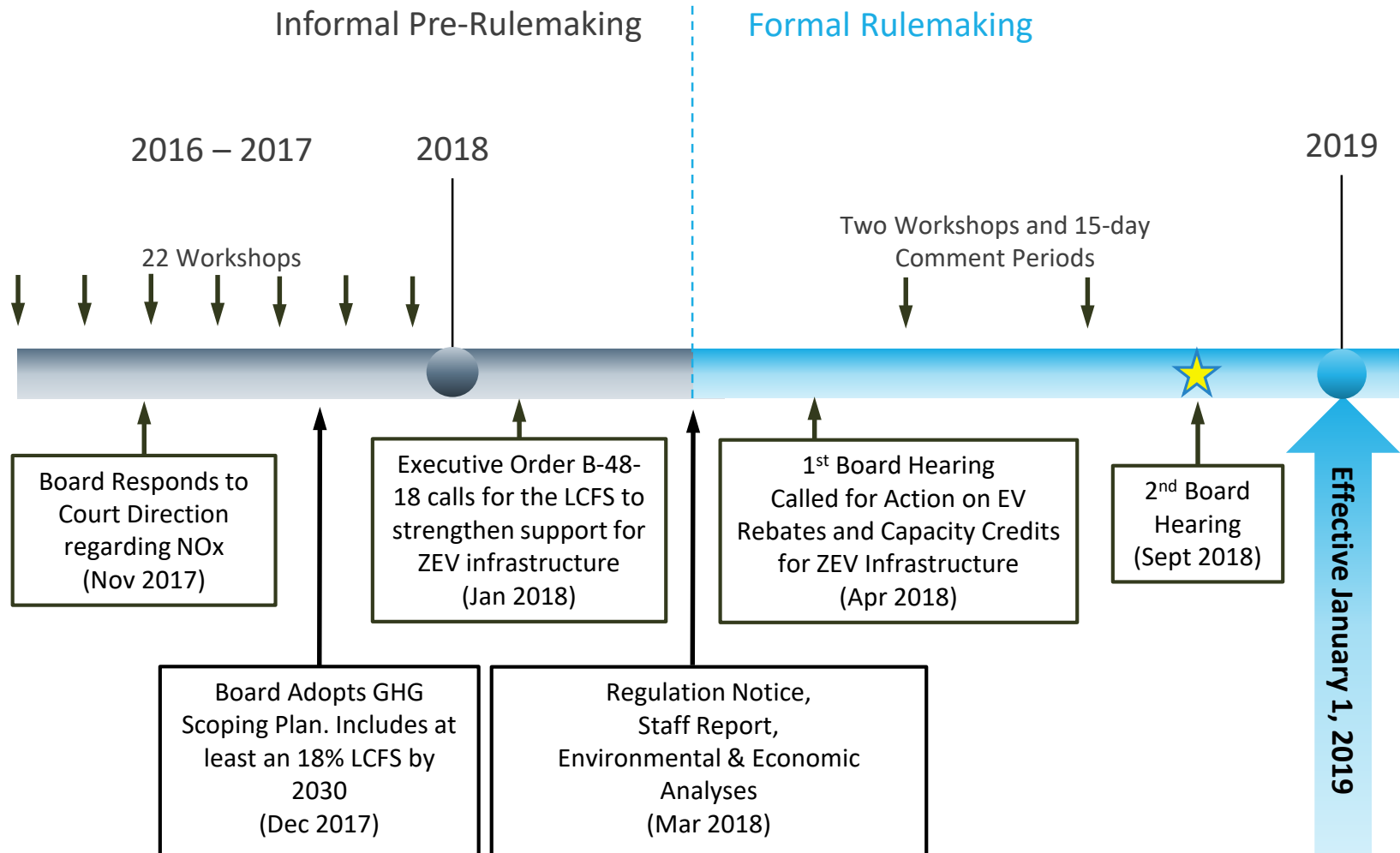
2017 Scoping Plan Update and Low Carbon Fuel Standard



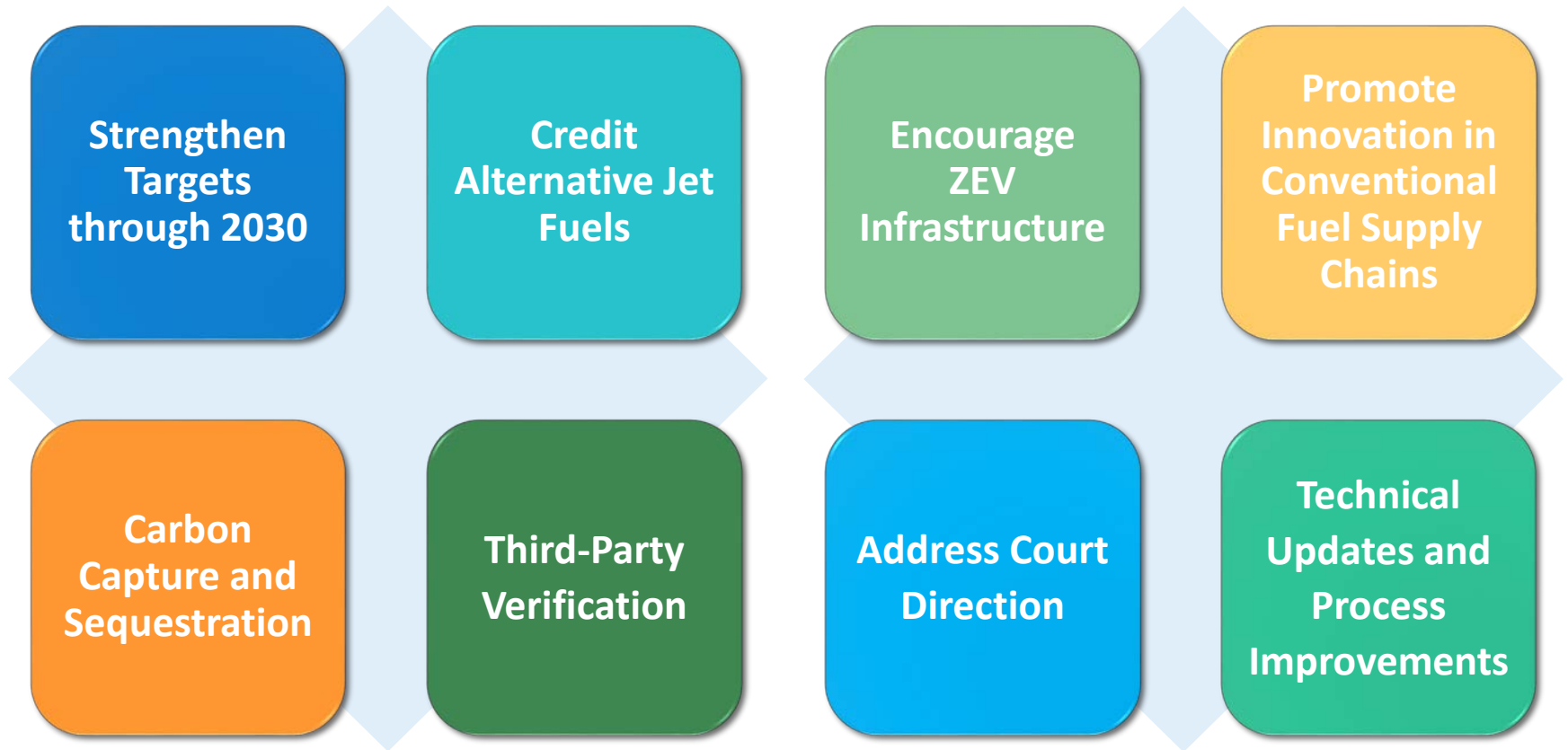
2016 Total CA Emissions: 429.4 MMTCO_{2e}

- Transportation accounts for ~50 percent of statewide GHG emissions
 - Increased 2 percent from 2015 to 2016
- Fuels are one of the three prongs for addressing GHG emissions in this sector
 - Cleaner Fuels
 - Vehicle Technology
 - Sustainable Land-Use
- 2017 Scoping Plan Update called for a more ambitious LCFS to achieve the 2030 goal of SB 32

Major Milestones and Rule Timeline

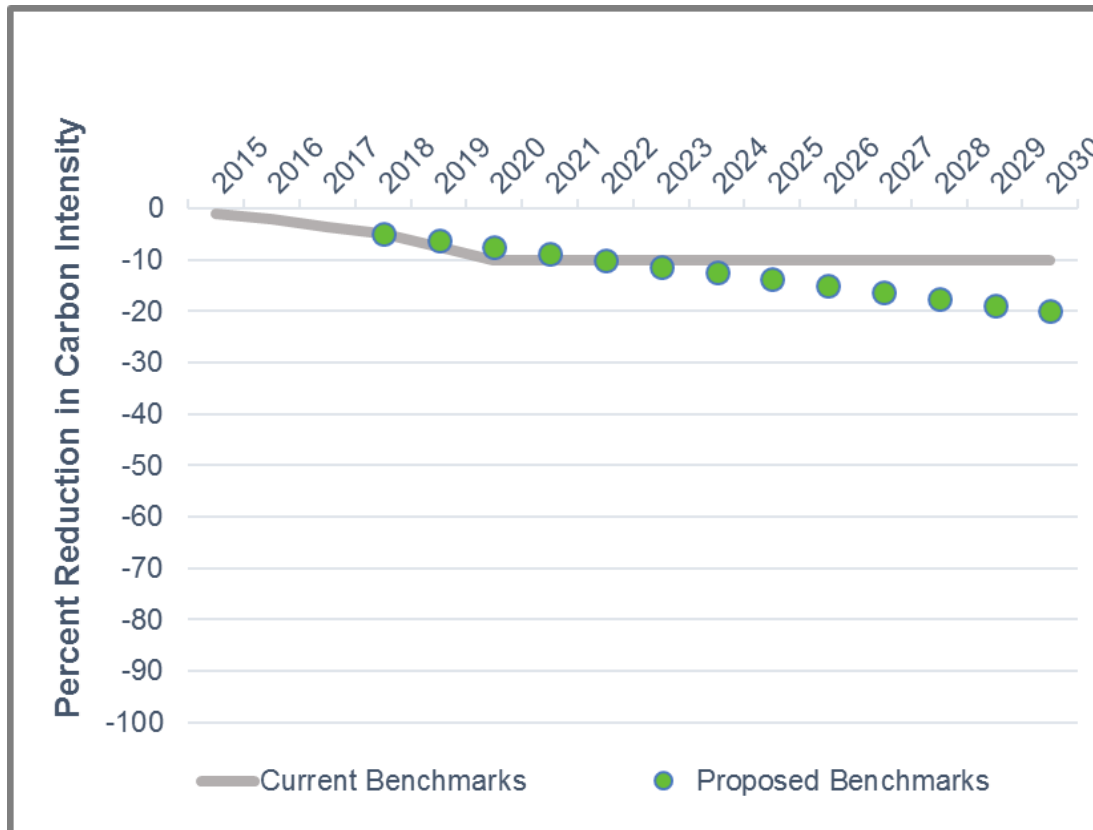


Key Objectives of the 2018 Rulemaking

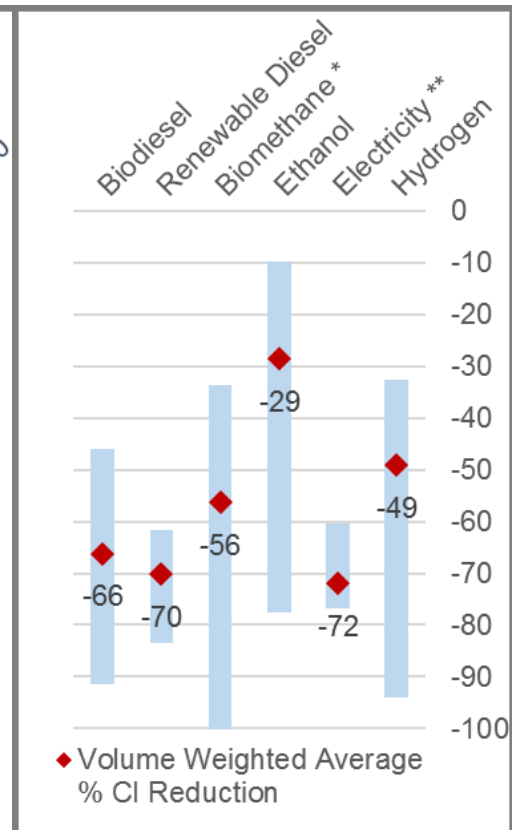


20% Carbon Intensity Reduction by 2030

Current and Proposed Annual Carbon Intensity Benchmarks



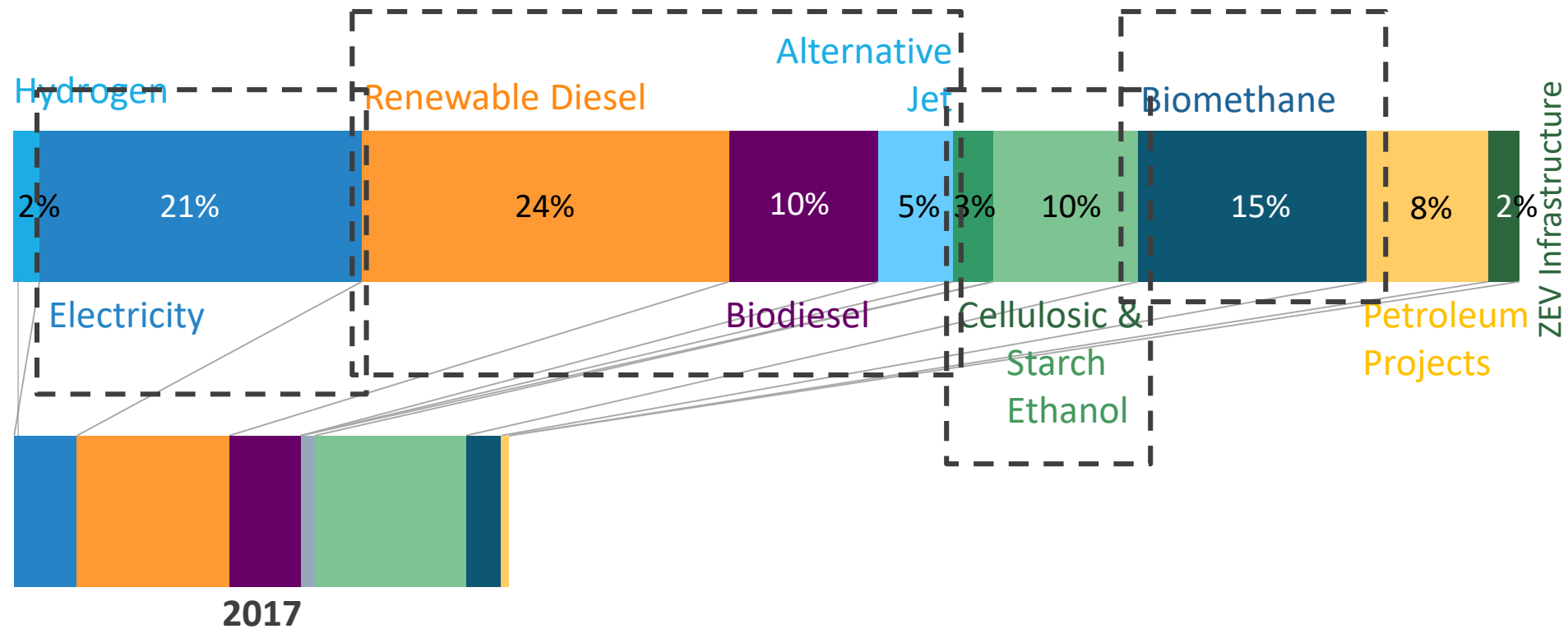
Average CI Reduction Achieved in 2017



20% by 2030: Illustrative Scenario

Potential Credits in 2030

% Share of Total LCFS Credits by Source



Zero Emission Vehicle Infrastructure

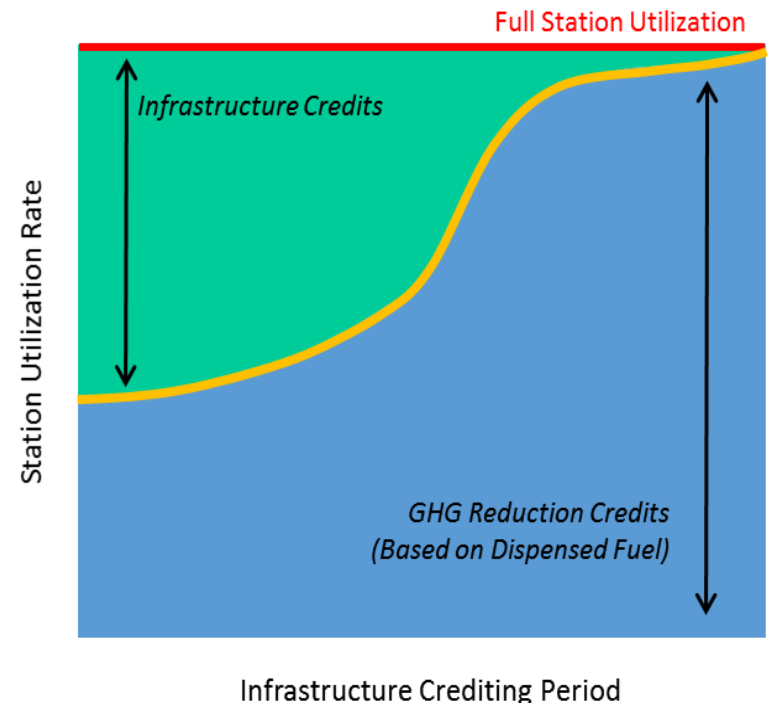
Promote the expansion of zero-emission vehicle infrastructure as directed by Executive Order B-48-18 and Board Resolution 18-17



Zero Emission Vehicle Infrastructure

Promote the expansion of zero-emission vehicle infrastructure as directed by Executive Order B-48-18 and Board Resolution 18-17

- Credit hydrogen and DC fast charging fueling stations on the basis of capacity
 - Infrastructure credits decline as stations reach full utilization
- Crediting limitations include:
 - Applications will only be accepted until December 31, 2025
 - Limit each charging and fueling station's crediting period
 - Limit overall capacity credit generation to 5% of program deficits



Clean Fuel Vehicle Reward

Explore with stakeholders the opportunities to increase the magnitude of ZEV vehicle rebates at the point of purchase funded by sale of LCFS credits



- Utilities and Automakers are developing a statewide point of purchase (POP) rebate program
- Minor changes to the LCFS regulation to accommodate the rebate program:
 - Require a minimum percentage contribution from each utility
 - Specify four tiers to determine the rebate amount based on EV battery capacity
- Staff will evaluate utility program design and report back to the Board

Alternative Diesel Fuels Regulation

In response to a 2017 court order, CARB developed a supplemental environmental analysis that was included in the rulemaking package

- Overall, increased use of biodiesel and renewable diesel due to the LCFS results in health benefits
- Under the current ADF regulation, future off-road sector NOx increases possible
- The ADF regulation imposes restrictions on certain biodiesels to prevent significant new NOx emissions; amendments avoid potential future off-road NOx impacts

Original proposal:
Amend ADF Biodiesel
NOx Sunset Provisions

- Biodiesel NOx provision sunsets when both on and off-road sectors are predominantly (90%) **New Technology Diesel Engines (NTDE)**

Modified proposal:
Bifurcate the sunset
provisions

- On-road sunsets when on-road sector reaches 90% NTDE (likely 2023)
- Off-road sunsets when off-road sector reaches 90% NTDE (likely after 2030)

Other Modifications to Original Proposal

Alternative Jet Fuels CI Benchmark Schedule

- Modified the benchmark to match the diesel substitutes schedule to improve parity with other fuels

Refinery Investment Credit Program

- Increased limit on use of credits to meet compliance obligation
- Allowed 15 years of credit generation for refinery improvements
- Removed “pilot program” designation

Pathway Application and CI Determination

- Improved CI modeling tools with stakeholder input
- Developed Tier 1 Simplified CI Calculators for all biomethane pathways
- Revised Temporary CI value for dairy manure biomethane to -150 g/MJ

Small Station Exemptions

- Exempted stations dispensing up to 150,000 gal/year of fossil CNG and LPG until fuel is deficit-generating

Carbon Capture and Sequestration Protocol

- Made technical improvements and clarifications
- Limited credit invalidation to 50 years post injection with an additional 5% contribution to the Buffer Account

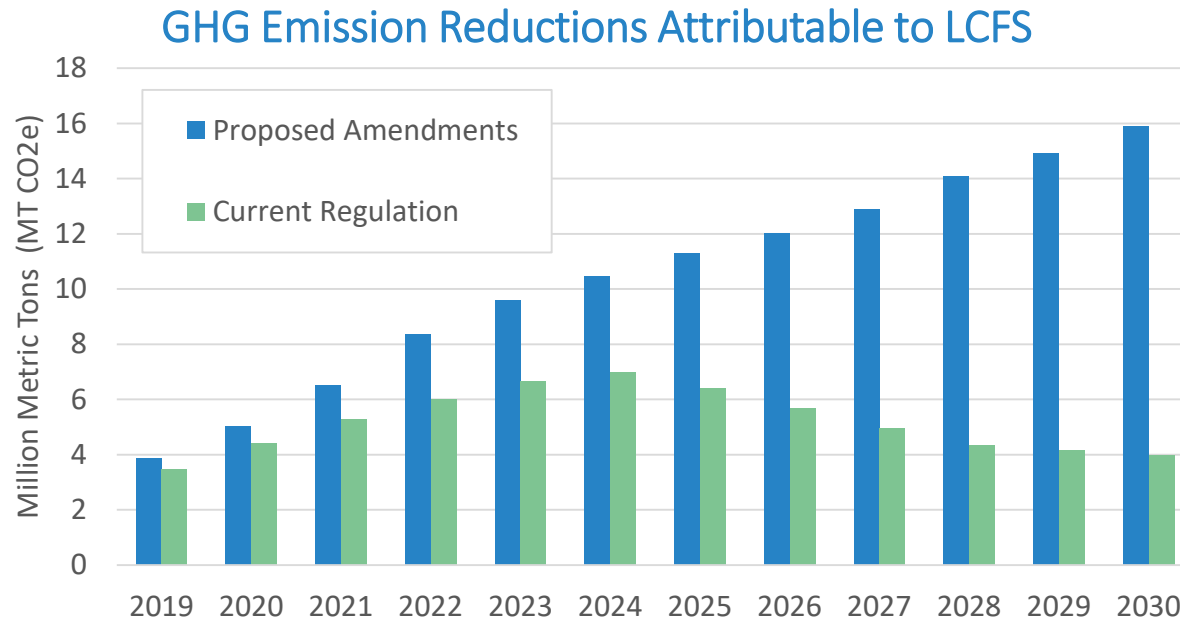
Third-Party Verification

- Modified conflict of interest requirements and expanded eligibility for deferred verification to address verifier availability concerns

Environmental Analysis

Draft Environmental Analysis (EA) completed and released for public comment

- March 9, 2018 – April 23, 2018
- Potentially significant impacts found for some resource areas
- Amendments will drive 63 million MT additional GHG reductions beyond the current regulation



CARB prepared the Final EA and written responses to comments received on the Draft EA

- Released in September 2018

Staff Recommendation

Approve the proposed Resolution which includes:

- Approval of written responses to environmental comments, certification of the Final EA, adoption of the Final NOx Disclosure Discussion and required CEQA findings
- Approval of the Proposed Amendments

Next Steps



Closely monitor LCFS implementation



Report to the Board in spring 2019

- Clean Fuel Vehicles Reward
- Other follow up as needed



Work with partners to implement low carbon fuel standard policies in other jurisdictions

- Brazil
- Canada
- Oregon



THANK YOU!