

Low Carbon Fuel Standard

Public Workshop: Potential Future Changes to the LCFS Program

DECEMBER 07, 2021



Agenda

- Implementation Updates
- Guiding principles for potential future changes
 - Q&A after each slide
- Stakeholder proposals
- Next Steps

Workshop Logistics

- Workshop materials and public comment docket available on the LCFS Meetings and Workshops page:
<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-meetings-and-workshops>
- Q&A during the workshop
 - Use the “Raise Hand” function in the GoToWebinar toolbar, which should be located to the right of your screen as shown
 - When staff call your name, please “Unmute” yourself by clicking the red button, and proceed to introduce yourself
- Written comments may be submitted to the public comment docket
 - Comment docket open Dec 7 to Jan 7



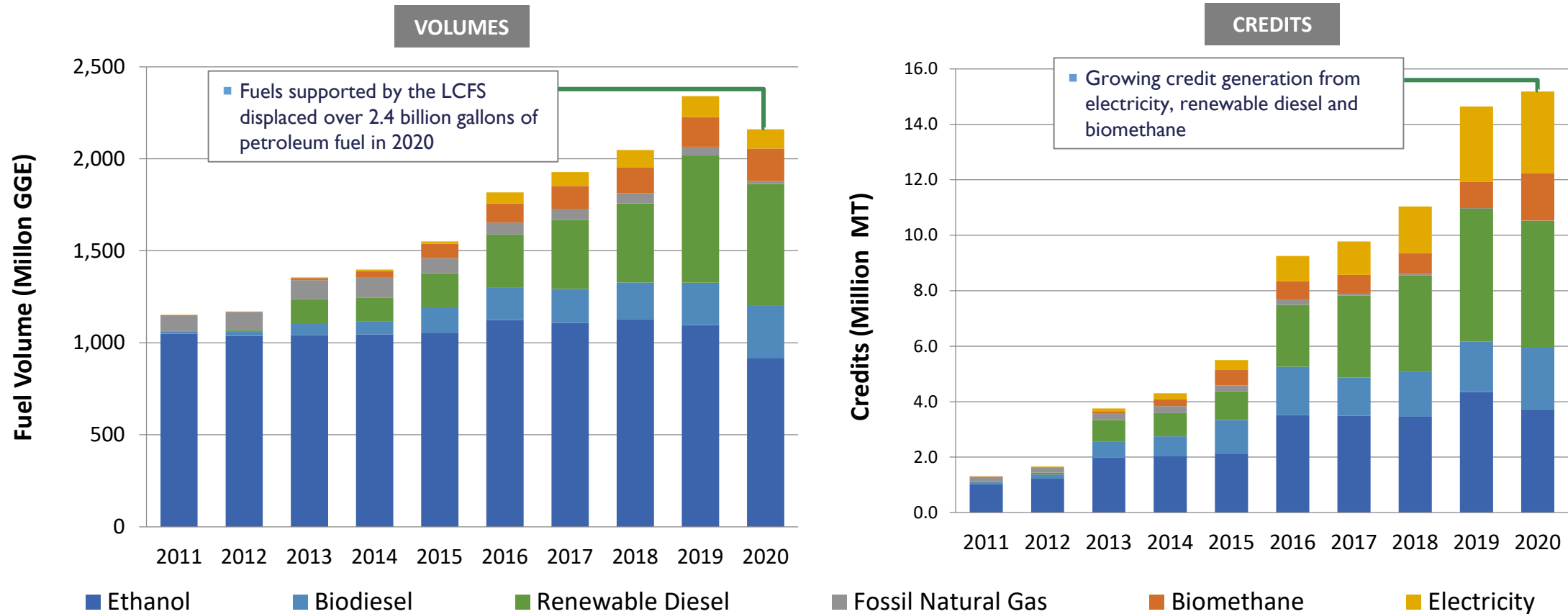
LCFS Implementation Updates

LCFS Supports GHG reductions

- LCFS program critical part of California's climate change portfolio¹
- Incentivizes transition away from fossil fuels in transportation, with accompanying greenhouse gas emissions reductions
- LCFS has supported and grown the alternative fuels market

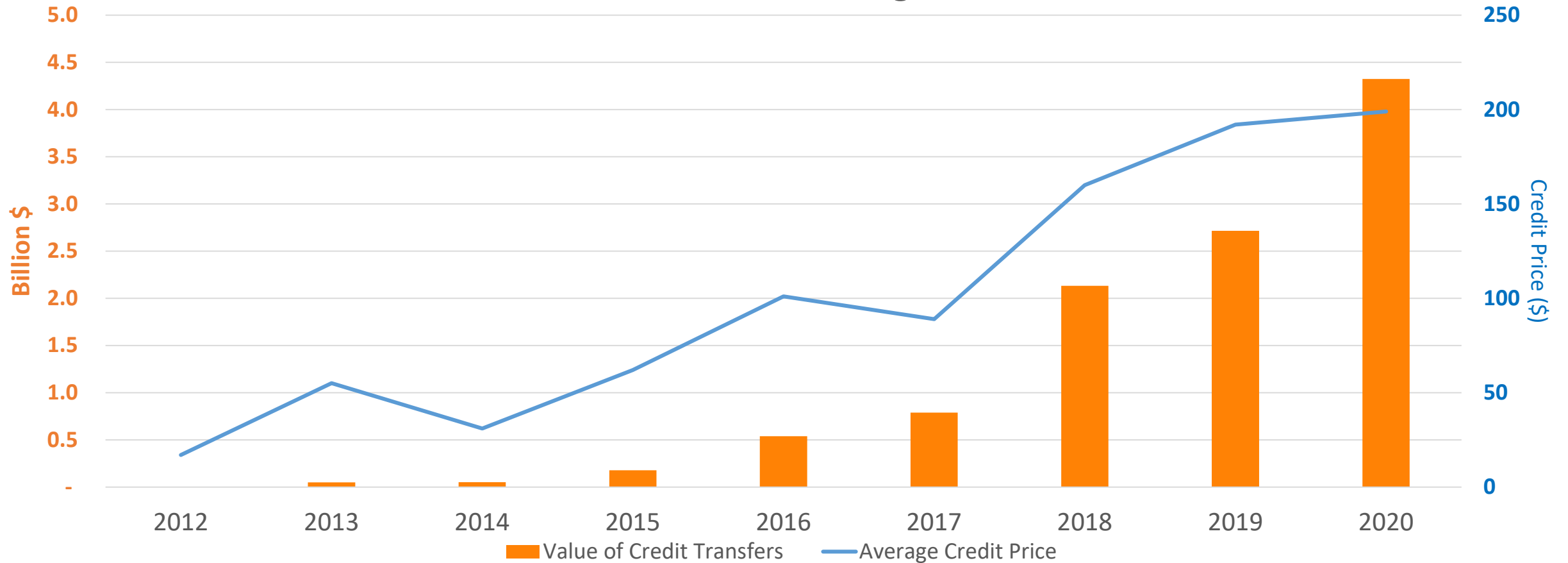
1. <https://ww2.arb.ca.gov/news/latest-ghg-inventory-shows-california-remains-below-2020-emissions-target>

LCFS is Increasing Diversity and Volume of Low-carbon Fuels



LCFS Promotes Investment in Low Carbon Fuels

LCFS Value Created and Average Credit Price



Fuel Pathways and Verification Status

- Over 600 fuel pathways certified since 2019
- Added verification in 2020

Fuel	Certified Pathways (2019 – Nov 2021)
Biodiesel	103
Natural Gas (incl. Renewable)	164
Electricity	87
Ethanol	187
Hydrogen	44
Propane	2
Renewable Diesel	31
Alternative Jet Fuel	6
Renewable Naphtha	15
Total	639

Introduction

- CARB's Scoping Plan provides actionable blueprint to achieve the state's climate targets
 - The 2022 Scoping Plan update will evaluate how to achieve carbon neutrality by mid-century and the types and role of low carbon fuels needed in the future
- This workshop presents staff initial concepts for future program changes and seeks public input
 - Future workshops may include additional concepts, including from ongoing Scoping Plan development
 - Future rulemaking could potentially take effect in 2024 upon approval of the 2022 Scoping Plan Update in late 2022

Broad Principles for Policy Concepts

- Align with long-term statewide climate goals and further incentivize private investment in low carbon fuels
- Accelerate transition to zero emission vehicles in line with Executive Order N-79-20
- Support exportability of the program to other regions
- Harmonize with federal policy signals
- Reflect changes in technologies, data, and stakeholder feedback
- Streamline implementation

Incentivize Investment and Align with Long-term Climate Goals

- Send long-term market signal to attract private investment in transportation decarbonization
- Achieve long-term climate goals, such as Executive Orders aimed at deep decarbonization and carbon neutrality by mid-century
- Seeking input:
 - Establish declining CI compliance targets post-2030, and potentially strengthen interim pre-2030 targets
 - Allow for book-and-claim accounting of new-or-expanded low-CI hydrogen injected into hydrogen pipelines
 - Promote electricity storage

Harmonize with Federal Policy

- California joined the Beyond Oil & Gas Alliance at COP 26¹, aimed at ending reliance on fossil fuels
- Federal emphasis on decarbonizing aviation sector²
- Seeking input:
 - Limit and ultimately phase out credit generation for petroleum projects
 - Add intrastate jet fuel as required fuel

1. [Governor Newsom Announces California has Joined New Global Alliance Committed to Ending Reliance on Fossil Fuels | California Governor](#)

2. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/>

Accelerate Transition to ZEVs

- Executive Order N-79-20 establishes framework for transition to ZEVs with sales/fleet targets across vehicle classes
- LCFS program can support achievement of these targets
- Seeking input:
 - Support hydrogen refueling infrastructure for medium-and-heavy-duty vehicles
 - Define new energy economy ratios (EER) for emerging zero emission fuel-vehicle combinations

Reflect Changes in Technology and Data

- Potential updates to reflect evolutions in technological performance and data availability
- Seeking input:
 - Update emission factors as appropriate
 - New Tier 1 Calculator for hydrogen fuel pathways
 - Update to new version of OPGEE model
 - Update certain existing EERs with more recent data

Streamline Implementation and Enhance Exportability (1 of 2)

- California's greatest influence is the exportability of its programs for adoption in other jurisdictions
- Several other jurisdictions are adopting or seriously considering LCFS programs of their own
- Seeking input:
 - Develop a single CI benchmark table for gasoline, diesel, and substitutes
 - Implement third-party verification for additional fuel reporting entities
 - Require validation of pre-project baseline data for petroleum projects
 - Remove deemed-complete designation for fuel pathways

Streamline Implementation and Enhance Exportability (2 of 2)

- Seeking input:
 - Allow for preferential allocation of low-CI hydrogen to specific fuel pathways used for reporting
 - Allow hydrogen production facilities not co-located with refinery to generate credit under refinery investment provision

Stakeholder Concepts

- Stakeholders have requested staff reevaluate land use change (LUC) carbon intensity values
- Stakeholders have requested consideration of site-specific agricultural inputs in fuel pathway life cycle analyses

Next Steps

- Submit written comments to online docket, through Jan 7, 2022
 - Link to submit written comments:
https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=lcfs-wkshp-dec21-ws%20&comm_period=1
- Further pre-rulemaking workshops in early 2022