

Low Carbon Fuel Standard

Public Workshop: Potential Regulation Amendment Concepts

FEBRUARY 22, 2023



Agenda

- Morning Session (9am – 12pm)
 - LCFS alignment with State and Federal signals
 - Target scenarios and modeling updates
 - Proposed policy details
 - Preliminary modeling outputs
 - Public comments
- Lunch Break (12pm – 12:30pm)
- Afternoon Session (12:30pm – 3pm)
 - Implementation overview
 - Streamlining proposals
 - Public comments

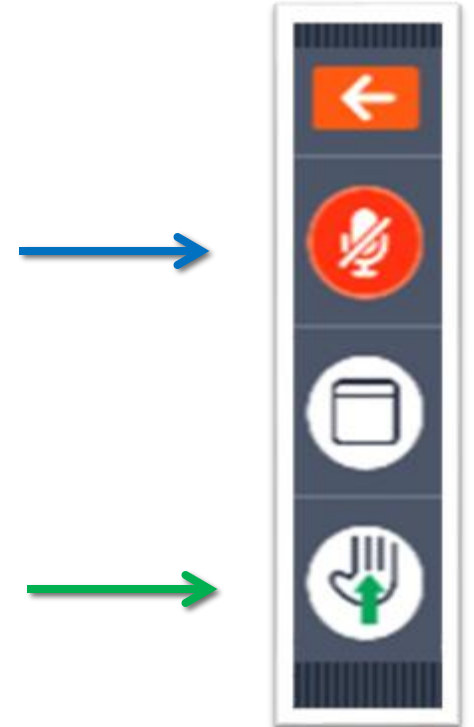
Note: The list of potential future changes discussed in this workshop should not be considered exhaustive

Today's Workshop Objectives

- Review objectives for rulemaking updates
- Present staff's latest thinking on rulemaking changes
- Share preliminary fuel supply modeling results
- Provide overview on rulemaking process and release of draft regulatory text
- Continue public discussion on LCFS updates needed

Public Comment Logistics

- Workshop materials and public comment page available on the LCFS Meetings and Workshops page:
<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-meetings-and-workshops>
- Written feedback accepted through March 15 at 11:59 p.m.
- Q&A during the workshop
 - 1) Use the “**Raise Hand**” function in the GoToWebinar toolbar, which should be located to the right of your screen as shown
 - 2) When staff call your name, please “**Unmute**” yourself by clicking the red button, and proceed to introduce yourself
 - 3) Commenters will be given 3 minutes for comments, no ceding time to others

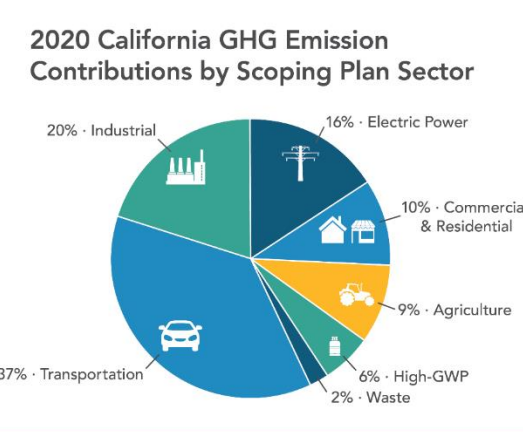


California's Climate Policy Framework



GHG Targets & Goals

Legislation & Executive Orders: Total GHGs (AB 32/SB 32/AB 1279) or sector targets (SB 1383/SB 100), etc.



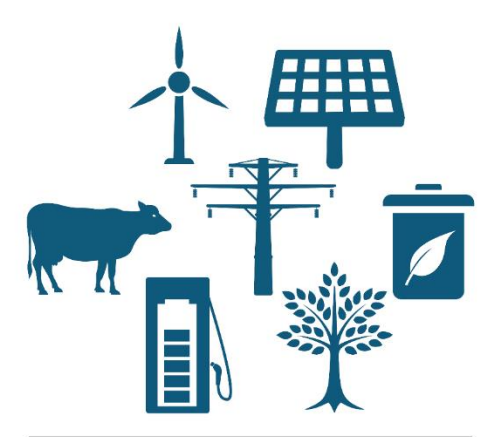
Scoping Plan

Actionable plan across all sectors



Action

Regulations & Incentives: Advanced Clean Cars, climate change investments, etc.



Projects

Examples: Zero-emission trucks, energy infrastructure and renewables, compost facilities, digesters, etc.

LCFS as part of State climate policy

2022 Scoping Plan: Path to Carbon Neutrality

- Dec 2022 – Board Approved 2022 Scoping Plan update
- Significant investment in lower-carbon technologies needed
 - Leverage private-public partnerships
 - Accelerate pace of decarbonization

Incorporates EO, Legislative direction, Board direction to lay out path to carbon neutrality

LCFS Pre-Rulemaking Public Engagement

- 2 years of concept discussions
- 6 public workshops on program goals, streamlining, and implementation
 - Thousands of participants
 - 400 feedback letters
 - Target-setting (CATS) and OPGEE model development

Public workshops to develop concepts aligned with State goals

LCFS Rulemaking (major steps)

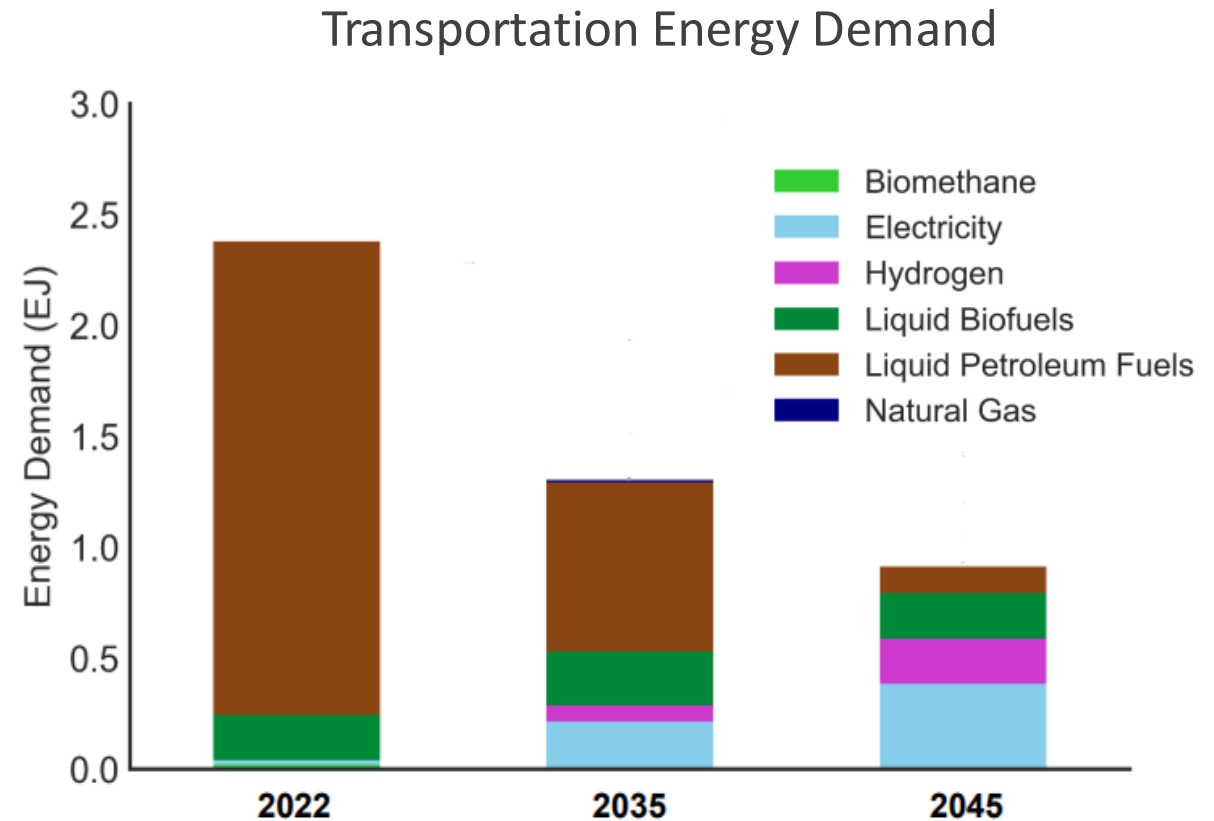
- Develop language and economic analysis
- Dept of Finance review of SRIA
- Initial Statement of Reasons (ISOR) and public comment period
- Board Hearing 1
- Respond to comments
- Board Hearing 2 (adoption)
- Office of Administrative Law review
- Implementation from effective date

Formal process with specific timelines
* By law, CARB has one year to complete rulemaking once ISOR is published

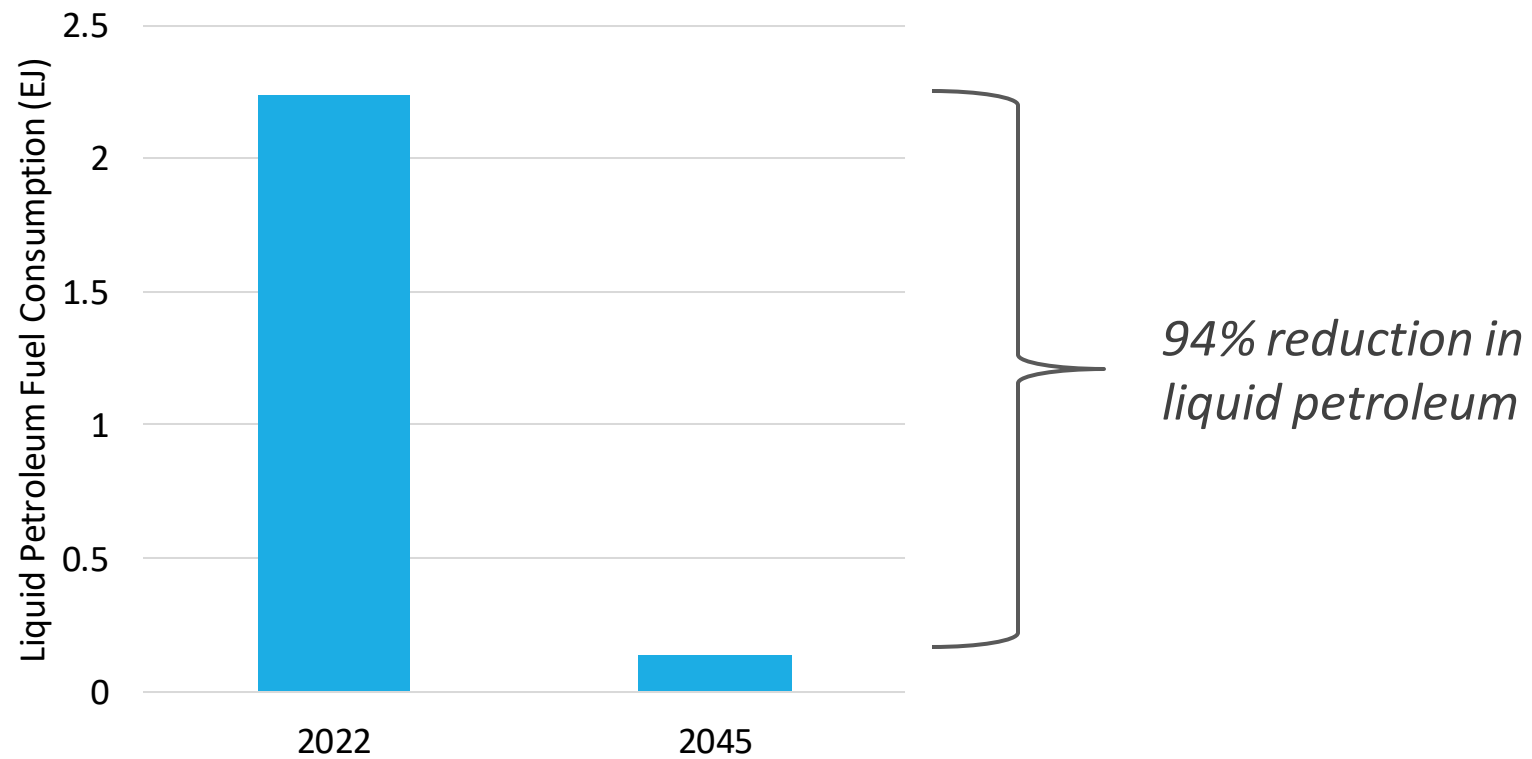
2022 Scoping Plan Update – Transportation Fuel Overview

Key Outcomes for Transportation Sector

- 2022 Scoping Plan identifies key outcomes to achieve carbon neutrality by 2045, including:
 - Over 30x as many ZEVs on the road in 2045 relative to 2022
 - Dramatic increase in hydrogen supply
 - Continued role for liquid biofuels
 - Decreasing role for biomethane as a primary fuel



Dramatic Reductions in Fossil Fuel Demand

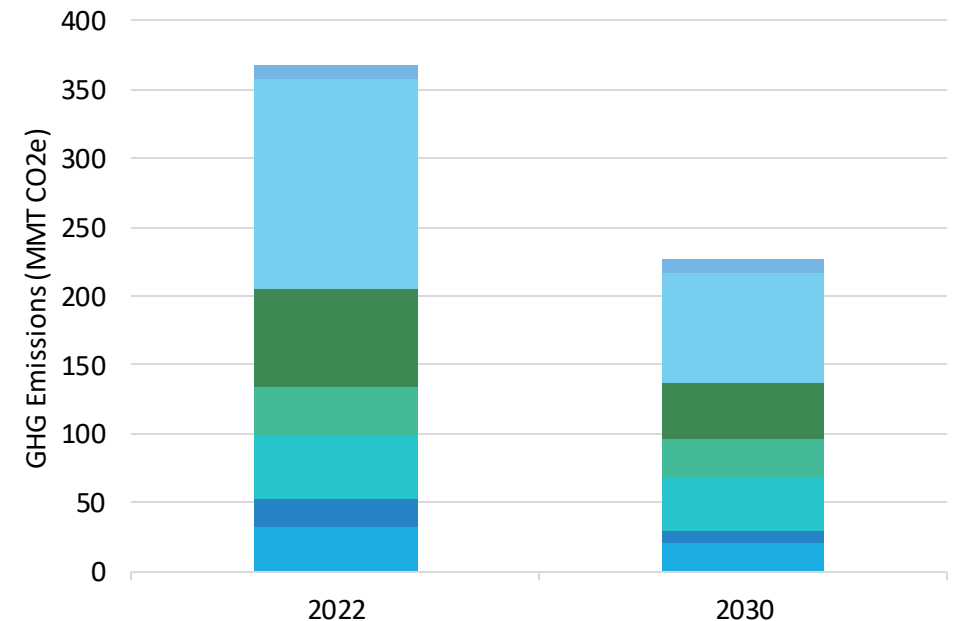


Demand projections in 2045 relative to 2022, from Final 2022 Scoping Plan

The Decade of Action

Target 2030: 48% Reduction below 1990

- Accelerate pace of building clean energy infrastructure and clean technology deployment to achieve the 2030 target and be on track for carbon neutrality:
 - Permitting for clean energy production
 - Transmission infrastructure
 - Consumer adoption
 - Access to raw materials

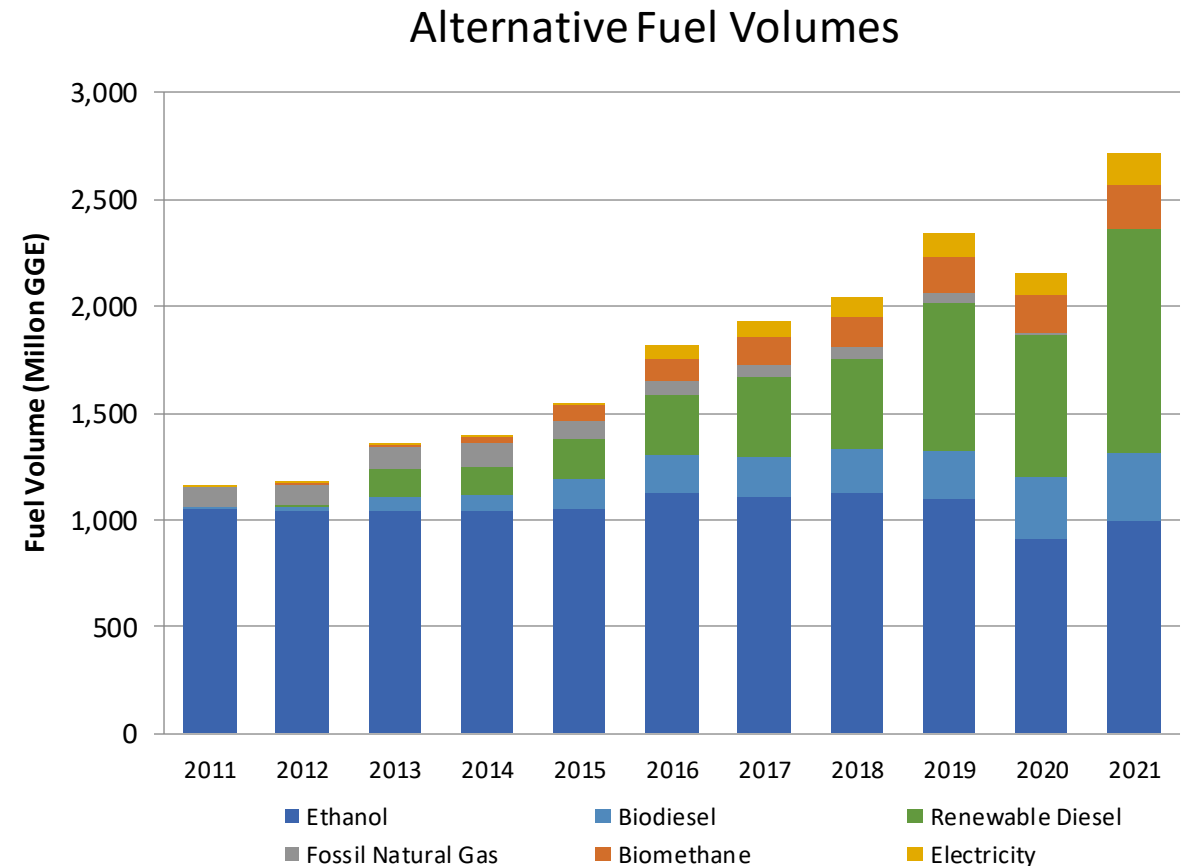


Emissions shown after CCS in 2030

- Agriculture
- Electricity Generation
- Industrial
- Recycling and Waste
- High Global Warming Potential
- Buildings
- Transportation

LCFS Drives Investment & Fuel Diversification

- LCFS has led to fuel diversification, low-carbon innovation
- California has **doubled** the volume of low-carbon fuels in 10 years
- New investments needed for accelerated targets: opportunity to leverage federal dollars from the Bipartisan Infrastructure Law and Inflation Reduction Act



2022 Scoping Plan Implications for LCFS

- Increase stringency for 2030 target and propose post-2030 targets
- Support transition away from fossil fuel demand
- Support continued private investment in low-carbon fuel production
- Support transition of refineries to clean fuel production
- Considering integrating opt-ins, like aviation, into the program
- Ensure that fuel/technology deployment does not result in unintended consequences

LCFS Rulemaking Overview

Objectives for Rulemaking

- Update LCFS to support increased low-carbon fuel supply identified in 2022 Scoping Plan Update
- Provide long-term price signals and increase regulatory clarity for the market to support deeper transportation sector decarbonization needed through mid-century
- Leverage new federal programs/funding via with complimentary LCFS policies
- Modify existing crediting opportunities to align with the Scoping Plan, while also reducing risk of backsliding on GHG benefits
- Streamline program implementation

Scope of Rulemaking

- 2030 CI target. Establishing post-2030 targets.
- Mechanisms to auto-adjust CI targets to accelerate investment if program is over-performing
- Incentives for ZEV infrastructure capacity build-out
- Provisions to support scaling of nascent technologies/fuel production needed to meet future demand
- Off-ramping/adjusting incentives where demand growth is limited
- Align investment signals with federal funding opportunities
- Changing implementation provisions to support streamlining

Process for Rulemaking Development

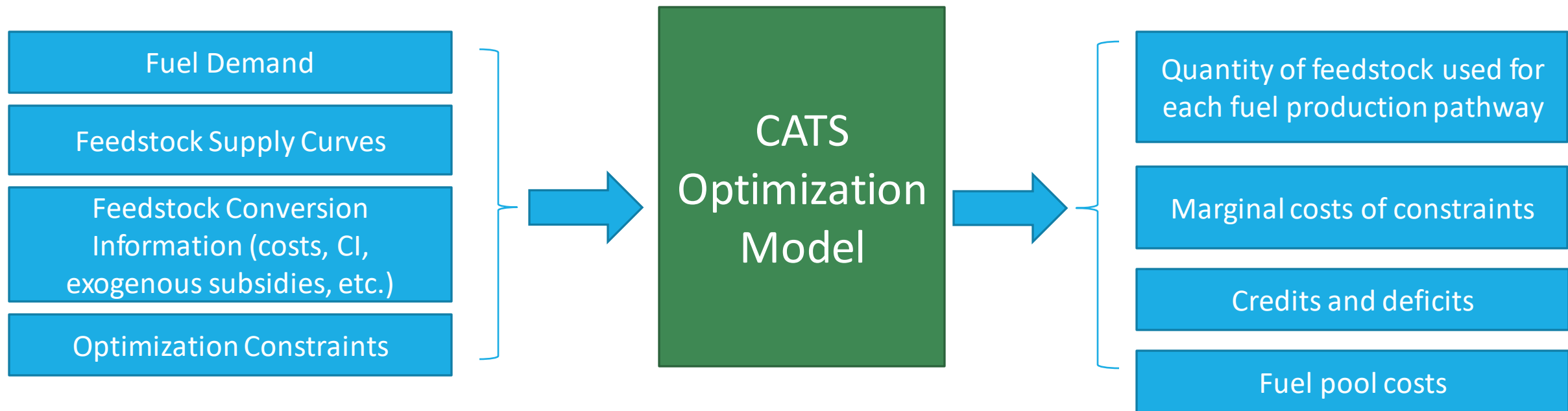
- Identify regulatory concepts
- Conduct public workshops to gather feedback on concepts
- Conduct technical analysis
 - Model fuel demand/supply effects of regulatory concepts
 - Evaluate GHG/air quality, public health, and economic impacts
- Release rulemaking package

Feedback from Nov 2022 Workshop

- Topics covered: introduced CATS Model, presented initial modeling scenarios and inputs for consideration
- 750 attendees
- Over 150 feedback letters
 - Feedback from: Industry, academia, Environmental Justice representatives, NGOs
 - Feedback included: CATS Model, scenarios, targets, ratchet/acceleration mechanism, renewable natural gas, crop-based biofuels, petroleum projects, zero-emission fueling infrastructure, forklifts, jet fuel
- Various stakeholder meetings

The California Transportation Supply (CATS) Model

- CATS is a transportation fuel supply optimization model
- Minimizes the cost of supplying fuel to meet fuel demand in each year



Fuel Supply Model to Guide Changes

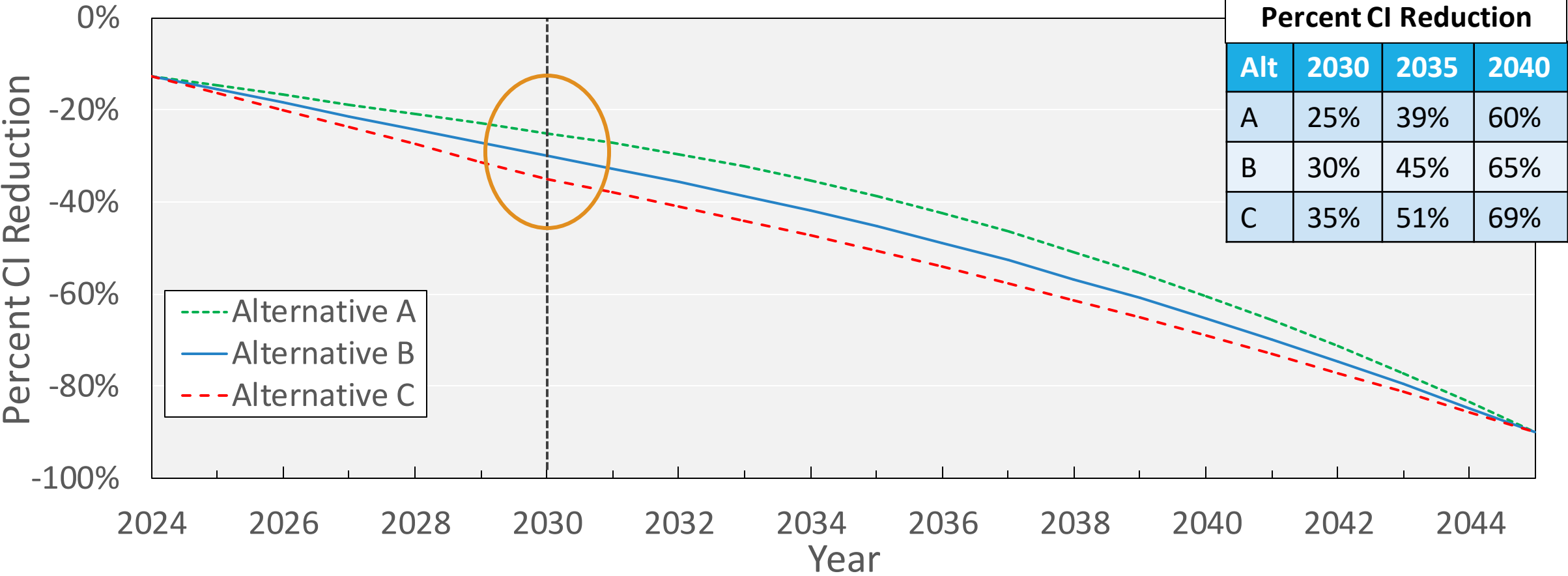
- Staff developed the California Transportation Supply (CATS) model to guide potential fuel market and policy scenarios
- The model provides fuel compliance pathways and costs to help guide the development of potential program changes
- The model minimizes the cost of supplying fuel to meet demand on an annual timestep
- Staff presented the model and three scenarios in November, released the model, and requested feedback

Updates to Model Since Release

- Staff made the following updates to the CATS model in response to stakeholder feedback:
- Adjusted Federal incentive assumptions
 - Updated Inflation Reduction Act incentive to better-reflect announced ethanol carbon capture and sequestration (CCS) projects that will likely qualify for the \$85/ton 45Q tax credit
 - Incorporated Inflation Reduction Act incentive for hydrogen produced using biomethane
- Aligned CA Avg Grid Electricity CI with published LCFS values
- Adjusted the average CI of ethanol to reflect continued CI reductions, informed by the historical downward trend
- Updated some of the supply curves to adjust for inflation
- Categorized white grease as a “waste oil”

Carbon Intensity Targets

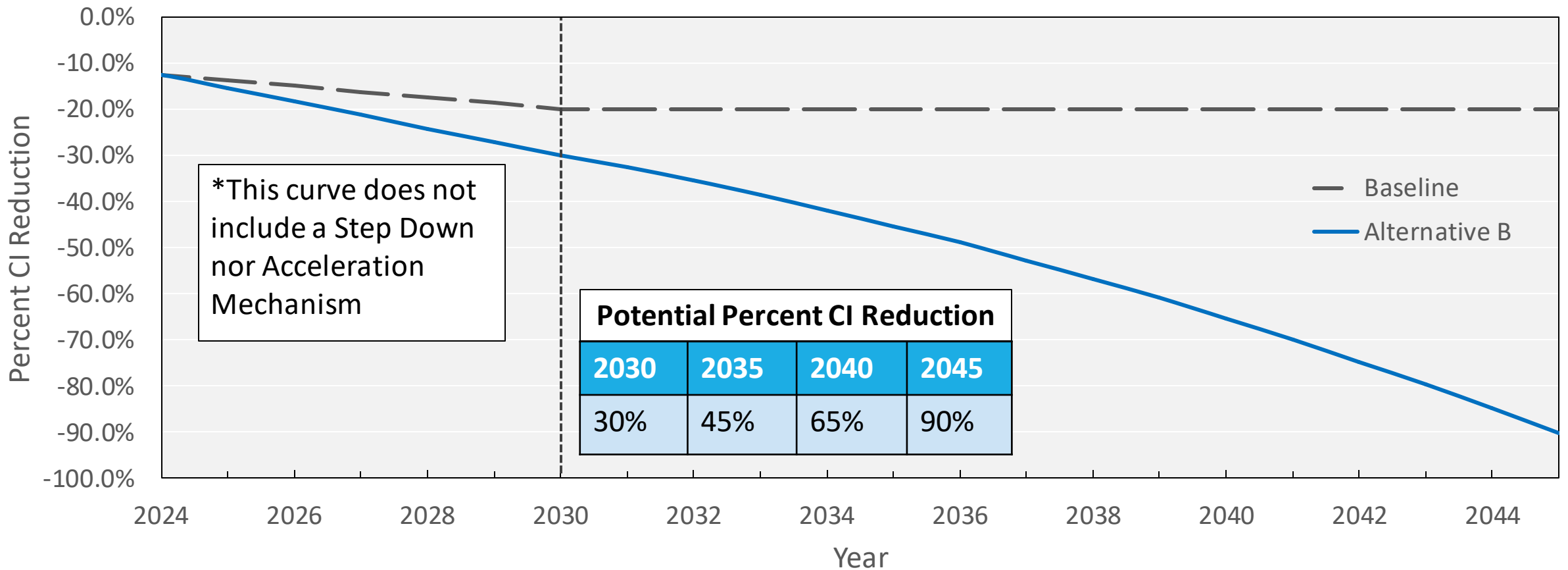
Carbon Intensity Target Alternatives



Feedback on Compliance Target Options

- Majority of stakeholders supported 2030 compliance target of at least 30% CI reduction, and that 25% by 2030 was not sufficiently aggressive
- Strong and steady price signal needed to encourage investment in low-carbon fuel production infrastructure
- For purposes of this workshop, staff modeled the middle scenario, 30% by 2030, 90% by 2045

Example CI Schedule: 30% by 2030



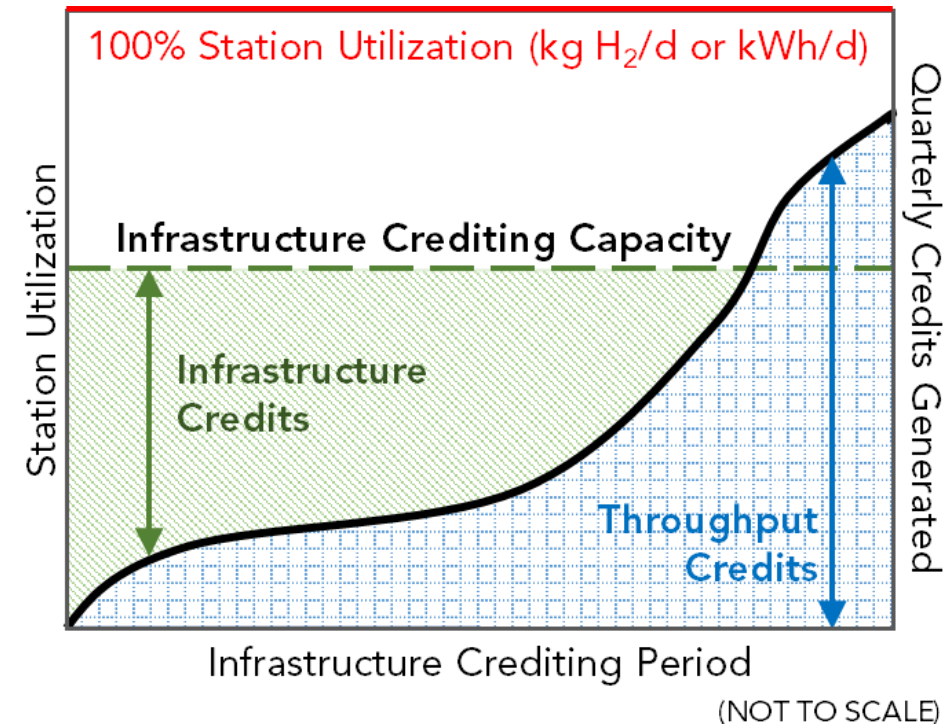
Compliance Target Step Down and Acceleration Mechanism Concepts

- Staff has received substantial feedback on the need to ensure the steady price signal for credits in the market to support ongoing investment
- Near-term step-down in compliance target stringency could strengthen near term price signal to support near-term investment
- Compliance target acceleration mechanism could potentially increase the stringency of compliance targets in response to predetermined market indicators/thresholds based on clear regulatory criteria
- Staff requests feedback on the following:
 - What market indicator(s) would serve as the best trigger for increases in stringency, and over what time period?
- Concepts: Average credit price; credit to deficit ratio; total credit bank
 - How much should the CI target increase in various situations?
- Concepts: Proportional to excess credits; advance existing compliance targets by 1 year

Other Potential Changes

Light-Duty Zero-Emission Vehicle Refueling Infrastructure (I)

- LCFS supports refueling infrastructure for fast charging and hydrogen refueling infrastructure, known as "capacity credits"
- Currently:
 - Crediting is for public light-duty refueling infrastructure
 - Credits based on refueling capacity, fuel characteristics
 - Limit on capacity crediting: 2.5% of previous quarter's deficits for each electricity and hydrogen
 - LCFS has supported 71 hydrogen stations and 3,225 Level 3 fast chargers
 - Applications end after Dec 31, 2025



Light-Duty Zero-Emission Vehicle Refueling Infrastructure (II)

- Potential Ongoing Support
 - Complete existing light-duty crediting periods for approved applications
 - Additional 1% of prior quarter deficits for light-duty fast charging and hydrogen refueling infrastructure
 - Starting Jan 1, 2026, new HRI/FCI applications for light-duty vehicles must be located in low-income or disadvantaged communities
 - Aligns with Clean Transportation Incentives 2022-2023 Funding Plan, which prioritizes incentive funding for ZEVs in low-income or disadvantaged communities

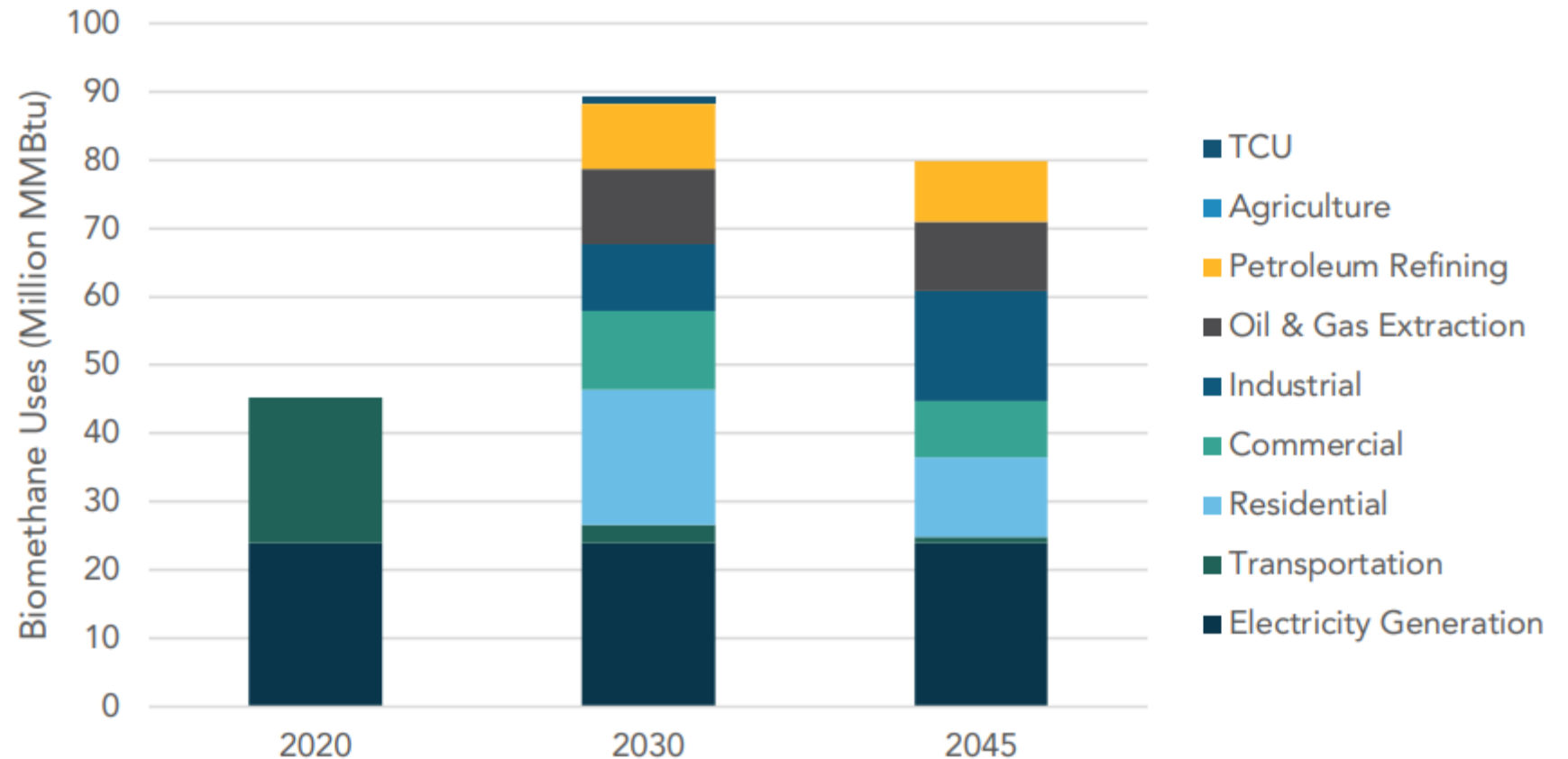
Medium- and Heavy-Duty ZEV Refueling Infrastructure

- Executive Order N-79-20 established wholesale transition to ZEVs in trucking sector
- Refueling infrastructure is critical for deployment of vehicles
- Upon effective date of amendments, provide "capacity" credits to MHD infrastructure (2.5% of previous quarter's deficits for each hydrogen and electricity), up to 10 years of support
 - MHD stations must service more than a single fleet
 - MHD stations capacity credit limits determined upon application approval, providing more investment certainty

Biomethane in 2022 Scoping Plan

- Biomethane supplies need to grow rapidly and then be deployed to more end-uses

Figure H-4. Biomethane Use in California by Sector, 2022 Scoping Plan



Biomethane Crediting | Guiding Principles

- Need to meet California's methane reduction targets (SB 1383)
- Need more methane reduction projects in California this decade, and current incentive environment has thus far successfully supported rapid build-out of projects in California and outside of California
- Need to avoid stranded assets that risk backsliding on GHG reductions
- Biomethane can displace fossil fuels on path to carbon neutrality, but long-term CNG demand in transportation is limited and declines
- We expect complementary policies will also value methane reductions and support biomethane demand in the future
- Biomethane as a hydrogen feedstock will remain important in LCFS

Avoided Methane Crediting | Staff Consideration

- Avoided methane crediting provides important pathway for payback on initial capital costs that will be highest this decade to meet SB 1383, but ongoing operational costs will be lower.
- **Concept:** Avoided methane crediting available until 2040, new fuel pathways accepted through 2030
 - Pathways certified or recertified prior to 2030 would be eligible for 10-year crediting period
 - If crediting periods end between 2031-2035, pathway can be recertified for another 5-year crediting period
 - Supports development of methane capture projects in near-term while sending long-term signal to transition to other sectors

Biomethane Crediting – Book-and-Claim | Staff Consideration

- Deliverability helps ensure California can decarbonize its natural gas use and achieve carbon neutrality and emission reductions required by AB 1279.
- **Concept:** Align deliverability requirements of biomethane used as a vehicle fuel with RPS and CPUC 1440 program (CPUC section 651(b)(3)), starting in 2028
 - Biomethane delivered to California for use as a primary fuel through common carrier pipeline must physically flow within California or toward the end user in California for which biomethane was produced
 - Eligible pipelines must flow toward California 50% of a given year, consistent with RPS eligibility rules
 - Biomethane used to produce hydrogen is not subject to the deliverability requirement and can continue to be sourced indirectly from projects in North America

Intrastate Jet Fuel | Existing Regulation and Guidance

- July 2022 letter from the Governor to CARB Chair: Requests that CARB “adopt an aggressive 20% clean fuels target for the aviation sector” and that CARB “evaluate and consider an increase in the stringency of the Low Carbon Fuel Standard...to accelerate refinery transitions away from petroleum to the production of clean fuels.”
- 2022 Climate Change Scoping Plan signals a need for rapid decarbonization of the aviation sector, including a goal of meeting 20% of aviation fuel demand with zero emission fuels in 2045
- Inflation Reduction Act of 2022 introduces \$1.25-1.75/gal tax credit for Sustainable Aviation Fuels

Potential Method to Include Deficit Generating Intrastate Jet Fuel in LCFS

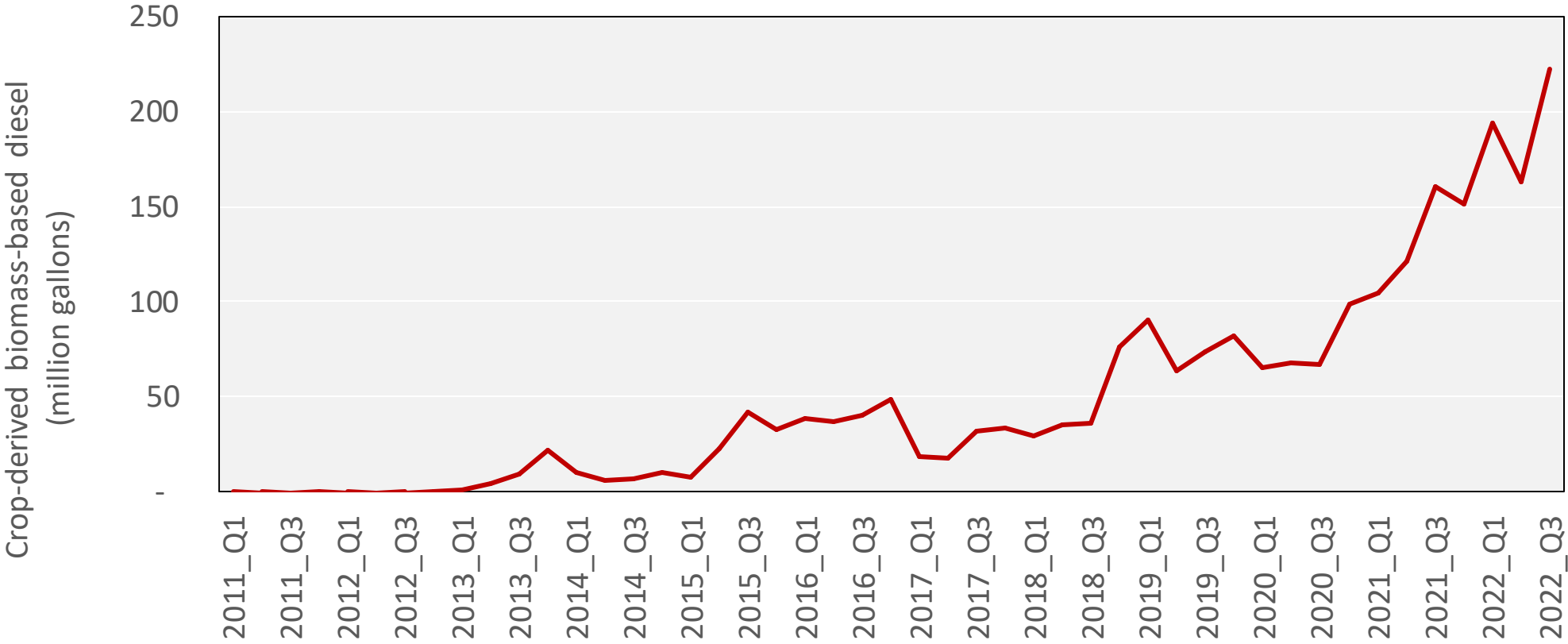
- Scope: Conventional jet fuel supplied in California for intrastate flights
 - Intrastate definition: flights that take-off in CA and land in CA
- Reporting:
 - Fossil jet: airlines would be the first fuel reporting entities
 - Alt jet: no change to current structure (producers and importers are first fuel reporters)

Crop-based Fuels Concerns

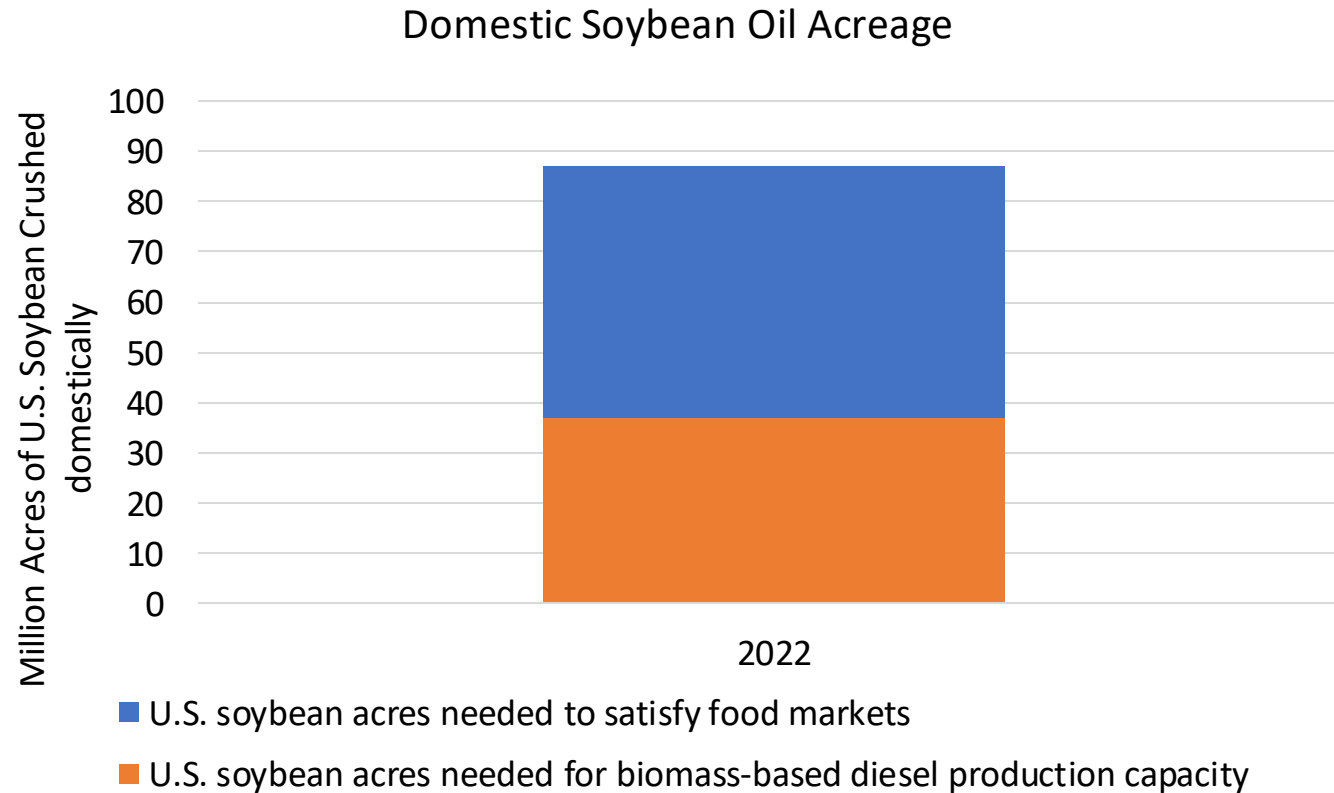
Feedback on Crop-Based Biofuel Concerns

- Received 38 comment letters in support and opposition of limits on crop-based fuels
- Received limited data, analysis and supporting documents
- Staff Review of submitted documents, comment letters and land use change science is ongoing

Increase in Crop-based Oils Used in California Over Time



Feedstock needs for announced U.S. biomass-based diesel production capacity has the potential to exceed current U.S. soybean oil availability

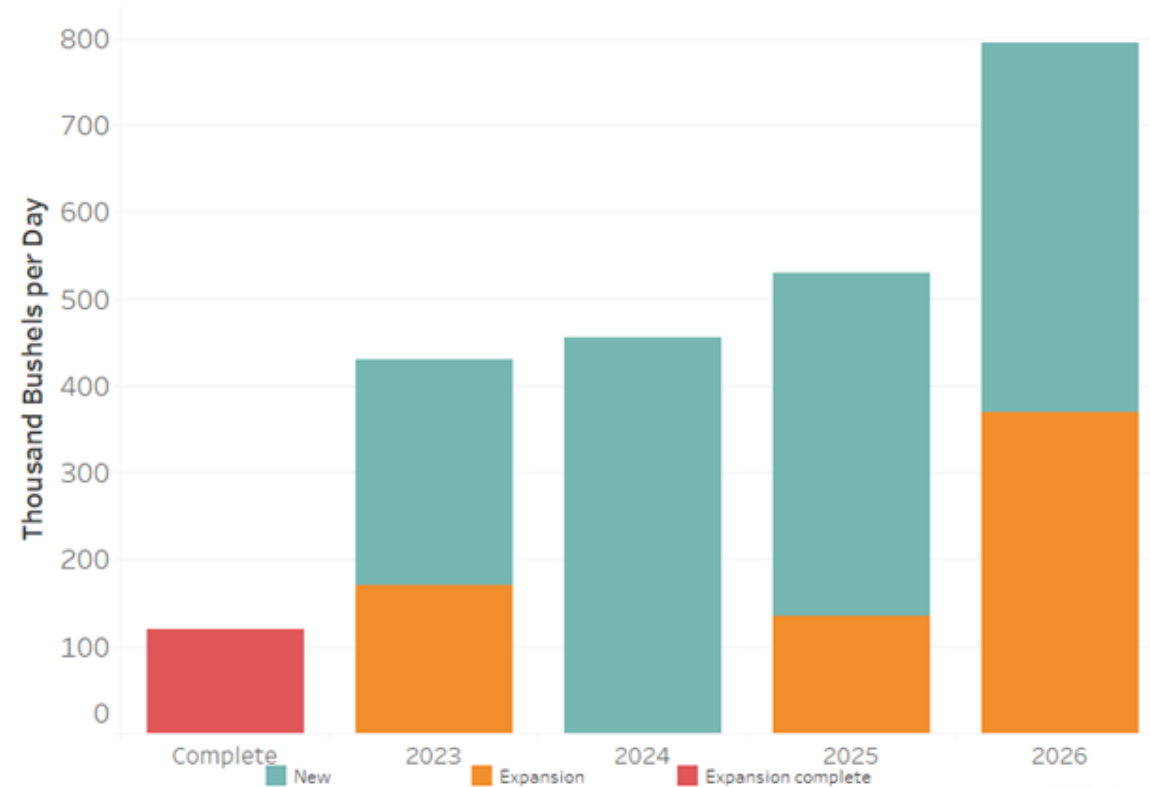


- Based on preliminary modeling, biofuel demand in 2025 may require 98 million acres of land for soybean production, separate from food market demand

Derived from USDA Oil Crops Yearbook Data

Large investments have been made to secure additional crop-based feedstock

Soybean Crush Expansion by Year



Source: Gordon Denny and American Soybean Association



Continuing to Seek Public Comment

- Biofuel production must not come at the expense of deforestation or food production.
- What indicators or resources should CARB monitor to understand if our programs are or are not having adverse impacts on land use or food availability? What technologies are likely to substitute for crop-based fuels if their use is limited? What investments are needed to bring these technologies to market?
- Are there regulatory mechanisms staff should consider?

Project-Based Crediting

- Currently, crude oil extraction and refineries can earn credits for projects that reduce their emissions
 - Innovative Crude
 - Low-Complexity/Low-Energy-Use Refinery
 - Renewable H2 to Refinery
 - Refinery Investment Projects (including process improvement projects)

Project-Based Crediting – Phase Out | Staff Consideration

- Phase out crediting of petroleum projects by 2040 (excluding CCS)
 - Currently most petroleum projects do not have limited crediting periods
 - Concept supports near-term emissions reductions at oil extraction and refining operations, with a defined end-date

Project-Based Crediting – Direct Air Capture | Staff Consideration

- Limit crediting of Direct Air Capture (DAC) with sequestration projects to those located in the United States
- More-directly supports deployment of DAC technology within the United States to achieve national and State-level emission reduction goals
- DAC-to-fuel projects (as Tier 2 fuel pathways) would not be subject to this geographic limitation

LCFS Modeling Outputs

Example Modeled Scenario (I)

Component	Current Scenario
2030 Target	30% by 2030
2045 Target	90% by 2045
Infrastructure Crediting	Total infrastructure crediting pool: 6% of deficits
Jet Fuel	Intrastate fossil jet is added as a required fuel
Crop-based fuels	TBD

Example Modeled Scenario (II)

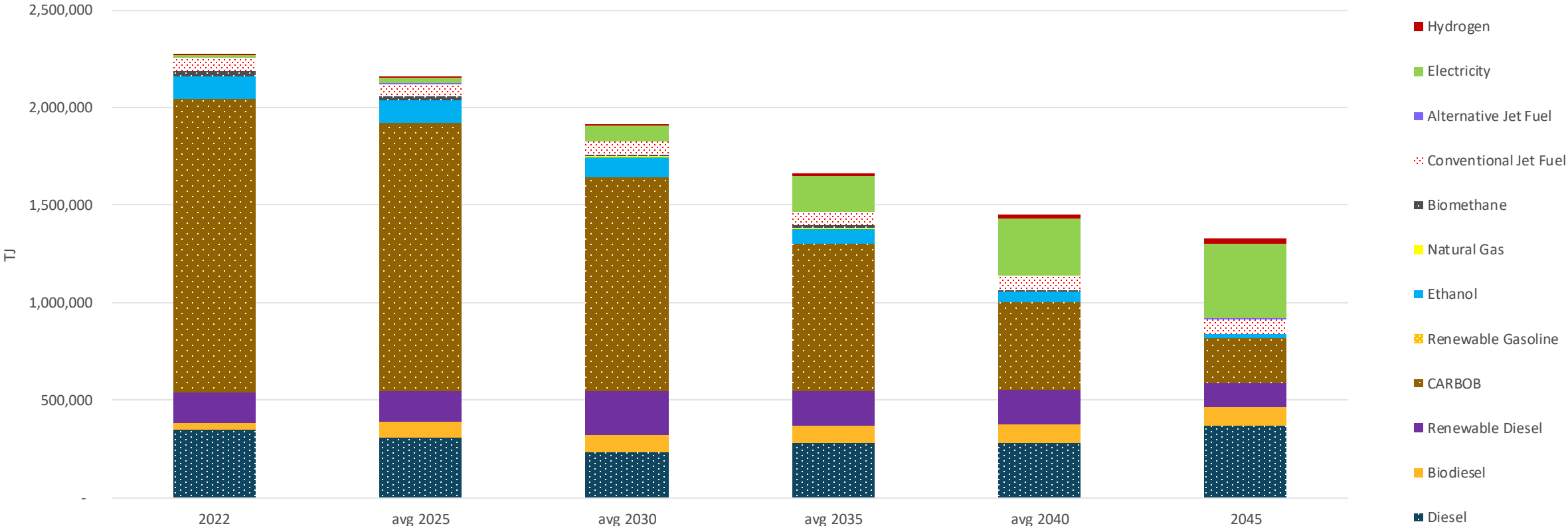
Component	Current Scenario
Electric Forklifts	Update credit calculation to target electrification of remaining ICE forklifts.
Petroleum crediting	Phase out by 2040, not including carbon capture and sequestration projects
Certification of fuel pathways with avoided methane credit	2030: No new fuel pathways approved with avoided methane; existing 10-year crediting periods are unaffected 2040: Phaseout of fuel pathways with avoided methane
Biomethane book and claim (B&C) eligibility	2028: B&C for biomethane used in CNG vehicles is limited to projects with direct delivery to California; limitation does not apply to biomethane used to produce hydrogen; existing avoided methane crediting periods play out in full

Modeling Framework

- CATS model is designed to identify lowest cost pathway to achieve LCFS compliance targets
- Model includes cost and subsidy assumptions for multiple fuel production and crediting pathways
- Model does not account for other constraints or potential future regulations, such as:
 - Advanced Clean Fleets regulation not currently reflected
 - Potential permitting delays

Preliminary Scenario Modeling Outputs

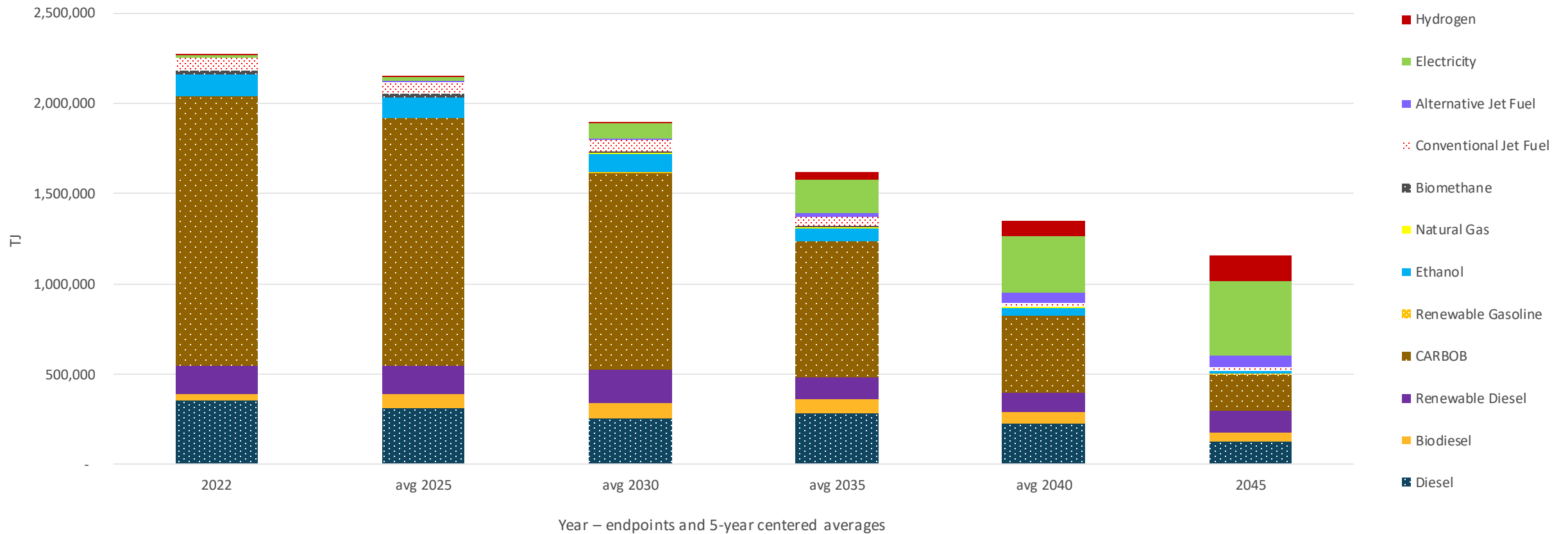
Fuel Mix by Energy Delivered **without** Draft ACF rule included



Year – endpoints and 5-year centered averages

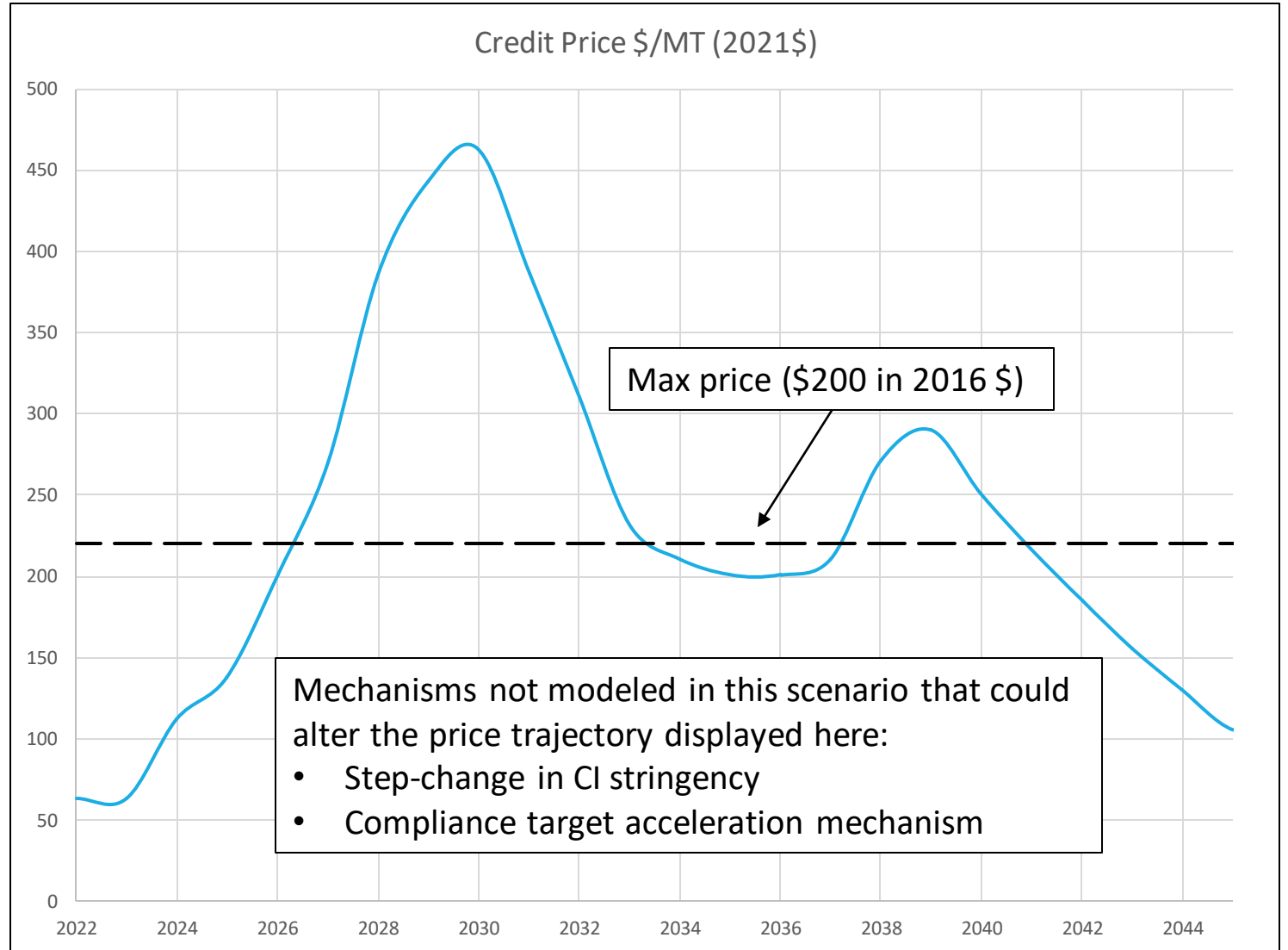
Alternative Outputs with Different Assumptions—Advanced Clean Fleets

Fuel Mix by Energy Delivered, Draft ACF Rule Included



Preliminary Credit Price Estimates

- LCFS credit prices are expected to be strong through 2045 due to increased compliance target stringency
- Maximum credit price shown in dashed line prevents dramatic price spikes; other mechanisms can also help
- Strong price signal expected to drive investment in new crediting opportunities, with downward pressure on prices over time
- High degree of uncertainty when forecasting to 2045

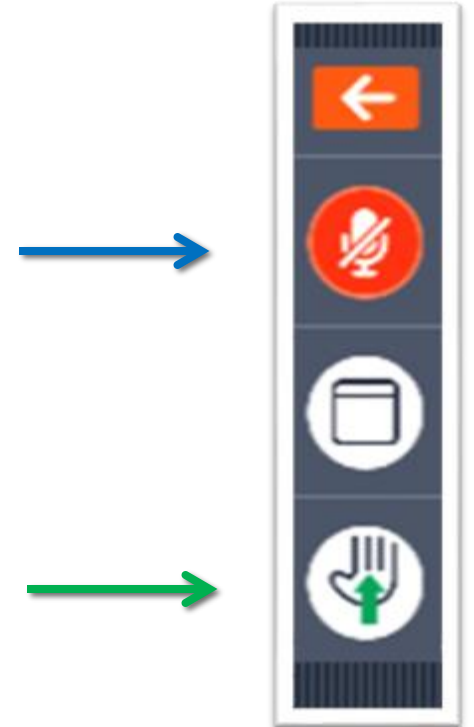


Short-term Adjustment to Compliance Targets

- Preliminary modeling suggests that a “step change” in compliance target stringency is needed in short term to send strong price signal in mid-2020s to increase ambition for 2030
- Existing modeling does not currently include a step change, or a compliance target acceleration mechanism
- Additional regulations, such as Advanced Clean Fleets, will add further downward pressure on credit prices

Questions and Feedback Session

- Workshop materials and public comment page available on the LCFS Meetings and Workshops page:
<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-meetings-and-workshops>
- Written feedback accepted through March 15 at 11:59 p.m.
- Q&A during the workshop
 - 1) Use the “**Raise Hand**” function in the GoToWebinar toolbar, which should be located to the right of your screen as shown
 - 2) When staff call your name, please “**Unmute**” yourself by clicking the red button, and proceed to introduce yourself
 - 3) Commenters will be given 3 minutes for comments, no ceding time to others



Lunch Break

WE WILL RESUME AT 12:30PM

Streamlining Implementation

LCFS Implementation Status

- Over 1,350 pathways certified since 2019
- Annual verification introduced in 2020
 - 379 pathways processed and 188 pathways re-certified for 2020 AFPR
 - 638 pathways processed for 2021 AFPR
- 12 project-based applications approved

	Pathways certified since 2019
Design-Based	9
Lookup Table	111
Temporary	371
Tier 1	537
Tier 2	325
Grand Total	1,353

Successful Policy Model Being Adopted in Other Jurisdictions

- California develops exportable programs, pursuant to AB 32
- LCFS platform is exportable and is being adopted in other jurisdictions
- New and emerging programs will send even stronger market signal to innovate and invest in low-carbon fuel production
- Increasing ambition in California and other jurisdictions furthers the need for efficient operations while maintaining program integrity

Opportunities to Streamline Implementation

- Zero-Emission (ZE) Forklifts
- Book-and-Claim of Hydrogen
- Updates to existing Tier 1 calculators
- Addition of a Tier 1 Hydrogen calculator
- Crude and Petroleum Fuels
- Updates to OPGEE/Crude Lookup Table
- Verification Updates

Align California Zero-Emission Forklift Policy

- The State Implementation Plan, Mobile Source Strategy, N-79-20, and proposed ZE Forklift Regulation target forklifts for ZE transition
- ZE Forklift Regulation proposing full ZE transition for all forklifts <12,000 lbs. by 2038
- Principles for alignment
 - Further incentivize private investment in transportation decarbonization
 - Account for established zero-emissions (ZE) transition of forklifts
 - Continue support for difficult to transition equipment

Zero-Emission Forklifts | Staff Consideration

- Account for existing fleet electrification and support difficult to decarbonize equipment
- Forklifts with <12,000 lb lift capacity
 - Include 50% electrification in the baseline for credit generation
 - Reduce EER by 50%
- Forklifts lift capacities >12,000 lb
 - High lift capacity forklifts have not transitioned
 - Maintain EER
- As part of implementation staff will continue to evaluate technology maturity across equipment types

Book-and-Claim of Low-CI Hydrogen

- Book-and-Claim of low-CI hydrogen can be one mechanism to support the Scoping Plan energy transition goal by overcoming bottlenecks in hydrogen production and supply
- Propose to align book-and-claim eligibility with hydrogen production incentive eligibility for Inflation Reduction Act (IRA)
 - Well-to-wheel CI of ≤ 55 gCO₂e/MJ for gaseous hydrogen and ≤ 95 gCO₂e/MJ for liquid hydrogen
 - Fossil gas derived hydrogen cannot participate in B&C
- Request detailed feedback to streamline process to incentivize production and delivery of low-CI hydrogen to transportation

Updates to Existing Tier 1 Calculators

All Tier 1 Calculators Subject to Updates

Starch and Fiber Ethanol

Sugarcane-derived Ethanol

Biodiesel and Renewable Diesel

Biomethane from North American Landfills

Biomethane from Anaerobic Digestion of Wastewater Sludge

Biomethane from Anaerobic Digestion of Organic Waste

Biomethane from Anaerobic Digestion of Dairy and Swine Manure

Highlighted Updates to Tier 1 Calculators (I)

- Emission Factor and user interface updates
- Separate Biodiesel and Renewable Diesel Calculators
- Additional transport options for Ethanol
- Enhance Dairy Swine Manure calculator functionality and flexibility to accommodate Tier 1 classification
 - Mass-balance based fugitive quantification for upgrading biomethane
 - Baseline adjustment when digester project is underperforming
 - Clarify data period for baseline modeling
- New Tier 1 Hydrogen Calculator for electrolysis and steam reforming

Highlighted Updates to Tier 1 Calculators (II)

- Staff is also considering including electricity generation from biogas using clean or non-combustion technologies in all biomethane Tier 1 Simplified CI Calculators
- Staff seeks stakeholder feedback on appropriate LCA methodology and alignment with federal Renewable Fuel Standard "eRINs"

Updates to Emission Factors

- Updated emission factors from:
 - Argonne National Laboratory GREET 2022
 - US Environmental Protection Agency eGRID 2022
 - California Air Resources Board EMFAC v1.0.2
 - Others as applicable

Updates to Lookup Table

- Updates to the following fuel pathway Carbon Intensities:
 - CARBOB
 - ULSD
 - Compressed Natural Gas
 - Propane
 - California Grid Electricity
- Hydrogen pathways will be removed due to the development of a Tier 1 Hydrogen calculator

Feedback on Tier 1 Calculators and Lookup Table

- Draft versions of all Tier 1 Calculators and Lookup Table will be published on the LCFS website between February 21st and April 15th, 2023
- Separate docket for focused calculator feedback
- Stakeholders feedback on Tier 1 Calculators requested no later than April 30th, 2023

Crude and Petroleum Fuels

- Refinery Investment Credit Provision and Renewable Hydrogen Refinery Credit Provision: Clarify crediting eligibility
- Innovative Crude Projects:
 - Streamline the reporting requirements to allow quarterly or annual submission of innovative crude projects
 - Update the displacement emission factor (EF) for innovative crude projects using solar electricity to align with the updated eGRID EF for California grid electricity

Updates to OPGEE Model and Crude Lookup Table

- CARB engaged with the public in 2021 and 2022 through two technical workshops regarding updates to the OPGEE model and impacts on the baseline crude CI. Staff also reached out to stakeholders to clarify technical questions related to the model update.
- Staff posted the following documents relevant to the OPGEE model and crude oil CI calculation:
 - OPGEE model version 3.0b and user guide
 - Inputs sheet for the 2010 Baseline Crudes
 - Inputs sheet for the Crude Lookup Table

Verification Updates | Current Verification Requirement

- System to monitor, report, and verify data
- LCFS requires regulated entities to retain the services of accredited third-party verifiers
- Verification is vital to ensure all data and information provided to CARB accurately represents the operation of the regulated entity

Verification Updates | Project-based Crediting

- Project-based Crediting: Require third-party validation of project-based crediting applications prior to CARB approval; similar to the validation requirements for fuel pathway certification

Verification Updates | Potential to Add Transaction Types to Verification Requirement

- With expected expansion of electrification in transportation sector, potentially add verification requirements for these transaction types:
 - EV Charging Transaction Types;
 - eTRU, eCHE, and eOGV Fueling;
 - Forklift Electricity/Hydrogen Fueling;
 - Fixed Guideway Electricity Fueling; and
 - Fuel Cell Vehicle (FCV) Fueling transaction types, not limited to hydrogen from book and claim biomethane

Verification Updates | Potential Deferral of Third-Party Verification

- Existing deferral threshold of 6,000 credits or deficits in a calendar year
- With the potential verification deferral for additional transactions types, entities that account for 99% of credits from subject transaction types would be subject to third party verification on an annual basis

Environmental Analysis

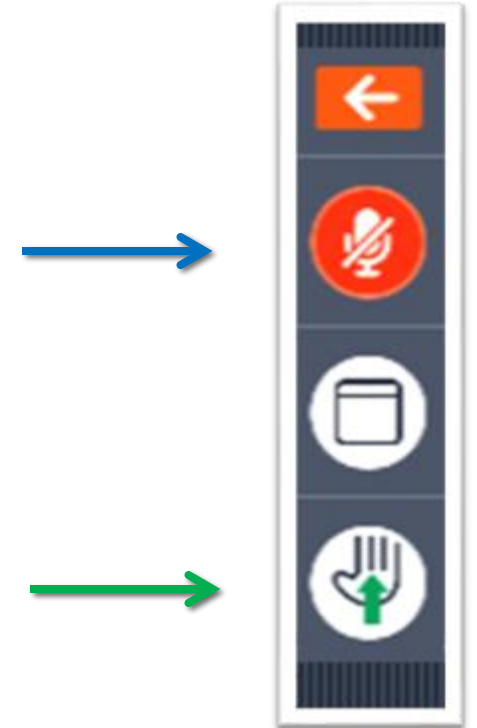
- Environmental Analysis (EA) being prepared analyzing potentially significant adverse impacts caused by reasonably foreseeable actions
- Meets requirements of CARB's certified program under the California Environmental Quality Act (CEQA)
- The CEQA Environmental Checklist (CEQA Guidelines Appendix G) is used to identify and evaluate potential indirect impacts
- The EA will be an appendix to the Staff Report

Environmental Analysis to be Prepared

- The EA will include:
 - Description of reasonably foreseeable actions taken in response to the proposal
 - Programmatic level analysis of potential adverse impacts caused by reasonably foreseeable actions
 - Feasible mitigation measures to reduce/avoid significant impacts
 - Alternatives analysis
- Input invited at this early stage on appropriate scope and content of the EA
- Draft EA will be released for 45 day public comment period

Questions and Feedback Session

- Workshop materials and public comment page available on the LCFS Meetings and Workshops page:
<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard/lcfs-meetings-and-workshops>
- Written feedback accepted through March 15 at 11:59 p.m.
- Q&A during the workshop
 - 1) Use the “**Raise Hand**” function in the GoToWebinar toolbar, which should be located to the right of your screen as shown
 - 2) When staff call your name, please “**Unmute**” yourself by clicking the red button, and proceed to introduce yourself
 - 3) Commenters will be given 3 minutes for comments, no ceding time to others



Next Steps

- Submit written feedback online through March 15, 2023
- Link to submit written feedback found on the LCFS Meetings and Workshop webpage:
https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=lcfs-wkshp-feb23-ws&comm_period=1