LCFS Program Update

ISCC/PRIMA Conference
April 6, 2017

Sam Wade
Branch Chief, Transportation Fuels

California Environmental Protection Agency
Air Resources Board
Program Background

- Established in 2009; Re-adopted 2015 due to legal challenge

- **Fuel Neutral** - Promotes all low carbon fuels

- **Life Cycle Accounting** - Ranks fuels with Carbon Intensity (CI) scores according to the greenhouse gas emissions resulting from each fuel’s production and consumption

- **Flexible** - Regulated parties can comply by:
  - Innovating to reduce the CI of their fuels,
  - Buying lower-CI fuels from other producers, or
  - Trading credits
How Does LCFS Work?

- Fuels above standard generate **deficits**
- Fuels below standard generate **credits**

Program continues post-2020 @ to-be-determined stringency
LCFS Supporting Growth in Low Carbon Fuels

- From 2011-2015:
  - Renewable diesel grew from less than 2 million to 165 million gallons per year
  - Biodiesel grew from 12.5 million to 126 million gallons per year
  - Renewable natural gas use in vehicles grew from 1.6 million to 69 million diesel gallons equivalent and now makes up over half of all gaseous fuels used in Californian vehicles.

- Annual 2016 volumes (released later this month) will be higher than 2015 for all of these fuels
Sources of Credits Continue to Evolve

Carbon intensity of each fuel is decreasing to remain competitive as more low-carbon alternatives emerge (more credits per MJ of fuel)

Diesel substitutes continue strong credit growth

Electricity cemented as a significant contributor
Credits Continue to Exceed Deficits in Every Quarter, Leading to a Growing Bank

Total Credits and Deficits for All Fuels Reported and Cumulative Credit Bank
Q1 2011 – Q3 2016

Last Updated 1/24/2017
Credit Prices Have Been Relatively Stable Recently
LCFS is an Integral Part of Achieving 2030 Goal

- SB 32 (Pavley) and AB 197 (Garcia) mandate, among other things, a 40 percent reduction in GHG emissions by 2030 (relative to 1990 levels)

- GHG Scoping Plan underway to determine how to achieve these objectives

- Post-2020 LCFS targets being discussed
Biofuel Supply Model Created to Look at Low Carbon Fuel Supply Through 2030

Fuels compete within categories
- Ethanol (E-10 blend)
- Natural gas
- Diesel and liquid alternatives
- Gasoline and liquid alternatives

https://www.arb.ca.gov/cc/scopingplan/meetings/090716/bfsmv83b.zip
18% Scenario: model results indicate increased volumes for renewable diesel, biodiesel, and biomethane.

*2016 value is a model estimate, not actuals
Electric vehicles, biomass-based diesels and low-carbon biomethane are responsible for the majority of credit generation in the modeled 18% LCFS scenario.

*2016 value is a model estimate, not actuals
Post-2020 LCFS Program Design

Amendments to be considered include:

- Post-2020 targets
- Third party verification
- Addition of alternative jet fuels
Public Process (subject to change)

Fuel-Specific Working Meetings

Workshops

Workshops

Workshops

Workshops

LCFS Progress Report to Board

Regulation Notice, Staff Report, Environmental & Economic Analyses

1st Board Hearing

2nd Board Hearing

Comment Periods & 15-day Changes

Effective Jan 1, 2019

2016

Q1 2017

Q2

Q3

Q4

2018
For More Information

LCFS Program Website:  
https://www.arb.ca.gov/fuels/lcfs/lcfs.htm

LCFS Data Dashboard:  
https://www.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm

Scoping Plan Biofuel Supply Module:  
https://www.arb.ca.gov/cc/scopingplan/meetings/meetings.htm

LCFS Contact:  
• Sam Wade, Chief of Transportation Fuels Branch  
samuel.wade@arb.ca.gov (916) 322-8263