



California Environmental Protection Agency

Air Resources Board

DOCKET

11-IEP-1L

DATE NOV 14 2011

RECD. NOV 16 2011

Low Carbon Fuel Standard

Illustrative Scenarios and Economic Analysis

California Energy Commission Workshop
November 14, 2011



Overview

- Formal LCFS Review
- Illustrative Scenarios
- Economic Analysis
- Next Steps



LCFS Formal Review

- LCFS regulation requires two formal reviews by:
 - January 1, 2012
 - January 1, 2015
- Executive Officer must convene Advisory Panel
- Regulation identifies 13 minimum topics of review, including:
 - Program's progress against LCFS targets
 - Fuel availability and economic impacts
- Review is driver for scenario/econ analysis effort



Illustrative Scenarios

- Included in economic analysis in 2009 LCFS Staff Report
 - Five gasoline scenarios
 - Three diesel scenarios
- To be included in 2011 LCFS review
 - Eight gasoline scenarios (may be more)
 - Six diesel scenarios
- Scenarios are not projections
 - Possible pathways
 - Show range of options

2009/2011 Scenario Differences

2009	2011
Excluded costs borne by RFS2	Used RFS2 as baseline case
Included biofuel tax subsidies	No tax subsidies
Used U.S EPA cellulosic fuel projections	Used EIA cellulosic fuel projections
Varied number of EVs and FCVs <i>among</i> scenarios	Held number of EVs and FCVs constant <i>among</i> scenarios
No LCFS credits used for compliance	LCFS credits used for compliance

2011 Gasoline Scenarios

- Common assumptions:
 - Number of EVs and FCVs increase over time
 - LCFS credits used for compliance
- Key variables:
 - Volumes of corn, sugarcane, and cellulosic ethanol
 - Drop-in fuels available for some scenarios
 - Fueling of FFVs (50% - 100% E85)
 - Some E15 in some scenarios



2011 Diesel Scenarios

Key variables

- Volumes of alternative diesel streams
- Later years require more lower-CI alt diesel
- Some drop-in diesel for a couple of scenarios

Economic Analysis: Scope

- Assumption-driven
- Not exhaustive
 - No macro-scale analysis
 - No value of health benefits included
 - No value of avoided climate change impacts claimed
- Staff planning to update 2009 economic analysis
 - Feedstock costs
 - Petroleum-based fuel costs
 - Cost-of-production basis
 - LCFS credits

Alternative Approaches

Market prices based on CI values:

- Some indication of CI value in market
- Does not take into account:
 - Consideration of actual cost of production of fuels
 - Downward pressure of market competition
 - Innovation spurred by market signals
- Current market does not value CI exclusively



Next Steps

- Advisory Panel Meeting
 - Thursday, Nov. 17, 12:30 - 5:00 p.m., Sierra Room
 - Agenda: Illustrative scenarios and economic analyses
- ARB Board Hearing
 - Friday, Dec. 16, 9:00
 - Non-Reg Item: 2011 LCFS review paper & sustainability workgroup update
 - Reg Item: Proposed LCFS Amendments



Contacts

Mike Waugh, Chief
Transportation Fuels Branch
916.322.6020
mwaugh@arb.ca.gov

Wes Ingram, Manager
Fuels Evaluation Section
916.322.3984
wingram@arb.ca.gov

John Courtis, Manager
Alternative Fuels Section
916.323.2661
jcourtis@arb.ca.gov