

California Low Carbon Fuel Standard Status Report

**John D. Courtis
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Background

- CA legislature adopts Global Warming Solutions Act (AB 32) in 2006
- Board passes LCFS April 2009
 - Title 17, CCR, section 95480 et seq.
- LCFS Board resolution includes mandated regulation reviews
 - Title 17, CCR, section 95489

Current Activities

- Implementation
- Advisory panel
- Proposed regulatory changes

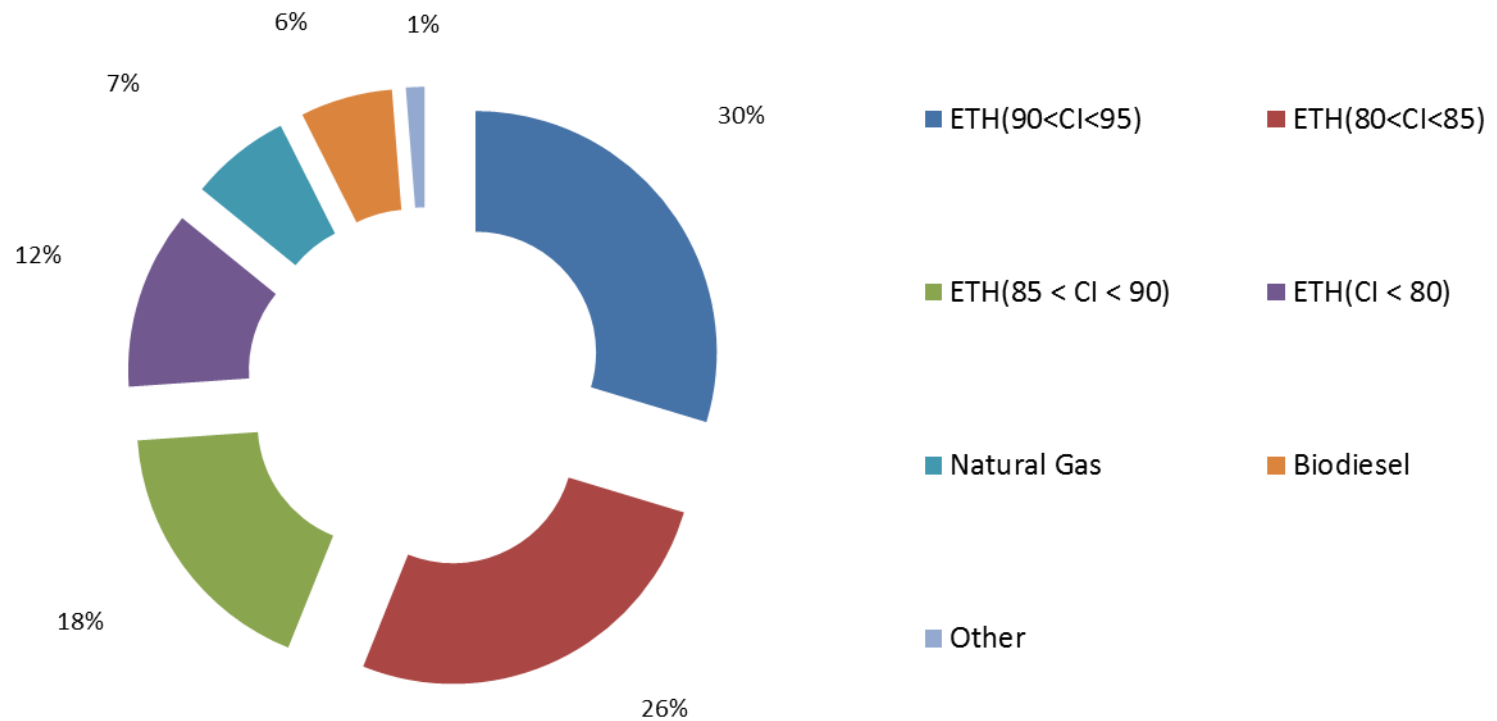
Implementation Overview

- LCFS
 - became effective 2010; full implementation 2011
- Expert Workgroup to address issues; report to the Board on Dec 2010
- Complete development of LRT
- Biorefinery registration (ongoing)
- Approval of new pathways (ongoing)
- Creation of an Advisory Panel for the first review on 2011; second review 2015
- Development of regulatory changes including HCICO, iLUC, sustainability

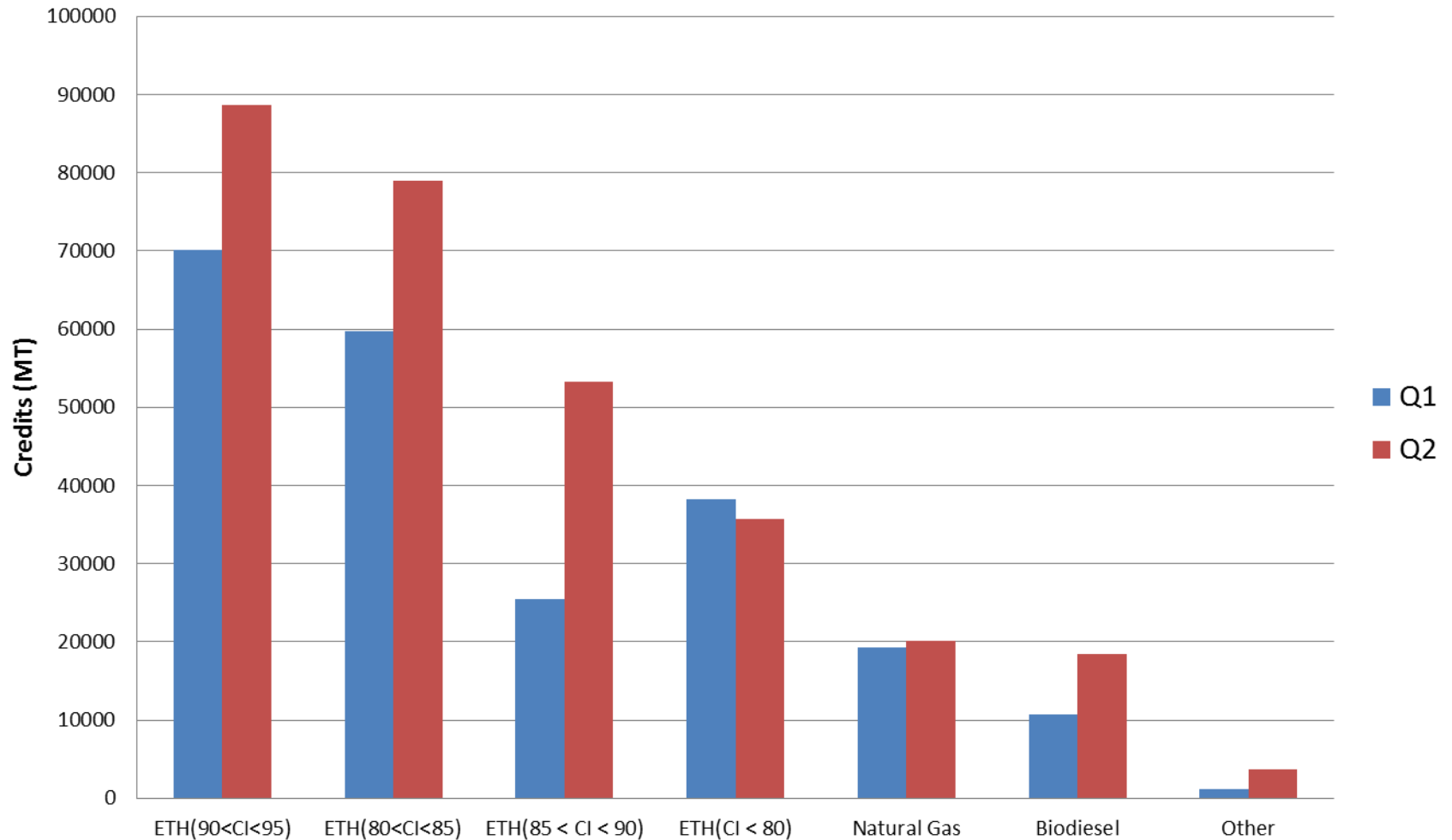
Ethanol from Corn: % of Total Volume Reported



Total Fuel By Credit Percentages



Credits by Fuel Type, Q1, Q2



Expert Workgroup: Short-Term Recommendations

- Incorporate cropland pasture for U.S. and Brazil
- Use updated elasticity values
- Incorporate improved treatment of DGS
- Incorporate modified structure of livestock sector
- Use revised estimates for yield on new cropland
- Use revised emission factors

New Model Revisions Under Review

- Update to GTAP 7 database
- Improved treatment of soy meal, oil, and biodiesel
- Revised price-yield elasticity (0.10-0.25)
- Endogenous yield adjustment (cropland pasture elasticity)
- Cropland transformation elasticity (-0.75—0.5)
- Increased flexibility of crop switching
- More comprehensive spatially explicit EFs
- Food consumption

iLUC: Revisions Under Review

- New GTAP model was developed by Purdue
 - Report and model published 9/13/2011. Updated version 10/11/2011
 - Sensitivity evaluation (on-going): Price-yield elasticity, cropland pasture elasticity, food consumption, etc
- Developed new emission factors and emissions factors model (review on-going)
- Stakeholders comments posted at ARB website
- Comments and model under review

Future Schedule for iLUC

- Pathways to be revisited for iLUC
 - Corn Ethanol, Sugarcane, Soy and Renewable Biodiesel
- Complete evaluation of comments, preliminary modeling results for corn ethanol, soy biodiesel, and sugarcane ethanol
- Additional model revisions (if needed)
- Mid November(?) – modeling results

Land Use Change

- Propose changes to regulation (mid-2012) including changes in compliance schedule
- Current pathways to be revisited: corn, sugarcane, biodiesel
- Initiate work on future pathways: palm oil, cellulosic, others
- Initiate work on long term recommendations

Advisory Panel-15 Topic Areas of Review

- Progress against LCFS targets
- Impact on State revenues, consumers, and economic growth
- Analysis of the public health and environmental impacts of the LCFS at the state and local level
- Potential issues with fuel adequacy, reliability, and supply
- Advisory panel review and report to be completed by Oct 2011

Proposed Regulatory Changes

- Public workshop 10/14/2011
- Proposed Draft Regulatory Language
 - High Carbon-Intensity Crude Oil (HCICO)
 - Revised Definitions
 - Enhanced Regulated Party Revisions
 - Opt-In and Opt-Out Provisions
 - Credit Trading
 - Method 2A/2B Certification
 - Electricity Regulated Party
 - Energy Efficiency Ratio (EER) Revisions

High Carbon Intensity Crude Oil (HCICO)

- Some processes use more energy/emit more GHGs to produce/preprocess crude oil
- Examples of high intensity production processes
 - Thermal enhanced oil recovery
 - Bitumen mining
 - Upgrading of ultra heavy crude or bitumen
 - Excessive flaring of produced gas
 - Other parameters
- LCFS based on full lifecycle GHG emissions; need to account for HCICO

Enhanced Regulated Party Revisions

- Revised “import facility ” definition to be the transportation equipment that carried or held product when it entered CA
 - Previous proposed “importer” definition – person who delivered product to import facility in CA, owns title
 - Revise “import facility” definition accordingly – transportation equipment that carried or held product when it entered CA
 - One step upstream to include intermediate entities
 - Moved potential initial regulated party status from owner of the product when it is received at a facility in CA to person who delivered product when it entered CA

Opt In Opt Out

- Suggestions and recommended revisions:
 - How intermediate or upstream parties would opt-in
 - Additional time requested for providing notice of opt-out
- Proposed amendments:
 - Opt in for
 - non-CA ethanol or biomass-based diesel producers
 - intermediates (between producer & importer)
 - gas companies in lieu of fueling station owners
 - Address multiple parties claiming reg party status for same fuel
 - Revised 30-day opt out notice to 90 days

Credit Trading

- Revisions to 95484(b)
 - Credit Calculations
 - Annual Compliance
- Creation of 95488
 - Generation and Acquisition of Transferable Credits
 - Credit Transfers
 - Mandatory Retirement of Credits for the Purpose of Compliance
 - Public Disclosure of Credit and Deficit Balances and Credit Transfer Information

2A/2B Certification Program

- Adding new pathways to Lookup Table now requires full rulemaking
- Proposed changes would make the process more efficient
- Provide more specifics on data requirements

Electricity Regulated Party

- Opportunity added for businesses to receive credits for employees charging EVs at work
- Requirements added for all potential regulated parties
- Scope of requirements to receive credits broadened
- Reporting requirement added
- Potential default credit recipients added

Proposed Language for Electricity

- Utilities eligible to receive credits for single and multi-family home EV charging if they
 - offer EV time-of-use rate schedule
 - provide user-friendly online tool for rate comparison
- Non-utility EVSP and utilities eligible to receive credits for public access EV charging equipment they install if they
 - have contract with property owner to maintain or service equipment, or contract with EV owners
- Fleet operators can opt-in to regulation to be eligible to receive credits, or may relinquish regulated party status to utility through written agreement

Revised Energy Economy Ratio (EER)

- Bifurcate natural gas for HD vehicles
 - 1.0 for compression ignition
 - 0.9 for spark ignited
- Revise electricity for LD PHEV/BEV to 3.4
- Revise FCV to 2.5

Regulatory Changes: Next Steps

- Public workshop 10/14/2011
- Solicit public comments /inputs
- Complete report-45-day comment period begins Oct 31, 2011
- Board hearing – Dec 15, 2011

Effects on Compliance Schedule

- All these changes in HCICO and corn ethanol iLUC will require changes in compliance schedule:
 - Baseline CI for CaRFG and Diesel changes
 - Compliance schedule targets for gasoline and diesel will change
 - Still the same % reduction targets

Thank you

John Courtis
Manager, Alternative Fuels
jcourtis@arb.ca.gov
(916) 323-2661

<http://www.arb.ca.gov/fuels/lcfs/lcfs.htm>