ISCC/PRIMA Conference

Plugging the West Coast Carbon Short –
The Coming Low Carbon Shortage and Need for
Sustainability Verification

Verification Considerations for
California’s Low Carbon Fuel Standard

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California Environmental Protection Agency
Air Resources Board
LCFS Program Background

- Market-based, fuel-neutral performance standard
- Requires reductions in carbon intensity (CI) of CA’s transportation fuels
  - CI is calculated based on greenhouse gas (GHG) emissions per unit of fuel energy over fuel’s lifecycle (gCO\textsubscript{2}e/MJ)
- Quantity of credits or deficits is determined by fuel-specific CI score relative to declining CI standard and quantity of fuel
  - Fuel CI greater than mandated average CI generates deficits
  - Fuel CI less than mandated average CI generates credits
- Deficits must be balanced with credits generated by lower-CI fuels to remain in compliance
Third-Party Verification
Guiding Principles

① ARB retention of sole authority over the LCFS program, including verification requirements, as bestowed through the State’s legislative and regulatory process;

② Continual improvement in the detection, prevention, and correction of errors or fraud;

③ Identification and implementation of cost reducing strategies, while maintaining verification rigor;

④ Policy consistency with other ARB verification programs; and

⑤ Consideration of the unique attributes of fuel carbon intensities and fuels marketing structure.
**Structure Meets the Needs of LCFS Verification**

- ARB oversight and authority
- Built on proven robust and effective ARB verification structures
- Necessary options for broad scope of LCFS verifications
  - Range of fuel pathway complexities and fraud/error risks
  - International feedstock and alternative fuel supply chains
- Leverages material/energy balance verification elements from U.S. EPA QAP program and EU RED recognized certification schemes
  - May recognize international certification schemes that can assist with administrative functions
  - Provides access to global resources and expertise
- Maintains verification rigor with cost-effective risk mitigation
  - Avoids multiple/duplicative audits and verifications
- Structure may support future sustainability provisions
Verification Structure Considerations: Option 1
ARB Oversees Certification Systems and Accredits CBs
**Verification Structure Considerations: Option 2**

ARB Selects Certification Systems and Specifies Minimum Requirements for CBs
Certification Systems Train and Oversee CBs
Possible Selection Criteria for Certification Systems (1)

Certification system

- Recognized under EU RED
- Regularly updates requirements based on LCFS regulatory updates and ARB guidance
- Requirements that are additional to LCFS are vetted via multi-stakeholder approach
- Requires traceability via chain of custody records
- Requires audit of all volumes to assure no double counting of feedstock or fuel attributes
- Includes full supply chain certification capability
- Reviews supply chain compliance with regional, national and international laws
Possible Selection Criteria for Certification Systems (2)

Certification system

• Publishes procedures, requirements, guidance, certificate validity and audit report summaries on website (transparency)
• Makes oversight reports and full CB audit reports available to ARB
• Requires certification body (CB) accreditation by national or international accreditation body
• Maintains effective auditor training program
• Includes an effective grievance mechanism
• Includes sanction mechanisms for system participants and CBs
Considerations for Certification Body
Minimum Requirements

• Fuels auditing experience
• COI policy and impartiality provisions specified by ARB
• Professional liability insurance
• Nonconformance root cause analysis and corrective action
• Requirements consistent with ISO standards: ISO 14064-3, 14065, 17065 (e.g., data confidentiality procedures and individual auditor competency)
Verification Responsibility Considerations

GENERAL

Legend
- Solid line indicates verification required
- Dotted line indicates additional verification required for some fuels (e.g., residue-based fuels)
- Icon indicates where traceability begins (i.e., feedstock/product transfer documents required)
Verification Responsibility Considerations

BIOMASS-BASED DIESEL

Crop-based – Soybean, canola, other vegetable oil

Residue-based – UCO, tallow, other animal fats
Verification Responsibility Considerations

ETHANOL

Verification Bodies

Certification Bodies

Completes entire verification of individual entities in supply chain

Starch-based – Corn, grain sorghum

Farm / Plantation → Aggregator / Country Elevator → Ethanol Plant → Importer → Marketer / Blender → Exporter

Sugar-based – Sugarcane, Molasses

Sugar Plantation → Sugarcane Processing Facility → Ethanol Plant → Importer → Marketer / Blender → Exporter
Verification Responsibility Considerations
LANDFILL BIOGAS

Verification Bodies
QAP Providers

Landfill → Upgrading Facility → Storage / Trader / Utility → Pipeline → Importer / Marketer

Bio-CNG
CNG Fueling Station

Bio-LNG
LNG Fueling Station

Typically at same location
# Proposed Rulemaking Schedule

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<tr>
<th>TASK</th>
<th>DATE</th>
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<tbody>
<tr>
<td>Concept Paper to inform Environmental Impacts and Economic Analyses</td>
<td>June/July 2017</td>
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<tr>
<td>Fuel-Specific Public Working Meetings</td>
<td>Dec 2015 – Jun 2017</td>
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<tr>
<td>Final Notice Package (Notice and Staff Initial Statement of Reasons)</td>
<td>November 2017</td>
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<tr>
<td>Board Hearing</td>
<td>February 2018</td>
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<td>Amendments Effective</td>
<td>January 1, 2019</td>
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Thank you

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