

California Environmental Protection Agency



**Air Resources Board**

*LCFS Sustainability  
Workgroup Meeting*

March 20, 2012

# Agenda

- Welcome and Introductions
- Presentation – Steve Kaffka
- RFS2
- EU RED
- Group Certification
- Next Steps



Presentation – Steve Kaffka

Mendota Bioenergy Beet Cooperative



# RFS2

# Outline

- RFS2 Standards
- Aggregate Compliance
- Recordkeeping and Reporting Requirements
- RINs

# General Information

- 40 CFR Part 80 Subpart M
- Affects those involved with the production, distribution and sale of transportation fuels
- Renewable fuel volume: 36 billion gallons by 2022
- Lifecycle GHG emission threshold standards
- No sustainability provisions
- Geographical land restrictions

# RFS2 Standards

## Renewable Fuel Volume Requirements (billion gallons)

	Cellulosic Biofuel Requirement	Biomass-Based Diesel Requirement	Advanced Biofuel Requirement	Total Renewable Fuel Requirement
2022 Volume Requirement (billion gallons)	16	TBD, but no less than 1.0	21	36

# RFS2 Standards cont'd

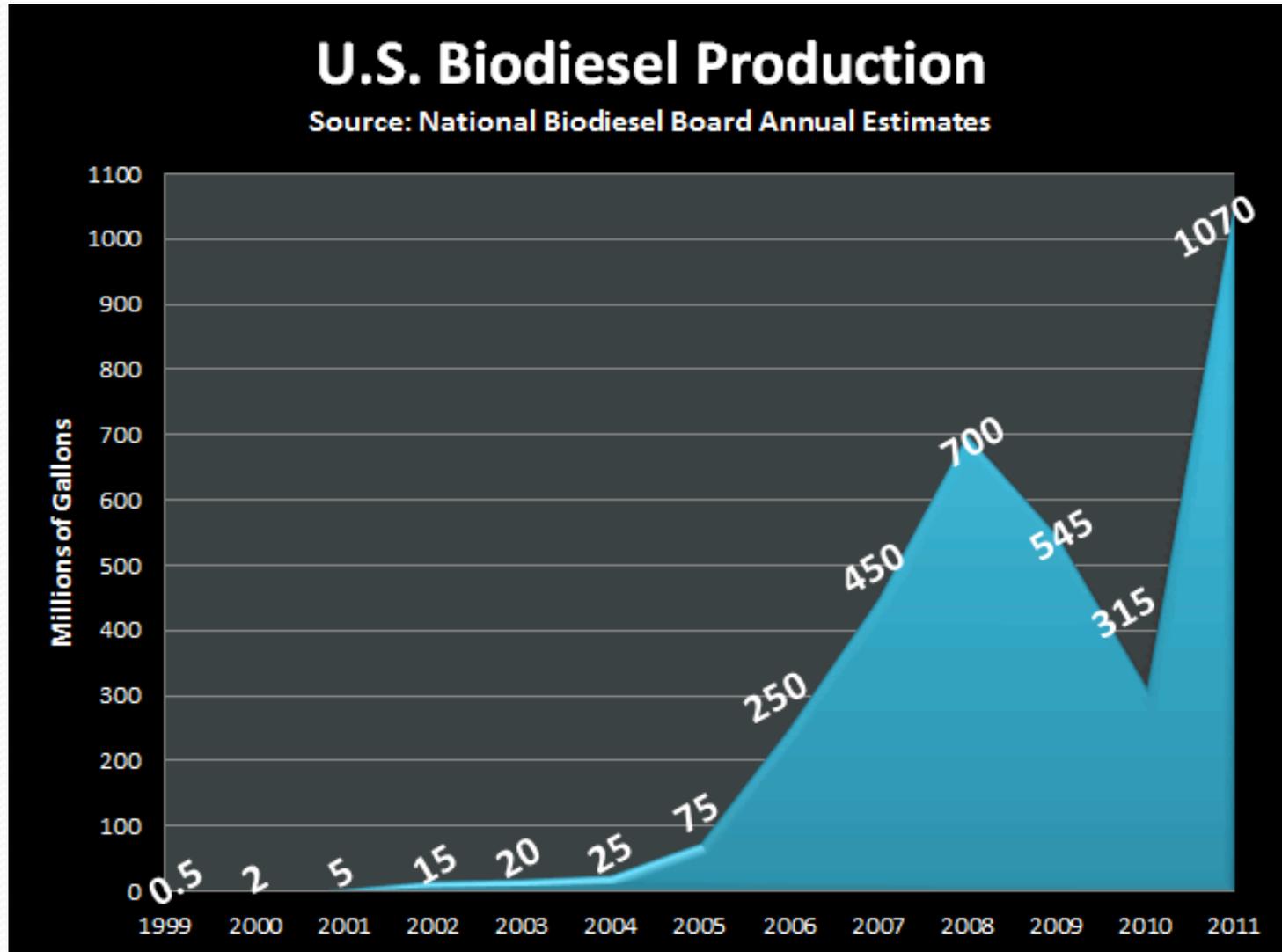
## Lifecycle Greenhouse Gas Emission Threshold

Renewable Fuel Category	Lifecycle GHG Threshold
Renewable Fuel	20%
Advanced Biofuel	50%
Biomass-based Diesel	50%
Cellulosic Biofuel	60%

# Imported Fuel Ethanol (EIA)

Year	Volume (thousand barrels)	Volume (million gallons)
2005	3,234	136
2006	17,408	731
2007	10,457	439
2008	12,610	530
2009	4,720	198
2010	373	16
2011	3,135	132

# Biodiesel Production Volume (NBB)



# Eligibility Requirements for Renewable Fuels

- Types of feedstock used
- Land used to grow feedstocks
- Processes to convert feedstocks to fuel
- Lifecycle GHG emissions

# Renewable Biomass Definition

- Planted crops and crop residue from agricultural land cleared prior to December 19, 2007, and actively managed on that date
- Planted trees and tree residue from tree plantations cleared prior to December 19, 2007, and actively managed on that date
- Animal waste material and byproducts

# Renewable Biomass Definition cont'd

- Slash and pre-commercial thinnings from non-federal forestlands that are neither old-growth nor listed as critically imperiled or rare by a State Natural Heritage program
- Biomass cleared from the vicinity of buildings and other areas at risk of wildfire
- Algae
- Separated yard waste and food waste

# Aggregate Compliance

- Applies to feedstocks from planted crops and crop residues consistent with definition of renewable biomass
- 2007 national aggregate baseline: 402 million acres
- Data sources
  - Farm Service Agency (FSA) Crop History Data
  - USDA Census of Agriculture (2007)
  - Satellite-based USDA Crop Data Layer (CDL)
  - “Conservation Reserve Program: Summary and Enrollment Statistics”

# Aggregate Compliance cont'd

- Producers are not required to recordkeeping and reporting requirements
- Monitor total U.S. agricultural land annually
- If baseline is exceeded, individual or consortium-based recordkeeping and reporting requirements is triggered
- Consider aggregate compliance approach on a country-by-country basis

Canada approved for the use of aggregate compliance approach (September 2011)

# Recordkeeping for Feedstocks

- Apply to producers using feedstocks from foreign or domestic sources
- Maintain written records
  - Identify types and volumes of feedstocks used
  - Electronic data or maps identifying land
  - PTDs tracing feedstocks from land to production
  - Other evidence
- Planted tree/tree residue: plantation cleared prior to December 19, 2007

Third-party certification

# Reporting Requirements for Feedstocks

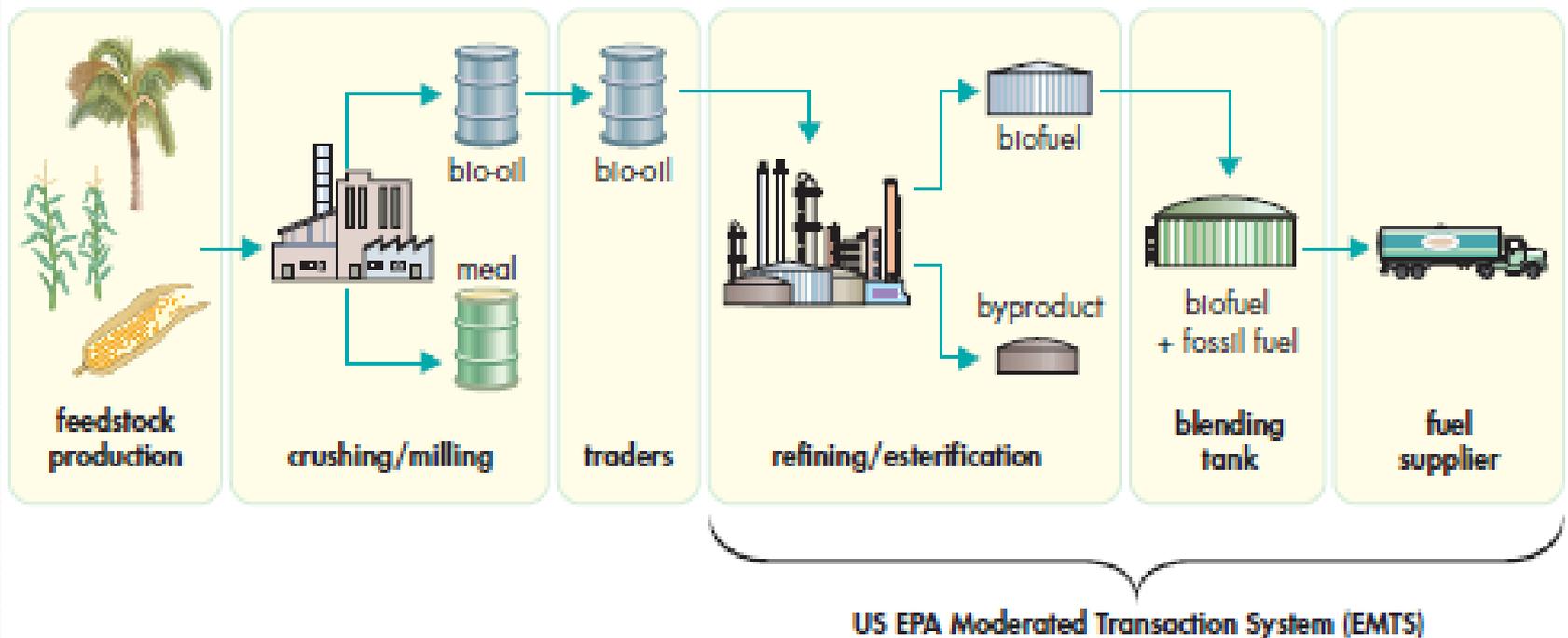
- Show feedstocks used meet definition of renewable biomass
- Quarterly report
  - Summary of types and volumes of feedstocks
  - Electronic data or maps identifying land

# Renewable Identification Numbers (RINS)

- Generate RINs that meet renewable biomass definition, including land restrictions
- Applies to domestic and foreign producers or importers
- RIN generation required for all qualifying renewable fuel
- Cases of fraudulent RINs
  - Clean Green Fuels LLC (Maryland)
  - Absolute Fuels LLC (Texas)

# EPA Moderated Transaction System (EMTS)

Figure 6: The segment of the biofuel supply chain addressed by the US EPA Moderated Transaction System



# In Summary

- RFS2 has volume and GHG emission requirements
- No sustainability provisions
- Geographical land restrictions that direct the standard
- RINs are generated for economic incentives
  - EMTS only addresses a portion of the supply chain
- Aggregate compliance



# **EU RED Background and Overview**

# European Union Biofuels Policy Overview

- Biofuels Directive (2003/30)
- Fuel Quality Directive (2009/30)
- EU Energy and Climate Change Package (CCP)
  - EU RED (2009/28)

# EU RED

## Directive 2009/28/EC

- Volume requirement, 10% goal in transportation
- GHG savings requirement
- Sustainability criteria
- Only biofuels meeting the GHG and Sustainability criteria can be used to meet the national targets for the transportation sector

# Minimum Requirements

- GHG's
- Biodiversity
- Other Environmental Aspects
- Food Security
- Social Impacts
- Security of supply impacts
- Additional Impacts from ILUC

# Sustainability Principles and the WTO

Principle	Effectiveness Voluntary Certification	Effectiveness Mandatory Certification
GHG balance/Carbon Sinks	+	+
Food competition/iLUC	-	-
Biodiversity	+	+/-
Local environmental effects	+	+/-
Local economic effects	+/-	-
Social well being of employees	+	-
Indigenous peoples rights	+/-	-

# Minimum Requirements

- **GHG's**
- **Biodiversity**
- **Other Environmental Impacts**

# Sustainability Criteria

## GHG's

- Report a 35% GHG saving, 50% in 2017, 60% for biofuels from new plants in 2018
- Report that the biofuel was produced by an installation that was already operational on 23 January 2008 ('grandfathered')

# Sustainability Criteria

## High Carbon Stock

On or after Jan. 2008, raw materials were not obtained from:

- Wetlands saturated permanently or most of year
- Forests with trees higher than 5 m and a canopy greater than 30%
- Forests with canopy cover of 10-30%
- Peatlands without conversion

# Sustainability Criteria

## High Biodiversity

On or after Jan. 2008, raw materials were not obtained from:

- Primary forest
- Designated as natural protected area
- Highly biodiverse grassland (not yet defined by EU)

# Sustainability Criteria

## Other Environmental Impacts

- Requirements such as soil and water management
- Reliable data sources impossible to identify
- Within EU, Cross-compliance system
- Outside EU, currently no requirements

# Sustainability Criteria

## Social Sustainability

- Commission will report on impacts every two years
  - Ratification and implementation of ILO Conventions
  - Availability of food, price
  - Land-use rights
- First report due in 2012

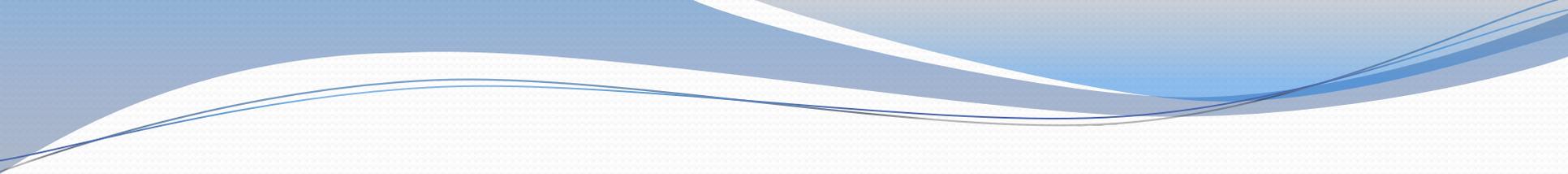
# Verification of Compliance

Three ways to verify compliance:

- Approved Voluntary Scheme
- Bilateral or Multi-lateral Agreements
- National Systems

# Voluntary schemes recognised by the Commission

Voluntary scheme name	Accepted from	Scheme version no.	Scheme scope		RED sustainability compliance				
			Geog.	Feedstock	GHG	Biodiv.	Carbon stocks	Mass balance COC	Audit quality
Abengoa RED Bioenergy Sustainability Assurance (RBSA)	10 August 2011	Various	Global	Multi-feedstock	Actual or default	Yes	Yes	Yes	Yes
Biomass Biofuels voluntary scheme (2BSvs)	10 August 2011	Various	Global	Multi-feedstock	Default only	Yes	Yes	Yes	Yes
Bonsucro EU (formerly Better Sugar Cane Initiative, BSI)	10 August 2011	v3.0 (March 2011)	Global	Sugar cane	Default only	Yes	Yes	Yes	Yes
Greenergy Brazilian Bioethanol verification programme (Greenergy)	10 August 2011	Various	Brazil	Sugar cane	Default only	Yes	Yes	Yes	Yes
International Sustainability and Carbon Certification (ISCC)	10 August 2011	v2.3 EU	Global	Multi-feedstock	Actual or default	Yes	Yes	Yes	Yes
Roundtable on Sustainable Biofuels EU RED (RSB EU RED)	10 August 2011	v2.0	Global	Multi-feedstock	Actual or default	Yes	Yes	Yes	Yes
Round Table on Responsible Soy EU RED (RTRS EU RED)	10 August 2011	Various	Global	Soy	Actual or default	Yes	Yes	Yes	Yes



# **Group Certification ISCC**

# Group Certification

## ISCC

- Producers of raw material only
- Appropriate for small holders, producer organizations and coops

# ISCC Group Certification cont'd

- Homogenous groups of agricultural producers
  - Members located in same region
  - Climatic conditions are similar
  - Similar production systems
  - Risk assessment shows similar risk exposure for the group

# ISCC Group Certification cont'd

## Central Office

### Rights and duties include

- Register members
- Internal audits
- Annual reviews
- Compile necessary documentation
- Exclude members
- More

# ISCC Group Certification cont'd

## Members

Rights and duties include:

- Commitment to central office to meet requirements
- Provide information and access to central office
- Commitment to implementation of amendments and corrective actions

# ISCC Group Certification cont'd

## Internal Audits

### Requirements:

- Audited upon certification then annually
- Trained auditors required
- Audit report made accessible to external certification body

# ISCC Group Certification cont'd

## External Audits

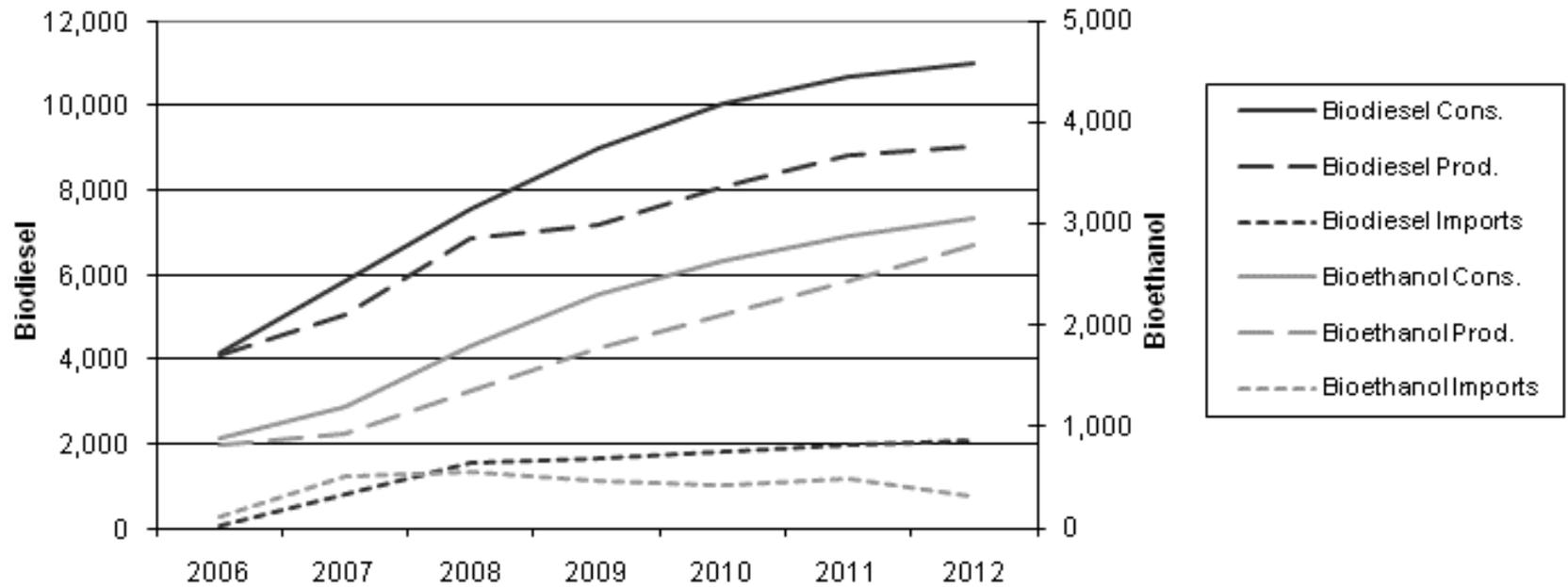
- Independent certification body
- Central office audited each time
- Annual review

# European Union Biofuels

## 2010 Consumption

- Biodiesel ~80%; Bioethanol - 20% of the biofuels market (Ktoe)
- EU did not meet its Biofuels Directive 2003/30 target for this year

## Biofuels EU Supply & Demand (ktoe)



Source: EU FAS Posts

# Chain of Custody

- RFS2 – Refiner to Fuel Supplier
- EU RED – Farm to Refiner
- LCFS – Hybrid?

# Next Steps

Next LCFS Sustainability Workgroup  
Meeting – May 2012

# Contacts

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