Regulated Entities and Compliance with the NEMA LCFS

Options for Discussion with Stakeholders

September 29, 2010

This presentation presents options for consideration and discussion with LCFS stakeholders.

These are not recommendations for an LCFS program framework.

Presentation Overview

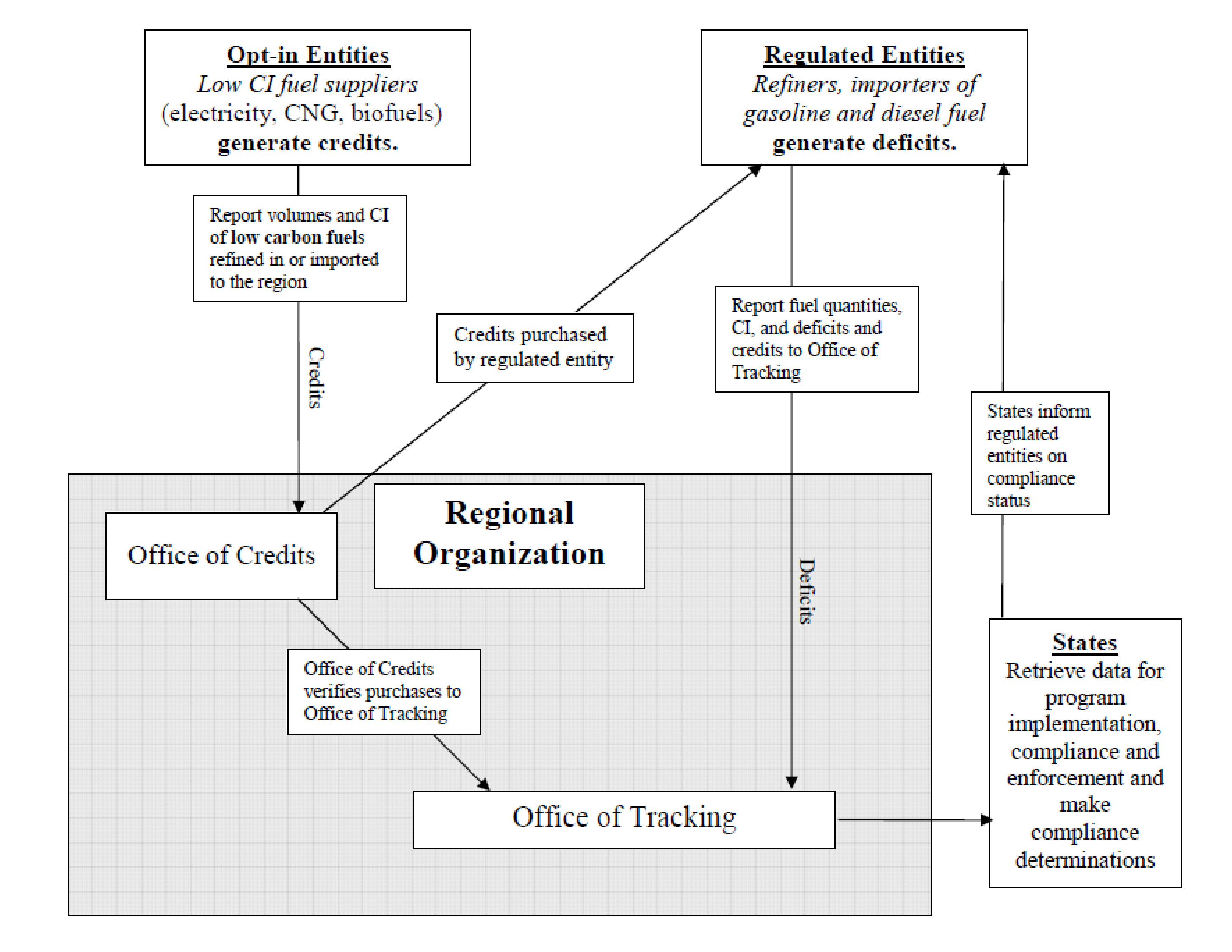
- Regulated Entities
  - Proposal: What is a regulated entity?
- Demonstrating Compliance – Option for Regional Compliance
  - How a regulated entity complies with the program
  - How compliance obligation is determined
  - Two options presented for regional compliance. State by state compliance another option
- Monitoring compliance and enforcing the regulation – lead state(s)
  - Options for discussion:
    - State where production/import occurs
    - State where first sale occurs
  - Apportioning responsibility to relevant states

What is a Regulated Entity?

We will be outlining two possible approaches to regional compliance, and a third approach for state-by-state compliance:

- Under regional option 1, regulated entities are:
  - Entities which refine petroleum transportation fuels in the region
  - Entities which import gasoline blendstocks or diesel fuel to the region
- Under regional option 2, regulated entities are:
  - Entities which make the first sale of gasoline blendstocks or diesel fuel produced in or imported to the region
- Under state-by-state option 3, regulated entities are:
  - "Prime suppliers" as defined by EIA, or a set of producers and distributors licensed by the state

Possible Regional Compliance Model



How Does an Entity Comply with the LCFS?

- Regulated entity reports volumes and carbon intensity of its fuel
- Regulated entity generates credits or deficits based on the difference between the fuel's carbon intensity and the reduction target, which correspond to quantities (e.g., tons) of greenhouse gas emissions
- When the fuel's carbon intensity is higher than the reduction target, the regulated entity generates deficits; these are offset by purchasing credits
- A system for tracking credits and deficits will be managed by a regional organization

MA Example: Potential Regulated Entities (Refiners/Importers)

- Foreign gasoline and blending components are imported to Massachusetts by:
  - Irving (1128 mill gal)
  - Citgo (566 mill gal)
  - Vitol SA (182 mill gal)
  - Morgan Stanley Capital Group (31 mill gal)
  - Getty (16 mill gal)
  - ConocoPhillips (8 mill gal)
  - Hess (8 mill gal)
- Fuel is imported to Massachusetts by waterway from 1 non-LCFS state (Virginia)
- There are no refineries in Massachusetts

PA Example: Potential Regulated Entities (Refiners/Importers)

- Foreign imports of gasoline and blending components are brought into Pennsylvania by:
  - Hess (100 mill gal)
  - ConocoPhillips (10 mill gal)
  - Sunoco (9 mill gal)
  - Vitol SA (1 mill gal)
- Domestically, petroleum products are imported by waterway to Pennsylvania from these non-LCFS states by a variety of refiners and wholesalers:
  - Louisiana (270,000 tons)
  - Texas (100,000 tons)
  - Virginia (54,000 tons)
  - West Virginia (242,000 tons)
- Pennsylvania refiners:
  - American Refining Group
  - ConocoPhillips
  - Sunoco (Marcus Hook)
  - Sunoco (Philadelphia)
  - United Refining Co

Opt-in Entities

- Credits generated by low carbon fuel suppliers or “opt-in” entities
- Suppliers report volumes, pathways, and CI values for each type of low-CI fuel produced in, or imported to, the region and generate credits accordingly
- Company may be regulated entity and opt-in entity

Example Compliance Calculation

- Company PetroX produces/imports/sells one million gallons of RBOB. Given an energy density for RBOB of 120 MJ/gal, one million gallons contains 120 Million MJ. Assume the CI for RBOB is 96 g/MJ, and in an example year the target CI is 91 g/MJ. Therefore, PetroX could have a deficit:

(120 Million MJ)*(91 gCO2e/MJ – 96 gCO2e/MJ) = -600 million gCO2e

- For compliance, PetroX would show pertinent states and the regional organization:
  - The quantity of gasoline sold, CI of the fuel, resulting deficit
  - The purchase of 600 metric tons CO2e of credits

Regional Compliance Options

- Two potential approaches for determining the states responsible for regulating fuel
- Both approaches place the point of regulation as far up the fuel distribution chain as possible
  - Fewer regulated entities
  - Easier to implement and comply with
- The first option regulates fuel where it is first imported to or produced in the region
- The second option regulates fuel based on the point of first sale in the region

Compliance Calculation in Options 1 and 2

- Calculating credit balances under the two regional compliance options:

Option 1: Credit Balance = MJ imported/refined * (CI_{target} – CI_{fuel})
Option 2: Credit Balance = MJ sold * (CI_{target}-CI_{fuel})

- In both approaches, credits measured in tons of CO_2e and calculated based on the difference between the CI value of a given fuel and the CI standard (target)
- Number of states responsible for regulating volumes of fuel differ in two options

Option 1: Regulate When and Where Fuel is Imported to or Produced in the Region

- "Imported" means brought into the NEMA LCFS region
- "Produced" means refined in LCFS region
- "Importer" is the company/person that owns the fuel when it is delivered to the LCFS region
  - An importer can be a producer, wholesaler, or distributor
- Fuel transported out of the region could be subtracted from a regulated entity's LCFS obligation
- Most fuel used in Northeast comes into the region through a small number of states

Option 1: Regulate When and Where Fuel is Imported to or Produced in the Region

- In option 1, credits and deficits are based on the carbon intensity and volume of fuel companies *import to* or *refine in* the region

- Regulated entities report:
  - The carbon intensity and volume of fuel refined or imported, and the generated deficits
  - Credits purchased in a given compliance period
- These reports are provided to the:
  - State where fuel was refined; and/or
  - State in the LCFS region where fuel was imported from outside of the region
  - Regional tracking system

- The volume and CI of any fuel exported out of the region may also be reported to the regional tracking system and state(s). These volumes are not regulated.

Illustration of Credit/Deficit Calculation and Program Enforcement in Option 1

Regulated Entity	State	Fuel Volume (RBOB)	Fuel Energy Density (MJ/gallon)	Fuel Energy (MJ)	Difference between CI of RBOB and Standard (g/MJ)	Deficits $MTCO_2e$
PetroX	State A	1,000,000	120	120 million	-5	-600

- PetroX generates a deficit of 600 metric tons of CO_{2e}
- State A, the refining or importing state, reviews the compliance demonstration and regulates the full volume of fuel
- PetroX demonstrates to State A that it has obtained credits equaling 600 metric tons of CO_{2e}
- Should enforcement be necessary, State A enforces against PetroX
- Other states may monitor these reports

Option 2: Regulate When and Where Fuel is First Sold in the Region

- "Sold in the region" means the first time ownership of fuel changes hands in the LCFS states after the fuel is imported to or refined in the region
- The state in which the sale occurs is responsible for regulating that volume of fuel. This may or may not be the same state to which the fuel was imported or in which it was refined
- Regulating at the point of first sale would more evenly distribute fuel tracking and compliance among the states than in option 1

Option 2: Regulate When and Where Fuel is First Sold in the Region

- In option 2, credits and deficits generated at the point of first sale in the region, regardless of where fuel was refined or imported

- Regulated entities report:
  - The carbon intensity and volume of fuel sold at each point of first sale in the region
  - Credits purchased in a given compliance period
- These reports are provided to the:
  - State(s) where fuel was sold; and
  - Regional tracking system
  - Volume and CI of fuel exported from the region also reported

- As in option 1, volume and CI of any fuel exported out of the region may be reported to the regional tracking system and state(s). These volumes are not regulated

Illustration of Credit/Deficit Calculation and Program Enforcement in Option 2

Regulated Entity	State	Fuel Volume (Gallons)	Fuel Energy Density (MJ/gallon)	Fuel Energy (MJ)	Difference between CI of RBOB and Standard (g/MJ)	Deficits $MTCO_2e$
PetroX	State A	500,000	120	60 million	-5	-300
PetroX	State B	300,000	120	36 million	-5	-180
PetroX	State C	200,000	120	24 million	-5	-120
PetroX	(State D)*	(300,000)	120	36 million	-5	(0)
PetroX	TOTAL	1,000,000	120	120 million	-5	-600

*State D is outside of the Northeast/Mid-Atlantic LCFS region, and the volume of fuel sold in the state is excluded from the compliance obligation. These 300,000 gallons are excluded from the total fuel volume

- PetroX has a total deficit of 600 metric tons of CO_{2e}
- States A, B, and C assume responsibility for regulating the volumes of fuel first sold in each state and, if necessary, enforcing the LCFS standard for the volumes of fuel sold in their states
- PetroX demonstrates to states in the region that it has obtained credits equaling 600 metric tons of CO_2e for the region
- If PetroX obtains no credits, each state will enforce against PetroX for a proportion of the deficit based on fuel sold in the state:
  - State A enforces for 300 metric tons CO2
  - State B enforces for 180 metric tons CO2
  - State C enforces for 120 metric tons CO2
  - No deficits are created for the fuel exported out of the region to State D
- No other state responsible for regulation, even if fuel is subsequently sold into another state

Option 3: State End Use

- "Sold for end use in the state" means sold to retail outlets in each state – i.e. gas stations or to fleet locations
- Calculation of credits/deficits would be based on the volume of fuel sold for end use in each state
- Compliance reporting would be made to each LCFS state in which fuel is sold
- The volume of fuel, the CI of the fuel would be reported to each LCFS state
- The number of credits purchased would also be reported to each LCFS state where fuel was sold for end use

State-by-State Option: Regulated Entities are EIA "Prime Suppliers"

- Regulated entities are so-called "prime suppliers" of petroleum products, as determined from state-level sales data
  - Estimate : 185 prime suppliers in the region
- EIA defines prime suppliers as those entities which must report fuel sales by state using form EIA-782C, "Monthly Report of Prime Supplier Sales of Petroleum Products Sold for Local Consumption"
- Prime suppliers consist of "refiners, gas plant operators, importers, petroleum product resellers, and petroleum product retailers that produce, import, or transport product across State boundaries and local marketing areas and sell the product to local distributors, local retailers, or end users."

Source: EIA's "Petroleum Market Survey Forms"

Examples of Possible Regulated Entities: Companies Licensed as Distributors by States

Massachusetts distributor list includes 53 companies:

- Cumberland Farms
- Exxon Mobil Oil
- Hess Corp
- Motiva Enterprises LLC
- Mutual Oil Co Inc
- Sunoco Inc (R & M)
- A L Prime Energy Consult
- Gulf Oil LP
- Alliance Energy Corp
- Global Companies LLC
- Irving Oil Terminals
- Drake Petroleum
- New England Petroleum LP
- Getty Petroleum Marketing Inc
- Irving Oil Marketing
- BP Products NA
- C.K. Smith & Co., Inc.
- Volta Oil

- O'Connell Oil Assoc
- Citgo Petroleum Corp
- Community Svc Stations
- Valero Mktg & Supply Co
- Parker Fuel Corp
- Colbea Enterprises LLC
- SEI Fuel Svcs Inc
- Dennis K. Burke Inc.
- Cape Cod Gas
- King Brakes, Inc.
- A R Sandri Inc
- South Coast Distributing LLC
- Global Montello Group LLC
- Crosson Oil Company
- Summit Distributing LLC

- Concord Oil Co Inc
- Lipton Inc
- Nouria Energy Corp
- Concord Oil Newport
- Drew Oil Corporation
- Total Energy Solutions
- Harbor Fuel Oil Corp
- Flynn Petroleum LLC
- Irving Oil Corporation (Dec 08)
- Mabardy Oil Inc
- F L R Trading Group
- Best Petroleum Corp
- Conoco-Phillips Co
- Hubbard Oil Co Inc
- Buckley Energy Group Inc
- Petroleum Traders
- HOP Energy
- Rice Oil Co Inc
- Consumers Petroleum of CT Inc
- Sprague Energy Corp

Source: Massachusetts Department of Revenue

Issues for Discussion

- Regulated entities
- Regional compliance vs state by state compliance
- Regional tracking mechanism
- Credit trading mechanism

Next Steps

- Comments and a follow-up call
- Report to Commissioners on the meeting
- Industry-specific meetings with other stakeholders
- Joint stakeholder meeting planned for late fall