Regulatory Impacts on State and Local Codes
Mid-America Alternative Fuel Codes Summit
Oct. 28, 2014
Overview

- Two main federal policies impacting alternative fuel adoption:
  - Renewable Fuel Standard (RFS & RFS2)
  - Corporate Average Fuel Economy (CAFE) Policies
Renewable Fuel Standard
Renewable Fuel Standard

What is it?

- Federal mandate requiring a minimum threshold of renewable fuels to be blended into the U.S. supply each year.
- Qualifying fuels must emit lower levels of GHG than traditional petroleum fuels.

Goals

- Security: Reduce dependence on foreign oil
- Environmental: Reduce GHG Emissions
Renewable Fuel Standard

- History of the RFS
    - Required 7.5 billion gallons by 2012
    - Expanded the program to 36 billion gallons by 2022
    - Included diesel as well as gasoline, and added new categories of renewable fuel.
Renewable Fuel Standard

- 2010 - New EPA Rule (RFS2)
  - Implemented the changes required by EISA.
  - Sets different requirements for 4 categories of renewable fuels, based on GHG reductions:
    - Renewable Fuels (20% reduction in GHG)
    - Advanced Fuels (50% reduction in GHG)
    - Cellulosic Fuels (60% reduction in GHG)
# Renewable Fuel Standard

## 2013 Final Volumes

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Statute Volume</th>
<th>Actual Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulosic biofuel</td>
<td>1 billion gal</td>
<td>6 million gal</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>1 billion gal. (min)</td>
<td>1.28 billion gal</td>
</tr>
<tr>
<td>Advanced biofuel</td>
<td>3.75 billion gal</td>
<td>2.75 billion gal</td>
</tr>
<tr>
<td>Renewable fuel</td>
<td>18.15 billion gal.</td>
<td>16.55 billion gal</td>
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## 2014 Proposed Volumes

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Statute Volume</th>
<th>Proposed Volume</th>
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</thead>
<tbody>
<tr>
<td>Cellulosic biofuel</td>
<td>1.75 billion gal</td>
<td>17 million gal</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>1 billion gal. (min)</td>
<td>1.92 billion gal</td>
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<tr>
<td>Advanced biofuel</td>
<td>3.75 billion gal</td>
<td>2.2 billion gal</td>
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<tr>
<td>Renewable fuel</td>
<td>18.15 billion gal.</td>
<td>15.21 billion gal</td>
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</table>
Supply Constraints for Cellulosic Biofuel

- EPA proposed far less for CB than the statute requires, due to “supply constraints”
- First commercial production of CB in U.S. began in 2013 from a small number of plants
  - 20,000 gallons produced in 2012
  - 500,000 gallons produced in 2013
  - 11 million gallons produced in 2014
Renewable Fuel Standard

Renewable Fuels as a Share of Total U.S.

(Percent)

Actual
Projected by CBO Under the RFS

real challenges. real answers. sm
Renewable Fuel Standard

RFS Volumes Over Time

Billions of gallons

Actual | Required Under the RFS

Other Advanced-Biofuel (Minimum)
Cellulosic Biofuel (Minimum)
Biomass-Based Diesel (Minimum)
Corn Ethanol Cap

Ethanol Consumption


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Renewable Fuel Standard

- **Tracking Compliance**
  - Renewable Identification Numbers
    - Each gallon of qualifying fuel is assigned a unique number
    - Fuel suppliers must submit a certain number of RINs to EPA based on their use of petroleum-based fuels
    - RINs can be sold, traded or banked, creating a secondary revenue stream
Renewable Fuel Standard

- **Obstacles**
  - Higher corn prices may cause higher food prices
  - E10 blend wall issues
    - Older and small engine problems (10% ethanol is max that can be used by most cars)
    - Lack of infrastructure for fueling
  - Lack of advanced biofuels commercialization
  - Increased reliance on Brazilian imports
Corporate Average Fuel Economy (CAFE) Policies
Corporate Average Fuel Economy (CAFE)

- Enacted in 1975
- Intended to improve the average fuel economy of vehicles sold in the U.S.
- By statute, the CAFE standards must be set at the "maximum feasible level" based on:
  - technological feasibility;
  - economic practicality;
  - effect of other standards on fuel economy;
  - need of the nation to conserve energy.
Compliance

- Standards are regulated by the National Highway Traffic Safety Administration
- Fuel Efficiency is measured by the EPA
  - If the fuel economy for a manufacturer’s fleet doesn’t comply, must pay a fine
    - $5.50 per 0.1 mpg under x total number of vehicles produced
CAFE Standards

- 2009: President Obama proposed average standard of 35.5 mpg for MY 2012-2016
  - Projected to reduce oil consumption by 1.8 billion barrels, and GHGs by 900 million tons
- 2011: President Obama and 13 automakers reached an agreement to increase fuel economy for cars and light-duty truck to 54.5 mpg by MY 2025
- 2014: Obama has asked EPA to establish regulations for medium and heavy-duty trucks
CAFE Standards

U.S. CAFE Standards from 1978 to 2016

- Passenger cars
- Light-duty trucks

Source: Data are from the National Highway Traffic Safety Administration.
## Estimated Average Fleet-Wide Fuel Economy under CAFE Standards

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<tbody>
<tr>
<td>Cars</td>
<td>39.4</td>
<td>41.1</td>
<td>43.3</td>
<td>45.1</td>
<td>47.1</td>
<td>48.1</td>
<td>49.6</td>
<td>51.3</td>
<td>52.1</td>
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<tr>
<td>Light Trucks</td>
<td>28.8</td>
<td>29.3</td>
<td>31.3</td>
<td>32.8</td>
<td>34.9</td>
<td>35.5</td>
<td>36.5</td>
<td>37.4</td>
<td>37.6</td>
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<tr>
<td>Both</td>
<td>34.8</td>
<td>36.0</td>
<td>38.2</td>
<td>39.9</td>
<td>42.0</td>
<td>42.9</td>
<td>44.2</td>
<td>45.6</td>
<td>46.2</td>
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Questions?

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