National Renewable Fuel Standard Program – 2010 and Beyond

February, 2011
Overview

- Overview: History of National Renewable Fuel Standards
  - EPACT 2005 – RFS1
  - EISA 2007 – RFS2

- Key Highlights of the RFS2 Rule

- Details on RFS2
  - General Structure
  - Compliance Overview
  - Renewable Fuel Pathway Determinations
  - Renewable Feedstock Compliance

- Setting the EISA Yearly Standards

- Other Items of Interest
  - Waiver Authorities
  - Report to Congress – 204
  - 206 – Antibacksliding / Tier 3

- E15

- DOE, USDA, BIWG Coordination / Activities

- Questions / Other Issues
EPACT 2005 vs. EISA 2007

EPACT 2005 RFS1
- 1 National Standard
- 7.5 billion gallons
- 2012 Full Implementation
- Obligation based on gasoline – onroad only
- General definition for renewable fuels
- 250 million gallons of cellulosic biofuels
- Different qualification for cellulosic fuel – 2.5 Credits (RINs) per gallon of ethanol

EISA 2007
- National Standard but with 4 categories of renewable fuels
- Significantly increased volumes of renewable fuel – to 36 billion gallons
- 2022 Full Implementation
- Expanded to on and off-road gasoline and diesel
- Explicit definitions for renewable fuels to qualify
- Inclusion of specific types of waivers
- Legislation allows renewable fuels used in Home Heating Oil and Jet Fuel to count towards RFS2 program
Establishes four categories of renewable fuel volume standards:
- cellulosic biofuel
- biomass-based diesel
- advanced biofuel
- total renewable fuel

Changes to the program include qualification requirements for renewable fuels and feedstocks:
- Definitions for qualifying fuels / feedstocks for the categories
  - Specifically defines cellulosic, biomass-based diesel, etc.
  - Set minimum lifecycle GHG reduction thresholds for categories
  - Established grandfathering allowances for renewable volumes from certain facilities
  - Applies restrictions on types of feedstocks that can be used to make renewable fuel, and types of land that can be used to grow and harvest feedstocks

Final rule set full 2010 EISA renewable fuels volume = 12.95 Bg

The RFS2 Regulations went into effect July 1, 2010.

EPA developed a path for transitioning from RFS1 to RFS2
Details of EISA Categories and Standards

- **Four Separate Standards**
  - **Biomass-Based Diesel:** Minimum of 1 Bgal by 2012 and beyond
    - E.g., Biodiesel, “renewable diesel” if fats and oils not co-processed with petroleum
    - Must meet a 50% lifecycle GHG reduction threshold
  - **Cellulosic Biofuel:** Minimum of 16 Bgal by 2022
    - Renewable fuel produced from cellulose, hemicellulose, or lignin
    - E.g., cellulosic ethanol, BTL diesel, green gasoline, etc.
    - Must meet a 60% lifecycle GHG reduction threshold
  - **Advanced Biofuel:** Minimum of 21 Bgal by 2022 (Minimum of 4 billion additional)
    - Essentially anything but corn starch ethanol
    - Includes cellulosic biofuels and biomass-based diesel
    - Must meet a 50% lifecycle GHG reduction threshold
  - **Total Renewable Biofuel:** 36 Bgal by 2022 (Minimum of 15 Bgal additional)
    - Ethanol derived from corn starch – or any other qualifying renewable fuel
    - Must meet 20% lifecycle GHG reduction threshold – Only applies to fuel produced in new facilities

Lifecycle GHG reduction comparisons are based on a 2005 petroleum baseline as mandated by EISA.

**NOTE:** Existing biofuel facilities (domestic and foreign) are not required to meet GHG threshold for conventional biofuel category – facilities are “Grandfathered.”
### Volume Standards as Set Forth in EISA

*(Reminder: EPA Sets Standards Each November – These are the standards published in the Act)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Conventional Renewable Fuels (Grandfathered or 20% Reduction)</th>
<th>Biomass-Based Diesel (50% Reduction)</th>
<th>Non Cellulosic Advanced (50% Reduction)</th>
<th>Cellulosic Biofuel (60% Reduction)</th>
<th>Total Advanced Biofuel</th>
<th>Total Renewable Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>9.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.0</td>
</tr>
<tr>
<td>2009</td>
<td>10.50</td>
<td>0.5</td>
<td>0.1</td>
<td></td>
<td>0.6</td>
<td>11.1</td>
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<tr>
<td>2010</td>
<td>12.00</td>
<td>0.65</td>
<td>0.2</td>
<td>0.1</td>
<td>0.95</td>
<td>12.95</td>
</tr>
<tr>
<td>2011</td>
<td>12.60</td>
<td>0.80</td>
<td>0.3</td>
<td>0.25</td>
<td>1.35</td>
<td>13.95</td>
</tr>
<tr>
<td>2012</td>
<td>13.20</td>
<td>1.0</td>
<td>0.5</td>
<td>0.5</td>
<td>2.0</td>
<td>15.2</td>
</tr>
<tr>
<td>2013</td>
<td>13.80</td>
<td>1.0</td>
<td>0.75</td>
<td>1.0</td>
<td>2.75</td>
<td>16.55</td>
</tr>
<tr>
<td>2014</td>
<td>14.50</td>
<td>1.0</td>
<td>1.00</td>
<td>1.75</td>
<td>3.75</td>
<td>18.15</td>
</tr>
<tr>
<td>2015</td>
<td>15.00</td>
<td>1.0</td>
<td>1.50</td>
<td>3.0</td>
<td>5.5</td>
<td>20.5</td>
</tr>
<tr>
<td>2016</td>
<td>15.00</td>
<td>1.0</td>
<td>2.00</td>
<td>4.25</td>
<td>7.25</td>
<td>22.25</td>
</tr>
<tr>
<td>2017</td>
<td>15.00</td>
<td>1.0</td>
<td>2.50</td>
<td>5.5</td>
<td>9.0</td>
<td>24.0</td>
</tr>
<tr>
<td>2018</td>
<td>15.00</td>
<td>1.0</td>
<td>3.00</td>
<td>7.0</td>
<td>11.0</td>
<td>26.0</td>
</tr>
<tr>
<td>2019</td>
<td>15.00</td>
<td>1.0</td>
<td>3.50</td>
<td>8.5</td>
<td>13.0</td>
<td>28.0</td>
</tr>
<tr>
<td>2020</td>
<td>15.00</td>
<td>1.0</td>
<td>3.50</td>
<td>10.5</td>
<td>15.0</td>
<td>30.0</td>
</tr>
<tr>
<td>2021</td>
<td>15.00</td>
<td>1.0</td>
<td>3.50</td>
<td>13.5</td>
<td>18.0</td>
<td>33.0</td>
</tr>
<tr>
<td>2022</td>
<td>15.00</td>
<td>1.0</td>
<td>4.00</td>
<td>16.0</td>
<td>21.0</td>
<td>36.0</td>
</tr>
</tbody>
</table>
Compliance Structure of RFS2 – 2010 Transition

- RINs are the currency of the RFS2 program – used for compliance
- RINs are generated by renewable fuel producer
- Types of Fuels are assigned a D Code – determined by EISA definition, restrictions, GHG evaluation, energy calculation
- RFS2 retains basic RIN handling requirements from the original RFS
- RINs follow product volume
- RIN separation from volume may only be performed by an obligated party
- RIN credits have a two year life – year generated, plus one year
- Program continues to be supplemented by recordkeeping and attest requirements

<table>
<thead>
<tr>
<th>D value</th>
<th>Meaning under RFS1</th>
<th>Meaning under RFS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cellulosic biomass ethanol</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2</td>
<td>Any renewable fuel that is not cellulosic biomass ethanol</td>
<td>Not applicable</td>
</tr>
<tr>
<td>3</td>
<td>Not applicable</td>
<td>Cellulosic biofuel</td>
</tr>
<tr>
<td>4</td>
<td>Not applicable</td>
<td>Biomass-based diesel</td>
</tr>
<tr>
<td>5</td>
<td>Not applicable</td>
<td>Advanced biofuel</td>
</tr>
<tr>
<td>6</td>
<td>Not applicable</td>
<td>Renewable fuel</td>
</tr>
<tr>
<td>7</td>
<td>Not applicable</td>
<td>Cellulosic diesel</td>
</tr>
</tbody>
</table>

RINs That Can Be Used To Meet Each Standard In RFS2

<table>
<thead>
<tr>
<th>Standard</th>
<th>Obligation</th>
<th>Allowable D codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulosic biofuel</td>
<td>RVO(_{CB})</td>
<td>3 and 7*</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>RVO(_{BBD})</td>
<td>4 and 7*</td>
</tr>
<tr>
<td>Advanced biofuel</td>
<td>RVO(_{AB})</td>
<td>3, 4, 5, and 7</td>
</tr>
<tr>
<td>Renewable fuel</td>
<td>RVO(_{RF})</td>
<td>3, 4, 5, 6, and 7*</td>
</tr>
</tbody>
</table>

* Plus certain RFS1 RINs for 2010
EPA Moderated Transaction System (EMTS):
- A closed, EPA–managed system that provides: 1) a mechanism for screening and 2) a means for tracking RIN credits
- Screening process checks that the information provided by the RIN generator is consistent with an existing registration
- RIN tracking process is similar to a banking system.
  - Accounts are assigned to registered users.
  - Transactions are conducted through EMTS which enforces business rules – e.g. a seller must have a sufficient account balance for a buyer to receive their credits.
General – Application of LCA

- Act defines lifecycle
- Modeling applies specific definitional requirements in modeling, including indirect land use
- Modeling accounts for typical feedstock and fuel production pathway from which significant production and contribution to RFS2 volumes are expected (2022)
- Accounts for uncertainty
- Modeled numerous fuel pathways
- Results extended to same fuel type and feedstock as a modeled pathway but with feedstock production sources that were not included in the analysis (e.g., corn ethanol and soybean biodiesel produced in another country)
- Results extended to other fuel pathways with low risk of not complying – cellulosic, waste, other
- Threshold determinations for certain other pathways were not possible at time of final rule because sufficient modeling or data not available
- For other fuel pathways not yet modeled, EPA provides a petition process through which the fuel pathway can be analyzed and provided a compliance determination.
- EPA recognizes that the state of scientific knowledge continues to evolve in this area, therefore, the Agency is committing to further reassess determinations and lifecycle estimates going forward
## Key Fuel Pathways *

<table>
<thead>
<tr>
<th>Renewable Fuel Category</th>
<th>Example of Qualifying Renewable Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulosic (60% GHG)</td>
<td>Cellulosic ethanol and diesel fuel (Thermal / Biochemical from Stover and Switchgrass)</td>
</tr>
<tr>
<td>Biomass-based diesel (50% GHG)</td>
<td>Biodiesel from soy, canola, wastes oils, and algae</td>
</tr>
<tr>
<td>Advanced biofuel (50% GHG)</td>
<td>Ethanol from sugarcane</td>
</tr>
<tr>
<td>Renewable fuel (20% GHG or Grandfathered)</td>
<td>Ethanol and Butanol from corn starch (coal-fired does not qualify)</td>
</tr>
</tbody>
</table>

* Other pathways under evaluation – Palm, Sorghum, etc.
New Renewable Fuel Pathways

Guidance on New Fuel Pathway Approval Process

Overview

For the first Renewable Fuel Standard (RFS2) rule, EPA assessed the lifecycle greenhouse gas (GHG) emissions of multiple renewable fuel pathways. Assessment of lifecycle GHG emissions is necessary to determine which fuel pathways meet the GHG reduction thresholds under RFS2 for the four required renewable fuel categories. Classifications of approved fuel pathways are specified in Table 1 to §80.1442(c)(7) of the RFS2 regulations.

Within the table, three critical components of a fuel pathway are listed: (1) fuel type, (2) feedstock, and (3) production process. Each specific combination of the three components or fuel pathways is assigned a RIN (Code designating the renewable fuel category (renewable fuel, biomass-based diesel, advanced biofuel, synthetic grease) for which it qualifies. For example, biodiesel is assigned a RIN D Code of 4, which qualifies the fuel for compliance with the biomass-based diesel category.

In addition, EPA recognizes during the reauthorization of RFS2 that new pathways requiring assessment in the future. Therefore, we provided §80.1446 in the RFS2 regulations, “Decision process for evaluation of new renewable fuel pathways.” This mechanism allows parties to request that EPA conduct a lifecycle GHG assessment for a new fuel pathway and provide a determination of the D code for which the new pathway may be eligible.

What/How to Submit

See these general instructions on how to request EPA evaluation and determination of any new fuel pathway.

Process/Timing

Prior to petitioning EPA for a new pathway, renewable fuel producers and importers must first ensure they meet the other requirements of the RFS2 program. Upon receipt of a new fuel pathway evaluation request, EPA will evaluate the following preliminary requirements prior to proceeding with a lifecycle GHG analysis:

- Do the feedstock and fuel meet the RFS2 definition requirements in §80.1410 for renewable biomass and renewable fuel?
- If so, does the pathway fit under an existing approved pathway, based on an interpretation of the regulatory definitions of the pathway?

If the fuel pathway does not fit within an existing pathway, then a lifecycle GHG analysis of the new pathway must be conducted in order to determine if the pathway meets the lifecycle GHG reduction threshold for one or more of the renewable fuel categories.

The approval process is then possible, depending upon the extent of lifecycle GHG modeling required. If the pathway is significantly different from existing approved pathways, then a full lifecycle GHG analysis must be conducted and, if the pathway meets one or more of the RFS2 compliance thresholds, approved through an official rulemaking process in order to provide notice and comment. Examples of this type of pathway request include those with new feedstocks that require agricultural or feedstock production modeling.

If the request does not require a significant amount of new modeling beyond what was modeled under the RFS2 fuel rule, then the second approval process allows the Agency to make a determination without a full reanalysis process. An example of this type of pathway request is with a different production process, but using previously approved feedstocks.

Under both of these approval processes, EPA will conduct the required lifecycle GHG analysis in a manner consistent with the definition of lifecycle emissions and threshold adequacy requirements under the Renewable Fuel Standard Program (EISA).

Upon determination of the type of approval process needed, EPA will notify the petitioners of the status of their request and an estimated timeframe for compliance. In general, requests will first be completed for pathways that are closest to commercial production. Requests that require significant new modeling may take up to a year for a final determination, while those with a partial analysis may require less time.

In addition to an approved pathway request, fuel producers and importers must submit registration requirements in §80.1450, reporting requirements in §80.1451, and recordkeeping requirements in §80.1454 to participate in the RFS2 program.

Completed Pathway Assessments

The following pathway requests have been completed:

Company | Date Completed | Determination
--- | --- | ---
| Triton | December 16, 2016 | Approved (RIN) (T 17 PP. 3.091B, December 2016)

For more information, please contact the EPA Fuels Programs Support Line at 202-344-3755.
Renewable Biomass Provisions – Approving Feedstocks

- EISA restricted where feedstocks can grow and be harvested for use in producing renewable fuels for compliance with the RFS2 program
  - Planted crops/crop residue from ag land cleared/cultivated prior to Dec. 2007
  - Planted trees/tree residue from nonfederal lands and tree plantations cleared/cultivated prior to Dec. 2007

- Compliance Options for feedstocks from the Non Agricultural land / Forest land
  - All renewable fuel producers using feedstocks from this sector can either
    1: Individually verify and qualify their feedstocks following specific recordkeeping and reporting requirements OR
    2: Opt to form and participate in a consortium that employs a third party to conduct a verification program that acts to collectively verify and qualify these feedstocks for RFS2 renewable fuel production

- Compliance Approach for feedstocks from planted crops / agricultural land
  - For US produced feedstocks, producers can comply under an aggregate compliance approach
  - For Foreign produced ag feedstocks, rule now provides option for other (non-U.S.) sources of feedstocks to use aggregate compliance if source region can provide sufficient data to support aggregate analysis
    - Canada recently petitioned EPA for an aggregate determination
  - Otherwise, producers must verify using one of the options applied in the non-ag / forest sector
### RFS2 Volume Standards for 2011

#### Final Volumes for 2011

<table>
<thead>
<tr>
<th></th>
<th>Actual Volume</th>
<th>Ethanol Equivalent Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulosic biofuel</td>
<td>6.6 mill gal</td>
<td>6.0 mill gal</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>0.80 bill gal</td>
<td>1.20 bill gal</td>
</tr>
<tr>
<td>Advanced biofuel</td>
<td>1.35 bill gal</td>
<td>1.35 bill gal</td>
</tr>
<tr>
<td>Renewable fuel</td>
<td>13.95 bill gal</td>
<td>13.95 bill gal</td>
</tr>
</tbody>
</table>

#### Final Percentage Standards for 2011

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulosic biofuel</td>
<td>0.003%</td>
</tr>
<tr>
<td>Biomass-based diesel</td>
<td>0.69%</td>
</tr>
<tr>
<td>Advanced biofuel</td>
<td>0.78%</td>
</tr>
<tr>
<td>Renewable fuel</td>
<td>8.01%</td>
</tr>
</tbody>
</table>

- **2011 Total Advanced Standard** – Maintained at 1.35 billion gallons
  - Expected to be met in 2010 with biomass–based diesel compliance (0.65*1.5 = 0.975)
Setting the EISA RFS2 Standards Each Year

- EPA Sets EISA Standards Every Year
  - Based on projected gasoline / diesel projections

- Formula used per regulations to determine the 4 obligations in terms of a percentage of production and EISA volume standards applied for each category

- Spring Proposal – Setting Following Year RFS2 Volume Standards
  - EISA Volumes converted into percent of gasoline and diesel production expected for following year
  - Standards that apply to refiners, importers, gasoline blenders
  - Cellulosic standard set based on EIA projections, our market assessment and info through notice and comment

- Standards Announced Every November
Cellulosic Biofuel – Credit Provisions

- **Cellulosic Biofuel Standard**: Irrespective of the volumes required in the Act
  - Administrator must set the cellulosic standard each November for the following year
  - Evaluation based on an updated market analysis considering
    - Detailed information from pilot and demonstration scale plants
    - Energy Information Administration analysis
    - Other publically and privately available market information, we

- If standard is set less than volume required in Act – EPA **must** make EPA-credits available for sale to obligates parties at the greater of:
  - 25 cent/gallon – or value greater than 25 c/gal based on EISA Formula:
  - $3.00 per gallon less the wholesale price of gasoline (adjusted for inflation)
    - Value was set at $1.13 for 2011

- If the cellulosic standard is lowered, EPA can lower the volume standards for advanced biofuel and total renewable fuel accordingly
Cellulosic Compliance Options

- *EPA* Cellulosic Waiver Credit
- Advanced Biofuel Gallon / RIN
- Cellulosic Gallon / RIN
- Zero
- Deficit Carry Over 1 Year
- Full Year Compliance + Deficit Compliance

* Only available to obligated parties *
* Only good for year of purchase *
What’s Next – 2012 Standards

- For the final rule, EPA will choose a single cellulosic value from within proposed range

- EISA set other applicable volumes
  - Biomass–based diesel, non–cellulosic advanced, renewable fuel and total advanced biofuel, and total renewable fuel
  - EPA has authority to lower total renewable and total advance in whole or in part if cellulosic standard is lowered
  - EPA proposed to maintain total advanced and total renewable fuel as specified in the statute

- Standards set by law each year for forthcoming year
  - EPA doing so by notice and comment

- Optimistic about late 2011 / 2012–2013 volume increases for cellulosic biofuels
Impacts of the RFS2 in 2022

- Reduce GHG Emissions by 138 MMT – equivalent of 27 million vehicles
- Displace ~7% of petroleum gasoline and diesel consumption
- Increase Net Farm Income by $13 B

Emissions and Air Quality:
- Increases in NOx, VOC, ethanol, acetaldehyde emissions
- Decreases in benzene and CO
- Emissions and air quality impacts vary by area

Environmental Considerations and Reports

- **Antibacksliding:** Section 206 of EISA directs the agency to further evaluate potential Air Quality impacts and to mitigate, to the extent possible, any adverse impacts
- **Comprehensive Environmental Report:** Section 204 – First report just release for public review and peer review – Required every 3 years
What Ifs: EISA Waiver Authorities

- **General:** Anyone subject to requirements can petition waiver or relaxation of the four standards
  - Severe harm to the economy; Inadequate supply
  - EPA must approve or disapprove within 90 days but requires opportunity for notice and comment
  - Limited to one year, but can be renewed

- **Biomass Based Diesel:** EPA can lower the standard in the Act
  - If significant supply or other market circumstances lead to high prices
  - Up to 15% or 30% if renewed
  - Can reduce advanced biofuel and total renewable fuel standards accordingly

- **Cellulosic Biofuel Standard:** Irrespective of the volumes required in the Act
  - Administrator must set the cellulosic standard each November for the following year “Based on" October EIA projections
  - If cellulosic standard is set less than volume required in Act EPA must make EPA Cellulosic Biofuel Credits available for sale at the greater of
    - 25 cent/gallon – or value greater than 25 c/gal based on calculation:
    - $3.00 per gallon less the wholesale price of gasoline (adjusted for inflation)
    - (Example 1: $3.00 – 2.82 = .18 c/gal) – Since this is less than 25c/g, it would default to .25 c/gal
    - Example 2: (Example 1: $3.00 – 1.80 = 1.20 c/gal) – Since this is more than 25c/g, the credit would sell for $1.20 c/gal
  - EPA can reduce the standards for advanced biofuel and total renewable fuel accordingly
CAA sec 211(v) (amended by EISA)
- Requires EPA to study the air quality impacts of EISA’s RFS program

Renewable fuel volumes
- Acetaldehyde impact of the use of ethanol
- VOC impact of higher volatility of E10?
- NOx impact of greater use of E10? Of other blends
- Impact on air quality?

Required regs by end of 2010 to mitigate adverse air quality impacts (to the greatest extent achievable)
- Informed by study
- Requires “fuel” regs
- Vehicle controls can be implemented through general CAA authority
- Currently intending to evaluate and address any issues through EPA’s Tier 3 Regulatory Efforts
EISA SEC. 204. Not later than 3 years after the enactment of this section and every 3 years thereafter, the Administrator of the Environmental Protection Agency, in consultation with the Secretary of Agriculture and the Secretary of Energy, shall assess and report to Congress on the impacts to date and likely future impacts of the requirements of section 211(o) of the Clean Air Act on the following:

(1) **Environmental issues**, including air quality, effects on hypoxia, pesticides, sediment, nutrient and pathogen levels in waters, acreage and function of waters, and soil environmental quality.

(2) **Resource conservation issues**, including soil conservation, water availability, and ecosystem health and biodiversity, including impacts on forests, grasslands, and wetlands.

(3) **The growth and use of cultivated invasive or noxious plants** and their impacts on the environment and agriculture.

The report shall include the annual volume of imported renewable fuels and feedstocks for renewable fuels, and the environmental impacts outside the United States of producing such fuels and feedstocks. The report required by this subsection shall include recommendations for actions to address any adverse impacts found.
E15 Waiver Request: Background

- March 2009: Growth Energy applied for a waiver to increase allowable amount of ethanol in gasoline from E10 to E15.

- Waiver application included some data on the impact of E15 on vehicle emissions, fuel system materials, and driveability.

- Additional data developed by DOE
E15 – So What’s In a Waiver? – Waiver Criteria of Clean Air Act Section 211(f)(4)

- EPA Requires Automakers to Certify Vehicle Emissions / System

- Waiver Requires Testing:
  - Exhaust emissions
  - Evaporative emissions
  - Durability:
    - Materials compatibility
    - Driveability or operability
  - Testing needs to include emissions over the full useful life of vehicle or equipment
    - Long-term emissions durability impacts
  - Fuel manufacturer applicant must demonstrate test sample size (for both on and non-road) is sufficient to infer significant portion of fleet will not fail to achieve compliance within the requirements set in the 211(f)(4) waiver
Summary of Waiver Decision

- Waivers allow introduction of up to 15 vol% ethanol (E15) into commerce
  - Model year (MY) 2001 and newer light-duty motor vehicles

- Waiver is subject to several conditions.

- Two Decisions:

- Decisions based on test results provided by the U.S. Department of Energy (DOE) and other information regarding the potential effect of E15 on vehicle emissions.

- Additional data developed by DOE
  - Testing followed enactment of the Energy Independence and Security Act of 2007, which calls for significantly increasing the amount of biofuels, such as ethanol, in transportation fuel

- Actions allow, but do not require, E15 if conditions for mitigating misfueling and ensuring fuel quality are met.

- Waiver does not include MY2000 and older light-duty motor vehicles or any other vehicles, engines or equipment not covered by the decision.
What Vehicles May Use E15?
- Flexible-fuel vehicles (FFVs).
- MY2001 and newer cars.
- MY2001 and newer light-duty trucks.
- MY2001 and newer medium-duty passenger vehicles (SUVs).

What Vehicles and Engines May Not Use E15?
- Motorcycles.
- All vehicles with heavy-duty engines, such as school buses, transit buses, and delivery trucks.
- All off-road vehicles, such as boats and snowmobiles.
- All engines in off-road equipment, such as lawnmowers and chain saws.
- All MY2000 and older cars, light-duty trucks, and medium-duty passenger vehicles (SUVs).
Conditions of the Waiver

- **Fuel quality conditions:**
  - Ethanol used for E15 must meet ASTM International D4806-10.
  - The Reid Vapor Pressure for E15 limited to 9.0 psi in summertime.

- **Misfueling mitigation conditions:**
  - Labels on E15 retail dispensers indicating use is only for MY2001 and newer motor vehicles.
  - Product Transfer Documents (PTDs) must accompany all transfers of fuels for E15 use.
  - Parties involved in the manufacture of E15 must participate in a survey of compliance at fuel retail dispensing facilities to ensure proper labeling of dispensers.
  - Parties must submit a plan addressing conditions to EPA for approval.
Market “Opportunity”

- 2011
  - More than 150 million light-duty vehicles able to fuel with E15
  - ~74% of gasoline consumption

- 2014
  - More than 187 million vehicles
  - ~85% of fuel consumption
Next Steps

- **Finalize Misfueling Rule** – Supports application of conditions of the waiver.
  - Expect final rule in April / May

- **Industry Submission of Fuel Registration Package**
  - Prior to distribution and use of E15, fuel and fuel additive manufacturers are required to register the fuel with EPA.
  - Documentation Submitted Friday – Under Evaluation

- **Other Actions**
  - Changes to various state and local laws
  - Underground Storage Tank Policy Guidance
  - Consumer outreach / education