Federal / State Legislative & Regulatory Changes Required for Introduction of E15

Implementation Issues Affecting E15

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Washington, DC
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Overview

- EPA Waiver Decision
- E15 Implementation Issues
- Federal and State Blending Restrictions
- Action by ASTM / NCWM to address higher ethanol blends
E15 Partial Waiver Decision

- October 13, 2010 – EPA granted partial waiver for E15 in MY 2007 and newer light duty vehicles


- Did not approve E15 for older vehicles (pre-2001) and non-road engines
Roadblocks to E15 Implementation
E15 Implementation Hurdles

Major legislative and regulatory changes needed before E15 can be marketed

- Federal
- State
- ASTM / NCWM

Other implementation hurdles include:

- Auto Manufacturer Warranties (max. 10% ethanol)
- Infrastructure / Retail Issues
- Petroleum Equipment / UL Listings
- Litigation
Federal Regulations Impacting E15

E15 Waiver Conditions

- EPA established conditions to limit vapor pressure, ensure fuel quality, and mitigate potential for misfueling
- Reid vapor pressure may not exceed 9.0 psi / 7.8 psi RVP during summer volatility season (May 1-September 15) – **No 1.0 psi RVP waiver**
- Ethanol must meet ASTM D4806-10
- Dispenser labeling / product transfer documents
- Retail compliance survey


- E15 must meet health effects and other registration requirements
- Fuel / fuel additive manufacturers must submit application and be registered by EPA before introducing E15 into commerce
- RFA, with Growth Energy, has begun fuel registration process
Federal Regulations Impacting E15 (cont.)

EPA RFG (Complex Model)
- EPA issued NPRM October 13, 2010 to revise complex model for E15

EPA Misfueling Mitigation Proposal
- October 13, 2010 – Proposed to adopt pump labeling, product transfer documents, and survey requirements for E15
- EPA reviewing public comments

FTC Labeling Proposal
- March 16, 2010 – Has proposed to adopt labeling requirements for mid-level ethanol blends and other revisions to Fuel Rating Rule
- Current rule does not address blends between E10 and E70
- Comment period closed May 21, 2010
38 states have laws / regulations restricting E15
Over 90 laws and regulations / multiple agencies
E15 restrictions include:
- 18 states prohibit marketing more than E10 (blend cap)
- 24 states and 2 counties adopt most recent ASTM D4814
- 23 states provide volatility waivers for up to E10
- 9 ozone nonattainment areas provide 1.0 psi RVP waiver for E10 during summer RVP control period
- 8 states adopt most recent NIST Handbook 130
- 5 states have ethanol mandates for E10
- 36 states have labeling and product transfer requirements for E10
States With E15 Blending Restrictions

Note: Does not include EPA RVP Waiver for Conventional Gasoline or Federal RFG
* Illinois adoption of 2010 HB 130 effective May 1, 2011 / Washington effective June 1, 2011

Herman & Associates
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January 2011
Missouri Case Study

- Volume Blend Cap – 10 vol %
- Oxygen Blend Cap – 3.7 wt. %
- Year-round RVP Waiver – 10 vol %
- T50 & T V/L=20 offsets – up to 10 vol %
- Kansas City – Summer RVP waiver E10
- Renewable Fuel Standard – Requires E10 *

*Missouri issued proposed rule 12-15-10 to exempt E15 from mandate
Estimated Timetable for State Changes

- **State Initiates Action**
- **Regulatory Change**: 3 months - 2 years (or longer)
- **Legislative Change**: 1 - 2 years
ASTM Action on E15

ASTM International Fuel Specifications
- Adopted by federal government, states, pipelines
- 37 states and 2 counties adopt ASTM D4814 (26 most current)

ASTM Action on E15
- Evaluating changes necessary to accommodate E15
- Established new Work Groups (D4814, D4806, BOBs for E15)

Primary ASTM Specifications Affected
- **D4814** “Standard Specification for Automotive Spark-Ignition Engine Fuel”
- **D4806** “Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel”
## States / Areas Adopting ASTM D4814

<table>
<thead>
<tr>
<th>Adopts Most Recent ASTM D4814</th>
<th>Adopts Earlier Version D4814</th>
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<tr>
<td>Arkansas</td>
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<td>Hawaii (1991)</td>
<td>Idaho (D4814-07a)</td>
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<td>New York (D4814-04a)</td>
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<td>South Dakota (2005 Book of Standards)</td>
<td>Texas (D4814-09a)</td>
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<td>Wisconsin (D4814-04be¹)</td>
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¹ Nevada – 38th parallel applies statewide
² Effective March 12, 2011
D4814 - Gasoline & Oxygenate Blends

- Specification covers E15 (applies to <50 vol % ethanol blends)
  - Current min. T50 offset applies to 1-10 vol% ethanol

- Modifications under consideration include:
  - Determine if changes necessary to performance limits
  - Can current T50 and TV/L=20 limits be extended to E15
  - Is current Driveability Index (DI) equation applicable to E15
  - RVP requirements for E15 (align with E15 waiver)
  - Address partial waiver
  - Applicability of test methods for E15

- Timetable for Action
  - May ballot revisions in Subcommittee D02.A by June 2011
  - Final action may be completed by early 2012
D4806 – Denatured Ethanol

EPA waiver for E15 requires ethanol meet ASTM D4806-10

“The waiver applies to the blending of greater than 10 vol% and no more than 15 vol% anhydrous ethanol into gasoline, and the ethanol must meet the specifications for fuel ethanol found in the ASTM International specification D4806-10.”

Future efforts by ASTM D4806 Work Group

- Modify scope of D4806 to eliminate E10 blend cap
- Determine if current test methods applicable to E15
- Determine if changes to performance limits on blend or components necessary for E15
NCWM Action on E15

National Conference on Weights and Measures (NCWM)
- Develops model laws / regulations published in NIST Handbook 130
- 16 states adopt NCWM fuel regulation (8 most current)

Fuels & Lubricants Subcommittee evaluating changes to HB 130
- Blend Cap – 2010 Edition of HB 130 limits ethanol content to 10%
- Volatility Relief – 1.0 psi RVP waiver for 9-10% ethanol during summer, 10% rest of year / T50 and T V/L=20 offsets for 1-10 vol % ethanol
- Retail and Wholesale labeling requirements – do not address E15

Timetable for Action
- January 24, 2011 – Laws and Regulations Committee decided that proposed changes for E15 should be “Information Item” (Non-Voting)
- No changes expected until 2012. If adopted, effective January 2013.
2.1. Gasoline and Gasoline-Oxygenate Blends


2.1.2. Gasoline-Oxygenate Blends. – shall contain no more than 10% ethanol the maximum volume percent ethanol approved for motor gasoline by the U.S. EPA under section 211(f)(4) of the Clean Air Act. Blends approved by EPA shall also meet other conditions required in the waiver. For other oxygenates other than ethanol, blends shall contain no more than 2.0 mass percent oxygen except fuels containing aliphatic ethers and/or alcohols (excluding methanol) shall contain no more than 2.7 mass percent oxygen.
Where Do We Go From Here?

- EPA approval of E15 is just the first step
- Numerous state / federal laws need to be changed
- Other changes needed for full implementation
- Government, private industry, and standards organizations working to address E15
Thank You

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