

DOE Questions and Data Gaps

FTD Workshop

FTD Emissions Data

- Any additional FTD emissions data including wider range of vehicle/engine types, conditions, ages, mileages, states of repair
- Data on post-1998 engines including engines equipped with emission controls
- Test data that includes detailed fuel composition data for test and control fuels
- Test data comparing FTD to ULSD

Additional FTD Vehicle Data

- Data on FTD fuel economy and differential to conventional diesel
- Data on power obtained with FTD and/or other low density diesel fuels
- Durability emissions data
- Data on cold flow performance with very high n-paraffin fuels
- Data on compatibility of near-zero aromatic fuels with elastomeric materials

Other Data Gaps

- Speciated emissions data
- Health/welfare effects data
- Biodegradability/ecotoxicity data

Conceptual Questions for Comment

- Approaches to designing a sec. 301(2) designation - “FTD” vs. “any diesel fuel made from natural gas”?
- Can and should DOE allow environmental detriments of one type (GHGs) based on overarching environmental benefits of a different type (criteria pollutant reductions)?
- Do NO_x reductions of e.g. 6% constitute “substantial environmental benefits” in light of reductions expected from EPA post-2006 standards and possible GHG increases?

Process Energy Limits

- Should a designation include limits on process energy use, as calculated according to the GREET model to assure process efficiency and energy security benefits?
- If so, at what levels should the limits be set
- in relation to energy use in production of conventional diesel?

Criteria Pollutant Benefits

- Is setting of fuel parameter limits the best way to assure reductions of criteria pollutant emissions?
- If so, what parameters should be controlled and to what levels?
 - Aromatics maximum, e.g 1-15%, and/or polyaromatics maximum?
 - Cetane minimum, e.g. 53-75?

Criteria Pollutant Benefits (cont.)

- Hydrocarbon composition parameters - total paraffin, n-paraffin, open chain paraffin, carbon number? Minimums and/or maximums?
- Sulfur maximum necessary, e.g. 5-15ppm, and where should it apply - plant or pump?
- Density?
- Adherence to ASTM D-975-02 required?

Criteria Pollutant Benefits (cont.)

- Would high n-paraffin content be likely to cause cold flow problems and, if so, would adherence to ASTM D-975-02 avoid such problems?
- Would low density of FTD fuels cause power loss that fleets would compensate with timing changes at expense of emissions?

Criteria Pollutant Benefits (cont.)

- Would in-use FTD likely have same properties as FTD emission test fuels or would properties be adjusted for marketability?
 - density - adjusted for power
 - n-paraffin content (hence, cetane) - adjusted for cold flow
 - aromatics - adjusted to prevent elastomer swell

GHG Emissions Options

- Which control option should DOE adopt if it makes an FTD designation -
 - no control - any GHG increases outweighed by criteria pollutant reductions
 - designate only FTD from plants meeting process energy limits - set in relation to conventional diesel production
 - designate only FTD from plants exporting steam and/or electricity or from flared gas

Oxygenate Issues

- Oxygenate content - should a designation include a limit on oxygenate content?
 - 1% oxygen limit proposed by Rentech
 - lower limit such as 0.25% total oxygenates except those for which EPA Tier 1&2 data submitted

Additive Issues

- Does FTD have any special additive requirements that should be included in a designation under sec. 301(2)?