Manufacturing Gasoline with & without Oxygenates:

Challenges & Timing

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Refining and Gasoline Supply Fundamentals

- Each Type and Grade of Gasoline
  - Must be made & moved to the customer while maintaining Federal, State and ASTM specifications

- Two Hurdles when Confronted with a Change in Gasoline Standards:

  1. Manufacture (Refining)
  2. Supply

Insert Refinery Flow Diagram here

(1st power point slide)

Manufacture (Refining Step)

- Replace MTBE with What?

- Review Options:

1. Replace with another ether (TAME, ETBE)?
   - virtually same odor/taste/water solubility?
2. Replace with an Alcohol (ethanol or TBA)?
   - Alcohols are generally toxic (ex ethanol).
3. Replace with a “Mix” (all of the above)?
4. Use no oxygenate?
   - Replacement? Alkylate?
     (CEC study imported ~100,000 B/D alkylate)
   - **Must Remove legislated oxygenate mandate**.

Removal of MTBE from RFG:

- Must ensure that emissions standards continue to be met.
- Must compensate for effects on octane.

Ethanol Has its Own Challenges:

- Unfavorable Vapor Pressure effect,
- Can't produce "finished" gasoline at refinery
  (necessitates new terminal facilities)
- Insufficient Supply Volume Potential, and
- Supply Logistics Problems

  RFG/ethanol cannot be mixed with other oxygenates during summer ozone season
  (per RFG rule).

Timing:

- Significant capital changes will be necessary if either ethanol is substituted or a non-oxygenated alternative is elected.

- Significant modifications to refineries require up to four years to complete.

- The period starts when industry has certainty.

Insert U. S. Supply diagram here
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Supply Issues:

- Fungible Movement of Product effectively uses:
  - Available tankage
  - Pipelines
  - Barge & Ship Compartments
- Limited Facilities do not lend to distribution of additional types of gasoline.
- Use of ethanol requires terminal modification to receive, store and blend.

General Guidance Summary:

- Continue support for clean gasoline and sustain the environmental standards for RFG (i.e., VOC, NOx and Toxics).
- Support removal of the Oxygen Mandate for RFG from the Clean Air Act.
- National solution is far better than states crafting own boutique gasoline.
- Strongly support 100% compliance with UST program.
- Blue Ribbon Panel is expected and encouraged to provide guidance for national remedy.
- Four years required to make significant modifications to refineries.