



PHMSA/Industry Pipeline R&D Forum New Fuels Transportation

New Orleans, Louisiana

February 8, 2007

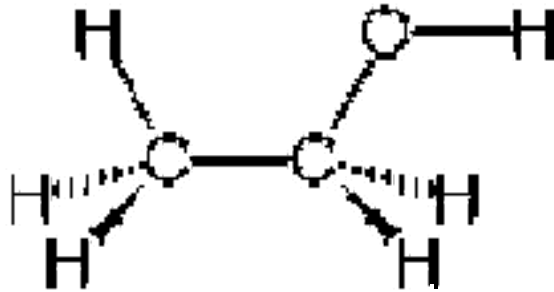


Ethanol Overview

- What is ethanol?
- Why the demand?
- How much is produced?
- Where is it produced?
- Pipeline transportation issues?
- Future?



What is ethanol?



Ethanol

Not quite like "Everclear", but neat (anhydrous) with a denaturant.

Denaturant (2-4%) makes it undrinkable.



Why the demand?

- MTBE Banned in 2006
- States mandating 10% ethanol gasoline
- Midwest states currently selling 85/15 gasoline
- Federal push for “clean” fuels
- Ford, GM, and Chrysler currently sell “flex-fuel” vehicles

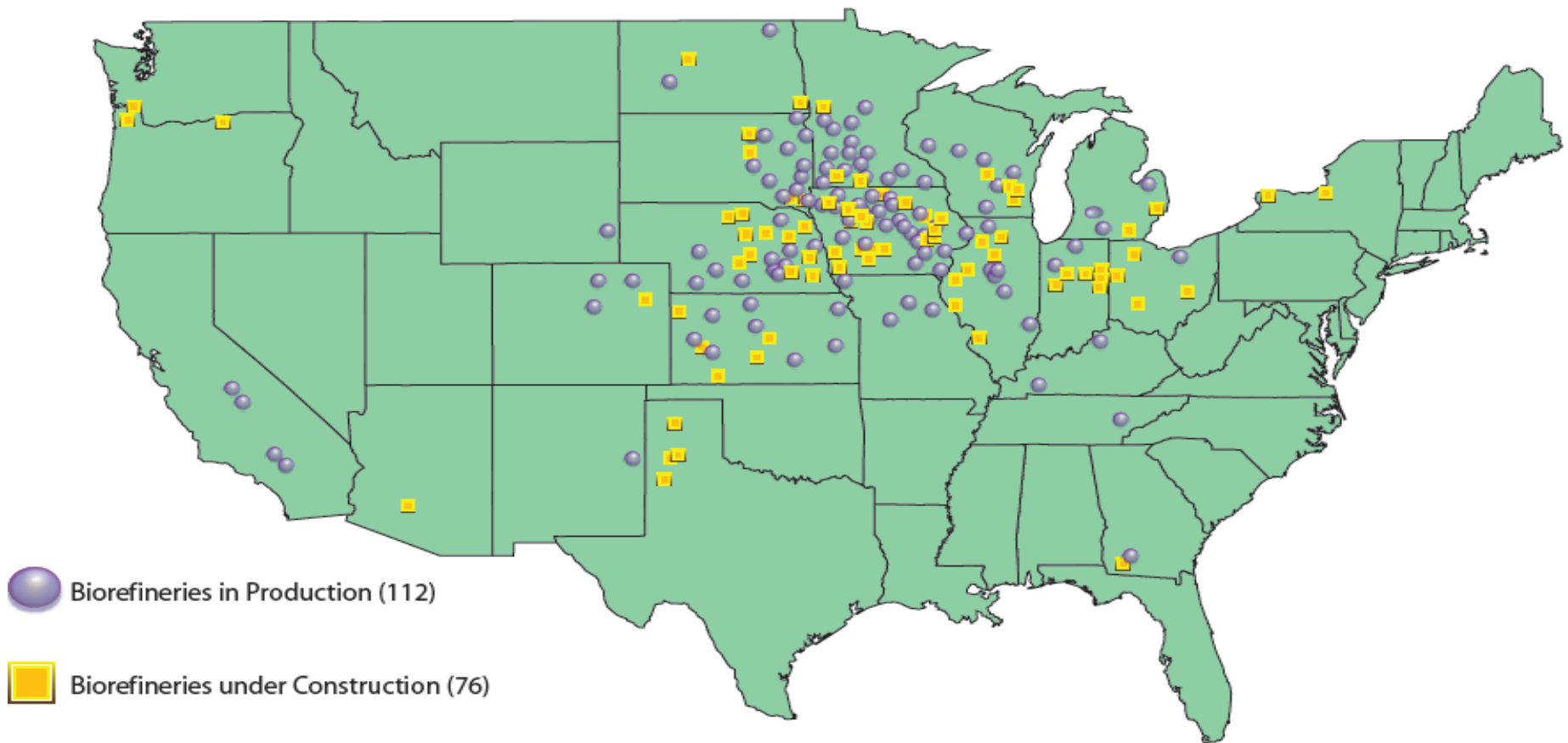


How much is produced?

- DOE Reports (November 2006)
 - 115 plants, 365,000 bbl/day capacity
 - 343,000 bbl/day production
 - Production is “tight” due to demand.

Where is it produced?

U.S. Ethanol Biorefinery Locations



Source: Renewable Fuels Association
1.29.07



Pipeline transportation issues?

- Ethanol has a high affinity for water.
 - Once contaminated, can't be separated without distillation
- Ethanol is a good solvent
- Ethanol may cause internal SCC



Future?

- PRCI Projects Underway
 - SCC-4-3 Identify Environmental Factors that Produce SCC in Ethanol Pipelines and Terminals
 - SCC-4-4 Determine Stressing Conditions that Promote SCC in Ethanol Pipelines and Terminals