Ethanol Industry Update

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Renewable Fuels Association

- National Trade Association for the U.S. ethanol industry promoting policy, regulations, research and development for the industry.

- History of the Association
  - Organized in 1981
  - Ethanol Producers constitute the Board of Directors
  - Representing domestic production
  - Leader in legislative and technical efforts of industry

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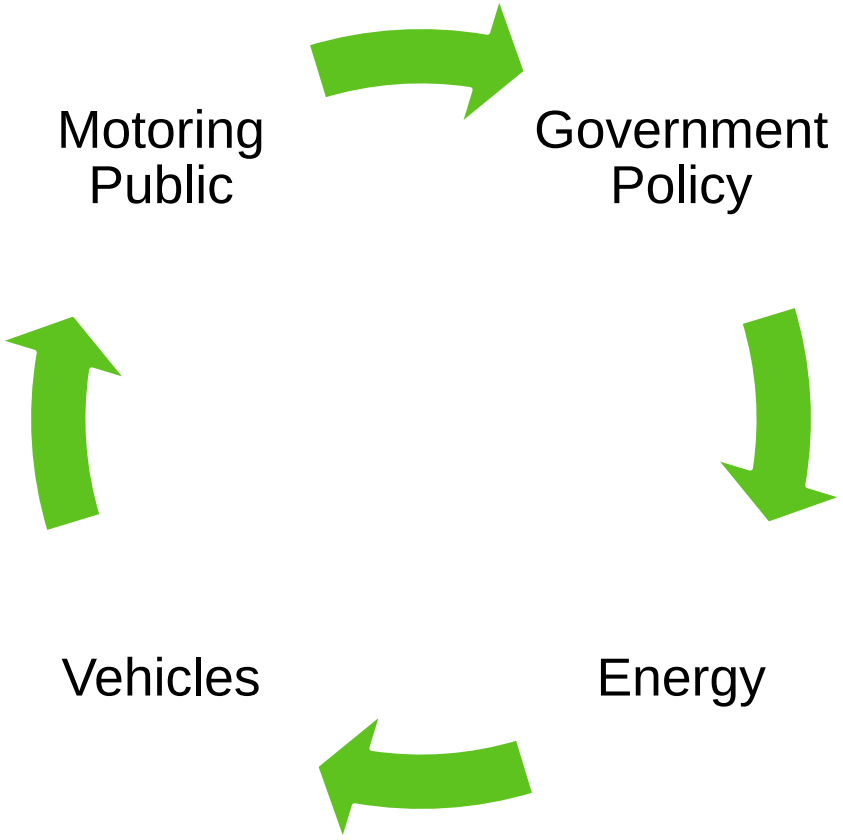
A Changing Climate for Motor Fuels



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Energy Independence and Security Act

- The Renewable Fuels Standard requires 36 BGY of renewable fuels to be used.
- Ties a carbon intensity to motor fuels
- Most of the renewable fuel will be ethanol (~33-34 billion gallons)
- What will be the fuel mix?
  - ~34 billion gallons = 27% of 2022 projected gasoline use

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Why Biofuels?

The Bigger Picture

Biofuels Policy Objectives:

- Reduce dependence on imported oil
- Provide new markets for surplus commodities
- Stimulate rural economies and create jobs
- Reduce GHG emissions and provide other environmental services

Ethanol accomplishes each of these objectives

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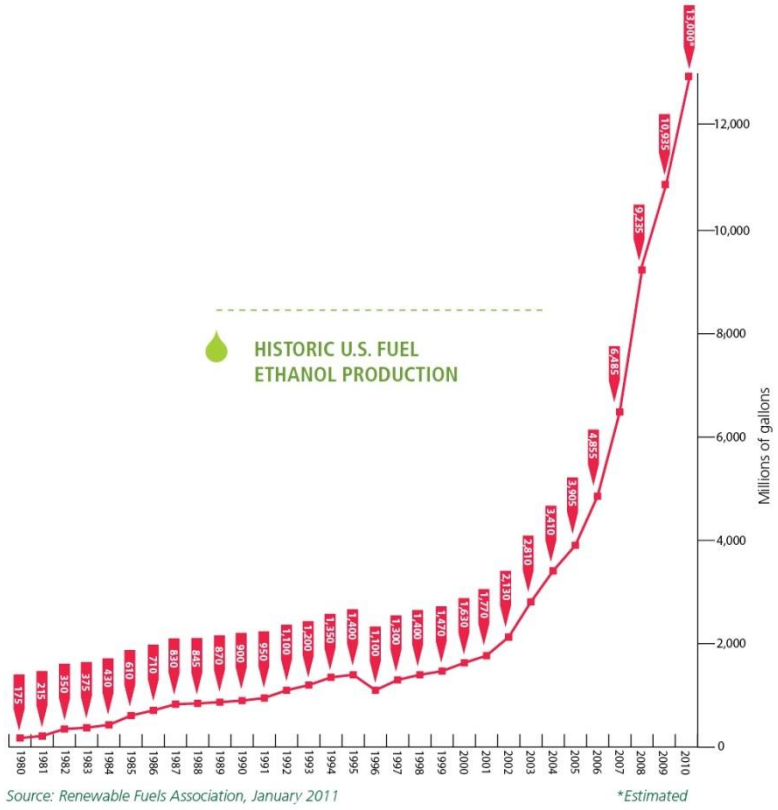
U.S. Ethanol Industry Today

- Total production capacity of 14.74 bgy
- 209 plants operating in 29 states
- Dozens of next generation facilities in various stages of development
  - Cellulose must become a reality



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US Transportation Fuels Today

- 147 billion gallons a year gasoline
  - ~14 billion gallons a year ethanol
- Industry considerations:
  - E10 saturation,
    - Currently >90% E10 in the US
  - Declining fuel use in 2008
  - Continued decline in 2009 (-0.1%)
  - Regaining some footing, 2010 demand +0.5%

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Ethanol: Current and Future Fuels

- **Current Fuels**
  - **E10 (10% ethanol by volume)**
    - Approved for use in all vehicles and engines
    - >90% of U.S. gasoline blended with ethanol
  - **E85 (70 to 85% ethanol by volume)**
    - For use in flex-fuel vehicles (FFVs) only
    - 8+ million FFVs; ~2,800 retail outlets
    - <2% of ethanol consumed as E85
- **Future Fuels**
  - Recent E15 Approval
    - Complicated Federal and State Regulatory matrix
  - "EXX" fuels in the future?

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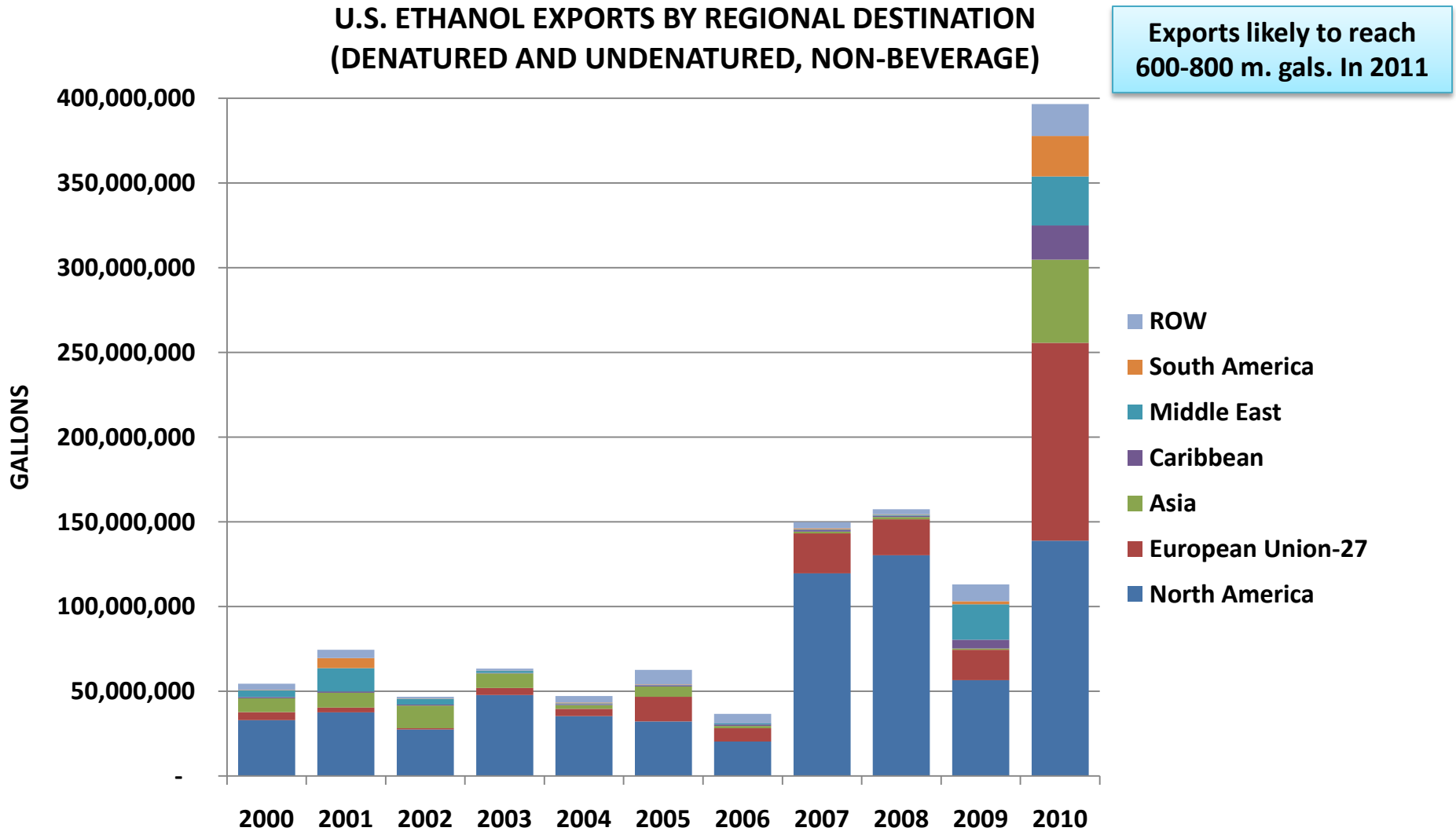
New Story: U.S. Ethanol Exports



Source: Department of Commerce, U.S. Census Bureau, Foreign Trade Statistics

Ethanol Plant Needs: 100 Million Gal./ Year Plant Example

- Logistics needs per year
  - 3448 railcars of Fuel Ethanol

    10 tank cars per day
  - 9867 railcars of Corn

    60% by Rail, 17 railcars per day
  - 3048 railcars of DDGs

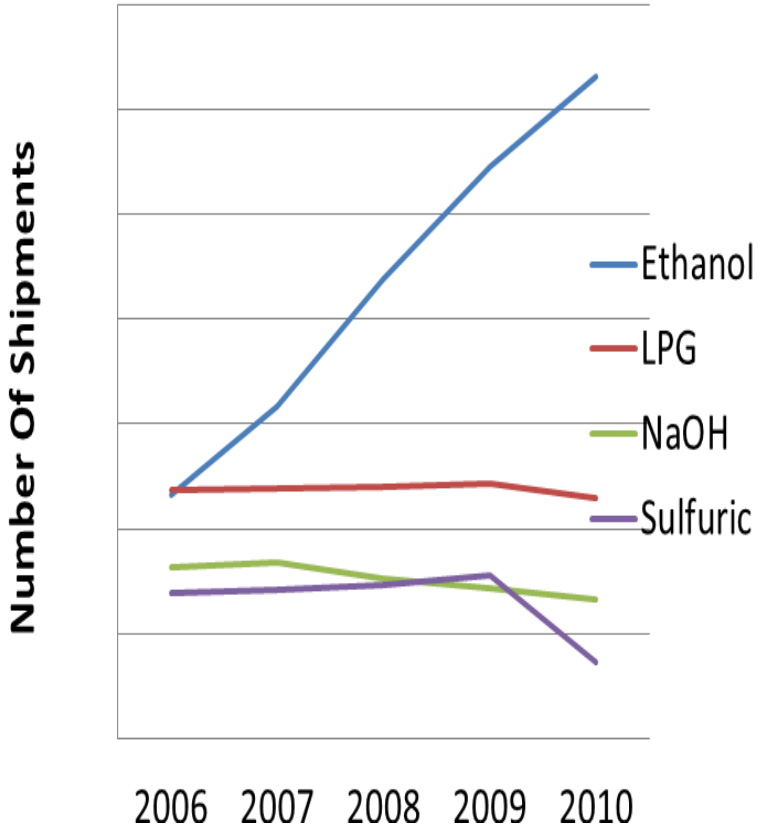
    9 hopper cars per day

Hazmat Ranking # of Ethanol Shipments

- 2004: 5 – 65,372 Loads
- 2005: 5 – 72,677 Loads
- 2006: 2 – 116,224 Loads
- 2007: 1– 158,460 Loads
- 2008: 1– 219,033 Loads
- 2009: 1– 257,635 Loads
- 2010: 1 – 315,718 Loads

Ethanol Industry Projection

- 2011: 1 – 349,879 Loads
  (14.7449 BGY est. 70% Rail with 29,500 gal/ car)



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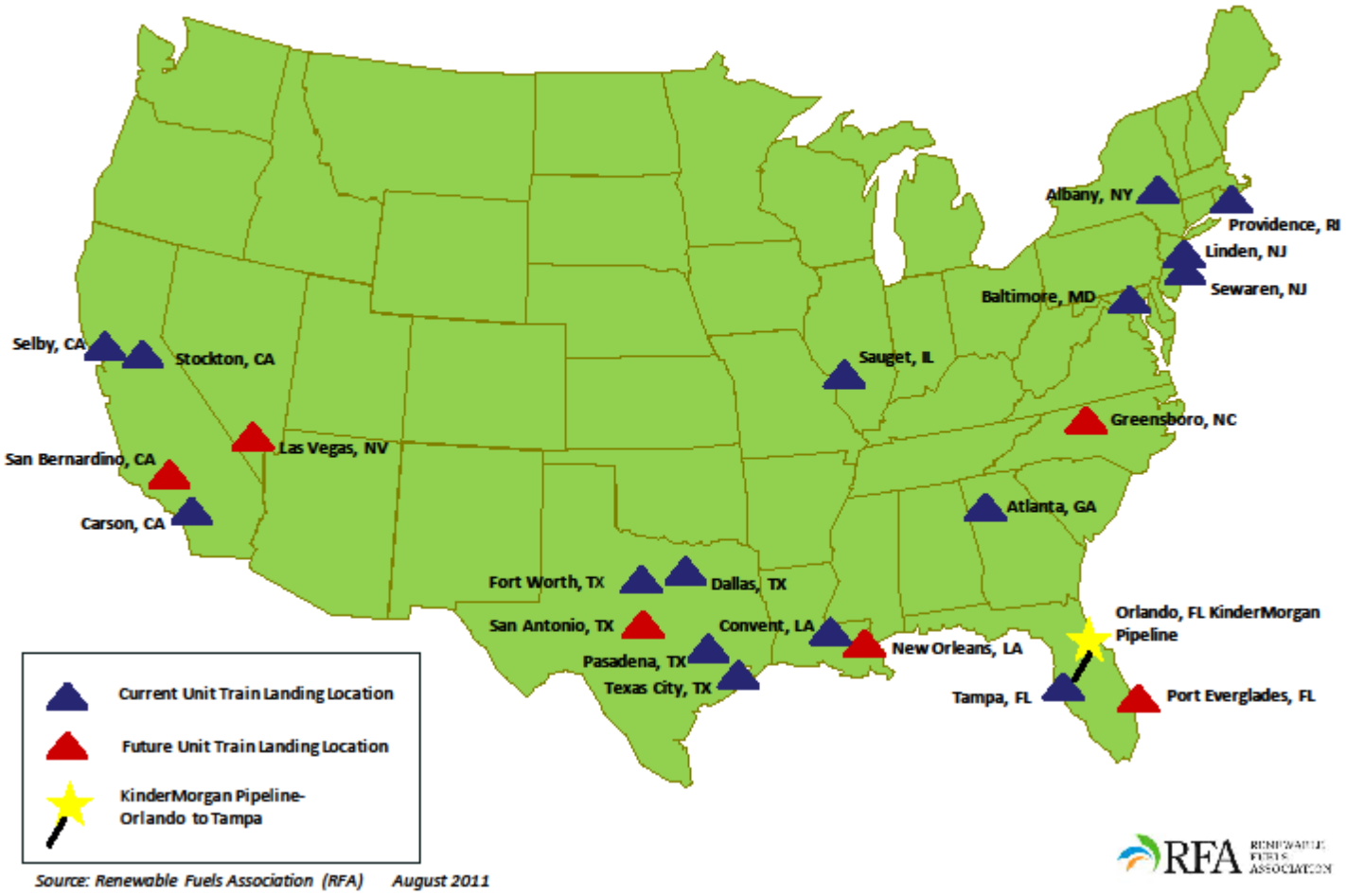
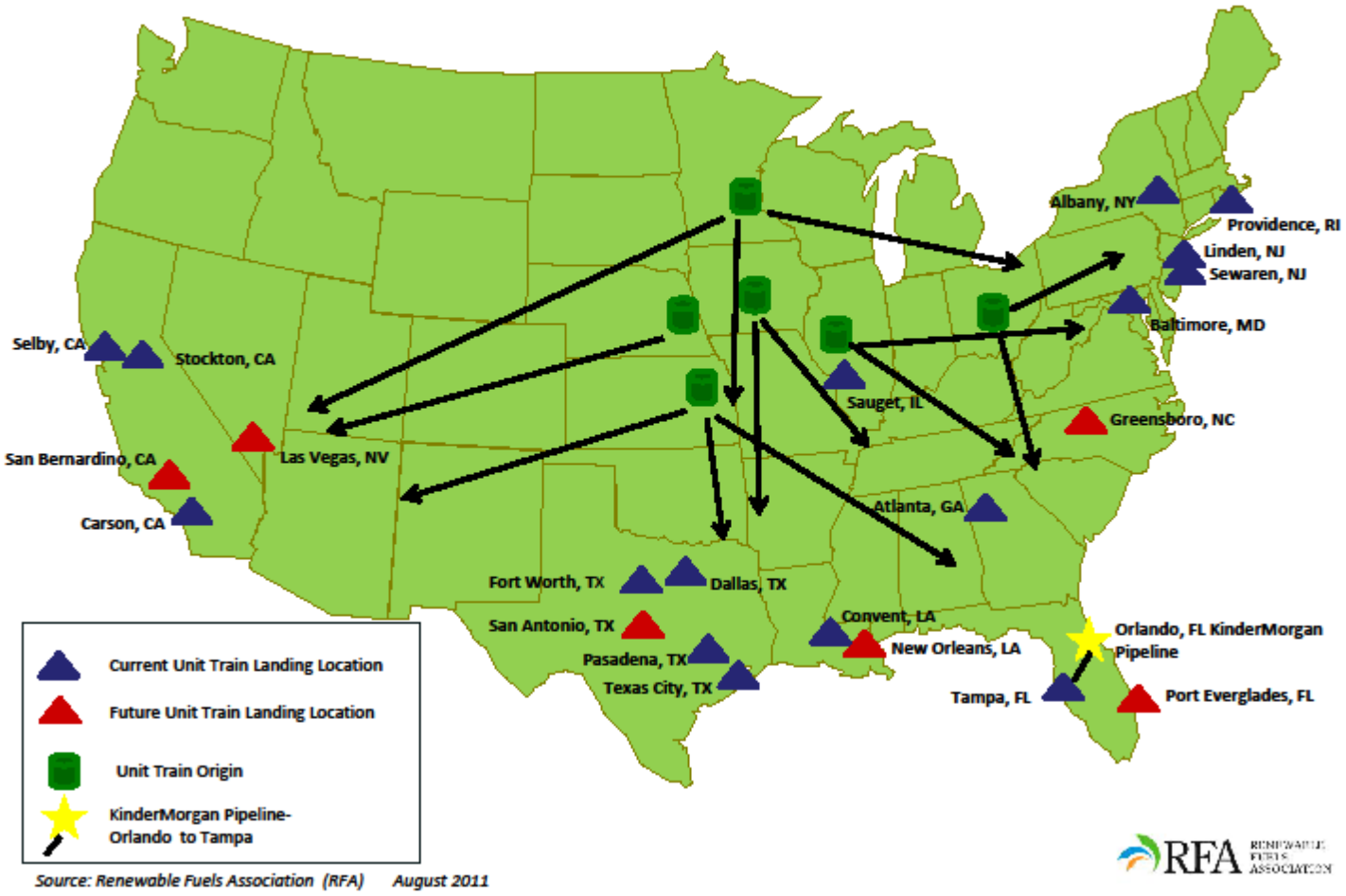
U.S. Unit Train Landing Locations



Source: Renewable Fuels Association (RFA) August 2011

Moving Ethanol to the Market



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Ethanol Rail Fleet

- On average, 85% of Ethanol rail fleet is less than 7 years old
- DOT 111A type of railcar
  - 286k #/ 30k gallon capacity, ½" thick steel, unjacketed/ unlined, non pressure
- Each car expected to be used 30- 40 year length of service
- AAR Tank Car Committee continuously looking for improvements to tank car design

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Future Ethanol Considerations

- Transportation: 3rd Highest Cost for Plant
  - Fleet Management Considerations: Must maintain efficiency
- Increasing Volume to Market
  - Rail expected to lead with greater efficiency: Unit Trains, Per Car Volume
  - Cost will be a determining factor
    - Pipeline research continues

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