Ethanol’s Challenges

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Overview

I. US Market Disposition for Ethanol and Gasoline
   I. Production Rates
   II. Blending Demand
   III. Gasoline Demand

II. US Gasoline Market
   I. Driving Trend
   II. Behavioral Changes
   III. Vehicle Efficiencies
   IV. Forward Demand

III. Higher Blends
   I. E15 Challenges
   II. E85 Opportunity

IV. Exports

Graphic Sourced from DOE's Energy Efficiency & Renewable Energy
The Choppy Ethanol Market

I. Production at Record High
   I. Low Corn Costs Offset Drop in Gasoline Prices

II. Supply/Demand Disposition Still Tight
   I. Logistical Challenges Persist

III. Exports Set to Expand
   I. Sensitive to Arbitrage
US Refiners Producing More Gasoline amid Oil Boon

I. Lower Retail Gasoline Prices Spurring Increased Demand

I. Will this Trend Continue?
New Behavior, Attitude

I. Consumer Price Sensitivity—Elasticity
   I. Higher household expenditures on fuel costs

II. Demographics Affect Driving Demand
   I. Aging Baby Boomers Drive Less
      I. Roughly 78M in 2010/56M in 2030
   II. Millennials have Lukewarm Attitude for Driving
      I. Roughly 79M in 2010/78M in 2030
      II. Evidence in New Driving Licenses for 19 Year Olds per US Public Interest Research Group
         I. 87% held license in 1983
         II. 69% held license in 2011

III. Personal Vehicle Travel has Declined
   I. Less VMT for Commuting, Shopping, Recreation cites Travel Behavior Analyst Nancy McGuckin

IV. Possible US Reached Point of Vehicle Saturation
   I. Previous “Wealth Effect” Driving Higher Demand Diminished
Vehicle Efficiencies Biggest Factor in Lower Demand

I. Researchers Find Vehicle Fuel Economy for New LDV Sales Up 5.2 mpg since October 2007
II. US Light Duty Vehicle Fleet in 2014 is Old at 11.4 Years per IHS
   I. New Vehicle Sales Growing Robustly
   II. Largest Gain since 2003 in November—Tops 17M
III. US Policy Guarantees Efficiency Trend will Continue
Durability of RFS amid Downgraded Assumptions

I. Blend Wall Constraints
II. Limited Sales for Higher Blends
III. New Era of Low Oil

*Slides from October presentation by CBO on issues with RFS
Many Obstacles for Wide Penetration of E15

I. EPA Partial Waiver Allowing E15 for 2001 or Newer Vehicles Covers 60% of US Fleet
   I. Only Two-thirds of New Vehicle Sales Allow for E15 Fueling

II. Many States Prohibit Higher Ethanol Blends Except for Flex-fuel Vehicles
   I. Regulations and Fuel Specifications Vary among States
   II. Florida Recently Allowed E15 Sales after Plus Two Years of Working with State

III. E15 Does Not Have 1 Pound RVP Waiver Like E10
    I. Restricts E15 Sales in Summer when RVP is most Stringent

IV. No Retail Stations Offered E15 Until mid-2012
    I. Roughly 100 Stations in 15 States out of More than 150,000 Now Offer E15

V. Liability Concerns for Retailers over Misfueling for Vehicles Built before 2012
   I. Automobile, Marketers Associations Discourage Retailers from Selling E15

VI. Retailers would Need to Invest in New Tanks, Pumps
    I. American Petroleum Institute Pegs per Station Costs at $80,000
Developing E85 Market would Boost Ethanol Sales

I. Plus 17.4M Flex-fuel Vehicles on US Roads
   I. Accounted for 6% of LDVs
   II. EIA Forecasts FFVs at 11% of LDV Sales in 2040
   III. EIA Projects FFV Sales to Flat Line after 2019 when Incentives Expire

II. As of June, 2,685 Stations Sold E85 per Alternative Fuels Data Center
   I. Equates to 2.2% of All Fueling Stations
   II. National Petroleum News Reports 152,900 Fueling Stations in 2013

Maps Sourced from Renewable Fuels Association
EIA Estimates 780% Surge in E85 Demand from 2014 to 2020

I. E85 seen as a Way to Bypass Blend Wall
   I. E85 Sales would need to Accelerate
   II. CBO Notes at Current Pace, would Reach 1B Gallons out of Projected 125B Gallons of Blended Gasoline in 2022

II. Expansion of Retail Outlets Selling E85 is Critical

III. So is Retail Pricing Strategy
   I. E85 has 22.8% Less Energy Content than Gasoline
      I. More Trips by Consumers to Stations for Refueling
   II. Fuels Institute Analysis of E85 Released in November shows Pricing at Discount to Gasoline Essential to Move Gallons
   III. Consumers make Decision to Purchase E85 over E10 based on Economics, not Loyalty to Higher Ethanol Blend
Exports Offer US Producers Growth Opportunities

I. US Now a Net Ethanol Exporter

II. Top Export Markets Include:
   I. Canada
   II. Mexico
   III. Brazil
   IV. United Arab Emirates
   V. Philippines
   VI. Europe

III. Most Waterborne Exports from US Gulf
   I. Houston
   II. Texas City
   III. New Orleans

IV. Ethanol also Exported from New York Harbor
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