The U.S. Renewable Fuel Standard
Background, Controversies, &
Potential Reform

Argus 2018 Biofuels/Ethanol Conference
October 8-11, 2018 – London, England UK
Washington, DC 20007
About EPRINC

- Founded in 1944
- Not-for-profit organization
- Studies the intersection of energy, economics, public policy & regulations, and trade
- Provides independent and technical analyses for distribution to the public
- Funded largely by the private sector, foundations and U.S. government
- Supports USG projects, e.g. Quadrennial Energy Review, DoD strategic outlook
- www.eprinc.org
Recent EPRINC Downstream Reports, Presentations, and Testimony Available at www.eprinc.org:

• The Biofuel Mandate: Technical Constraints And Cost Risks

• Testimony on the RFS on February 24, 2016 by Lucian Pugliaresi (EPRINC’s President) before the U.S. Senate Committee on Environment & Public Works

• CAFE, Gasoline Prices and the Law of Diminishing Returns: A New Agenda for the Midterm Evaluation

• Presentation at the Energy Information Administration (EIA) 2017 Annual Conference on Octane and the CAFE Standards

• Understanding California’s High Transportation Fuel Prices
Paths to RFS Reform & CAFE MY 2022-2025 Compliance

- More Octane
  - Refining Processes
  - Ethanol
- More [P/H] EVs (Electric Vehicles)
CAFE: Required vs Achieved MPG

Analysis Based on NHTSA Data

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U.S. Average AKI Octane (LHS) vs Compression Ratio (RHS)

Analysis Based on ORNL Data
AEO 2018 - Comparison of Gasoline Consumption Forecasts

- AEO 2018 Reference
- High Gains in Oil & Gas Production Growth
- High Macro Growth
- Low Oil Price
- High ANWR
- High HEVs Penetration
- High PEVs Penetration
U.S. Gasoline Sales By Grade

Analysis Based on EIA Data

Premium
Midgrade
Regular

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U.S. Gasoline Sales By Grade - Forecast

Analysis Based on EIA Data

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Adj E10 vs Adj Ethanol: 06/27/2016 through 06/29/2018

$ per MMbtu

Analysis based on CME Data

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Thank you!

Questions?
Extra Slides After This
U.S. Supply/Demand Balances & Inventories
Gasoline & Ethanol
United States Fuel Ethanol Supply/Demand Balances: 01/31/2010 to 07/31/2018

Analysis based on Monthly EIA Data
U.S. Trade & Movements
Gasoline & Ethanol
U.S. Gasoline Trade 09/30/2003 to 07/31/2018

Analysis based on Monthly EIA Data
U.S. Fuel Ethanol Trade 01/31/2010 to 11/30/2018

Analysis based on Monthly EIA Data

Imports
Net
Exports
U.S. Fuel Ethanol Exports by Destination Country - 01/31/2010 to 07/31/2018

Analysis based on Monthly EIA Data
PADD 2 to PADD 3 Railroad Movement - Fuel Ethanol - 09/21/2008 to 07/31/2018

Analysis based on Monthly EIA Data
PADD 2 to PADD 1 Railroad Movement - Fuel Ethanol - 09/21/2008 to 07/31/2018

Analysis based on Monthly EIA Data
PADD 2 to PADD 5 Railroad Movement - Fuel Ethanol - 09/21/2008 to 07/31/2018

Analysis based on Monthly EIA Data
U.S. Exports - Fuel Ethanol - 01/31/2010 to 07/31/2018

Analysis based on Monthly EIA Data
U.S. Product Market Context
US Net Imports of Crude Oil and Petroleum Products: 07/31/1988 through 07/31/2018

Analysis based on EIA Data
Monthly U.S. Crude Oil Production - Conventional Vs Shale: 08/31/2009 through 07/31/2018

Analysis based on EIA Data
U.S. Prices – Various Views
RINs, Crude Oil, Corn, E10, Ethanol
D4 RINs, D5 RINs, D6 RINs: 09/16/2016 to 09/30/2018

$ per US Gallon

Analysis based on EcoEngineers and PFL Data
D4 RINs, D5 RINs, D6 RINs: 12/31/2017 to 09/30/2018

Analysis based on Daily EcoEngineers and PFL Data

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Crude Oil vs Corn: 09/20/2008 to 09/28/2018

Analysis based on CBOT, EIA, and USDA Data
Adj E10 vs Adj Ethanol: 09/26/2016 through 09/28/2018

Analysis based on CME Data