

# **Potential Impacts of a Partial Waiver of the Ethanol Blending Rules**

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# The Drought and Corn Market

- There are many impacts of the drought that permeate not only the agricultural sector but the economy as a whole.
- This paper is about one issue related to the drought – the possible impacts of a partial waiver of the Renewable Fuel Standard (RFS) for corn ethanol.
- It is not about the merits of the RFS itself.

# Corn Price Impacts Many Sectors

- Livestock products such as meat, dairy, and eggs;
- Soft drinks and food products containing corn sweeteners;
- Gasoline containing 10% or more ethanol made from corn;
- Other food items that contain corn starch, corn flour, or corn directly.
- There will not be enough corn for everyone to continue consuming at normal rates.

# The Renewable Fuel Standard

- It is 13.2 BG for 2012 and 13.8 BG for 2013 for corn ethanol.
- There is some flexibility built into it:
  - Blenders can use surplus credits from prior year blending to meet the current year RFS. It is estimated that blenders have about 2.6 BG of such prior year credits.
  - Blenders can also borrow from future obligations if needed.

# Blenders Need Positive Economic Incentives

- In recent weeks, ethanol has been priced 25 to 40 cents below RBOB.
  - On that basis, blenders would not have a financial incentive to change from current practice.
  - Corn and ethanol would have to rise in price or gasoline fall to change the basic economics.
- However, CBOB is blended in much of the country, and it is usually cheaper than RBOB.

# Blenders Must Overcome Technical Blending Issues

- At present, most of the regular gasoline produced in the US comes out of the refinery as 84 octane, and ethanol is added to bring it up to 87.
- It is not clear how quickly that whole system could be modified if ethanol blending were partially waived.
- Also not clear if refiners and blenders would want to do it for a one time waiver.

# Technical Blending Issues

- Gasoline sold in the US must meet strict vapor pressure rules to prevent evaporative emissions.
  - The rules vary by region and also between winter and summer months.
  - In summer 10% ethanol blends have an exemption of 1 psi for the vapor pressure limits, so there might be incentive to continue ethanol use at least in summer.

## Other Blending Issues

- Incentives to reduce ethanol use in the event of a partial waiver could vary from company to company and region to region.
  - Valero owns both oil refining and ethanol plants.
  - Because of the varying rules and use of RBOB, CBOB, and CARBOB, decisions on ethanol also could vary.
- Take-or-pay ethanol contracts could be an important actor too.

# Possible Waiver Impacts

Market and Technical Conditions	Likely Waiver Impact on Ethanol
High corn price Moderate crude oil (<\$100) Limited refining and blending flexibility	Little impact of a waiver
High corn price Moderate crude oil (<\$100) Refining and blending flexibility	Possible waiver impact
High corn price Moderate crude oil (<\$100) Refining and blending flexibility RIN credits available for use in 2013	Possible significant waiver impact
High corn price High crude oil price (>\$120) Limited refining and blending flexibility	Little impact of waiver
High corn price High crude oil price (>\$120) Refining and blending flexibility	Likely small impact of waiver, but possibility of larger impact

# Determinants of Waiver Impacts

- The extent to which a partial waiver would have an impact depends on the financial incentives and technical constraints faced by the refining and blending sectors.
  - If they cannot change current practice quickly, there would be little impact.
  - If it is not in their financial interest to change, there would be little impact.

## If They Do Have Operational Flexibility

- Quantitative assessment under different levels of ethanol supply reduction:
  - 13.8 BG for 2013 – no waiver,
  - 11.8 BG – no waiver, but use of 2 BG of prior blending credits (RINs),
  - 10.4 BG – 25% reduction due to any combination of waiver and prior credits,
  - 7.75 BG – waiver of 3.45 BG + 2.6 BG RINs.

# Simulations Done for 3 Corn Production Levels

- 10.5 Bil. bu. (120 bu./ac.),
- 11.0 Bil. bu. (126 bu./ac.),
- 11.5 Bil. bu. (132 bu./ac.),
- We adapted a model including crude oil, gasoline, ethanol, DDGS, and corn that Taheripour and Tyner have used in several published papers.

# Waiver Impact Simulation Results

- Impact of reduced blending to 11.8 BG is around \$0.67/bu. of corn (due to use of RINs)
- Going from 11.8 to 10.4 BG reduces corn price another \$0.44 - \$0.47/bu.
- Going from 11.8 to 7.75 BG reduces corn price by \$1.31 to \$1.34/bu.
- If refiners and blenders have flexibility and use it, the partial waiver impact could be up to \$1.30/bu. for a large waiver and \$0.47 for a small waiver.

# Impacts on Livestock Producers and Consumers

- Livestock producers face substantially higher feed costs, much of which they cannot pass on to consumers in the short run.
- Ultimately, consumers will face higher prices for livestock products and other products that use corn and higher fuel costs.
- Most farmers have crop insurance, but they will also face losses.

# Economic Harm Done by the Drought

- Corn price is substantially higher than a normal year, and losses amount to tens of billions of dollars
- In considering a waiver, EPA cannot change the loss – it can only possibly redistribute it among the affected parties.

## **Possible Waiver Impacts**

- If refiners and blenders do not have or choose not to use ethanol blending flexibility, a waiver has very limited impact.
- To the extent there is flexibility, use of prior blending RINs could reduce corn price \$0.67/bu.
- In addition, a partial waiver, could reduce corn price up to \$1.30/bu. again assuming flexibility.

# Possible Waiver Impacts

- If refining and blending flexibility is assumed, a waiver helps livestock producers and consumers – sharing the available corn supplies.
- A waiver that reduces ethanol production also penalizes corn producers and ethanol producers who invested in their plants assuming the RFS would provide a market.

# Waiver Decision

- Clearly the degree of refining and blending flexibility is critical to a waiver decision, and EPA needs to do a thorough assessment on this issue.
- The waiver decision is complicated. We have tried to evaluate the key issues that need to be taken into consideration in reaching a decision.

Thanks very much!

Questions and comments.

