Outlook for Biofuels: A New Feature of BIC
What is it?

• First publicly available, regularly-produced outlook information for biofuels
• Will reflect supply and demand outlook for
  – Conventional ethanol
  – Biodiesel
  – Advanced biofuels
• Will reflect impacts on markets from policy interventions (tax credits, RFS, Renewable Energy Directive (EU))
• Will reflect impact of changing available biofuel feedstock supplies as taken from USDA and changing energy prices as reflected in futures prices
• Will account for sugarcane supply and demand in Brazil and Brazilian and Argentine soybean supplies
Outlook Content

- Historical and projected margins that are currently on the CARD website
- Historical RIN prices
- Projected RIN prices
  - Biofuels prices
  - Competing fuel prices
- Aggregate feedstock usage
- Aggregate production levels
Method of Analysis

- Will develop and maintain a model of biofuels markets
- Model will reflect planned collaborations with engineers who are working on cost estimates of advanced biofuels
- Will serve as a vehicle for Economics graduate students to complete their PhD dissertations
• Comments and or suggestions?
Background Information for Possible Focus of 2012 BIC RFP
Research Questions about RFS Economic Feasibility

• What is the outlook for ethanol prices?
• What will RIN prices be?
• Will biodiesel or sugar cane ethanol be the advanced biofuel of choice?
• What will be the impacts on RIN prices from alternative gasoline and diesel prices?
• What will ethanol RIN prices be under alternative E15 scenarios?
US Gasoline Consumption Has Declined Substantially More than Fuel Consumption

- Finished Motor Gasoline
- Gasoline
Questions

• In 2011 the price of ethanol did not reflect the 10 percent blend wall
What’s Going on With Brazil?
Brazilian Ethanol Production and Mandatory Amount Used in Blend

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Mandatory Blend</th>
</tr>
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<tbody>
<tr>
<td>09/10</td>
<td>6.5</td>
<td>2.5</td>
</tr>
<tr>
<td>10/11</td>
<td>7.0</td>
<td>3.0</td>
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<tr>
<td>11/12</td>
<td>6.7</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Legend:
- Blue: Production
- Red: Mandatory Blend
Brazilian Ethanol Available for Domestic FFVs or Export
Brazilian FFV Fleet

- 2007: 4 million cars
- 2008: 7 million cars
- 2011: 12 million cars
Outlook for Brazil

• No new ethanol mills or “green fields” for at least 3 to 4 years (2015)
• Can increase sugar production by a maximum of 250 million tons
  – 150 million tons from non-utilized fields
  – 100 million tons from better reconditioning and growing weather
• Ethanol production increased by a maximum of 3 billion gallons to 2015
Implications

• Sugar cane ethanol will not be inexpensive
• Advanced biofuel RINs will not be zero
• Robust demand for hydrous ethanol to run FFVs
A Small Calculation

- Wholesale gasoline regulated at 1.5 reals per liter
- Robust demand for hydrous ethanol at about 1 real per liter
- Exchange rate is 1.75 per dollar or $2.60 per gallon anhydrous delivered to Brazil. With 25 cents per gallon transport, equivalent to about $2.35 per gallon in U.S.
  - June 2012 CBOT ethanol, futures are at $2.42/gallon
Conclusions

• Brazil will not be an ethanol-exporting powerhouse
  – Little to no impact of removing import tariff along with VEETC
  – Only impact would be to increase RINs for advanced biofuels

• Brazil demand for ethanol will put a floor under US ethanol prices

• Can US blended fuel destined for Brazil be counted as domestic consumption?
• Comments and discussion