CoBANK

ETHANOL + BIODIESEL INDUSTRIES

Tom Houser
November 2, 2006

CoBANK, ACB

- Part of the $140 billion Farm Credit System

- $37 billion, customer-owned, cooperative bank headquartered in Denver, Colorado

- Nation-wide bank, with 11 regional banking centers across the country, and two overseas offices to facilitate the export of U.S. agricultural products.
CoBank Portfolio (September 30, 2006)

Lender to the industry since 1992

- Bio-fuels commitments presently total over $700 million, including $650+ million for ethanol and $50+ million for biodiesel
- “Gross” commitments (i.e., before sell-downs) total over $1.2 billion
- Gross includes approximately $100 million purchased “passive” participations in 10 plants

CoBank Portfolio (cont’d)

- Have approved a total of 42 ethanol plants (39 companies).
- 25 plants with capacity of 1.2+ billion gallons are now producing; is approximately 25% of industry total capacity based on 105 plants currently in operation.
- 17 plants (2 tentative) with over 1 billion gallons capacity in construction/scheduled.
- Total of 2.2+ billion gallons; approx. 25% of currently proposed industry capacity through 2008 per the Renewable Fuels Association (RFA).
### CoBank Portfolio (cont’d)

- Approved plants are located as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td>11</td>
</tr>
<tr>
<td>Minnesota</td>
<td>8</td>
</tr>
<tr>
<td>South Dakota</td>
<td>5</td>
</tr>
<tr>
<td>Nebraska</td>
<td>4</td>
</tr>
<tr>
<td>Illinois</td>
<td>2</td>
</tr>
<tr>
<td>Indiana</td>
<td>3</td>
</tr>
<tr>
<td>Kentucky</td>
<td>2</td>
</tr>
<tr>
<td>Michigan</td>
<td>2</td>
</tr>
<tr>
<td>Other States</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>

### U.S. Ethanol Industry Today

- Annual production record in 2005 of approx. 4.2 billion gallons.
- Per RFA, 105 plants currently in operation in 19 States; total capacity near 5 billion gallons/year (bg).y.
- 41 additional plants under construction, along with several expansions, will add another 2.9 billion gallons capacity.
- Dozens (hundreds?) of additional plants in various stages of development.
Historic U.S. Fuel Ethanol Production

Future Ethanol Production

<table>
<thead>
<tr>
<th>Year</th>
<th>RFS</th>
<th>Estimated Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4.0</td>
<td>5.1</td>
</tr>
<tr>
<td>2007</td>
<td>4.7</td>
<td>6.6</td>
</tr>
<tr>
<td>2008</td>
<td>5.4</td>
<td>7.9</td>
</tr>
<tr>
<td>2009</td>
<td>6.1</td>
<td>8.6</td>
</tr>
<tr>
<td>2010</td>
<td>6.8</td>
<td>9.3</td>
</tr>
<tr>
<td>2011</td>
<td>7.4</td>
<td>9.9</td>
</tr>
<tr>
<td>2012</td>
<td>7.5</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Source: U.S. Energy Information Administration / Renewable Fuels Association
U.S. Ethanol Refineries

Source: RFA, January, 2006

ETHANOL
Is the Glass Half Empty or Half Full?
Risk Assessment / Issues:

- Primary Risk – Crude Oil Price Scenario !!!

- Crude stays $60+/barrel, “the glass is half full”

- Crude settles back to $40 +/- a barrel, economics dramatically different

- RFS, does, though, provide “floor”

---

U.S. Motor Gasoline vs. Ethanol, Wholesale Price

[Chart showing the comparison of U.S. Motor Gasoline and Ethanol Wholesale Prices from January 2005 to January 2008. The chart includes a graph with data points for RFN US Spot Ethanol Wholesale Price, DOE Forecast of Wholesale gasoline Price, DOE Actual Wholesale Gasoline Price, and a note stating that in May 06 outlook, ethanol price is above wholesale gasoline plus the blender tax credit, due to continued tight supply of octane enhancers. Source: US Department of Energy, www.eia.doe.gov/emeu/steo.]
Risk Assessment / Issues: (cont’d)

- **Corn Production/Cost**
  - Absent a widespread “weather event”, cost likely to increase, though modestly:
    - PRX – “what’s to stop the farm price of corn as a raw material from approaching the world price of petroleum, on a gallon per gallon basis.”
    - “… it is the coming job of corn price to reduce the ROI of the ethanol dry mill industry to zero or below, halting the expansion before all the corn is gone.”
- Acreage, yield curve, new hybrids, etc.
- Corn vs. Soybeans

---

**Cornbelt-12 Yield History and Trend**

For CORNBELT-12, PRX is forecasting the Trend, dated 1960 to 2004, which is above the long term, poor trend.
What will the next 5 years look like?
A 10 cent move in corn has a 3.5 cent affect on an ethanol plants margin. A $1.00 per mmbtu of Nat Gas has a 3.5 cent affect on an ethanol plants margin. Ethanol price has a 1 for 1 affect on the margin. How will corn and nat gas price be determined?

Ethanol price has a 1 for 1 affect on the margin. How will corn and nat gas price be determined?

The future of corn supply-demand depends as much on the future of ethanol price as any other factor, and ethanol price has now declined from its above $3.00 levels. The job of corn price is easier, of course, the lower one's opinion of ethanol price!
Risk Assessment / Issues: (cont’d)

- **Distillers Dried Grains (DDG’s)**

  - Ration inclusion rates increase for dairy and beef cattle, and also with swine and poultry (“glass half full”).
  - Market becomes saturated and value relative to corn declines.
  - DDG’s vs. soybean meal (what if bio-diesel takes off ?)

Distillers Dried Grains
Growth in U.S. DDGS Production

- DDGS production rapidly increased to near 9 million tons in 2005 and will continue to grow as dry mill production capacity is added.
- Many industry observers believe the market for DDGS can and will expand but worry about the impact on pricing from the build-out.

Historic US Production of Distiller Grains

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>9.0</td>
</tr>
</tbody>
</table>
Risk Assessment / Issues: (cont’d)

- Political / Legislative Support
  - Partial excise tax exemption has been extended through 2010; 5.1 cents/blended gallon.
  - RFS mandates usage increasing to minimum 7.5 bgy.
  - Positioning has begun to legislate higher requirement.
    - “Mom, Apple Pie, and Ethanol” (Hillary Clinton!)

Risk Assessment / Issues: (cont’d)

- Technology
  - Basic production process continues to evolve, especially regarding energy use.
  - Fractionization also gaining interest.
  - Cellulosic technology improving, but not yet commercial.
    - “Logistics” also an open issue(s) regarding transportation, quantity, timing, and consistency.
“Wall Street” $$$$

- Raw Material (Corn) / Finished Product (ethanol) relationship (lack thereof) used to “scare off” Wall Street.
- Tremendous interest has now developed, both for debt and equity investments (concerned about being “left out”).
- Project finance (leveraged) structures.
- Ready market to sell deal into.
- Significant fees; not much “skin”.

[ Risk profile of Bio-Diesel NOT the same as ethanol !!!! ]

Ethanol Industry – Impacts

- In-process “profound” change in infrastructure accelerated by ethanol build-out
- Need for “Speed and Space”
- Need to “Build and Close”
- Aggressive replacement of inefficient, depreciated assets
- Size matters