Sale of Abengoa Bioenergy’s Gen 1 Ethanol Plants

August 2016
Overview of Abengoa’s Gen 1 Ethanol Plants

Abengoa operates 6 Gen 1 ethanol plants totaling 381 MGPY\(^{(1)}\).

<table>
<thead>
<tr>
<th>Location</th>
<th>MGPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison, IL</td>
<td>90</td>
</tr>
<tr>
<td>Mt. Vernon, IN</td>
<td>90</td>
</tr>
<tr>
<td>York, NE</td>
<td>56</td>
</tr>
<tr>
<td>Ravenna, NE</td>
<td>90</td>
</tr>
<tr>
<td>Portales, NM(^{(1)})</td>
<td>30</td>
</tr>
<tr>
<td>Colwich, KS</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>381</strong></td>
</tr>
</tbody>
</table>

Source: Company website.
Note: Plant size based on nameplate capacity.
\(^{(1)}\) Portales, NM ethanol plant was not sold in the 363 bankruptcy process.
### Summary Plant Information – Abengoa Ethanol Plants

<table>
<thead>
<tr>
<th>Plant Location</th>
<th>Capacity (MGPY)</th>
<th>Technology</th>
<th>Rail Access</th>
<th>Corn Oil</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Madison, IL    | 90             | Vogelbusch | CSX / NS / CN / KCS | Yes | • Construction started in 2008 and began production in early 2010  
• Located next to the Mississippi River  
• Produces 230K tons of DGS and consumes 825K tons of corn annually |
| Mt. Vernon, IN | 90             | Vogelbusch | CSX / NS / CN / KCS | Yes | • Construction started in 2008 and began production in early 2010  
• Located in the Corn Belt along the Ohio River  
• Produces 230K tons of DGS and consumes 825K tons of corn annually  
• Products are transported by truck, train and boat |
| York, NE       | 56             | Vogelbusch | BNSF / UP    | Yes | • Built in 1994 and expanded in 1996 and 2001  
• Produces 145K tons of DGS and consumes 520K tons of corn annually  
• >50% of CO2 produced is captured and refined by the client on site  
• Supports the adjacent biomass pilot plant |

Source: RFA, Company website and OPA research.
Note: CSX – CSX Corporation; NS – Norfolk Southern; CN – Canadian National; KCS – Kansas City Southern; BNSF – Burlington Northern and Santa Fe.
## Summary Plant Information – Abengoa Ethanol Plants

<table>
<thead>
<tr>
<th>Plant Location</th>
<th>Capacity (MGPY)</th>
<th>Technology</th>
<th>Rail Access</th>
<th>Corn Oil</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Ravenna, NE   | 90             | Vogelbusch       | BNSF / UP   | Yes      | • Construction started in 2005 and completed in 2007  
• Produces 230K tons of DGS and consumes 825K tons of corn annually  
• The first in the US to use continuous fermentation technology  
• A double railroad circuit for simultaneous loading and shipment of ~3M gallons of bioethanol in 95 tank cars  
• Designed to recycle all process waters                                                                                   |
| Portales, NM  | 30             | Vogelbusch       | BNSF / UP   | No       | • Built in 1985, expanded in 2006 to double capacity  
• Produces 75K tons of DGS and consumes 260K tons of corn and sorghum annually  
• Can simultaneously use corn and sorghum  
• Primary markets are Texas and California                                                                                 |
| Colwich, KS   | 25             | Vogelbusch / ICM | BNSF / UP   | Yes      | • Built in 1982, one of the oldest dry mill bioethanol facilities in the US  
• Produces 70K tons of DGS and consumes 240K tons of corn and sorghum annually  
• Can simultaneously use corn and sorghum  
• 50% of the energy requirements covered by methane coming from a municipal solid waste dump                                  |

Source: RFA, Company website and OPA research.  
Note: CSX – CSX Corporation; NS – Norfolk Southern; CN – Canadian National; KCS – Kansas City Southern; BNSF – Burlington Northern and Santa Fe.
Case Study: Green Plains’ Acquisition

Green Plains acquired the Madison, Mt. Vernon and York plants for $237.4M or $1.01/gal.

<table>
<thead>
<tr>
<th>Transaction Highlights</th>
<th>GPRE Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>• On June 13, 2016, Green Plains was selected as the Stalking Horse bid for the Madison and Mt. Vernon ethanol plants — $200.0M or $1.11/gal</td>
<td>• Headquartered in Omaha, NE — Founded in 2004 — IPO in 2006 — Owns 62.5% of Green Plains Partners</td>
</tr>
<tr>
<td>• On August 22, 2016, GPRE was the successful bidder on the Madison, Mt. Vernon and York plants — $200.0M for Madison and Mt. Vernon — $37.4M or $0.67/gal for York — Tops BioUrja’s $35.0M Stalking Horse</td>
<td>• 3rd largest ethanol producer (post acquisition) — 17 plants with total capacity of 1,424MGPY — 2nd largest dry mill ethanol producer</td>
</tr>
<tr>
<td>• To be approved by Missouri Bankruptcy Court on August 29, 2016</td>
<td>• Publicly traded (NASDAQ: GPRE) — Market Cap: $916M (as of 8/24) — Enterprise Value: $1,802M (1)</td>
</tr>
<tr>
<td>• Expected closing by September 30, 2016</td>
<td>• LTM Production: 998M gal (as of 6/30) — LTM EBITDA: $110.7M (1) or $0.09/gal (2)</td>
</tr>
</tbody>
</table>

(1) Includes 62.5% of Green Plains Partners.
(2) Based on nameplate capacity of 1,188MGPY.
Case Study: KAAPA and ICM’s Acquisitions

KAAPA acquired Ravenna for $115M, while ICM acquired Colwich for $3.15M.

**Transaction Highlights**

- On June 13, 2016, KAAPA was selected as the Stalking Horse bid for Ravenna plant
  - $115.0M or $1.28/gal
  - Confirmed as buyer post-auction
- To be approved by Missouri Bankruptcy Court on August 29, 2016
- Expected closing by September 30, 2016

**KAAPA Overview**

- Headquartered in Minden, NE
- Owns a 80 MGPPY plant in Minden, NE
- Owns a portion of 3 additional plants in MN, ND, OH through KE Holdings
- Post acquisition:
  - Owns all or a portion of 4 plants with total capacity of 302MGPPY

**Transaction Highlights**

- On August 22, 2016, ICM was the successful bidder on the Colwich Plant
  - $3.15M or $0.13/gal
    - Tops ACE’ Ethanol’s $3.0M Bid
- To be approved by Missouri Bankruptcy Court on August 29, 2016
- Expected closing by September 30, 2016

**ICM Overview**

- Headquartered in Colwich, KS
  - Operates a pilot plant in St. Joseph, MO
- Provides equipment and technology to ethanol plants
  - ICM technology plants produced 8.8BGPPY
- Operates plants on behalf of owners

## Ethanol Plant Acquirers (2009 – 2016)

8 buyers have bought 65% of plants and 78% of capacity since 2009. Only 30 buyers in 5 years.

### Top 8 Buyers

- **Flint Hills**
  - 5 Acquisitions in 2010 – 2014
  - 7 plants and 760 MGPY capacity
- **GPRE**
  - 8 Acquisitions in 2009 – 2016
  - 13 plants and 1,036 MGPY capacity
- **Valero**
  - 4 Acquisitions in 2009, 2010 and 2014
  - 12 plants and 1,220 MGPY capacity
- **Guardian Energy / KAAPA**
  - 4 plants and 394 MGPY capacity
- **CHS**
  - 2 Acquisitions in 2014 and 2015
  - 2 plants and 258 MGPY capacity
- **Pacific Ethanol**
  - 2 Acquisitions in 2010 and 2015
  - 5 plants and 335 MGPY capacity
- **Murphy Oil**
  - 2 Acquisitions in 2009 and 2010
  - 2 plants and 225 MGPY capacity
- **Big River**
  - 2 Acquisitions in 2009 and 2012
  - 2 plants and 155 MGPY capacity

### Single Acquisition Buyers

- Pennsylvania Grain Processing / 110 MGPY – 2012
- Global LP / 107 MGPY – 2013
- Central Farmers Co-Op / 100 MGPY – 2009
- POET / 90 MGPY – 2010
- Siem Kapital & North Atlantic Value\(^{(1)}\) / 87 MGPY – 2011
- Marathon Petroleum / 86 MGPY – 2013
- Future Fuels / 65 MGPY – 2013
- Tyton BioEnergy / 60 MGPY – 2014
- Ace Ethanol / 60 MGPY – 2013
- Aemetis / 55 MGPY – 2012
- Pratt Biofuel / 55 MGPY – 2012
- The Andersons / 55 MGPY – 2012
- Carbon Green / 50 MGPY – 2009
- REX / 50 MGPY – 2011
- Nebraska Corn Processing / 44 MGPY – 2009
- Palmer Energy / 40 MGPY – 2012
- Aventine / 38 MGPY – 2010
- Granite Falls / 37 MGPY – 2013
- ICM / 25 MGPY – 2016
- Gevo / 22 MGPY – 2010
- Green Biologics / 21 MGPY – 2014
- West Ventures / 18 MGPY – 2013

\(^{(1)}\) Going private transaction.
Ethanol Plant Bankruptcy Acquisitions

Since 2009-2013, valuations for ethanol plant acquisitions out of bankruptcy have averaged $0.71/gallon.