Proposed Ethanol Plant in Corunna Michigan

Meeting with City of Corunna - Economic Development

January 24, 2007 7:00 p.m.

Corunna High School Cafeteria
417 East King Street
Corunna, Michigan

Introductions

- Joe Schriner, Senior Process Engineer with E85, Inc.
- Degrees in Chemical Engineering, Biochemistry, & Chemistry
- Worked in Chemicals industry for 10 years
- Kansas farm boy
- Married with 2 children--9 & 11 years old

E85, Inc. Background

- Delaware corporation located in Kingston, WA
- Sterling Infotech Group (SIG) company
- Diversified global business conglomerate founded in 1988
- Interests in telecomm, high growth / mass consumption food & beverage industries
- President, C. Sivasankaran

E85, Inc. Background

- Pursuing specific investment opportunities in renewable energy, real estate, engineering
- Formed for this specific project
- 10 captive facilities in the next 2 years throughout the U.S.
- 100 million gallons per year per plant
- Co-produce an additional one to two billion gallons of ethanol
- Web site: www.e85.com

Vogelbusch Technology

- Founded in 1921
- Core expertise in process engineering for biotechnology
- 17 operating facilities throughout the U.S.
- 3 under construction
- >12 under design

Engineering & Construction

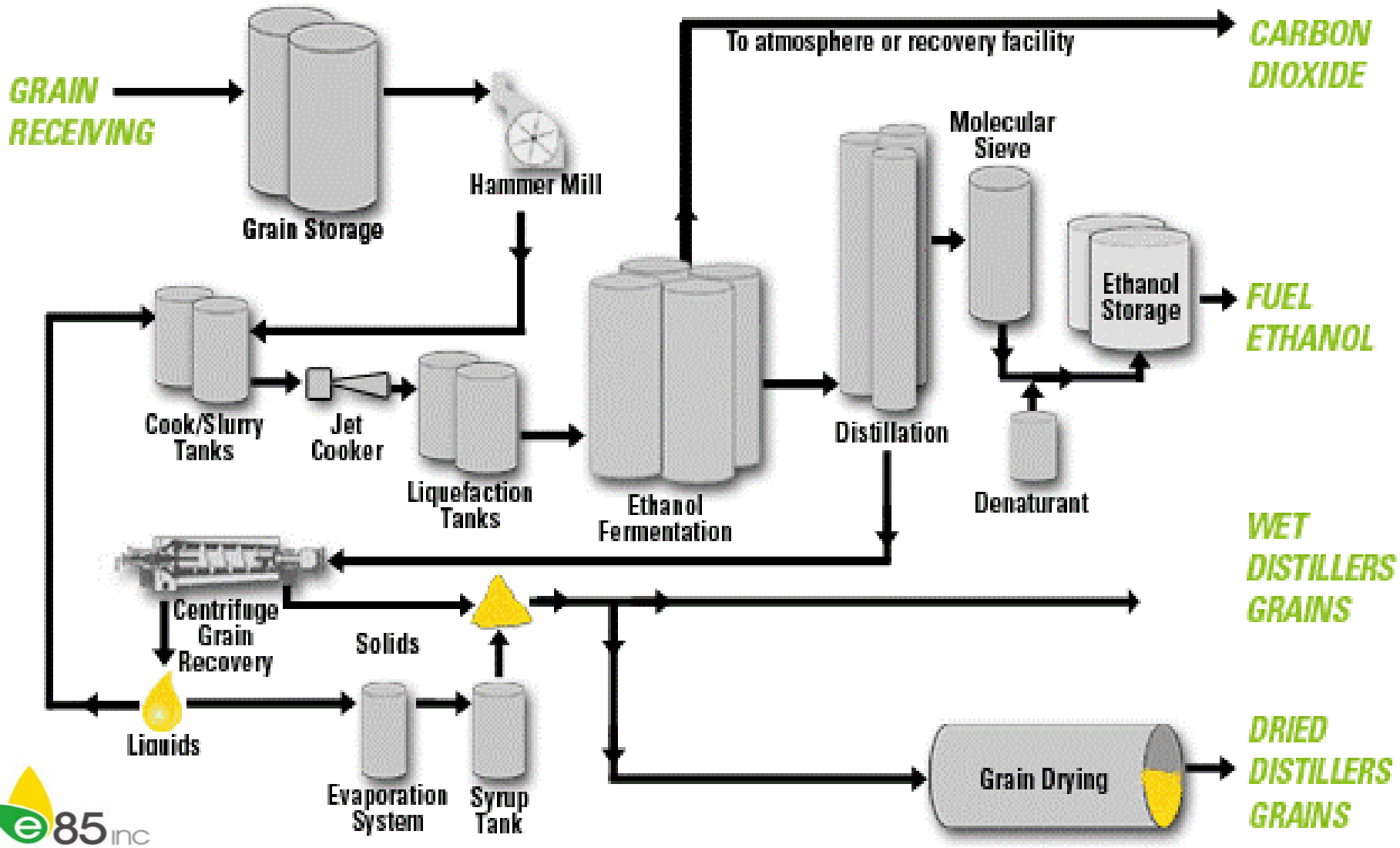
- Engineering: Fru-Con Corporation
- Construction & Construction Management: Fluor Corporation
- Utilize local, qualified vendors & construction personnel
- Approximately 150 construction personnel

Dry Corn-Milling Ethanol Plant
Example

Ethanol Production

The Dry Mill Process

Mouse over diagram for more information.



e85 inc

Area Description

- Located at intersection of Parameter Road and M-71
- Parcel approximately 130 acres
- Predominantly open field
- Rail America Rail line runs along southern boundary

Utilities

Utility	Service Provided By:
Water	Wells
Wastewater Treatment	City of Corunna
Electricity & Natural Gas	Consumers Energy
Rail	Rail America

Water Plant

Wastewater Plant

Materials in Use at Facility

- ~41MM bushels of corn per year
- ~30 rail cars of corn per day
- ~2.8 MM Lbs of enzymes per year
- ~1.7 MM gallons of water per day
- ~7.5 MM Lbs of Urea per year
- ~5.9 MM Lbs of Sulfuric Acid per year
- ~3.9 MM Lbs of Ammonia per year

Materials Produced at Facility

- ~110.3 MM gal of anhydrous ethanol / yr
- ~115.8 MM gal of denatured ethanol / yr
- ~11 rail cars of denatured ethanol
- ~384 M tons of DDGS / yr
- ~14 rail cars of DDGS / day
- ~360 gpm wastewater containing negligible COD (Boiler & cooling tower blowdown)

Employment

- 40 to 50 employees
- Upper tier technical qualifications
- Mechanical, Electrical, Instrumentation, Analytical, & Operations
- 2-3 Engineers
- Current national average for ethanol facility technician salaries: $18 to $25 per hour

Emissions Information

- To be a minor emitter:
  - Less than 100 tons of each criteria pollutant (VOC's, NOx, SO2, CO)
  - Less than 10.0 tons of any single HAP (Hazardous Air Pollutant), and 25 tons of combined HAPs

Emissions Components

- Particulates < 10 micron--48 tons
- Total Particulates--63.6 tons
- SO2--12.17 tons
- NOx--90.5 tons
- CO--91.4 tons
- Total Volatile Organic Compounds--98.8 tons

Comparative Air Emissions

- 7 average chainsaws emit as much pollution as a 100 MM gal / yr Ethanol plant / hr
- 11 average lawn mowers emit as much pollution as a 100 MM gal / yr Ethanol plant / hr
- Vehicles using a main thoroughfare during evening peak volume emit 50% more pollution than a 100 MM gal / yr Ethanol plant / hr
- A typical steel manufacturing process emits 100 times more pollution than a 100 MM gal / yr Ethanol plant / hr
- 1965 Chevy polluted more over its' lifetime than a modern 100 million gallon-per-year ethanol plant does annually.

Odors

- Environmental systems eliminate 98.8 % of organic compounds
- Tours of operating ethanol plants with City officials did not reveal any appreciable odors at the property line

Efficiency of Environmental Systems

- Filter bag houses--
  >99% efficient

- Cyclones—
  >90% efficient

Efficiency of Environmental Systems

- Scrubbers--
  >98.8% efficient

- Flare stack-->99%
  efficient

Efficiency of Environmental Systems

- Thermal oxidizer--
>98.8% efficient

Noise

- Noise levels at our property line are expected to be around 65 dB which is comparable to a typical home air conditioner
- Process does not require large noise-generating sources such as engines, turbines, etc.
- Most of the equipment will be housed in insulated buildings which will attenuate what noise is generated

Safety & Security

- Working with local fire & emergency response officials
- Develop a comprehensive response plan for any type of incident
- Contacting Department of Homeland Security to determine security guidelines

Ethanol & the Environment

- Ethanol lowers harmful carbon monoxide emissions by 30%
- Ethanol reduces carbon dioxide emissions by 27%
- Every 100 BTUs of energy used to produce ethanol (including planting, cultivating, harvesting, and processing) yield 167 BTUs of ethanol

How Ethanol Effects the Economy

Texas A&M study of an 80 MM gal / yr plant

- Income: $79 MM during construction $41 MM during operation
- Sales Tax: $2.4 MM during construction, $1.3 MM during operation
- 1,400 associated jobs over time
- Excess of $400 MM in revenues

Study conducted across a region of Texas such as the panhandle

How Ethanol Effects the Economy

- Consumers could save approximately $7.8 billion between 2002 and 2016 via reduced government farm payments
- Increased production and use of renewable fuels would create an additional $71 billion in household income over the next 15 years.

How Ethanol Effects the Economy

- In 2004, the ethanol industry supported the creation of more than 1476 jobs in all sectors of the US economy, boosting US household income by $4.5 billion
- Ethanol production is the third-largest use of U.S. corn, using nearly 16% in 2006
- Ethanol is produced from field corn fed to livestock, not sweet corn fed to humans

Ethanol Industry Facts

- One bushel of corn can produce at least 2.7 gallons of ethanol
- One acre of corn can produce 300 gallons of ethanol -- enough to fuel four cars for one year with a 10% ethanol-blend
- Ethanol production provides more than 200,000 U.S. jobs, spurring growth in many rural areas
- In 2005, over 4 billion gallons of ethanol were produced nationwide

Schedule

Pending successful site due diligence:

- Construction:

  Start - Mid 2007

  Complete - Mid 2008

- Commencement of Plant Operation in Mid to Late 2008

Questions