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Greater Ohio Ethanol, LLC is organized to build and operate ethanol production facilities in Ohio and surrounding states serving the ethanol demands of the US east coast market.



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FAQ

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What is ethanol?

Answer: 200 proof grain alcohol with a 5% denaturant (unleaded gasoline) added to prevent consumption and to avoid an alcohol tax being levied.



What can you make ethanol from?

Answer: Any starched based commodity, with corn being by far the most plentiful, practical, economical and locally available.



What is ethanol used for?

Answer: 50% of all ethanol is used as an oxygenate for reformulated gasoline consumed in areas of the country that require it. The other 50% is currently being used in many areas that do not require its use because of ethanol's octane enhancement (117 octane), fuel expansion characteristics, and federal tax incentives.

How many acres of land will be required to construct the facility?

Answer: The facility will set on 30 acres or less, but from a practical standpoint it will require at least 40-60 acres or more to allow for a buffer zone around the facility and for possible future expansion or companion businesses.

What will be the capital investment?

Answer: The physical structures will cost \$70+ million and total capital for all purposes will be \$90+ million per facility.

This number may increase if there is a decision to add on site grain storage beyond a 20 day supply (the industry norm). At the maximum, \$25 million of total equity capital will be needed. The balance of funding will be a combination of long term debt and tax free and taxable municipal bonds.

How many people will an ethanol plant employ?

Answer: 30+ full time employees to run the facility 24 hours per day 7 days per week. Production is scheduled for 350 days per year.

What would the annual insurance costs be?

Answer: Approximately \$150,000 per year

Are there any uninsurable risks?

Answer: Other than pure operational risks, none that we are currently aware of.

How long will it take to build the physical structure?

Answer: Approximately 12-14 months from ground breaking to the start up of ethanol production. The shortest construction time for a facility currently operating has been 9 months and 1 day.

Where will the corn you need come from?

Answer: A considerable portion will come from local producers and elevators but we could contract with national companies to source and schedule delivery of the corn. Daily needs will be approximately 55,000 bushels per day per facility. Total yearly corn consumption will exceed 20 million bushels. 300+ million bushels of corn is grown in an average year within a 60 mile radius around the proposed site.

Why build an ethanol plant now?

Answer: The timing is right. Ethanol prices are increasing, the price and supply of corn are stable and MTBE is being phased out, making the East Coast the largest market in the U.S. Also, the Federal Government and State Government are offering incentives. Profitability is very good and demand is projected to double in the next 4-5 years.

There has never been a more opportune or profitable time to construct an ethanol facility in Ohio.

Is there any odor from the ethanol making process?

Answer: There is a slight odor from the drying process similar to that of a brewery. You could compare it to existing elevators in the community that dry corn at harvest time. The bio-scrubber equipment described in question 14 eliminates most odor from the dryers.

Are there any air pollution issues to consider?

Answer: Yes and those issues are all dealt with in the EPA permitting process. Bio-scrubbers will eliminate 99.5% of all air born pollutants are required by the EPA. Older facilities are being required to update to meet the new clean air requirements. Small older facilities are struggling to absorb the costs of the new pollution controls mandated by the EPA.

Are there any water pollution issues to consider?

Answer: Yes. Again this is part of the permitting process. All water used will be pretreated and discharged to the city sewer system in Lima. Most ethanol plant designers are adopting technology which comes close to zero-discharge for water that has come in contact with the alcohol fermentation process.

How much water will the facility use?

Answer: 3.85 gallons of water for each gallon of ethanol produced or about 220 million gallons per year. At the Lima facility, all water will be purchased from the City of Lima. Raw water from the reservoirs will be used in the ethanol process at a substantial savings over treated water.

Are there any adverse water discharge issues?

Answer: No, all water will be pre-treated before discharge. We will discharge to the city sewer systems.

Where will we sell the ethanol?

Answer: Ethanol could be sold to any jobber or blender but will probably all be sold to regional blenders such as Marathon, Citgo, BP, Premcor, and Sunoco. Rack price for November 15, 2004 in Ohio stands at \$2.05 per gallon.

What is reformulated gasoline?

Answer: Regular gasoline that is blended with an oxygenate such as ethanol or MTBE. Most metropolitan areas have an oxygenated fuel requirement and the fuel demand in these required areas is increasing annually. 50% of all ethanol is used because of the economic benefits, not because it is required.

How is the ethanol transported to the consumer?

Answer: Most that is consumed in Ohio will be delivered directly to the blender by over the road tanker trucks. The ethanol sold to the east coast will be shipped by rail, which is much more cost effective as distance increases.

Which states currently produce the most ethanol?

Answer: 85% of the total is produced in Illinois, South Dakota, Nebraska, Minnesota, and Iowa. Because ethanol was not mandated in the past, a supply push model focused on the cheapest source of inputs. This is changing today as demand increases significantly in mandated markets. The industry can be characterized as a demand pull model with focus placed on location to end user markets.

Which states currently use the most ethanol?

Answer: California, New York, Ohio, Illinois, and Minnesota

How much ethanol is produced in the US now?

Answer: As of the end of October 2004, the production capacity was 3.3 billion gallons annually. There is currently 300+ million gallons of capacity under construction.

How many different ethanol production facilities are there currently?

Answer: There are currently 78 different operating facilities and for the most part are controlled by different entities. There are currently 8 facilities under construction with a combined capacity of nearly 300+ million gallons. After completion of the 8 under construction facilities annual capacity will surpass 3.7 billion gallons.

Are the oil companies readily accepting ethanol or are they being forced to use ethanol instead of MTBE?

Answer: The oil companies that are currently using ethanol are very satisfied with the overall safety, economy, and effectiveness of ethanol. Most oil companies have already accepted ethanol. As an example, Marathon Oil Company is projected to buy 460 million gallons in 2004 and is only required to use 55 million gallons in its reformulated gas market.

Will the community be expected to help with incentives?

Answer: Yes, we will apply for tax abatement. Typically, the local community will fund infrastructure type items such as roads. This is currently being pursued.

Has the State of Ohio offered any incentives for building an ethanol facility?

Answer: Yes The Ohio Department of Development has offered a complete package of incentives to Greater Ohio Ethanol including a \$5,000,000 direct low interest loan, \$30,000,000 tax free municipal bonds, \$1,365,000 low interest loan to the City of Lima, \$250,000 grant for infrastructure, and other tax credits and incentives.

Has the federal government offered any incentives for building an ethanol facility?

Answer: Yes. Each 25,000,000+ gallon facility will be eligible for a one time \$7,500,000 grant from the Commodity Credit Corp. to be used in the first year of operation. Each facility can also receive additional funding by increasing production above the previous years output. EDA grants are being pursued to assist with the needed infrastructure.

How long does the permitting process take from start to issuance?

Answer: Approximately 6 months. The process will be shorter for subsequent plants because duplication will speed up the process.

What makes you think anyone will buy the ethanol you produce?

Answer: Currently the State of Ohio is projected to consume over 305 million gallons of ethanol without benefit of any in-state production facilities. This makes Ohio the #3 ethanol consuming state in the U.S. Ohio does not currently produce any ethanol. The emerging east coast area will

also become a major market with the MTBE phase out in 2004 and 2005. Ohio is in the best possible position to capitalize on the east coast market because of our geographic proximity and plentiful supply of corn, the eastern portion of the corn belt ending about midway through the state.

How much truck traffic will the facility create?

Answer: Approximately 400 semi-truck loads of corn in per week and 140 loads of ethanol and 140 loads of DDG's out per week. Rail service is expected to reduce total truck volume by over 50%.

What zoning restrictions apply to the construction?

Answer: Zoning will depend on the location chosen. Industrial zoning will be minimally required. Our selected site in Allen County is already zoned industrial II. We will be required to have a conditional use determination.

How much electricity will the facility use?

Answer. Approximately 57 million kw per year at a total cost of about 2.4 million dollars. This is roughly the amount of electricity used by 1,600 homes.

How much natural gas will the facility use?

Answer: Approximately 1.85 million MMBTU for an annual cost of about \$9.7 million, based on current natural gas prices. Prices have been significantly higher in the last 12 months. This input will be hedged. Cash flow numbers use \$ 7 million per year.

Why must some states and cities use reformulated gasoline?

Answer: They are mandated by the federal clean air standards act to use oxygenated gasoline to help reduce air pollution. By adding an oxygenate tailpipe emissions are reduced by over 30%.

What is MTBE?

Answer: Methyl Tertiary Butyl Ether (MTBE) C5 H12 O. It is made from petroleum based fossil fuel.

Why are states banning the use of MTBE?

Answer: MTBE has been mentioned as a possible cause of cancer and it has also been found to leach into ground water. The federal and state governments have passed legislation to encourage the use of ethanol. To date 20 states have legislation to ban MTBE usage.

Which states will need the most ethanol when MTBE is phased out?

Answer: California will need 1.2 billion gallons when MTBE is completely phased out. The Northeastern US will need 1.6 billion gallons when MTBE is completely phased out. (New York, Boston, Philadelphia, etc.) In the State of Ohio, if all gasoline vehicles used 10% ethanol, it would translate into a market size of well over 500 million gallons.

Is it really possible to create enough ethanol to replace MTBE?

Answer: Yes. It will be a huge undertaking but we can easily produce enough over time. We need to get the funding secured and the new facilities built in order to meet demand. All existing facilities are running at or near capacity.

Do the automobile companies' warranties permit the use of ethanol?

Answer: Yes. All domestic and foreign car manufacturers' warranties for currently selling cars in the United States permit the use of a 10% ethanol blend of fuel, many permit much higher percentages and a significant percentage are E-85 vehicles. The total number of E-85 vehicles on the road today is over 4,000,000.

What is the octane rating of ethanol?

Answer: 115- 117

If ethanol is needed for reformulated gasoline then why aren't the oil companies building ethanol plants?

Answer: The main problem for the oil companies is that the ethanol business requires many relatively small plants in strategically placed areas where the corn is available. A successful ethanol facility will require local support, which will be easier to secure with local ownership than an oil company trying to develop. Until recently the oil companies relied on MTBE, a product that they or subsidiaries

produced from fossil fuels. In addition, oil companies have experienced difficulties in the past few years and many are being consolidated. Each oil company has its own issues to deal with. The total fuel consumed in the U.S. is over 300 billion gallons. Ethanol makes up a little over 1% of the total U.S. market. The oil companies already have 99% market share and view ethanol as strictly an additive or octane enhancer.

Is there really enough corn in Ohio to make the proposed ethanol?

Answer: On an average year Ohio will produce nearly 500 million bushels of corn. Therefore, each facility will use about 4% of an average crop. As more facilities are added and new markets are created, farmers will shift acres away from soybeans, wheat, or hay and into corn to fill the new demand. Currently 250 million bushels or 50% of Ohio's corn is exported out of Ohio completely unprocessed. This is the equivalent amount of corn to fuel twelve 54 million gallon ethanol facilities.

What happens if there is a drought? Will we run out of corn?

Answer: No. Ohio had a drought in 2002 but the country as a whole still produced over 9+ billion bushels of corn. One of the numerous reasons for using a National Risk Manager to source the corn will be so they can use the entire corn belt for supplies instead of just Ohio in a year like 2002. Nationwide corn production in 2004 is estimated to be over 11.7 billion bushels, an all time record.

What happens if the government changes the rules so that reformulated gasoline is no longer needed?

Answer: Not likely to happen. If anything the clean air standards are going to get tougher instead of being repealed. Under current law and all proposed legislation, states are not allowed to implement any program where air quality would "backslide" or deteriorate. If passed, the Renewable Fuels for Energy Security Act would require 3% of highway fuel come from renewable sources by 2011 and increasing to 5% by 2016. This would translate into 9 billion gallons by 2011 and 16 billion gallons by 2016. This amount of ethanol would require almost 6 billion bushels of corn, nearly 5 times what is processed into ethanol now. The state of California, Atlanta and New Orleans have applied and been rejected for a waiver from the EPA.

The President, during the 2003 State of the Union Address, stated that cars would be using fuel cells in

the future. Won't the use of fuel cells make ethanol obsolete?

Answer: Actually ethanol is a perfect transitional fuel since it can also be reformed into hydrogen for fueling fuel cell cars.

How many dollars of property tax and personal property tax would this facility pay annually?

Answer: Approximately \$250,000 per year. If Ohio clean air bonds are secured for debt financing, we will automatically receive a 15 year tax abatement.

Does ethanol really help keep the air clean?

Answer: Yes. By blending up to 10% ethanol with regular gasoline harmful tailpipe emissions are reduced by over 30%. The added 10% ethanol also raises the octane rating 3.0 points and therefore increases the selling price per gallon. Ethanol is 30+% oxygen and gasoline is 0% oxygen, the blending raises the oxygen level in the finished product resulting in more complete burning and thus reducing emissions.

Who is the largest producer of ethanol now?

Answer: Archer Daniels Midland (ADM) is by far the largest producer in the US. They own several facilities and when combined they are easily the single largest producer, they currently own approximately 30% of the industry's current capacity.

Why build many small plants rather than a few big plants?

Answer: The main reason for many small facilities is so a relatively high percentage of the corn crop could be produced within a 50 – 60 mile radius of the plant so as to not drive up area corn prices or creating localized shortages. Also, permitting of large scale facilities is very difficult.

What if we find out that ethanol is bad for the environment?

Answer: Grain alcohol has been around for a very long time, so if there were any harmful effects on the environment they more than likely would have discovered them by now. Grain alcohol has been made for 100'S of years for human consumption. Ethanol is grain alcohol with a denaturant added. Federal law requires the ethanol

producer to add poison (unleaded gasoline) to the ethanol in order to prohibit human consumption.

Can the ethanol industry capitalize on the pending buying and selling of carbon credits?

Answer: Under the current proposal an ethanol plant could possibly qualify for payments under the carbon credit proposal.

What is the market for Bio-diesel and how could it impact the ethanol industry?

Answer: Bio-diesel works a lot like reformulated gasoline. This would be a good companion facility to an ethanol plant. Bio-diesel has the same effect in reducing exhaust emissions in diesel engines. Bio-Diesel is diesel fuel blended with 2% soybean oil and a proprietary additive.

What is DDGS?

Answer: Dried Distillers' Grains with solubles (DDGS) is a high protein by-product of the Ethanol production process commonly used to supplement animal feed. There are approximately 19 Pounds of DDGS produced per bushel of processed corn.

Where will we sell the DDG?

Answer: Local large dairy farms will use a considerable amount but a significant percentage will eventually be sent by rail to the southeast to help supplement their need for large amounts of corn and soybean meal. Other markets are the large dairy herds in Pennsylvania and New York. DDG is approximately 28% protein and usually sells for 125% the price of corn on a per pound basis.

The production of ethanol would appear to be a simple process. Is there anything that will make this process more efficient in the future?

Answer: Yes. There are new enzymes being developed which will extract more gallons of ethanol from each bushel of corn. There are also several seed companies working on developing high starch corn and high fermentable varieties that will produce more ethanol per bushel. Greater Ohio Ethanol intends to utilize both of these techniques to enhance profitability. Either one of these developments will greatly impact the profitability of the ethanol industry. This would give producers the opportunity to grow under contract for a specific market. Also, over the past decade the industry's processing efficiency has increased from

approximately 2.4 gallons per bushel to today's 2.8 gallons per bushel. It is likely to reach 3.0 gallons per bushel in the next few years. 2.67 (average of the last ten years and guaranteed by the technology provider) was used in all financials models.

I've heard that ethanol is really just needed for southern California. Why should we build plants in Ohio when other states closer to California have even more corn that could be used to produce ethanol?

Answer: The truth is there will be more total gallons needed in the Northeastern U.S. than any other single area in the country. This plant's geographical location to the northeast will be a huge transportation advantage.

Which one of the five competing technologies has GOE chosen?

Answer: We believe the Benchmark technology that we have chosen is the superior technology on the market today. Benchmark greatly reduces the cooking and drying temperatures to better preserve the protein digestibility of the distillers grain. With this process it will enable us to promote our product to higher protein markets such as poultry, swine, pets, fish, and eventually humans. This technology is patented and proprietary only to Benchmark and will be licensed to Greater Ohio Ethanol.

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