

Confidential

# **Ethanol Refinery - Maryland**

## *Executive Summary*

Prepared by:

**The McLean Group, LLC  
1660 International Drive, Suite 450  
McLean, VA 22102**

**June 2006**

---

---

***CONTACTS***

Any inquiries or communications relating to the Company should be directed to The McLean Group. No personnel of the Company should be contacted directly under any circumstances.

Please direct all inquiries to:

---

**Enrique C. Brito**  
Managing Director  
ebrito@mcleanllc.com  
703-827-5093

---

**The McLean Group, LLC**  
1660 International Drive, Suite 450  
McLean, VA 22102  
703-827-0200  
703-827-0175 (fax)

---

## **EXECUTIVE SUMMARY**

---

### ***INTRODUCTION***

The Company, a Delaware corporation currently headquartered in Washington DC, was formed for the purpose of **becoming the largest and the cleanest manufacturer of fuel ethanol on the East Coast of the United States.**

The site for the proposed ethanol plant is an existing heavy industrial site of about 60 acres located at a busy intersection of interstate roads, deep water waterways, and railroads.

The state of Maryland enthusiastically supports the proposed facility, which would provide benefits to local farmer communities, create additional jobs and tax revenues on municipal and state levels, and bring substantial positive economic impact for the region.

Nameplate capacity of the plant's first production line is 100 million gallons per year (MGY) of denatured fuel ethanol conforming to ASTM standards. Following the completion of the first production line in 2007, the Company's plant has the additional expansion capacity up to 300 MGY of fuel ethanol using the same site and the same infrastructure.

The Company's competitive advantage is based on developing a model for a 'destination' plant where corn is transported to the ethanol plant which is designed in close proximity to the users for its products. Such 'destination' model is viewed by the Company's management team as making more economic sense and leading to a broad set of important benefits, including regional diversification of production, reduced overall transportation costs, and spread of economic benefits.

The management team has operating and financial experience in the industry. Its experience ranges from start-ups to multi-billion dollar operations.

### ***BUSINESS DEFINITION***

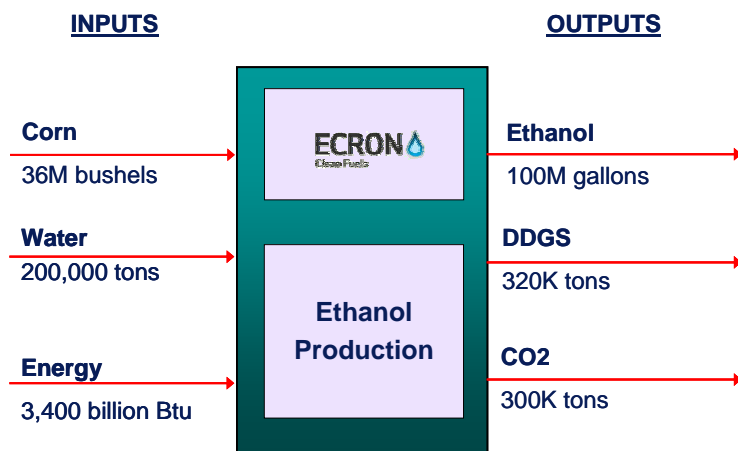
**Company's Mission** – The Company's mission is to produce environmentally clean renewable fuels by using domestic agricultural crops to replace imported oil, decrease greenhouse effects and generate local jobs.

The Company's initial objective is to commission a 100 million gallons per year capacity ethanol manufacturing plant with a subsequent expansion to produce 300 million gallons of ethanol per year. That expansion will make The Company the largest and cleanest ethanol manufacturing plant not only in the United States but in the world.

**Inputs and Outputs** – There are two major inputs to the plant operations: corn (62% of the cost) and energy (24% of the cost). One of the largest grain operators in the U.S. was selected to originate all corn for the facility while a nearby steel plant has agreed to provide its excess energy in the form of steam.

There are three major outputs from the plant's operations: fuel ethanol (79% of revenues), distiller grains (18% of revenues), and liquefied carbon dioxide (4% of revenues). For the commercialization of its products, the Company has secured preliminary marketing agreements with leading marketing companies in the ethanol, distiller grains and carbon dioxide markets.

**Figure 1.** Ethanol Production – Inputs / Outputs



**Plant Construction** – The construction of the plant will take up to 12 months and is expected to be completed by late 2007. The Company has secured preliminary agreements for the construction of both the ethanol plant and the liquefied carbon dioxide plant.

### ***INVESTMENT HIGHLIGHTS***

**Substantial Revenue and EBITDA Growth** – The Company intends to commission three production lines of 100 million gallons per year each during the first four years of operations. Financial projections under its most probable scenario show that by the end of year 4 (2011), the Company will be generating revenues of \$582.3 million with an associated EBITDA in excess of \$218 million. Annual compounded growth rates for revenues and EBITDA over this period are expected to be 19% and 12% respectively.

**Creation of Low-Cost Production Capacity** – By transporting corn to an ethanol plant that is situated close to the users in the Company's target markets, the Company will be able to capitalize on a broad set of benefits including reduced overall transportation costs, regional diversification of production and spread of economic impact at the local and regional level. In addition, using available steam as an energy source not only lowers production costs, but also makes the Company the cleanest ethanol manufacturing plants in the U.S.

**Well Positioned to Take Advantage of Expected Industry Growth** – Under the Renewable Fuels Standards (RFS), usage of renewable fuels (ethanol, biodiesel or any other fuel produced from biomass) in the U.S. will increase to 7.5 billion gallons by 2012. Given current industry dynamics, experts consider this benchmark a floor rather than a ceiling.

---

**Creation and Expansion of Marketing Alliances** – The Company has carefully evaluated and is currently negotiating strategic agreements with the leading marketing firms in each of its three target markets—ethanol, distiller grains and carbon dioxide. The Company’s objective is to capitalize on the marketing firm’s market position and extensive distribution network in the Mid-Atlantic to increase market presence, revenues and profitability. As the scale of marketing alliances increases, the Company expects to increase its level of production capacity, efficiency and customer service.

**Positioned to Capitalize on Current and Changing Regulation** – Through expansion of marketing alliances and continued investment in production capacity, the Company will be well positioned to take advantage of the current and changing regulatory environment in the ethanol industry. Most notably among these changes are the phase-out of MTBE as a gasoline oxygenate currently banned in 26 states and the Energy Policy Act of 2005 which created the RFS which in turn is expected to increase demand for ethanol and other renewable fuels.

**Research into Cellulosic Ethanol** – Current fuel ethanol production in the U.S. is almost exclusively based on the fermentation of corn starch. On the other hand, cellulosic plant biomass represents an untapped potential feedstock for the generation of fuel ethanol from renewable resources. Recognizing the potential that cellulosic ethanol represents, the Company is currently exploring alliances with leading research organization in renewable fuels to develop an ethanol production program based on cellulosic biomass.

## ***THE OFFERING***

The total project cost is \$166 million dollars, which the company plans to raise by selling some of its equity and raising the balance as debt; the exact proportions will be determined based on specific terms of the investment proposals that the Company will be able to secure.

Funding requirements for the first five years are expected to be \$372.3M categorized as follows:

**External**    Equity:            \$66.4M            Debt: \$99.6M

**Internal**    Cash Flows:    \$206.3M

### **Main Assumptions**

- Only one round of external equity funding (\$66.4M) is expected in the first five years. Investment will be used to finance the construction of the ethanol and the liquefied carbon dioxide plant as well as a grain handling facility, railroad switchyard, pier repairs, and initial working capital.
- No dilution of equity positions is expected after the initial investment
- Debt Financing:            Terms = 10 years,            Rate: prime plus 200 b.p.

## Sources and Uses of Investors' Funds

Sources			Uses		
Investor's Equity	\$ 66,400,000	40%	Ethanol Plant	\$ 120,000,000	72%
Debt Financing	\$ 99,600,000	60%	CO2 Plant	\$ 11,000,000	7%
	\$ 166,000,000	100%	Working Capital	\$ 20,000,000	12%
			Grain Storage	\$ 10,000,000	6%
			Rail & Pier	\$ 5,000,000	3%
				\$ 166,000,000	100%

**Valuation and Exit Strategy** – The proposed exit strategy for equity investors will be via an initial public offering (IPO). The Company's management currently estimates the exit event to be three or four years after the project start. All financial systems, controls and reporting will be prepared in line with public company requirements and will be established accordingly from the beginning of the Company's operations.

	Worst Case	Most Probable	Best Case
<b>M&amp;A Scenario</b> (exit = 4th year of operations)			
Projected Revenue	\$ 772,235,424	\$ 849,235,424	\$ 880,735,424
Projected EBITDA	\$ 229,814,886	\$ 334,106,762	\$ 375,078,868
Expected EBITDA Multiple	9.2X	9.2X	9.2X
Future Value (at exit)	\$ 2,114,296,954	\$ 3,073,782,213	\$ 3,450,725,584
Required Annual Return	55.0%	55.0%	55.0%
Present Value of Equity	\$ 294,831,893	\$ 402,253,780	\$ 444,386,318
Probability of Outcome	15%	60%	25%
<b>Expected Present Value of Equity (M&amp;A)</b>	<b>\$ 396,673,631</b>	Probability 30%	
<b>IPO Scenario</b> (exit = 4th year of operations)			
Projected Revenue	\$ 772,235,424	\$ 849,235,424	\$ 880,735,424
Projected Net Income	\$ 119,312,411	\$ 186,288,828	\$ 211,752,673
Expected P/E	20.3X	20.3X	20.3X
Future Value (at exit)	\$ 2,422,041,950	\$ 3,781,663,207	\$ 4,298,579,253
Required Annual Return	55.0%	55.0%	55.0%
Present Value of Equity	\$ 336,186,974	\$ 488,333,735	\$ 546,111,605
Probability of Outcome	15%	60%	25%
<b>Expected Present Value of Equity (IPO)</b>	<b>\$ 479,956,188</b>	Probability 70%	
<b>Expected Present Value of Equity</b>	<b>\$ 454,971,421</b>		

## MANAGEMENT TEAM

The executive management team is comprised of the following experienced industry executives:

### Chief Executive Officer

- Company co-founder.
- Co-founded a company focused on the manufacturing and distribution of advanced electric motors.

- 
- 
- Prominent Russian scientist who spent over 10 years working with various Russian organizations.
  - BS, MS and Ph.D in electric and electronics engineering.

### **President**

- Company co-founder.
- Co-founded a \$1 billion import-export company in Russia with operations in Europe, USA, and Latin America.
- Graduate of the Leningrad Merchant Marine Academy.

### **Chief Financial Officer**

- Over 20 years in international energy working for large multinational oil companies.
- Served as the first-ever Chief Financial Officer for a \$4BN “brown-field” liquefied natural gas project in Qatar.
- BA and MBA degrees from Tulane University.
- Certified Public Accountant.

### **Vice-President, Operations**

- Co-founded an energy company focused on cogeneration plants.
- Served as Vice-President of Sales for an energy management company.
- BA and MA degrees in administration from the Missouri State University.

### **Vice-President, Business Development**

- Over 17 years of experience in energy distribution and infrastructure.
- Experience in international infrastructure finance and asset management.
- Held various positions in unregulated utility holding company subsidiaries, independent power organizations and management consulting.
- M.A. in Economics, Concentration in Finance, from the Virginia Polytechnic Institute & State University and a B.A. in International Studies, Concentration in Economics, George Mason University.
- Project management certification from Villanova University.

### **Plant General Manager**

- Founded a financing intermediary in the alternative energy sector.
- Current operations consultant for an ethanol plant in Lexington.
- Started and operated three technology companies.
- Former consultant to on the design and construction of two \$500 million gas neutralization facilities for the EPA.
- Graduate of Towson State University, Catholic University and is active in the Villa Julie forensics accounting graduate program.

## Executive Management

			Ethanol Production	Plant Operations	Distribution & Logistics	Marketing & Sales	IT Systems	Business Development	Financial Accounting & Reporting	Human Resources	Training	Communications & Media	Gov Policy & Regulation	Capital Formation	M & A Transactions	Capital Markets	Legal		
Chief Executive Officer			✓	✓	☠	☠	✓	☠	☠	✓	✓	☠	✓	☠	✓	☠	✓	☠	☠
President			☠	☠	☠	☠	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VP Operations	✓	☠	✓	☠	☠	☠	✓	✓	☠	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
VP Business Development			✓	✓	✓	☠	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chief Financial Officer		✓	✓	✓	✓	✓	☠	☠	✓	☠	✓	☠	☠	☠	☠	☠	☠	☠	☠
Plant General Manager	☠	☠	✓	✓	☠	☠	✓	✓	☠	✓	✓	☠	✓	☠	✓	☠	✓	☠	✓
<b>Total</b>																			
Experienced	✓	1	1	4	4	2	1	3	3	3	3	4	2	3	1	2			
Highly Expert	☠	1	2	1	2	2	3	1	2	3	1	1	2	2	3	2			

## FINANCIAL PROJECTIONS

As shown below, revenues are expected to grow to \$849 million by the end of year fourth with an associated EBITDA of \$334 million (39% margin).

INCOME STATEMENT PROJECTIONS	MOST PROBABLE SCENARIO					Five Year Total
	Construction	1	2	3	4	
Revenue	\$0	\$290,262,986	\$306,575,618	\$581,654,152	\$849,235,424	\$2,027,728,180
Cost of Revenues	\$2,457,646	\$153,044,885	\$177,634,836	\$352,285,219	\$536,293,061	\$1,221,715,647
Gross Profit	\$0	\$290,262,986	\$306,575,618	\$581,654,152	\$849,235,424	\$2,027,728,180
EBITDA	(\$4,750,959)	\$143,718,520	\$139,192,745	\$247,023,409	\$334,106,762	\$859,290,478
Net Income	(\$4,750,959)	\$76,203,232	\$72,153,147	\$132,799,041	\$186,288,828	\$462,693,288

## Main Assumptions

- Total nameplate capacity comprises three production lines of 100 MGY each: Line 1 becomes operational just after the plant's construction in 2007, Line 2 becomes operational during the third year (2009) and Line 3 which becomes operational during the fourth year (2010).
- Overall, about 50 full-time employees working in shifts will support full operations and maintenance of both the ethanol and the liquefied carbon dioxide operations.
- Typical inventories at the plant include: corn (10 days), yeast and process materials (10 days), fuel ethanol (14 days), distiller grains (14 days) and liquefied carbon dioxide (5 days).



- 
- For the prices of inputs used in the financial projections, the Company relied on official U.S. government forecast models and data from the U.S. Department of Energy - Annual Energy Outlook 2006 (AEO2006) and U.S. Department of Agriculture – USDA Agricultural Baseline Projections to 2015 (USDA2006).

## ***MARKET OPPORTUNITY***

**Growth Drivers** – The ethanol market is being driven by several broad forces most notably the increasing price of crude oil, national security issues and environmental concerns. Specific measures mandated by the U.S. government to deal with these issues include the passage of the Renewable Fuels Standards in 2005 and the phase-out of MTBE (a gasoline oxygenate shown to contaminate groundwater).

- The Energy Bill signed in 2005 sets forth minimum requirements for renewable fuel usage in the U.S. through 2012 and serves as a strong indicator of the U.S. government’s support of the ethanol industry. In essence, the Energy Bill created a floor from which the ethanol industry can continue to grow by requiring refiners to utilize an increasing percentage of renewable fuels (ethanol and biodiesel) in their motor fuel mix. The program, which began in 2006, ramps up from about 700 million gallons per year to 7.5 billion gallons by 2012.
- Similarly, the phase-out of MTBE in an increasing number of states is also fueling the growth of the ethanol industry. In 2004, California became the first state to ban the use of MTBE. Later on, the New York legislature followed California’s lead and also banned MTBE, as did 24 other states. There are still 2 billion gallons of MTBE that are currently being used annually across the country and ethanol continues to fill the void that is being caused by the elimination of MTBE.

**Inadequacy of the Existing Ethanol Industry** – Despite the accelerating demand for ethanol, the existing industry is ill configured to capitalize on it. Currently, the industry consists of 96 plants nationwide, with an additional 34 plants under construction. The bulk of the industry is represented by single-facility independent owners, typically farm co-operatives (with the exception of top five players which represent 45% of the industry’s capacity), who developed their plants as a way to dispose of their own corn and because of state incentives developed to support them. This fragmentation has resulted in an industry that is largely unsophisticated, with virtually no points of product or services differentiation.

**Industry Trends** – Other market dynamics promoting the expansion of the industry include:

- The increased usage of renewable fuels has the potential to significantly change the energy landscape in the U.S. In addition, international efforts are under way to meet greenhouse gas emissions standards required by the Kyoto protocol.
- Ethanol profitability should remain solid with the Energy Information Agency’s (EIA) long-term crude oil forecast of \$50 per barrel.
- Increased use of ethanol as primary fuel in E-85 formulations for Flexible Fuel Vehicles.

- 
- Brazil has become the model concerning ethanol production and usage with 20% of its entire transport fuel market coming from ethanol, versus a global average of just 1%.
  - Concerns over gasoline prices and energy security.

**Feasibility Study** - A feasibility study completed by Informa Economics in May 2006 on behalf of the U.S. Department of Energy shows that an ethanol manufacturing facility on the eastern shore in Maryland would be expected to earn a substantial return on investment. The study points out that although corn costs for a plant located in Maryland would be higher than for facilities in the Corn Belt, they would be offset by the closer proximity to ethanol destination markets, higher DDGS prices and the ability to capture and sell carbon dioxide. In addition, the facility is an enterprise zone and is eligible to receive income tax credits of up to \$5.4 million.

## ***SALES AND CUSTOMERS***

target markets are local Mid-Atlantic markets for ethanol, distiller grains and carbon dioxide which include Philadelphia, Baltimore, Washington DC, southern Pennsylvania, Northern Virginia, and most of Maryland. In these markets, the Company will be the only producer of ethanol and distiller grains with a strong market demand for these products.

- **Ethanol** – The Company’s customers for ethanol are predominantly refineries and mid-stream oil industry participants such as blenders, distributors, finished the Company’s products terminals, and larger down-stream operators.
- **Distiller Grains** – For distiller grains, customers include cattle and dairy farm operators, hogs and swine growers, and the poultry industry which are heavily concentrated on the east shores in the Delaware and Maryland peninsula region. Potential customers include finished animal food processors and export markets to include the European Union and Asian markets.
- **Carbon Dioxide** – The Company’s carbon dioxide customers are mostly large gas manufacturing companies, gas wholesale and distribution companies, and end users predominantly from the food and drinks industry. Currently, the East Coast and more particularly the Baltimore area, are short of carbon dioxide with more than 250,000 tons brought into the region annually from as far as Canada.

**Additional Market Opportunities** - There are clear growing trends not only in gasoline blending markets for ethanol, but also in the E-85 fuel market. E-85 is a fuel consisting predominantly of ethanol (85% with seasonal variations) and small amount of gasoline mainly to address cold-starting issues. There are currently more than 6 million Flexible Fuel Vehicles cars on the road with more than 1 million added annually

## ***TECHNOLOGY***

Ethanol is a grain alcohol that can be burned cleanly as a high-octane fuel. It is used as oxygenate in gasoline formulations to create a cleaner-burning, more efficient fuel. Typically, ethanol is blended with gasoline in a formulation consisting of 10% ethanol and 90% gasoline

---

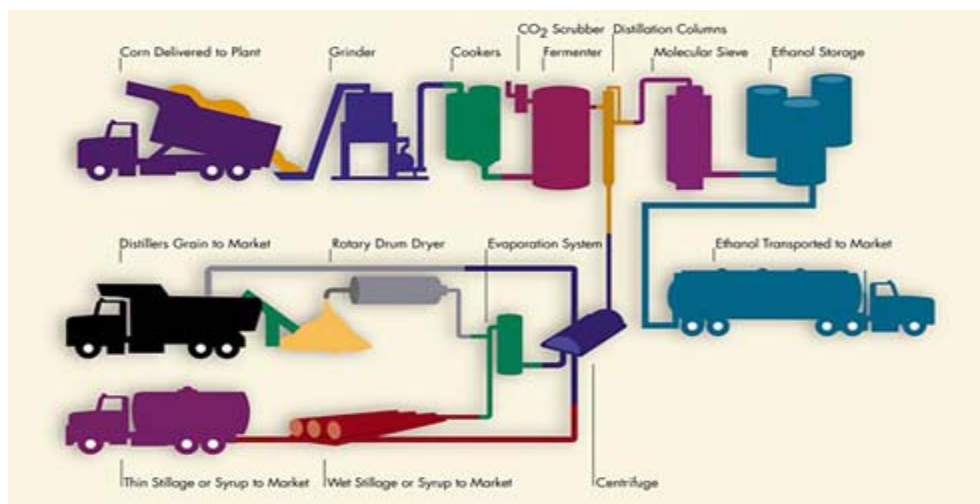
(known as E-10). This should make the majority of the increased demand resulting from the Energy Bill stipulations. However, ethanol is increasingly being used in E-85 formulations (85% ethanol and 15% gasoline) for use in Flexible Fuel Vehicles which are currently being offered by most major automotive manufacturers.

Ethanol can be produced through two processing methods: wet corn milling and dry corn milling. The main difference between the two is the initial treatment of the grain. About 75% of ethanol production is done through the dry corn milling process. The Company's plant will use the dry milling method to produce ethanol and its co-products, distiller grains and carbon dioxide.

---

**Figure 2.** Dry Corn Milling Process

---



Source: Renewable Fuel Association

In dry corn milling, the entire corn kernel or other starchy grain is first grounded into flour (“meal”) which is then slurried with water to form a “mash.” The mash is then fermented and then distilled where the ethanol is separated from the remaining “stillage.” The ethanol is concentrated to 200 proof using distillation and dehydration and then blended with about 5% denaturant (such as natural gasoline to render it undrinkable) and thus not subject to beverage alcohol tax. The course grain in the stillage is then separated from the solubles in a centrifuge. The solubles are concentrated by evaporation resulting in Condensed Distillers Solubles (CDS) while that course grain is dried to produce Dried Distillers Grains with Solubles (DDGS). The carbon dioxide released during fermentation is captured and sold for use in carbonated drinks and in the manufacturing of dry ice.

### ***OPERATIONS OVERVIEW***

The site selected for the plant construction on the Maryland's eastern shore comprises approximately 60 acres of land with heavy industrial zoning having immediate access to interstate I-695, railroad, and waterways for barges and vessels. There is an option for a 99-year term lease and an initial annual rate of \$22,000 per acre with a 3% annual escalation.

---

Preliminary designs of both the ethanol plant and the carbon dioxide plant have been completed. The dry mill ethanol plant uses mature technology implemented in nearly half of all plants around the United States. The construction of the plant for the production of liquefied carbon dioxide will be undertaken by an industry leader in manufacturing liquefied carbon dioxide plants. It will take approximately a year to construct the plant although there are various opportunities to make this time shorter.

Overall, about 50 full-time employees working in shifts will support full operations and maintenance of both operations. Typical inventories for the plant's main inputs and outputs range from 5 to 14 days.

The Company has assembled a strong management team, as well as core team of industry leaders, expert advisors and engineers clearly capable of leading the company forward well beyond its first substantial milestone – successfully establishing the first 300 MGY production facility in Maryland.

---