

## BULLETIN #126 – MARCH 9 2013

### GREEN PLAINS RENEWABLE ENERGY GPRE-NASD

#### COMPANY ANALYSIS

Green Plains is the 4<sup>th</sup> largest producer of ethanol in the US, producing about 700 million gallons a year. Ethanol is a corn-based biofuel that the US government mandates must make up at least 10% of all gasoline sold in the country.

I think two factors make this trade both very powerful, and very simple.

1. Leverage—and I don't mean debt, I mean scale GPRE only has 30 million shares out, 36.7 million fully diluted, and produces 700 million gallons of ethanol. That means a 10 cent change in ethanol margins can mean a huge swing in cash flow, and stock price. The industry gets 6x cash flow. Their profit in 2013 **could be** larger than their current market cap.
2. Weather—the #1 cost of ethanol is corn. A wetter summer than last year's drought in the Midwest will drive corn prices lower, and Green Plains' cash flow (dramatically!) higher.

Think of GPRE as a refinery—its input is just cheap corn, not cheap crude. They both sell Brent based end products—gasoline.

I will also explain how ethanol prices are on the rise now because of last year's low corn crop. Lastly, I think management is excellent, being both disciplined and opportunistic in the last year.

#### QUICK FACTS

Trading Symbol:	GPRE-NASD
Share Price:	\$11.00 (my price ~\$9.60)
Shares Outstanding:	29.703 million
Fully Diluted:	36.57 million (conv deb @ \$14.33 strike)
Market Capitalization:	\$293 million
Enterprise Value:	\$513 million (\$220 million debt)
2012 Revenue:	\$3.47 billion (with a b)
2012 EBITDA:	\$115 million
2012 Net Income / EPS:	\$11.8 million / 39 cents a share

## **POSITIVES**

- Huge leverage to corn, oil and ethanol prices
- Enough diversification in business segments to avoid heavy losses if commodity prices move the wrong way
- Disciplined mgmt team just shuts in production if margins go negative
- They are one of if not the low cost producer
- Very liquid balance sheet

## **NEGATIVES**

- Heavily regulated industry
- Huge leverage to corn, oil and ethanol prices (leverage works both ways)
- Weather dependent (I grew up on a farm; that makes me nervous)

## **ETHANOL--BACKGROUND**

All cars used to run on the same type of fuel, but gas stations now offer not only unleaded gasoline but fuels with ethanol, biodiesel, and others.

Ethanol is an alcohol fuel that's distilled from plant materials, such as corn and sugar. Ethanol is biodegradable, nontoxic, and dissolves in water, so it produces less carbon dioxide/carbon monoxide emissions than gasoline.

The vast majority of ethanol is produced for use as motor fuel. Studies show that a 10% ethanol blend can reduce gasoline emissions by up to 28% (air toxics).

While gasoline containing up to 10% ethanol (known as E10) has been available in the United States since the 1970's, ethanol only became a significant portion of the fuel mix in the late 1990's, largely due to series of legislative changes.

The Clean Air Act Amendments of 1990 mandated that the EPA develop regulations requiring gasoline in certain areas of the U.S. to reduce carbon monoxide pollution by increasing the oxygen content of gasoline.

The 2011 Renewable Fuel Standard Program update requires that 13.2 billion gallons of corn ethanol is blended into gasoline in 2012, 13.8 billion gallons in 2013, 14.4 billion gallons in 2014 and 15 billion gallons each year thereafter. EISA07 also places a limit on the maximum amount of corn that can be used to

produce ethanol, resulting in a 15 billion gallons per year effective ceiling for corn-based ethanol production.

But ethanol is controversial in the US. Pure ethanol contains 34% to 39.1% less energy than gasoline and ethanol has also been reported to degrade petroleum-based engine components (gaskets, hoses, fuel pump casings, etc.) over long periods of use.

There is a side argument that all this ethanol production is forcing food prices higher—corn is used in a LOT of food products. Ethanol now uses over 40% of US corn production, and 15% of global corn.

That has to impact a lot of hungry people around the world. But that's somebody else's argument.

## **GREEN PLAINS—BACKGROUND**

Green Plains Renewable Energy was formed in 2004 and has quickly grown to nine plants with 740 million gallons per year of total capacity. This makes Green Plains the fourth largest ethanol producer in North America after Archer-Daniels Midland, POET and Valero (that's right—one of my top refinery picks also refines ethanol).

## **THE BULLISH CASE FOR ETHANOL IN 2013**

In the next couple sections I'll explain my theory on why the ethanol price should be bullish in 2013, and why the corn price should be bearish. The spread between the two is Green Plains' profit (just like the crack spread of an oil refinery! In the ethanol business it's called the "crush spread", or sometimes just "crush").

There are two potential drivers of ethanol demand

1. Increased blending requirements called E15 and E85
2. An outright shortage of ethanol due to last year's low corn crop

### **1. E15 and E85**

The Clean Air Act of 1970 in the United States restricted ethanol blending to a maximum of 10% of gasoline by volume. (You would think that a Clean Air Act would want as much ethanol as possible.)

This blend is referred to as “E10”.

Back in February of 2012 the American EPA announced that “E15” was approved for use in select Midwestern States in 2001 and later model vehicles.

This is good news for Green Plains and ethanol producers. E15 increases the amount of ethanol being blended into gasoline by 50%. If E15 were to become widely accepted that would create a big increase in ethanol demand.



While E10 is available at virtually all of the 160,000 gas stations in the United States E15 so far has only been made available at a handful of stations in Kansas, Iowa and Nebraska.

As it becomes more widely available/accepted it will be bullish for ethanol prices.

If E15 is good for ethanol producers then “E85” must be better still.

E85 can only legally be used in the ten million Flex Fuel Vehicles that are on the road in the United States today. Because of government incentives, automakers have pledged to design 50% of new vehicle models as Flex Fuel Vehicles.

The challenge with E85 is that because of its higher percentage of ethanol it has a much lower energy content than gasoline (it provides lower fuel economy). Because of that, for a consumer to be willing to use it E85 must be available at a significant discount to gasoline.

E85 is currently available at just over 2% of the gas stations in the United States with that number increasing every month as the government has provided incentives to gas station owners to sell E85.



## 2. An Outright Shortage of Ethanol—Why I Think It's Coming

(This is repeated from the March 7 IB#203 on my 3<sup>rd</sup> GPRE purchase)

In this section I explain some of the government bureaucracy around ethanol production, which sounds boring but it does show, IMHO, very clearly how and why ethanol prices should stay high in 2013 due to simple supply and demand forces. The simple thing to remember here is that last year's corn crop was very low due to the drought, so it only makes sense that as the last bit of that supply gets used up (lower supply) prices should rise.

### a) The Rise of the RIN Prices

A RIN is a Renewable Identification Number, and every gallon of ethanol produced in the US has a RIN, which is a 38 character number, which can be banked and used later, or even sold, if gasoline blenders use more ethanol than U.S. laws require (the RFS, or Renewable Fuels Standard).

I want you to think of them as carbon credits—insurance **against** having to use ethanol. If you own 1 RIN, you don't have to use 1 gallon of ethanol.

I just explained how, in the most entrepreneurial of countries, the USA, refiners and gas blenders/marketers MUST use at least 10% ethanol in all gasoline (E10) and in some cases up to 15% (E15).

They did this to lower oil use in the US, back in 2007. To monitor this, the EPA created RINS, and refiners have to give the EPA their RINs every year to prove they put enough ethanol in their gasoline. If you use more ethanol than you have to, you get to 'bank' excess RINS to use later or sell. If you use less, you have to go buy RINS in the market.

Anyone who is registered with the EPA can buy and sell RINs—so they're somewhat of a currency.

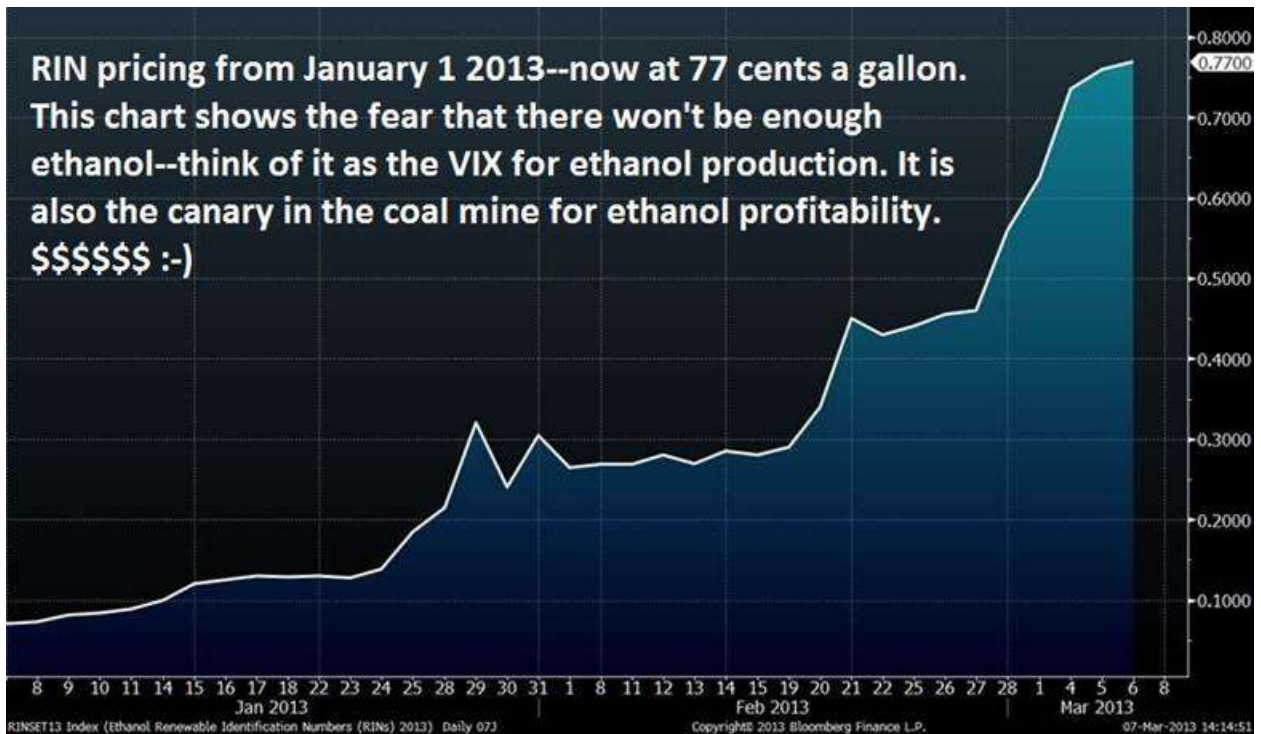
The RIN market is liquid and various exchanges allow for RIN trading.

If the ethanol market is oversupplied the price of a RIN will drop. If it appears that there isn't going to be enough ethanol available for refiners to meet the RFS target, the price of a RIN will rise—like I said, a refiner can use a RIN in place of blending a required gallon of ethanol.

RINs are the canary in the coal mine for ethanol supply. And right now the price of RINs is soaring. See this chart below.

RIN pricing is now high enough that it could really hurt some refiners' profits on a per gallon basis.

Refiners are not making a lot of driving gasoline right now—now they're making home heating fuel to keep us all warm. Gasoline demand in the US is seasonal, bottoming in January and peaking during the summer driving season.



Refiners adjust to this seasonality by switching production between heating oil and gasoline. But ethanol plants only make ethanol, and keep production near capacity year round to keep per-gallon production costs down. They cannot ramp up production in the spring and summer to meet driving needs.

Increased demand with lower supply (due to last year's small corn crop) = HIGHER ETHANOL PRICES. This means more profits for Green Plains—they sell ethanol.

**And what the RIN pricing is telling us is that higher ethanol prices are coming.**

US brokerage firm Stephens & Co said that in the week ending February 1, production decreased 16.1% from last year. Ethanol production is running at an 11.9 billion gallon run rate, near the lowest rate since EIA began reporting the data.

Now, there will be more supply this year if margins increase. Right now, my limited research says there are several plants in the western mid-west (Dakotas, Nebraska) that could come back online. **But the market knows that and RIN pricing is still high and rising.** In fact, there are a lot RINS out there this year, and the price is still rising.

All the bureaucracy created to make a derivative business around RINs to lower oil consumption via corn...OMG. But it's not my job to be self righteous about government stupidity. It's my job to profit from it.

## Gasoline Prices

I've just explained two independent factors that could impact the price of ethanol. But in a regular market, gasoline prices are the big factor in ethanol pricing.

Assuming the spread between gasoline and ethanol stays constant, high gasoline prices are good for Green Plains' revenue; low gasoline prices are bad. Ethanol trades at an average 7 cents a gallon below gasoline, but that skews wildly due to the seasonality of gasoline production I mentioned above.

From my refinery (~~Norther~~Northern Tier) report, remember gasoline prices in the United States are higher than you would expect with the current price of WTI crude.

One big reason for this is that American exports of gasoline have tripled over the past five years, mostly to Latin America. (A big reason *for this* is all the problems at Venezuela's 930,000 barrel a day Paraguana refining complex).

Americans are competing against (mostly) Latin America for their own cheap energy, and that's why they have to pay world (Brent based) prices for their refined products. That's why these refineries are like cash cows right now. Like ATMs. Like Banks. Like Government Mints. (You get the idea)

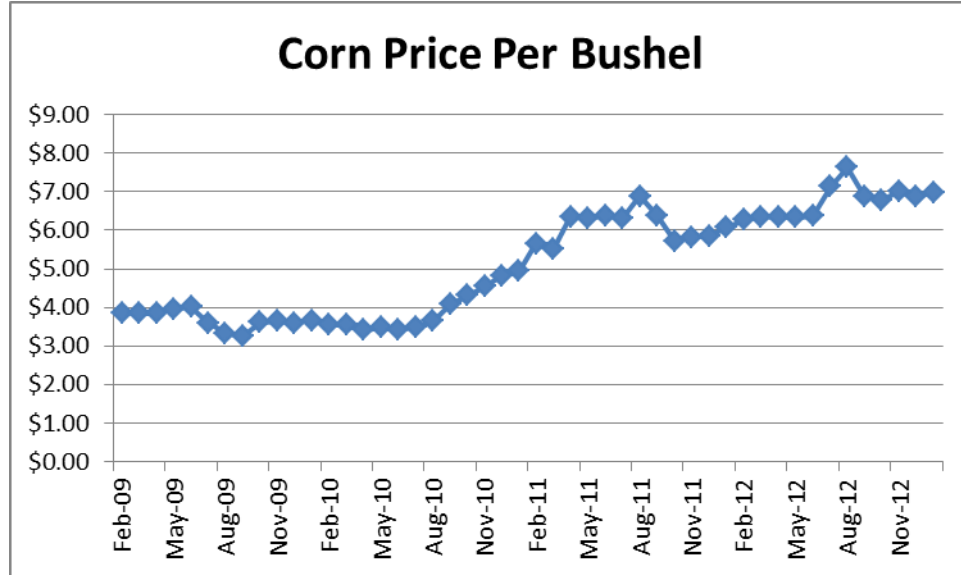
This situation has no near term solution, so American gasoline prices should remain elevated (assuming little change in oil prices) through 2013 which is good for the top (and bottom) line of Green Plains.

## THE BEARISH CASE FOR CORN PRICES IN 2013

The largest input cost for U.S. ethanol producers is corn: On average it takes .357 bushels of corn to produce a gallon of ethanol (or a bushel of corn produces 2.80 gallons of ethanol).

At \$4 per bushel that means that a gallon of ethanol costs  $.357 \times \$4 = \$1.42$ . At \$7 per bushel a gallon of ethanol costs  $.357 \times \$7 = \$2.49$ .

For the last couple of years drought conditions in the United States have caused those input costs to increase significantly from under \$4 per bushel in 2010 to between \$6 and \$8 per bushel in 2011 and 2012.



The drought induced corn price spike in 2012 was so severe that Governors of eight US States actually petitioned Federal Regulators to end the requirements for blending corn based ethanol into gasoline in an effort to lower prices. Those petitions were denied.

High corn prices = low profit for Green Plains. Its 2012 income statement reflects that with the company roughly breaking even in 2012 (if you back out a non-recurring gain) vs a profit of \$38 million in 2011.

However, I invest using the windshield and not the rearview mirror.

And the view through the windshield looks pretty good. The USDA [forecast](#) for the U.S. corn crop (with normal weather and crop yields) for next year is for 14.350 billion bushels. That is an increase of 35 percent on the year. With that increase the USDA also forecasts that season-average U.S. corn prices for 2013/14 will fall to \$4.80 per bushel.

Corn plantings drive the big crop increase and for 2013 corn plantings are projected at 96.5 million acres (39.1 million hectares) which is near a 75 year high. Barring another severe drought there should be a big swing in corn production year on year—and that's bullish for GPPE.

How likely is a repeat of 2012's extreme drought conditions for the 2013/2014 season? Only God knows. I sure don't. Drought like conditions have still persisted in much of the States through February, but the weather in the upcoming months (especially July) is what is critical.

## **VALUATION--LEVERAGE TO ETHANOL MARGINS**

Flat ethanol prices combined with a drop in corn prices sets Green Plains up for a more profitable 2013/2014 season. Just how much leverage Green Plains has to changes in ethanol margins though is...remarkable.

Stay with me here....and remember, when I do my financial projections, I have one foot firmly planted in the air.

Each \$.04 change per bushel in corn prices increases ethanol production margins by \$.01 per gallon.

The average price of corn per bushel in 2012 was \$6.75 per bushel. For the 2013/2014 season the USDA is predicting corn will average \$4.80 per bushel—a decrease of \$1.95 per bushel.

If each \$0.04 per bushel change in corn prices increases ethanol production margins by \$0.01 per gallon, a \$1.95 decrease in corn prices should create a whopping \$0.48 increase in production margins per gallon of ethanol.  
 $\$1.95/4=\$0.48$ .

The maximum production capacity of the nine Green Plains ethanol facilities is 740 million gallons per year. In 2011 Green Plains produced 721 million gallons, and in 2012 Green Plains intentionally reduced production to 677 million gallons because of poor operating margins (caused by high corn prices).

With better margins it is likely that Green Plains would produce closer to 721 million gallons. The \$0.48 increase in production margin per gallon discussed above means additional gross profit of  $\$0.48 \times 721 \text{ million} = \$346 \text{ million}$ .

GPPE's operating income, or cash flow, runs about 60% of gross profit. And 60% of \$346 million = \$207.6 million.

Analysts are giving the industry 6x cash flow multiple, or a \$1.245 billion valuation. Divide that by 30 million shares and you get \$41.52/share.

**I DO NOT EXPECT THE STOCK TO TRADE AT THAT PRICE. THIS IS A PERFECT WORLD SCENARIO**—and if investing was this easy I would be rich.

But I did buy the stock thinking it had a shot at \$25 this calendar year.

Of course, if the US Midwest gets another bad drought, corn prices will go higher and the stock of GPRE will go lower. (Remember, this stock went from almost \$11 to under \$4 in three months during 2012.)

But the RIN pricing is, I think, giving me a cushion on that possibility, because ethanol availability now and corn crops in the early fall are two different things.

## **DIVERSIFIED OPERATIONS**

There is clearly big potential here if corn prices do drop and ethanol prices stay the same. The leverage to ethanol margins is enormous.

But Green Plains is also able to tread water during times where this leverage works the other way and margins compress.

Below is the segmented operating income (adjusted for an Agribusiness gain on disposition in 2012; they sold some corn storage and inventory) for Green Plains for the past three years. You can see that in 2012 the ethanol production segment actually lost money because of high corn prices and the increasing discount to gasoline for ethanol prices with the \$0.45 tax credit expiry (expired at the end of 2011).

The other three business segments generate enough income that Green Plains was still able to turn an operating profit in a very difficult business environment. So 2012 was a terrible year for ethanol producers and while Green Plains didn't make much money, it wasn't damaged badly by it either. That tells me management is good. (I haven't mentioned algae in this report, which has several analysts excited; they could be building several algae factories in Q4 2013.)

Segment	2012	2011	2010
Ethanol Production	(\$20,393)	\$73,242	\$93,410
Corn Oil Production	\$32,140	\$26,999	\$878
Agribusiness	\$12,897	\$11,721	\$5,614
Marketing and Dist	\$17,290	\$9,475	\$9,673
Other	\$977	\$334	\$188
Corporate Activities	(\$25,159)	(\$22,758)	(\$17,712)
Operating Income	\$17,752	\$99,013	\$92,051

## Book and Replacement Value of Assets

Green Plains currently has a book value of \$14.25 per share which is above the current share price of \$9.88.

Even more relevant is the replacement value of the Green Plains assets.

Ethanol facilities were recently sold at \$1.25 per gallon of annual production capacity and \$2.00 per bushel of grain storage capacity.

That would value Green Plains 740 million gallons of ethanol production capacity at \$925 million ( $\$1.25 \times 740$  million) and its 39 million barrels of grain storage capacity at \$78 million.

That is a replacement value of almost \$25 per share after backing out Green Plains' debt and net current assets. But of course, the stock has shown me it's still willing to trade down to \$4; but I guess this means it should never go to zero. (Does it also show the company is more valuable in bankruptcy? :-))

## STOCK CHART

Historic Chart for US:GPRE by Stockwatch.com 604.687.1500 - (c) 2013  
Thu Mar 7 2013 Op=10.44 Hi=10.85 Lo=10.44 Cl=10.74 Vol=361,571 Year hi=16.25 lo=3.57



## WHAT THE ANALYSTS SAY

<b>FIRM</b>	<b>TARGET PRICE</b>
Feltl and Company	\$8.98
Jefferies	\$17.00
Stephens Inc.	\$8
Wedbush	\$10

## RISKS

Investing in any commodity producer is not without risk and for Green Plains that is especially true given that it is exposed to not just ethanol prices but also corn and gasoline (oil).

The main risks facing Green Plains would include, in decreasing order of importance:

1. The weather--another drought could again create a spike in corn prices
2. Falling oil prices caused by a global economic slowdown would reduce the price of ethanol
3. The U.S. ethanol industry is heavily regulated meaning there are forces at work in the business that are totally out of Green Plains control Ethanol's discount to gasoline could widen further which would offset the benefit of falling corn prices

## CONCLUSION

Green Plains operates in a very cyclical business, much like refining. GPRE just refines corn to ethanol, not crude to gasoline. That cyclical business also creates tremendous opportunity for investors who manage to jump in at the bottom of the cycle.

2012 was a rotten year for ethanol producers with soaring corn prices and a widening discount between ethanol and gasoline. But now, several factors

appear to be coming together to potentially be a banner year for GPRE profitability:

1. Lower input prices as corn prices with more moisture in the American Midwest
2. Higher output prices as last year's corn shortage is now translating into a potential ethanol shortage for 2013. At least, that's what RIN pricing is now telling the market.

The potential for margin expansion along with GPRE's levered share structure—only 30 million shares out—offers big potential for my investment over the next year.

If that doesn't transpire the \$50 million of income that the other business segments generate and the replacement value of Green Plains offer some staying power and downside protection for me.

I own 15,000 shares of Green Plains with an average cost of roughly \$9.60.

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