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July 24, 2008

California Energy Commission
Dockets Office MS4
Docket # 08-OIR-1
1516 Ninth Street
Sacramento CA 95814-5512

Re: Regulatory Concepts on Sustainability Goals

Dear Sir or Madam,

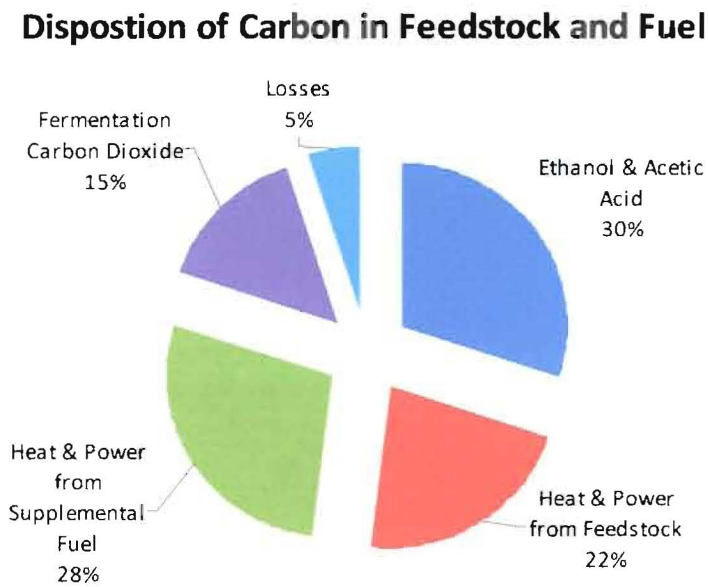
SWAN Biomass Company licenses technology for the conversion of a wide variety of cellulose-containing biomass to fuel ethanol and other products. Your presentation of July 8, 2008 contains goals very much like the ones that we arrived at while designing a 30 million gallon per year fuel ethanol Biorefinery using energy cane as a feedstock. Based on a combination of pre-project preparation and cutting and fitting as we talked to farmers, environmentalists, administrators, and other stakeholders we ultimately reached many of the goals you define. We also uncovered one additional sustainability goal we think worthy of your consideration; that is the financial sustainability of Biorefineries.

Experience in Meeting Sustainability Goals

We started off with the assumption that we should locate in an area that had long been committed to agriculture, thus establishing a base line for environmental impact. Having found such a location in El Centro, CA, we then started to develop a Process Design Package (PDP). We were about half way through the PDP when a group interested in preserving the Salton Sea pointed out that we were increasing the soluble solids content of the drainage ditches that ultimately fed into the Salton Sea, and therefore were increasing its soluble salt content, since the Sea has no outlet. We tore up the first PDP and started working on ways to resolve the problem. Since much of the soluble material consisted of nutrients absorbed by the cane, we decided to ship it back to the farmers. They thought it was a good idea because the cost of their fertilizer was rising along with hydrocarbon costs and this nutrient recycling would grossly decrease their needs for imported fertilizer. Other soluble salts were converted to valuable byproducts.

Initially we thought using natural gas as a temporary fuel would speed up permitting, but decided that we would use biomass as a fuel because of the relatively high cost of the fossil fuel and power. The facility was then designed to be self sufficient in both. Other modifications included incorporating suggestions by farmers on how to reduce dust and to increase per acre yield of biomass.

The proposed facility now has a 15 percent carbon footprint since the only fossil fuel used is the diluent (and we are working on ways to replace that component). The diluent-free disposition of carbon from the feedstock and fuel into the products is illustrated on the following page. If one considers the fact that the carbon in ethanol and acetic acid are going to go through one more use before becoming carbon dioxide in the atmosphere, and the carbon dioxide from fermentation can be put through at least one more use, one could claim a negative carbon footprint for this facility.



A Proposed New Goal

The new goal that we propose is one of financial sustainability. In recent weeks we have seen how market forces can create havoc and disaster for the unprepared if the prices for feedstocks, fuels, and product shift in unpredicted ways.

As mentioned above, the decision to change from natural gas to biomass for a fuel was not made to achieve a better carbon footprint (though it does have that effect); it was made to reduce exposure to wide swings in the price of natural gas. In addition, we are making arrangements for back up feedstocks and fuel so that we can adjust if prices of feedstock/fuel and product diverge.

The attached note shows the reduction in risk this strategy can achieve. The corn data was generated in early 2007, the biomass data more recently, at a time when corn prices were approaching $7 per bushel, and ethanol $2.25 per gallon. Restricting the differential between feedstock and fuel can have a dramatic impact on business (and fuel supply) survivability. The fact that cellulosic biomass processing today is more capital intensive than corn processing is a stabilizing factor. The DCF-ROI does not swing as widely with feedstock/fuel price changes due to the ability to switch between feedstocks and the earnings before interest, taxes, depreciation and amortization (EBITDA) provides debt coverage to a much lower price of ethanol for a biomass-fed plant than for a corn-fed plant. The net result is that biomass based facilities can keep their doors open far longer than the corn based facilities in an economic downturn.

If it would help your program we would be pleased to provide data for you to run through your GREET model or other analytical tools to assess the impact on a standard basis our experiences would have.

Yours truly,

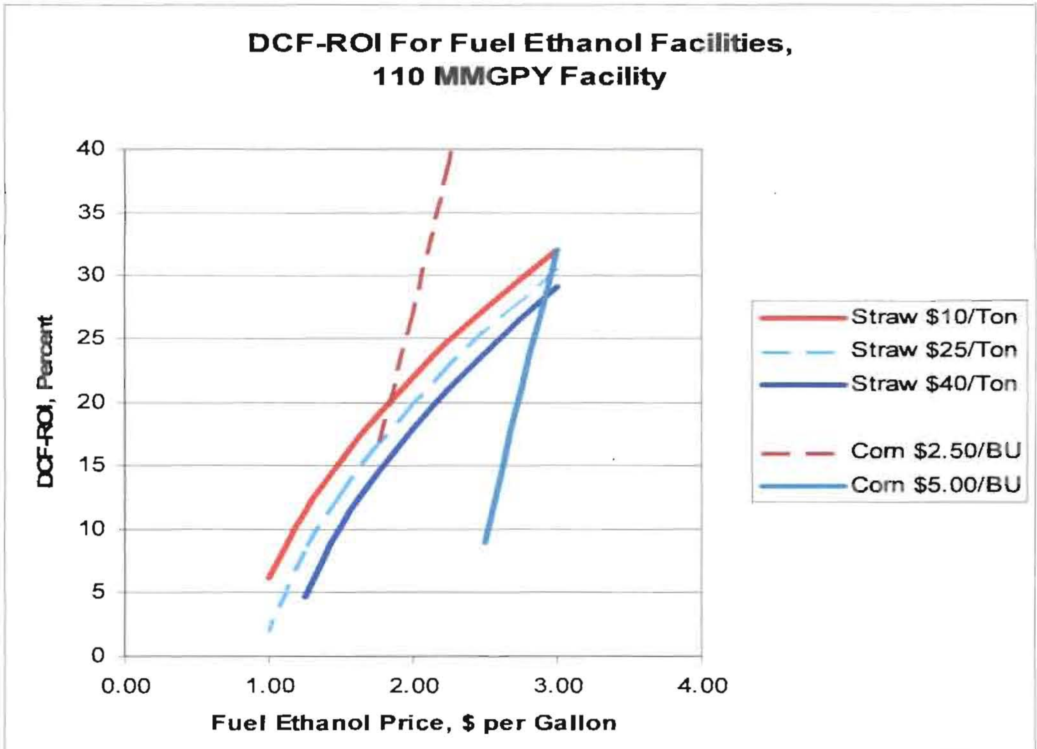
RHWalker

Robert H. Walker, President

Financial Risk of Cellulose-Based Biorefineries and Corn-Based Facilities Compared

Figure 1 below presents the information provided by Citi Group on the rate of return (D/E=70/30) for a 110 MMGPY fuel ethanol facility based on corn feedstock at $2.50/BU (a typical historic price) and $5.00/BU representative of the expected price at the time he gave his presentation. Recent prices have gone as high as $7-8/BU. Also presented in the figure are relationships expected for a similar size straw-based Biorefinery (100% Equity). The expected costs in past years are depicted as dashed lines.

Figure 1



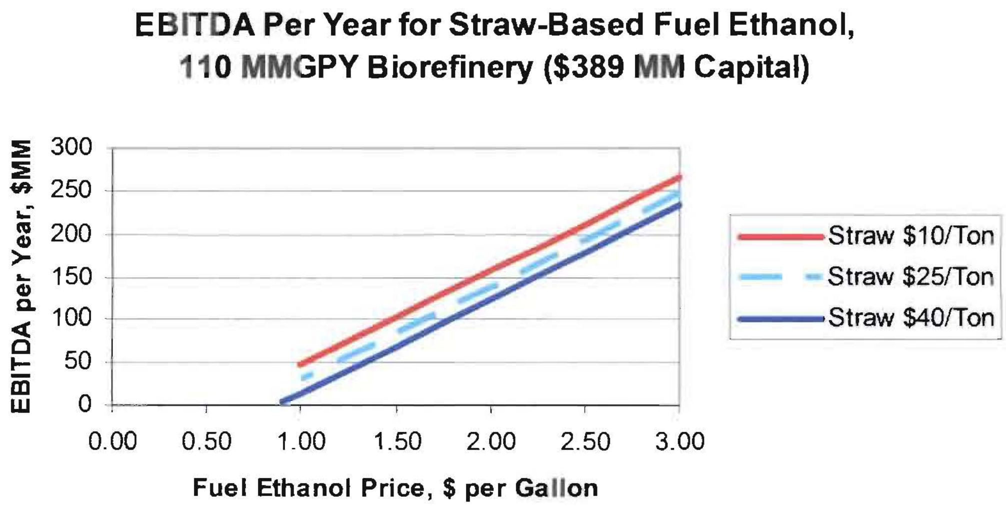
Clearly the ROI for corn-based facilities is more sensitive to changes in the price of fuel ethanol than is the ROI for straw-based facilities. A doubling of the cost of corn results in the reduction of ROI-based shutdown prices for ethanol moving from about $1.30 per gallon to about $2.40. One could speculate that plants today buying spot market corn will not survive long even with prices over $3.00 per gallon.

In contrast a quadrupling of feedstock costs for straw results in perhaps a drop in ROI of about 5%, and the Biorefinery would still be able to keep its doors open at a price of about $1.00 per gallon of fuel ethanol. The straw-based Biorefinery is fundamentally less risky an investment because, just like a petroleum refinery, it has the capacity to generate the heat and power it needs to operate using low value byproducts and other low cost sources of fuel, rather than relying on purchased high cost natural gas and electricity.

The capital cost is higher but results in lower per gallon cost and an increased ability to control costs, thereby reducing financial risk. In addition, the feedstock itself for corn-based ethanol facilities is expensive: corn at $2.50/BU is corn at $89/ton; corn at $5.00/BU is corn at $179/ton. Although the carbohydrate content in corn is higher than it is in straw, that benefit does not compensate for the higher cost.

Figure 2 illustrates the ability of the straw-based Biorefinery to generate sufficient Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) as a measure of its capacity to cover principal and interest payments. No data was presented for the corn-based facility.

Figure 2



The low cost of feedstock and lack of costs for natural gas and power result in a massive amount of EBITDA and produce diminishing contributions to principal and interest even at fuel ethanol prices below $1.00 per gallon. Figure 3 is a presentation of the data in dollars per fuel ethanol gallon, the manner in which it is often presented. Today values for corn-based facility hover between zero and $0.30 per gallon, almost an order of magnitude lower than the values expected for a cellulose-based facility. Therefore lenders should highly favor funding these facilities.

Figure 3