Analysis of Breakeven Costs for Utilizing Biomass Feedstocks as a Natural Gas Replacement

International Fuel Ethanol Workshop & Expo

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an independent member of BAKER TILLY INTERNATIONAL

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Overview

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I. Natural Gas Markets

II. Breakeven Costs Analysis

III. Other Points for Consideration

IV. Financial Mechanisms in a Difficult Market

V. Summary

Natural Gas Markets

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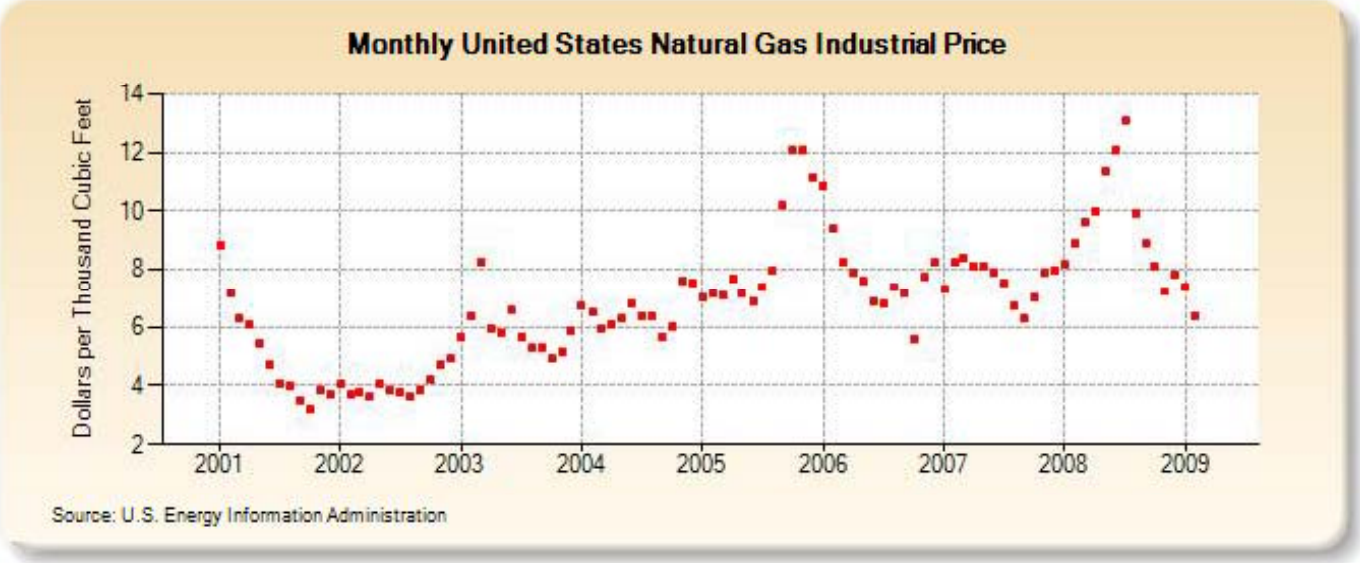
- Worldwide natural gas consumption expected to increase 66% from 2005-2030 (EIA)
- Electric power, particularly new generation, anticipated to be a large driver of this trend (coal not exactly popular anymore)
- Recent history suggests natural gas has been an extremely volatile commodity



Breakeven and Sensitivity Costs Analysis

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- A detailed breakeven cost analysis is critical to any decision regarding replacing or supplementing natural gas with biomass, HOWEVER,
- Breakeven analysis is only a supply side (i.e. costs only) analysis, as it tells you nothing about what sales are actually likely to be for the product at these various prices
- It assumes that fixed costs are constant
- It assumes average variable costs are constant per unit of output, at least in the range of likely quantities of sales (i.e. linearity)
- It assumes that the quantity of goods produced is equal to the quantity of goods sold (i.e., there is no change in the quantity of goods held in inventory at the beginning of the period and the quantity of goods held in inventory at the end of the period)
- In multi-product companies, it assumes that the relative proportions of each product sold and produced are constant (i.e., the sales mix is constant)

Other Points for Consideration

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- The physical long term hedge of biomass heat/power option provides investor comfort and higher asset valuations
- Further reduction of production facility's carbon footprint/increased public view of ethanol facilities
- Increase dollars to the local economy

"This sounds like a great idea, but how do I justify the capital expense to my existing shareholders and lenders in a turbulent financial market and a soft natural gas market?"

In today's economic climate, for most independent ethanol producers, analysis of how one will fund an investment is just as important as analysis of how well the investment pays off.

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Stimulus Bill Impacts

- Open Loop Biomass Investment Tax Credit (ITC)/Combined Heat and Power ITC or Treasury Grant
- Additional Allocation of New Market Tax Credits (NMTC)
- Department of Energy Loan Guarantee Program

Other Potential Opportunities

- Rural Energy for America Program (REAP)
- USDA B & I Loan Guarantee Program
- Accelerated (5 year) Depreciation Benefit
- State Level Incentives

Section 48: Investment Tax Credit/Cash Grant

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- Open loop Biomass Investment Tax Credit (ITC)/Combined Heat and Power ITC or Cash Grant
- Open Loop: Tax Credit or Cash Grant equivalent to 30% of basis of eligible property:
  - Must generate and sell electricity from waste material
  - Determination on what is eligible and what financial/ownership structure can be most advantageous is key
- Combined Heat and Power (CHP): Tax Credit or cash grant equivalent to 10% of basis of eligible property

Section 48: Investment Tax Credit/Cash Grant

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- What portion of the costs of my facility is eligible?
  - Boiler
  - Pollution control
  - Steam turbine
  - Fuel handling/storage
  - Other/contingency
- Detailed study and tax opinion likely, but assume 10% of total capital costs for the purposes of examples forthcoming

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New Market Tax Credits

- Program created under the Community Renewal Tax Relief Act of 2000
- Approximately $12 billion of tax credits currently available on a competitive basis
- Program seeks to leverage capital from investors to spur economic development in urban and rural low income communities

New Market Tax Credits

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- Potential to provide $2+ million in equity or equity-like instruments to the project for every $10 million of Capital Expenditure
  - Project location needs to be in an eligible census tract
  - Credit is not an entitlement, rather a competitive process
  - There is substantial credit available to projects in today's market due to the economic downturn
  - Various options for incorporating credits into financial structure- 20% of capital costs can be covered

Department of Energy
Loan Guarantee Program

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- Potential to provide up to 100% loan guarantee based on total project costs (80%/20% debt to equity structure)
  - "Renewable energy systems… that generate electricity or thermal energy…"
  - Total application fees typically 0.5% – 1% of guarantee amount (non refundable)
  - Loan term of up to 30 years
  - Before accepting applications, DOE must issue a solicitation that outlines the parameters for that particular loan guarantee pool (e.g. technology/industry vertical, dollar amount available, deadlines, fees, etc.
  - Program is evolving and DOE leadership is striving to reduce bureaucracy. Additional guidance anticipated to be released no later than August 15, 2009

Department of Energy
Loan Guarantee Program

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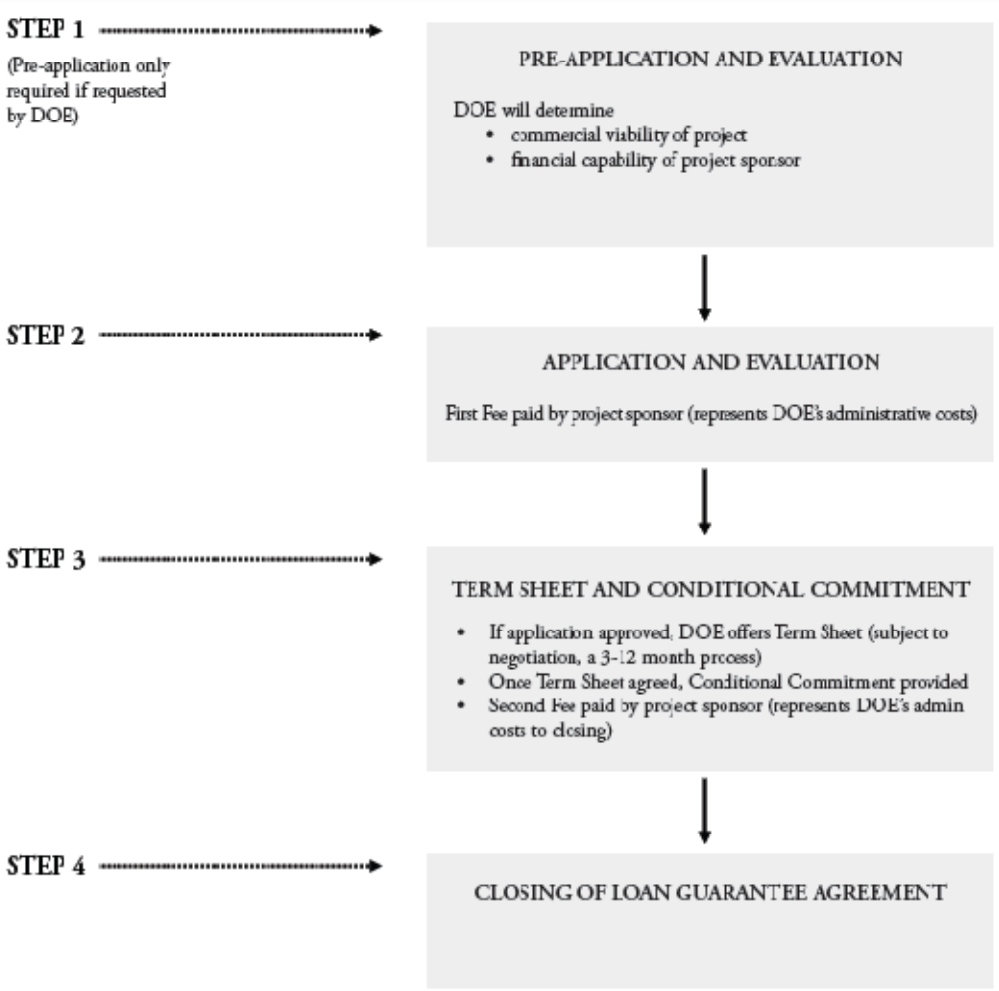
- Traditional DOE Loan Guarantee Process
  - Program is looking at significant overhaul under new leadership at the Department of Energy
  - Revised and temporary program rules anticipated to be released in the near term



Other Potential Opportunities

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- Rural Energy for America Program (REAP)
  - Up to $500,000 grant or $25,000,000 loan guarantee for the purchase of a renewable energy system
  - Dollars also available for feasibility studies
  - Applications due July 31, 2009
- USDA B & I Loan Guarantee Program
  - Loans of up to $25,000,000 for eligible projects
  - Appetite for projects should be high given current funding climate

Potential Opportunity Based on Public Financing Incentives: $20 Million Dollar Project

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New Market Tax Credits	$4,000,000
48C Cash Grant (s)	$2,000,000
DOE Loan Guarantee (FFB)	$14,000,000
Total	$20,000,000

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- Natural gas prices will continue to be volatile and we can assume increase from current prices
- Each producer will have a different business case for utilizing biomass as a hedge against natural gas; these projects will never be “cookie cutter”
- Production facilities that have been well managed to date and continue to “weather the storm” should have existing lenders with a vested interest in funding these projects due to financial incentives available, as well as construction and material pricing in current market
- Lenders and investors will look favorably upon projects that utilize proven technology, have biomass feedstock contracted, or preferably have ownership or control of biomass feedstock

Summary

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