

January 29, 2008

Sector	Rating
Machinery/Multi-Industry	Market Weight
S&P 500	Market Weight
Special Situations (OPTT)	Market Weight

Companies Covered

Company	Cl. Price	Rtg
AGCO Corp.	\$58.98	O
Caterpillar	\$68.21	O
CNH Global	\$48.63	O
Danaher Corp.	\$74.51	O
Deere & Company	\$85.43	O
Eaton Corporation	\$82.38	O
General Electric Co.	\$34.72	O
Illinois Tool Works	\$50.09	P
Ingersoll-Rand	\$39.08	O
Ocean Power Technologies	\$12.60	O
Parker-Hannifin Corp.	\$64.00	P

O=Outperform; P=Peer Perform; U=Underperform
Securities in this report priced as of:
January 28, 2008 16:00ET

The Green Machine: Renewable Energy Update

- President Bush's State Of The Union.** Last night, Bush presented his framework for addressing energy security and climate change in his final year. We received a preview of his energy policy from the White House Office of Communications. His plan aims to (1) Explore clean coal technology; (2) Increase the use of nuclear power; and (3) Establish a \$2BN CleanTech fund. Additionally, the President renewed his call to increase the US domestic oil supply by drilling in Alaska. While these initiatives address certain issues, the initiatives unfortunately did not provide any concrete plans to extend the production tax credits (PTCs) & investment tax credits (ITCs) for the wind & solar industries.
- Renewable Energy Underperformed S&P 500 YTD -23% Vs. -8%.** In addition to the general market pull-back, the renewable energy sector is likely down given (1) Sector's inability to extend the PTCs & ITCs important for the wind & solar industries to maintain momentum; and (2) A weak housing market and economy in CA and other western states. Legislators & the industry failed to establish extensions in the 2007 Energy Bill passed in Dec'07 and are currently seeking to append the provisions to other fast-moving legislation, i.e. the Economic Stimulus Bill and Farm Bill.
- Record US Wind Capacity Installed In 2007.** In 2007, the US wind industry installed 5.2 GW of wind power generating capacity, representing an increase of total capacity of +45% resulting in 17 GW global capacity. Additionally, AWEA projects that 2008 could equal 2007 in new capacity installed. On a global basis, the wind energy industry installed 20 GW of capacity. Total wind energy capacity at YE 2007 was 94 GW (+27% YoY).
- Ethanol Pricing Improving.** Since Oct'07 ethanol prices have steadily improved as the Southeast has started to open up. Ethanol & wholesale gas px are near parity at \$2.31 & \$2.40/gal, respectively. We believe pricing will continue to improve as the 2007 Energy Bill RFS kicks in and mandates demand.

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† All numbers are after stock-based compensation expense, normalized consistent with BSC option expense policy.

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EXECUTIVE SUMMARY

In addition to our “Capital Goods Weekly Monitor,” we publish “The Green Machine: Renewable Energy Update,” a monthly piece that focuses on the renewable energy sector. Similar in format, this monthly product presents the following:

- **Valuation and Stock Performances.** Within the renewable energy sector, we monitor the performance approximately 50 companies—25 solar, 8 fuel cell, 8 ethanol, 7 wind, two geothermal energy companies, and a wave energy company.
- **Upcoming Events.** This section is simply a calendar of the important events for the renewable energy sector.
- **Industry and Company Tracker.** This section highlights renewable energy industry events, important data points and their implications, and takeaways from conversations our team had with companies and/or trade contacts. In this note, we provide an update of the following:
 1. **President Bush’s State of the Union address;**
 2. **The Wind Industry;**
 3. **The Solar Industry; and**
 4. **The Ethanol Industry.**

VALUATION AND STOCK PERFORMANCES

- **2007 Stock Performance**
 - The Renewable Energy sub-sector we track outperformed +98.4% vs. S&P 500 +3.5%.
- **Stock Performances: 2008 YTD (through January 25th)**
 - The Renewable Energy sub-sector we track has underperformed -23.4% YTD vs. S&P 500 -7.9%.
 - In addition to the general market pull-back, the renewable energy sector is likely down given (1) Sector’s inability to extend the production tax credits (PTCs) and investment tax credits (ITCs) important for the wind & solar industries to maintain momentum; and (2) A weak housing market and economy in CA and other western states.
 - Legislators & the industry failed to establish extensions in the 2007 Energy Bill passed in Dec’07 and are currently seeking to append the provisions to other fast-moving legislation, i.e. the Economic Stimulus Bill and Farm Bill.

UPCOMING EVENTS

Exhibit 1. Upcoming Renewable Energy Sector Events

Date	Event	Location	Website
Feb 03 to Feb 06, 2008	National Biodiesel Conference & Expo 2008	Kissimmee, Florida	www.biodieselconference.org
Feb 07 to Feb 07, 2008	Bioenergy World Europe 2008	Verona, Italy	www.bioenergy-world.com
Feb 17 to Feb 21, 2008	Third Annual International Solar Cities Congress	Adelaide, Australia	www.solarcitiescongress.com.au
Feb 19 to Feb 21, 2008	POWER-GEN Renewable Energy 2008	Las Vegas	http://pgre08.events.pennnet.com
Feb 26 to Feb 27, 2008	Carbon Forum America 2008	San Francisco	http://www.carbonforumamerica.com/

Sources: Industry Reports, Bear Stearns & Co., Inc.

PRESIDENT BUSH'S STATE OF THE UNION

Last night, President Bush presented his framework for addressing energy security and climate change in the final year of his administration. We received a preview of his energy policy from the White House Office of Communications ahead of the speech. His plan aims to (1) Explore clean coal technology; (2) Increase the use of nuclear power; and (3) Establish a \$2 billion CleanTech fund. Additionally, the President renewed his call to increase the US domestic oil supply by drilling in Alaska.

Key Takeaways From President's Address As It Pertains To Renewables

- **Diversifying Power Generation.** Bush hopes to generate electric power from greater use of clean coal technology, solar & wind energy, and nuclear power. The focus of the diversification seems to be on nuclear and clean coal technology, rather than on wind and solar energy. Although the President acknowledges the growth of these industries, he did not provide details on how he hopes to support these nascent industries.
- **Domestic Oil.** The President is calling to increase our domestic oil supply by opening up Alaska and the Outer Continental Shelf for drilling.
- **\$2 Billion Clean Energy Technology Fund.** The President will commit \$2 billion over 3 years to create an international clean energy technology fund and hopes to generate contributions from other countries.
- **GHG Emissions.** Bush highlights his administration's efforts to date, and reaffirms that it is not willing to compromise on its focus on regulating GHG emissions for every major economy.
- **2007 Energy Bill.** Finally, the President summarizes the key impact of the recently passed 2007 Energy Bill—(1) New Renewable Fuel Standard (RFS) of 36 BGY of biofuel by 2022; (2) New CAFÉ standards of 35 MPG by 2020; (3) Mandating the increase in lighting efficiency of light bulbs by 30%; and (4) Establishing new appliance and building efficiency standards.

While these initiatives address certain issues, the initiatives unfortunately did not provide any concrete plans to extend the PTC and ITC for the wind and solar industries. Moreover, although the preview from the White House establishes that President Bush is “dedicated to strong growth in renewable electricity generation”, the administration does not share how it plans on supporting the nascent industries in a concrete way. We believe more tangible support is required for renewable energy industries in order to accelerate our transition to a lower-carbon economy.

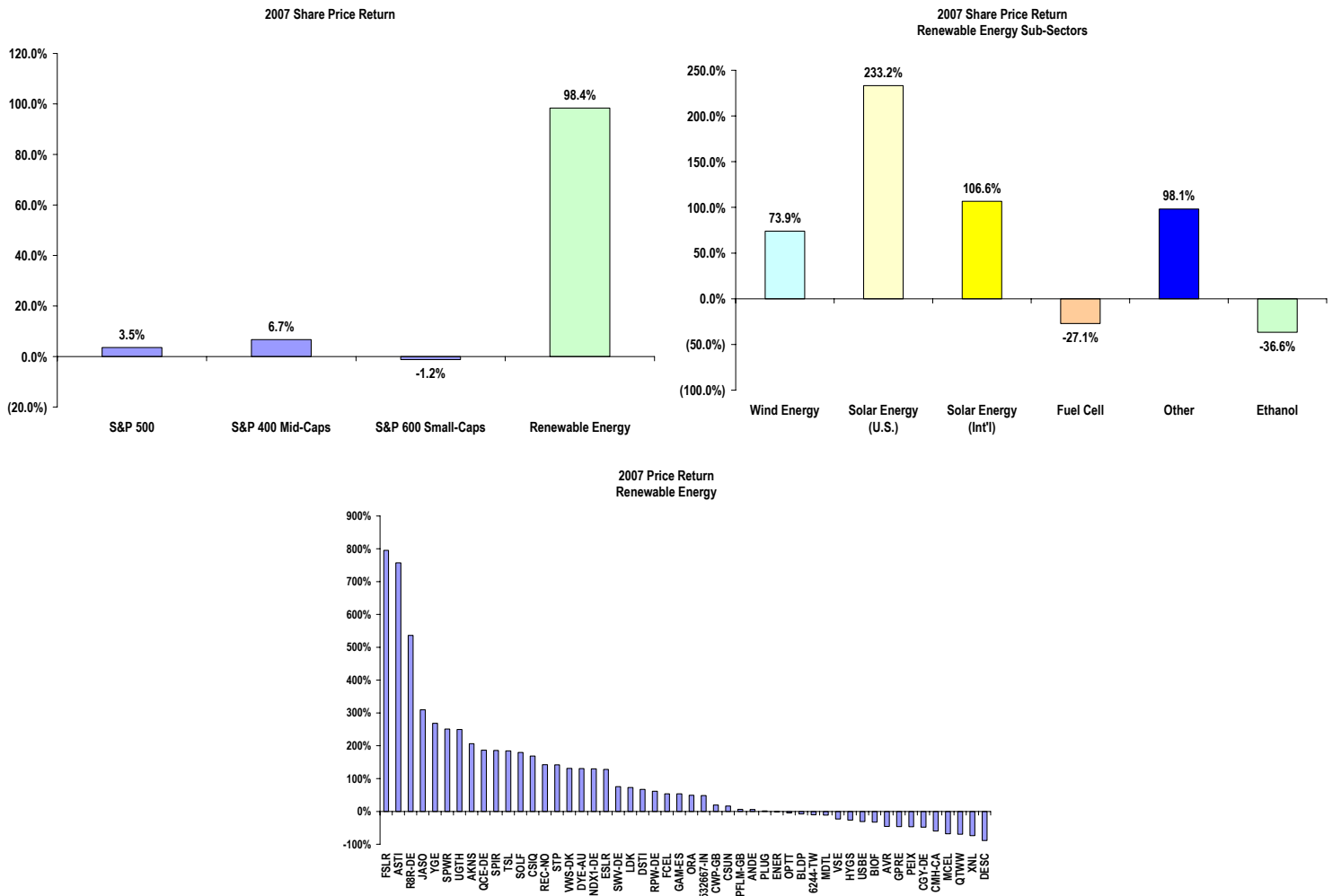
2007 RENEWABLE ENERGY SECTOR PERFORMANCE

We track ~50 pure-play stocks in the wind, solar, fuel cell, ethanol, wave, and geothermal sub-sectors in our Renewable Energy Comp Sheet. In addition to tracking share price returns, this comp sheet analyzes several valuation methodologies including Price/Sales, P/E, EV/EBITDA, and Price/BV Assets.

Renewable energy demonstrated strong growth throughout 2007 largely on the back of aggressive solar stock appreciation. As a sector, renewable energy (+98%) outperformed the S&P 500 (+3.5%), S&P 400 Mid-Caps (+6.7%), and S&P 600 Small-Caps (-1.2%).

Within the renewable energy sector, two sub-sectors shouldered substantial losses—ethanol (-37%) and fuel cells (-27%). Ethanol companies performed poorly as supply outgrew demand and margins deteriorated. Fuel cell companies continue to face challenges, while they continue to commercialize their technologies. Dramatically offsetting ethanol and fuel cell declines were domestic solar, international solar, and wind companies which appreciated 233%, 107%, and 74%, respectively.

Exhibit 2. Renewable Energy Sector Outperformed In 2007 (+98%)

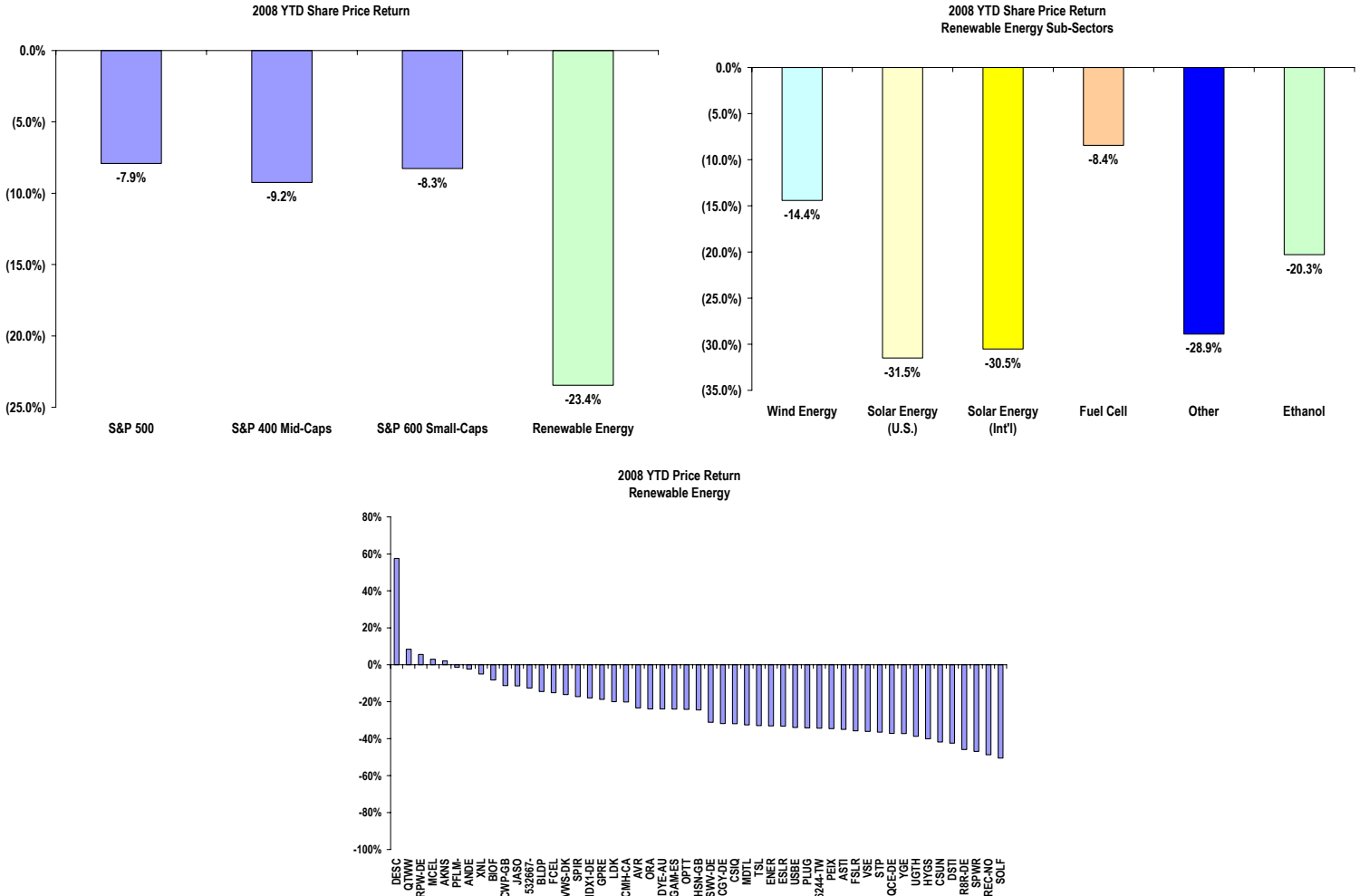


Sources: FactSet, Bear Stearns & Co., Inc.

2008 YTD RENEWABLE ENERGY SECTOR PERFORMANCE

In 2008 year-to-date (through January 25th), the Renewable Energy sub-sector we track has underperformed -23.4% YTD vs. S&P 500 -7.9%. Each of the renewable energy sub-sectors is down since the beginning of the year with a general pull-back in the market.

Exhibit 3. Renewable Energy Sector Pulling Back More Than S&P 500 In 2008 YTD, -23.4% Vs. -7.9%, Respectively

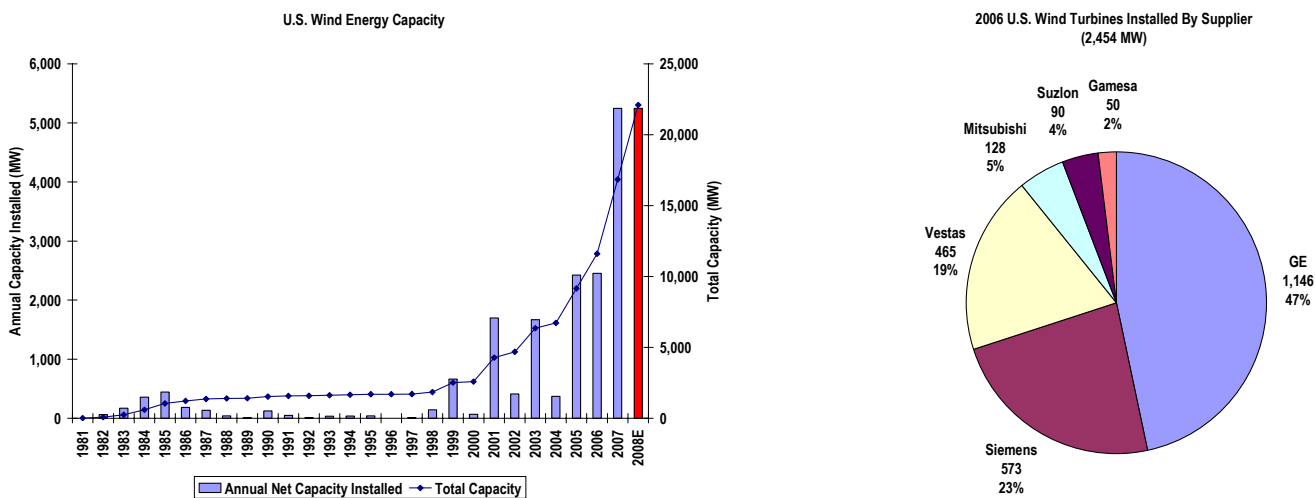


Sources: FactSet, Bear Stearns & Co., Inc.

THE WIND ENERGY INDUSTRY

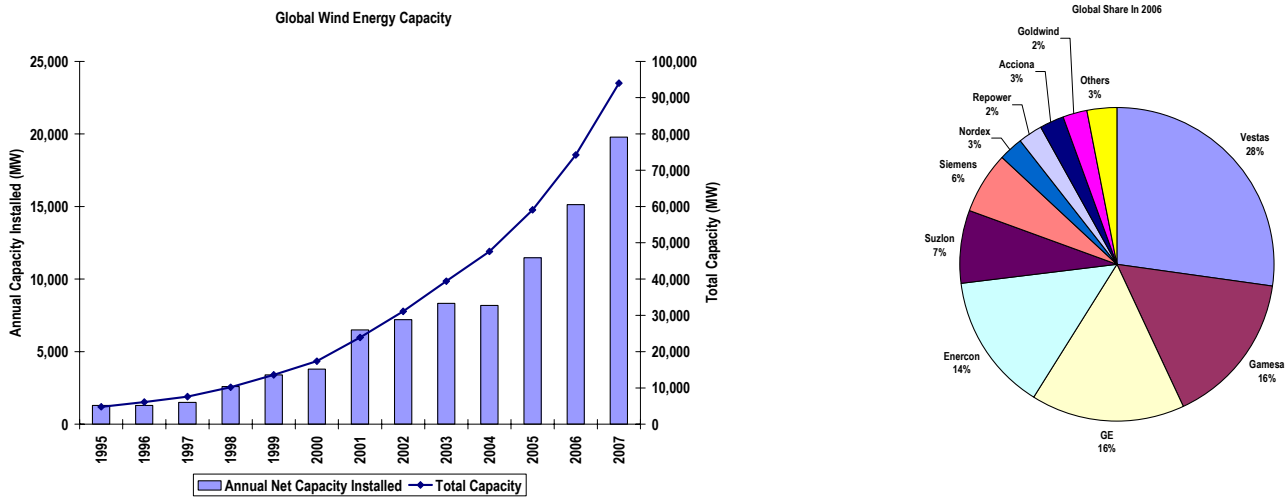
- **Total U.S. Wind Generating Capacity Increased +45% YoY In 2007.** In its most recent release, the American Wind Energy Association (AWEA) announced the U.S. wind energy industry installed 5,244 MW of wind energy power generating capacity, +144% YoY. AWEA noted that 2,930 MW of capacity came online during Q4'07, which brings the total installed capacity to 16,818 MW, representing an increase of total capacity of +45%. Additionally, AWEA indicates that 2008 could equal 2007 in new wind capacity installed. For perspective, the U.S. industry added 2,454 MW in 2006 (installed capacity +27% YOY for a total installed base of 11,600 MW). The top three suppliers to the U.S. market in 2006 were GE with a ~47% market share (vs. 59% market share in 2005), Siemens ~23%, and Vestas ~19%. (AWEA originally forecast 3,000 MW would be installed in 2006 as well.)
- **Global Wind Generating Capacity Increased +30% YoY In 2007.** The Global Wind Energy Council (GWEC) recently reported that 20 GW of wind generating capacity were installed on a global basis in 2007. Total wind energy capacity at YE 2007 was 94 GW (+27% YoY). Europe continues to have the largest installed base (>57 GW or 61% of global capacity), and grew capacity by 8.5 GW, ~17% YoY. In 2007, the U.S. was the largest geographic market for the wind industry—adding 5.2 GW of capacity. Of note, in 2007 China more than doubled its installed capacity, albeit from a smaller base, by adding 3.4 GW to increase total capacity to 6 GW (+156% YoY).
- **GE Is Rapidly Growing Its Clean Energy Presence.**
 - **GE Financial Services Has Increased Its 2010 Renewable Energy Investment Target By 50%.** GE Financial Services raised its 2010 renewable energy investment target by 50% from \$4 billion to \$6 billion. This has become the unit's fastest growing business and has invested in 85 wind farms increasing total capacity of wind energy assets to 3.6 GW.
 - **GE Energy Demonstrates Strength In Wind Turbine Sales.** GE estimates that its 2007 wind energy business generated over \$4 billion in revenues or 2.3% of total company revenues. It remains the top U.S. supplier in 2007 with 45% market share according to AWEA and installed over 2.3 GW of wind capacity in 2007. In Q4'07, GE Energy secured a number of contracts to provide wind turbines through 2009 totaling over 1,500 MW of power generation capacity. On October 22nd, it announced that it would supply Third Planet Windpower 167 1.5 MW turbines under a contract valued at \$350 million. The next day, GE signed a \$730 million agreement with Energias de Portugal SA, the world's fourth largest wind project developer, to supply wind turbines representing 500 MW of capacity. On November 16th, Invenergy Wind announced that it contracted GE to purchase 800 MW of wind turbines.
- **U.S. Congress Expected To Extend Production Tax Credit (PTC).** Given the boom-bust nature of the domestic industry with short-term production tax credits (now due to expire on December 31, 2008), supply chain inefficiencies may continue to delay some projects in 2007. Although the 2007 U.S. Energy Bill failed to include the extension of PTCs for the wind industry, Democrat congressional leadership is currently exploring opportunities to place the PTC extension into other fast-moving bills such as the Economic Stimulus Bill and the Farm Bill.

Exhibit 4. U.S. Wind Energy Industry Added ~5GW In 2007; AWEA Expects 5GW In 2008; GE Remains Top U.S. Supplier In 2007 With ~45% Share



Sources: American Wind Energy Association; Bear Stearns & Co., Inc.

Exhibit 5. Global Wind Energy Capacity Grew +30% YoY In 2007. Vestas Was Top Supplier In 2006 With 28% Market Share.

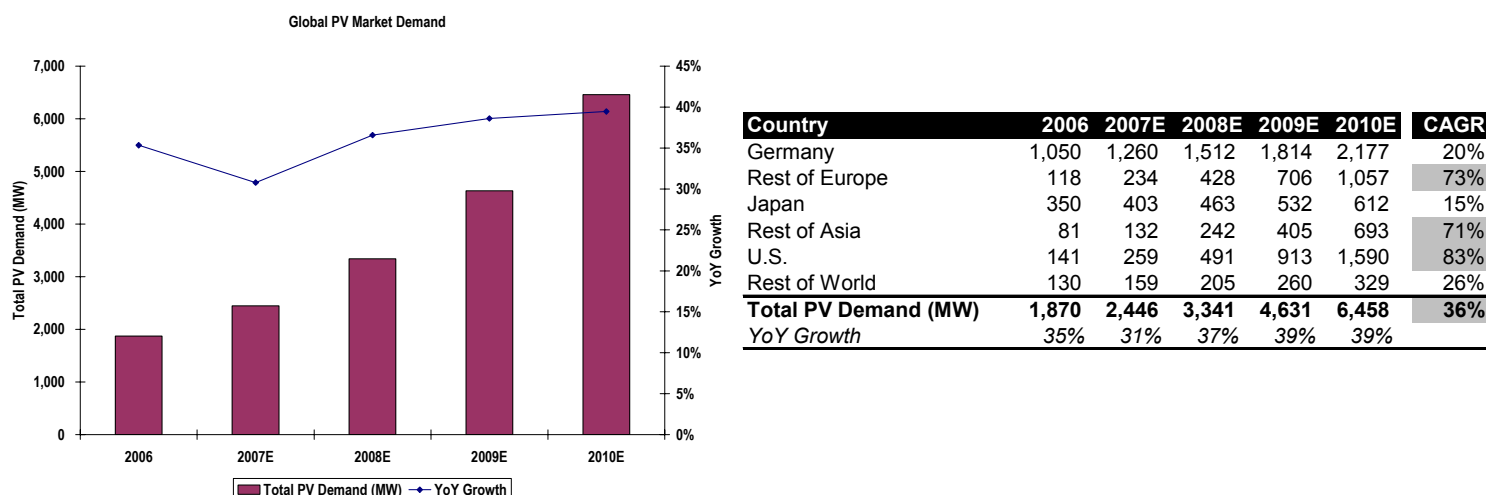


Sources: Global Wind Energy Council; BTM Consulting; Bear Stearns & Co., Inc.

THE SOLAR ENERGY INDUSTRY

- **U.S. Congress Expected To Extend Investment Tax Credit (ITC).** Although the 2007 U.S. Energy Bill failed to include the extension of the ITCs for the solar industry, Democrat congressional leadership is currently exploring opportunities to place the ITC extension into other fast-moving bills such as the Economic Stimulus Bill and the Farm Bill.
- **PV Demand Forecasted To Grow By 36% CAGR From 2006 To 2010.** Solar Today previously published its global forecast for photovoltaic demand through 2010. PV demand is now expected to grow 36% CAGR through 2010 to 6,500 MW from a base of 1,900 MW in 2006. Although Germany's growth will slow, it is expected to more than double its demand for PV. The United States, on the other hand, is projected to increase by more than 10x though is starting from a much smaller base of 141 MW in 2006.

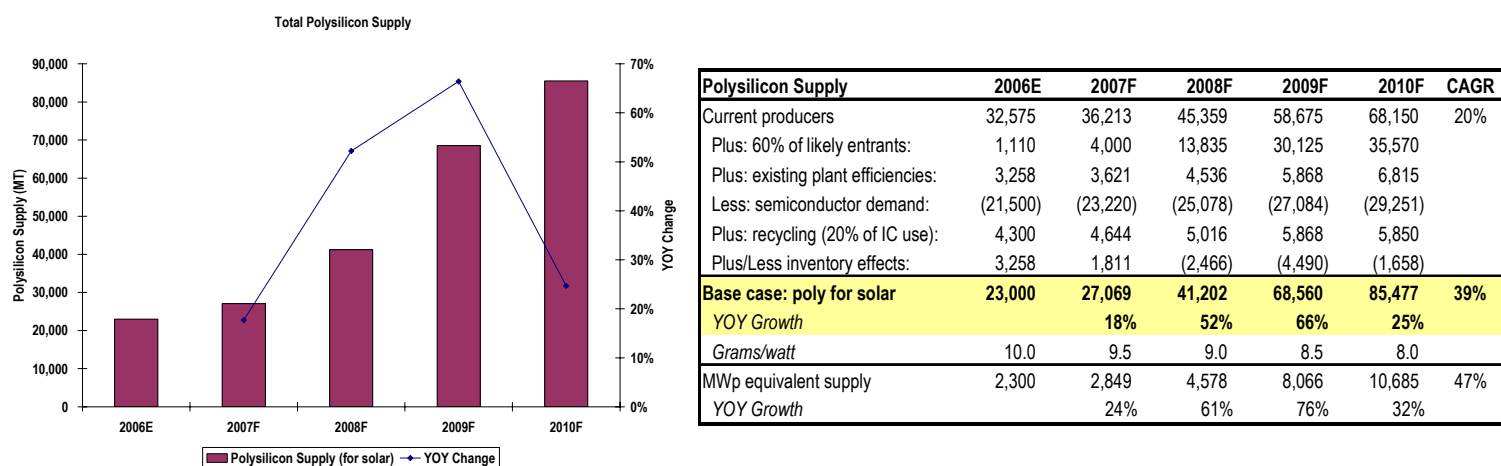
Exhibit 6. PV Demand Forecasted To Grow By 36% CAGR From 2006 To 2010



Sources: Solar Today, Bear Stearns & Co., Inc.

- **Polysilicon production forecast to grow 39% CAGR from 2006-2010.** Solar Today previously published the Prometheus Institute's forecast for polysilicon supply through 2010. Polysilicon supply for solar applications (after deducting for forecasted semiconductor demand) is expected to grow 39% CAGR through 2010 to 85,500 MT from a base of 23,000 MT in 2006. The current tight polysilicon supply conditions, due to increased demand from solar cell manufacturers, has incentivized new entrants into the market and current producers to expand their capacity. Polysilicon prices will likely fall significantly as this additional capacity comes online through 2010.

Exhibit 7. Polysilicon Supply For Solar Applications Forecast To Grow 39% CAGR

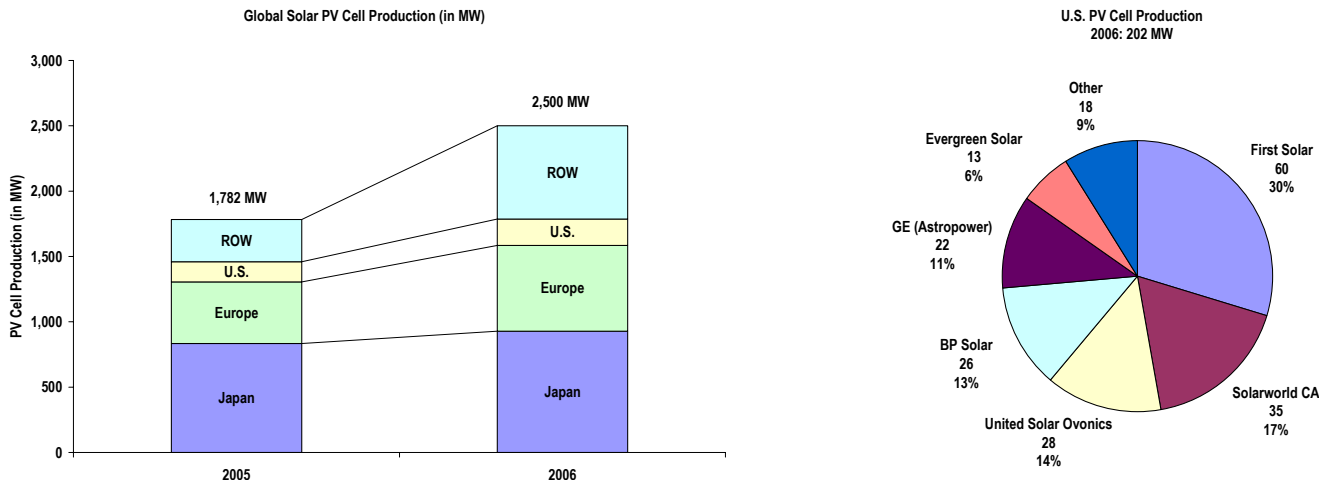


Sources: Solar Today, Prometheus Institute, Bear Stearns & Co., Inc.

- **Solar PV cell producers' output increased 40% YOY in 2006.** PV News previously published industry data from its annual survey of solar PV cell producers. In 2006, PV manufacturers produced 2,500 MW of cells on a global basis, up 40% YOY despite the continued tight supply conditions in the polysilicon market. Of note, China surpassed the U.S. as the third largest

global producer with 370 MW produced in 2006. Manufacturers in the U.S. produced 202 MW (+31% YOY). Of note, First Solar tripled its U.S. production to 60 MW (+200% YOY) to become the leading U.S. producer.

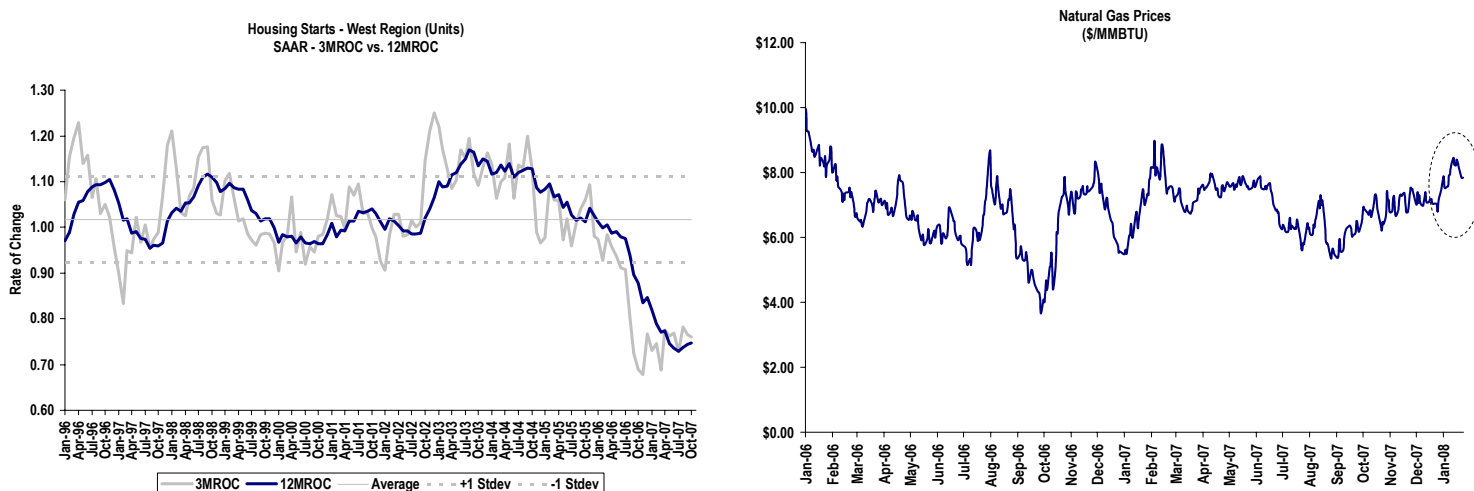
Exhibit 8. Global PV Cell Production +40% YOY In 2006; U.S. PV Cell Production +31% YOY – First Solar Top In U.S. Market



Sources: PV News, Bear Stearns & Co., Inc.

- Western housing starts (SAAR) -14% MoM in December.** The Western U.S. is an important region for the solar industry, and while solar technology is being installed on existing homes as well, a notable decline in housing starts could negatively impact demand for solar panels in the near term. New housing starts in December decreased to 1.0 million (SAAR) -14% MoM and -38% YoY. In the western region of the U.S., housing starts were 205K (SAAR), -20% MoM and -51% YoY.
- Natural gas price +5% since the beginning of the year.** We also track the price of natural gas, since this is the key input for power generation in California and any downward trend in the price of natural gas, if passed on to consumers, could pressure the competitiveness of other forms of renewable energy such as solar. The price of natural gas increased +5% since the beginning of the year to \$7.84/MMBtu (as of January 25th).
- GE Global Research Demonstrates Low-Cost Solar Cell.** GE’s centralized research group announced that its scientists have demonstrated a scalable silicon nanowire-based solar cell with the potential to achieve up to 18% efficiency. Additionally, the team asserts that the technology can be produced at costs lower than conventional solar cells.

Exhibit 9. Western Region Housing Starts (SAAR) +6% MOM In December*; Natural Gas Price +5% YTD



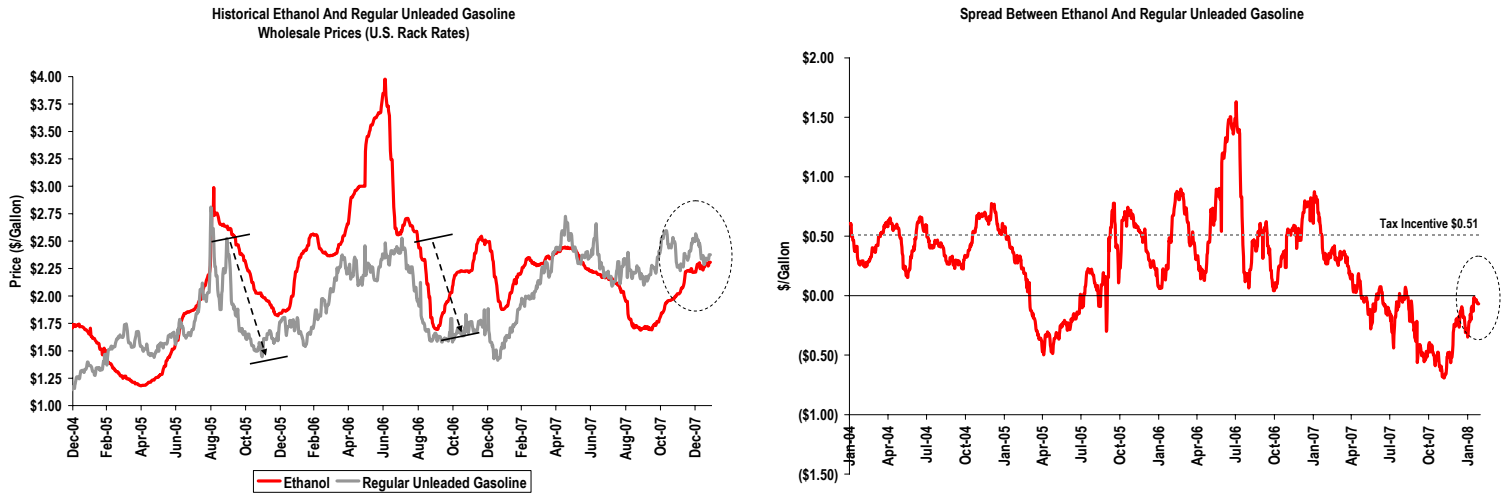
*Latest data available

Sources: Haver Analytics, US Census Bureau, Bear Stearns & Co., Inc.

THE ETHANOL INDUSTRY

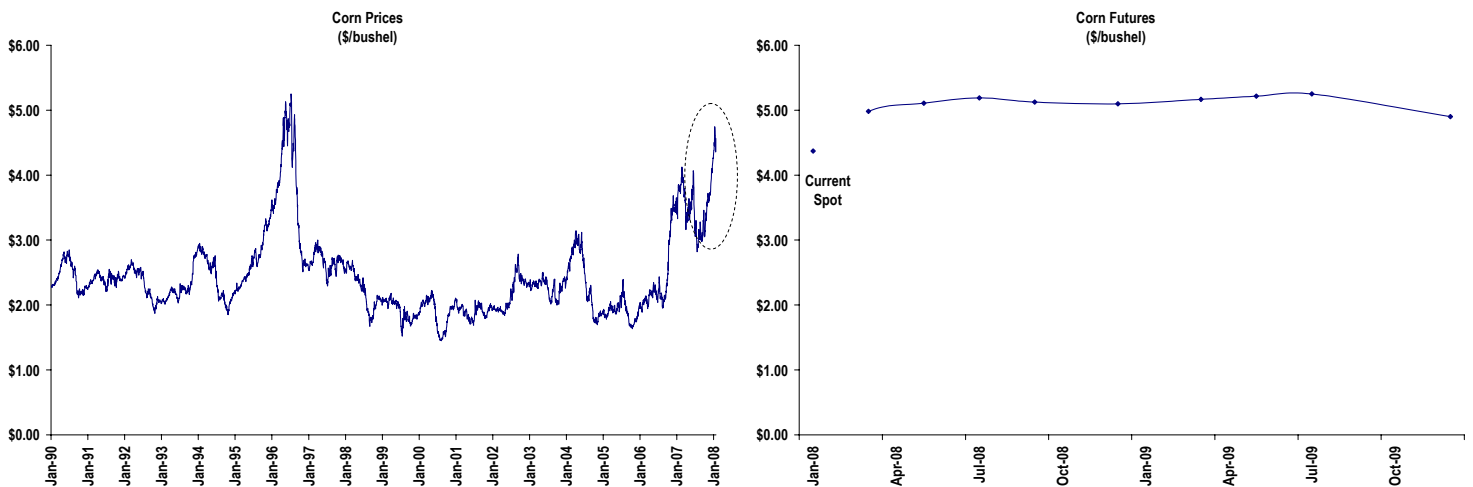
- Ethanol Prices Improve.** Since Oct'07 ethanol prices have steadily improved as the South-East has started to open up. Ethanol and wholesale gas are near parity at \$2.31 and \$2.40 per gallon, respectively. The industry produced a record amount of ethanol in Oct'07 (589 MM gallons) and grew +36% YoY, while demand grew +24% YoY. There currently are 139 plants with 7.9 BGY of capacity. The number of announced ethanol construction projects (both greenfield and expansions) is currently 69 and represents 5.6 BGY.
- Gross Margin Economics Remain Steady.** Our analysis suggests that at current ethanol and corn prices, producer variable margin is ~16% (vs. ~18% in Dec'07). Although corn costs have increased, ethanol pricing has also improved. DDGS prices have also improved to \$180/ton vs. \$140/ton in Dec'07. Ethanol prices would have to fall to about \$1.84/gal to breakeven. With about ~232 MM gallons coming on stream each month over the next 18-24 months, producers margins will likely remain steady or even improve as the new RFS under the 2007 Energy Bill kicks in.

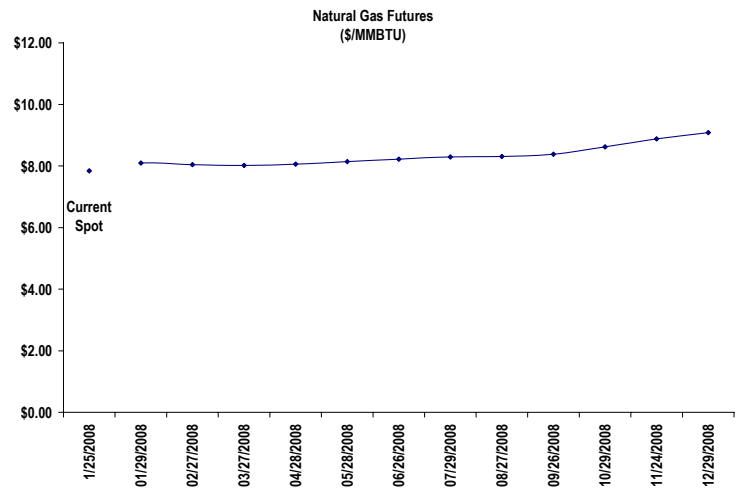
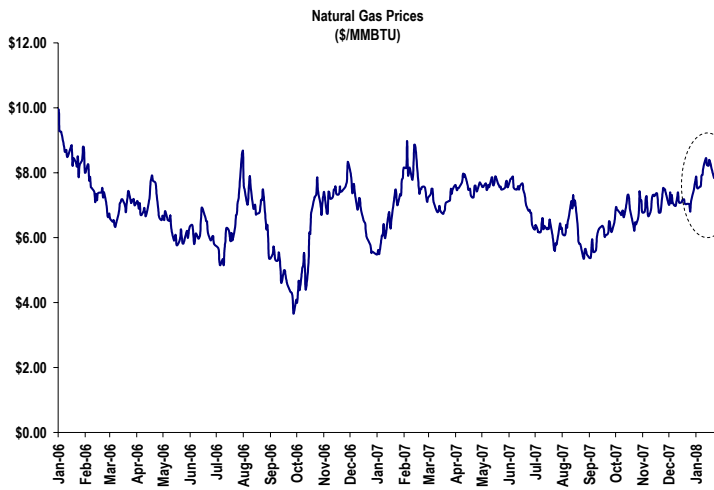
Exhibit 10. Without Additional Blending Capacity And Demand, Ethanol Prices Will Likely Remain Depressed



Sources: Bloomberg, Bear Stearns & Co., Inc.

Exhibit 11. Input Costs Remain Elevated





Sources: Haver, CBOT, Reuters, Bear Stearns & Co., Inc.

Exhibit 12. Margins Remain Steady (16% In Jan'07 Vs. 18% In Dec'07) Though Input Costs Rise As Demand Improves Pricing Of Ethanol & DDGS

Corn Ethanol - Dry Mill - Today				Corn Ethanol - Dry Mill - Corn Breakeven Price				Corn Ethanol - Dry Mill - Ethanol Breakeven Price			
Input:				Input:				Input:			
Corn (1)	1 bushel @	\$4.67	\$4.67	Corn	1 bushel @	\$5.93	\$5.93	Corn (1)	1 bushel @	\$4.67	\$4.67
Natural Gas (1)	0.165 mBtu @	\$7.84	\$1.29	Natural Gas (1)	0.165 mBtu @	\$7.84	\$1.29	Natural Gas (1)	0.165 mBtu @	\$7.84	\$1.29
Variable Production Cost per bushel			\$5.96	Variable Production Cost per bushel			\$7.22	Variable Production Cost per bushel			\$5.96
Ethanol Gallons per bushel			2.7	Ethanol Gallons per bushel			2.7	Ethanol Gallons per bushel			2.7
Variable Production Cost per gallon			\$2.21	Variable Production Cost per gallon			\$2.68	Variable Production Cost per gallon			\$2.21
Transportation (4)			\$0.18	Transportation (4)			\$0.18	Transportation (4)			\$0.18
Variable Input Cost per Gallon			\$2.39	Variable Input Cost per Gallon			\$2.86	Variable Input Cost per Gallon			\$2.39
Output:				Output:				Output:			
Ethanol (2)	2.7 gallons @	\$2.31	\$6.24	Ethanol (2)	2.7 gallons @	\$2.31	\$6.24	Ethanol	2.7 gallons @	\$1.84	\$4.97
DDGS (lbs) (3)	18 lbs.		\$1.47	DDGS (lbs) (3)	18 lbs.		\$1.47	DDGS (lbs) (3)	18 lbs.		\$1.47
	0.008 tons @	\$180.00			0.008 tons @	\$180.00			0.008 tons @	\$180.00	
Revenue per bushel			\$7.71	Revenue per bushel			\$7.71	Revenue per bushel			\$6.44
Ethanol Gallons per bushel			2.7	Ethanol Gallons per bushel			2.7	Ethanol Gallons per bushel			2.7
Revenue per Gallon			\$2.86	Revenue per Gallon			\$2.86	Revenue per Gallon			\$2.39
Gross Margins:			16.4%	Gross Margins:			0.0%	Gross Margins:			0.0%

(1) Haver Analytics, January 25, 2008
 (2) Bloomberg, January 25, 2008
 (3) USDA, BSC estimates, January 23, 2008
 (4) BSC estimate
 (5) Reuters, CBOT, January 25, 2008

Sources: Bloomberg, USDA, CBOT, Reuters, Haver Analytics, Bear Stearns & Co., Inc.

INDUSTRY TRACKER

Cellulosic Ethanol Summit

We recently attended the Cellulosic Ethanol Summit in Washington, D.C. The conference featured companies with some of the most promising cellulosic ethanol technologies and explored the biomass infrastructure that may be required to enable cellulosic ethanol to reach scale. The general tenor and sentiment was subdued as a result of the recent negative media coverage on ethanol. We highlight some key takeaways from the event below:

- **Enzymatic Cellulosic Ethanol Companies Are Making Headway.** In 2007, the U.S. Department of Energy awarded up to \$385 million to six cellulosic ethanol companies. Having said this, getting the funds has proven tough, according to sources. These six companies—Abengoa, ALICO, Bluefire, Broin, Iogen, and Range Fuels—use a wide variety of conversion pathways and feedstock. Of the six companies, enzymatic hydrolysis is the most common pathway, representing four of the six companies. In 2006, the average capex per gallon required to build a enzymatic cellulosic ethanol plant was north of \$10. Today, it stands in the single digits, ranging from \$5-8 per gallon.
- **Non-Enzymatic Cellulosic Ethanol Pathways—such as Gasification And Acid Hydrolysis—Could Prove Promising.** Typically, when the term cellulosic ethanol is used, it is often considered in the context of enzymatic hydrolysis—or, the application of enzymes to break down carbohydrates into simple sugars, which are then used to ferment ethanol. It is important to recognize that there are other pathways to ethanol in addition to enzymatic hydrolysis such as gasification and acid hydrolysis. Gasification (thermochemical hydrolysis) and acid hydrolysis approaches could prove promising. The gasification pathway has a number of advantages, such as feedstock flexibility and multiple valued outputs in addition to ethanol, such as syngas and chemicals. Acid hydrolysis technology, on the other hand, has a high sugar recovery rate.
- **Biomass logistics infrastructure is in its nascent stages of development, yet critical to success of cellulosic ethanol industry.** A successful cellulosic ethanol industry will require a well developed biomass logistics infrastructure to enable the industry to reach scale. This results in a classic chicken-and-egg dilemma. How do you convince farmers to grow energy crops or collect feedstock? Farmers will not cultivate energy crops or collect feedstock unless there is a clear market and compelling economics, while a cellulosic ethanol plant requires biomass infrastructure. Additionally, many types of feedstock have low BTU content per unit of volume and/or weight, and the biomass is often not uniform or easily collected and transported. Moreover, resolving these issues may require special machinery and processes to be manufactured and developed. At the conference, we learned of some encouraging developments that potentially lay some groundwork to enable this infrastructure to develop. Specifically, the ShowMe Energy Cooperative has taken steps to organize >500 farmers and has systematically assessed dozens of biomass feedstock options. Given the variety of BTU content and ag residue characteristics, the coop is developing standard, uniform ‘pellets’ to be sold into the cellulosic ethanol value chain.

Exhibit 13. There Are Three Primary Approaches To Cellulosic Ethanol Production

Three Primary Approaches to Cellulosic Ethanol Production*			
	Concentrated acid hydrolysis	Thermochemical hydrolysis	Pretreated enzymatic hydrolysis
How the biomass is treated	Exposed to concentrated sulfuric acid and water to convert the substrate into sugar, which is then fermented into ethanol	Gasified with heat and chemicals, then percolated through fermenters and converted to ethanol via a microorganic or chemical catalyst	Thermal, chemical or enzymatic pretreatment followed by conversion first to sugar and then to ethanol via the use of biological agents or traditional fermentation
Advantages	Proven technology. High sugar recovery efficiency	Feedstock flexibility	Greatest potential for conversion efficiency and cost savings
Disadvantages	Capital-intensive	May use more energy than it produces. Large scale conversion to ethanol is difficult	Different feedstocks require different enzyme treatments. High cost of enzymes
Progress-to-date	Well established	Moderately established	Emerging
Key Players	BlueFire Ethanol Fuels, Masada Resource Group	Range Fuels, Syntec Biofuel, ThermoChem Recovery International, Alico	Abengoa Agrivida, POET, Verenium, DuPont, Dyadic, Iogen, Mascoma, Genencor, Novozymes, Syngenta, Lignol

* Note: There are biological and chemical variations within each of these processes

Sources: DOE, Bruce Dale of Michigan State University, Kiplinger's Biofuels Market Alert, Bear Stearns & Co., Inc.

The following provides an overview of key companies:

- **Lignol (CVE: LEC).** A public company based in Vancouver, Canada and listed on the Toronto Stock Exchange, Lignol produces ethanol based on an enzymatic hydrolysis that was originally developed at GE and has a proprietary feedstock preprocessing technology. The company is focused on wood and forest residues as its primary feedstock and produces other valued products such as furfural and lignin in addition to fuel-grade ethanol.
- **Verenium (NASDAQ: VRNM).** In June 2007, Verenium was created as a result of the merger between Diversa, an enzyme developer, and Cellunol, a company focused on developing cellulosic ethanol processes. VRNM is currently building a pilot 1.4 MGY cellulosic ethanol production facility in Jennings, Louisiana using sugarcane bagasse as its primary feedstock and plans to complete construction of the plant by the end of Q1 '08.
- **Poet (Private).** Poet is the largest ethanol producer in North America, producing over 1 BGY per year. Headquartered in Sioux Falls, South Dakota, the company employs over 1000 employees in 21 plants throughout the Midwest. Although the vast majority of its ethanol production is currently derived from corn, it has invested resources to explore cellulosic ethanol production. This project, which is titled 'Project Liberty', plans to convert a 50 MGY corn-to-ethanol plant in Emmetsburg, Iowa into an integrated ethanol biorefinery that will source corn cobs and fiber as feedstock.
- **Bluefire (Private).** Based in Irvine, California, Bluefire uses an acid hydrolysis process to break down feedstock cellulose. The company plans to use urban trash, rice and wheat straws, wood waste and other agricultural residues as feedstock and to apply a concentrated sulfuric acid to break down the cellulose into simple sugars. Its technology has been implemented in Japan on a small scale that produces 21 thousand gallons of ethanol per year.
- **ShowMe Energy Cooperative (Non-Profit).** Based in Missouri, this is the first producer-owned biomass cooperative in the U.S. focused on building out the biomass logistics infrastructure. With over 500 member farmers from 14 states, the coop aggregates 15 different types of agriculture residue based on a mix of BTU content to develop standardized biomass pellets. The team hopes to give producers the ability to develop a profitable biomass infrastructure business.

Exhibit 14. Exposure To The Renewable Energy Sector Within Our Coverage Area Varies By Company

	Solar	Wind	Ethanol/ Other Fuels	Biomass	Fuel Cells	Hybrid Technology	Comments
GE	+	+++		+	NM	NM	Greatest exposure is Wind: \$3+ billion in revenues (~2% of total revenues)
DE		+	+++				John Deere Credit finances wind projects; NA Ag leveraged to ethanol demand
AG			++				NA Ag leveraged to ethanol demand
ETN			+		NM	+++	Designing and manufacturing hybrid drivetrains; offering fuel cell power solutions; revenues not yet material but offer significant potential
CAT			NM		NM	NM	Initiatives are research focused; revenues not yet material; alliances include: FuelCell Energy (FCEL), Firefly Energy, Active Power (ACPW)
PH	+	++	+		NM		Provides wind blade components & fuel cell components; exposure to ethanol as component supplier to Ag; supplier of drives that enable solar mirrors to track the sun; revenues not yet material
IR				+			Micro turbines can burn gas from landfills & wastewater treatment facilities; revenues not yet material
DHR			+				Gilbarco business unit manufactures fuel dispensing equipment, including that used for E85 (85% ethanol blend)
ITW							No direct exposure

*NM = Not Meaningful

Sources: Company Reports, Bear Stearns & Co., Inc.

Exhibit 15. GE Offers Full Product Lines While Other Companies Are Pilot Testing And Developing Component Products

Company	Sector	Product Details
GE	Solar	Photovoltaic cells and solar modules primarily for residential; revenues ~\$100 million; #5 in global market
	Wind	Wind turbines (1.5 - 3.6MW); revenues \$3+ billion; #1 in U.S., #2 in global market
	Fuel Cells	Research focus -- driven mostly internally by GE's Research Lab; development collaboration agreement with Plug Power, Inc.
	Hybrid Technology	GE Rail designing hybrid diesel-electric locomotive that captures energy dissipated during braking; could reduce fuel consumption and emissions by 15%
	Biomass	GE Jenbacher product line of gas-fueled reciprocating engines (300 kW to 3 MW) can burn methane gas from landfills & wastewater treatment facilities
ETN	Hybrid Technology	Leveraging trend toward hybrid vehicles by investing in drivetrain technology
		Developed hybrid electric drivetrain for FedEx "step-van" trucks -- 18 tested in 2004-2005; ~75 ordered for 2006; (ETN's internally developed, winning design was selected among submissions from ~20 companies)
		Content on hybrid cars -- similar products as conventional automobiles although parts are redesigned for smaller engine
	Fuel Cells	Agreements with Alteryg to offer complete fuel cell power solutions to telecommunications and other premium power end markets
Other	Developing pressurized cylinder technology to utilize a vehicle's braking energy for propulsion -- potential application for garbage trucks	
CAT	Alternative Fuels	Conducting research for engines to be able to run on multiple fuels, including biodiesel
	Fuel Cells	Alliance with FuelCell Energy (FCEL) -- distribution and development of ultra-low emission fuel cell power generation products. Research based; revenues not yet material
	Hybrid Technology	Firefly Energy -- CAT spin-off developing improved storage capacity for batteries; possible future applications include hybrid vehicles
	Other	Active Power (ACPW) developed a battery-free UPS system that incorporates flywheel technology; marketed by Caterpillar under brand name "Cat UPS." Revenues not yet material
PH	Wind	Manufactures components that control the pitch of wind turbine blades; revenues not yet material
	Fuel Cells	Provides components to fuel cell manufacturers; also has strategic partnership with Protonex Technology to develop, manufacture, and sell fuel cell products; revenues not yet material
IR	Biomass	Designs and manufactures micro turbines (70KW and 250KW) can burn methane gas from landfills & wastewater treatment facilities; revenues not yet material
DHR	Alternative Fuels	Gilbarco business unit manufactures retail and commercial fuel dispensing equipment, including infrastructure used for E85 (ethanol blend)

Sources: Company Reports, Bear Stearns & Co., Inc.

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Ann Duignan

Companies Analyzed

* AGCO Corp. (AG) - \$58.98 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$70.00

Risk(s) to Price Target - Slower than expected farm equipment spending

Valuation Methodology - Rel P/NE

* Caterpillar (CAT) - \$68.21 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$78.00

Risk(s) to Price Target - Economic Slowdown

Valuation Methodology - Forward P/E

* CNH Global (CNH) - \$48.63 (as of January 28, 2008 16:00 ET) - Outperform

* Danaher Corp. (DHR) - \$74.51 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$98.00

Risk(s) to Price Target - Economic slowdown; inability to make acquisitions at reasonable prices

Valuation Methodology - Relative Price / Sales

* Deere & Company (DE) - \$85.43 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$99.00

Risk(s) to Price Target - Slower than expected farm equipment spending

Valuation Methodology - Relative Price / Average Earnings

* Eaton Corporation (ETN) - \$82.38 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$97.00

Risk(s) to Price Target - Economic slowdown

Valuation Methodology - Relative price to normalized earnings

* Illinois Tool Works (ITW) - \$50.09 (as of January 28, 2008 16:00 ET) - Peer Perform

* Ingersoll-Rand (IR) - \$39.08 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$60.00

Risk(s) to Price Target - Economic slowdown

Valuation Methodology - Relative P/NE

* Parker-Hannifin Corp. (PH) - \$64.00 (as of January 28, 2008 16:00 ET) - Peer Perform

* General Electric Co. (GE) - \$34.72 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$46.00

Risk(s) to Price Target - Macro economic weakness, power generation orders, merger integration

Valuation Methodology - Relative price to normalized earnings

* Ocean Power Technologies (OPTT) - \$12.60 (as of January 28, 2008 16:00 ET) - Outperform

Price Target ('08): \$20.00

Risk(s) to Price Target - Slower than expected development of the wave energy industry; execution risk

Valuation Methodology - DCF, P/Sales, EV/EBITDA, P/E

Ingersoll-Rand (IR): Bear Stearns is affiliated with the specialist that makes a market in the common stock of this issuer, and such specialist may have a position (long or short) and may be on the opposite side of public orders in such common stock.

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