

# Winslow Environmental News

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## FEATURED COMPANY

### MAKING COAL CLEANER: FUEL TECH AT THE FOREFRONT

BY CELINE M. SUAREZ

While the Bush administration is indulging coal-burning utilities that are dragging their feet on



anti-pollution technology, Fuel Tech N.V. (NASDAQ: FTEK) is spurring on those forward-looking companies that want to clean up their act.

Headquartered in Stamford, CT, FTEK's three businesses, NOxOUT®, Fuel Chem®, and ACUITIV™ help coal-fired utilities and industrial units meet mandated clean air levels and run more efficiently.

**Regulatory-driven business: clearing the air around coal boilers.**

According to the US Energy Information Administration

Please see *FUEL TECH* page 4

## The Science of Climate Change: Where Are We Now?

BY ELLEN PFEIFER



The science of climate change is still in its infancy – fragmentary, inexact, and complicated by contradictory evidence. But we know enough to conclude that parts of the globe are warming significantly, that human activity is to blame for some of it, and that a continued warming trend has ominous implications for life on Earth.

There are still naysayers, of course. Some of the contrarians are even respected scientists. However, there is enough consensus to impel the nations of the world to initiate huge, coordinated studies. And some haven't waited for the results, but are already taking steps to minimize emissions that contribute to warming.

### Worldwide urgency

A look at the calendar for fall 2003 demon-

strates the ubiquitous concern to understand the problem. As you receive this issue of WEN, international researchers are meeting in Moscow for the World Climate Change Conference. Their goal is to discuss climate science, the adaptation of populations and economies to on-going climate change, and the search for economically and politically feasible ways to minimize anthropogenic (human) impact on the climate system. Coinciding with the Moscow meeting, regional and local authorities in France will be conferring in Strasbourg about best practices for limiting greenhouse gas emissions. In mid-October, Montreal hosts the 2003 Open Meeting, "Human Dimensions of Global Environmental Change."

And Trieste, Italy will sponsor the First Young

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## MARKETBEAT PAGE 2

### Climate Change's Effect on Values

Environmental liabilities drive down prices as market recognizes threat



## PORTFOLIO UPDATE PAGE 6

### Sonic Announces Top-Tier Licenses

Technology will allow end-users to create video-CDs of photo slideshows

## REDESIGNED WEB SITE

Winslow recently launched a redesigned Web site that provides in-depth information about Winslow's environmentally responsible investment products and services. Additionally, the site offers extensive information on green investing. The new web site, which can be found at [www.winslowgreen.com](http://www.winslowgreen.com), also includes online applications for the Winslow Green Growth Fund (WGGFX)\* along with information about the fund and its performance. Other features of the new web site include: archived copies of Winslow Environmental News; general news about green investing; links to studies that demonstrate the relationship between environmental responsibility and stock performance; and recent news about Winslow Management Company. We believe visitors will find the new site more attractive, easier to navigate and, most important, more informative than our previous site.

\* The Winslow Green Growth Fund invests in small and medium size companies which pose greater risks than those associated with larger, more established companies. For additional information about the Fund, including fees and expenses, request a prospectus by calling 888-314-9049.

Please read the prospectus carefully before investing. Forum Fund Services, LLC, distributor.

MARKETBEAT

# Stock Prices of Companies Aiding Climate Change are Melting

BY JACKSON W. ROBINSON

Global warming is here. According to NASA, three of the last five years have been the warmest years on record. And it is not getting any cooler in 2003. The French Health Ministry just reported that 11,435 people died in early August during a record setting European heat wave. And if you live in the United States, you don't have to be a scientist to know that our weather is changing and getting warmer.

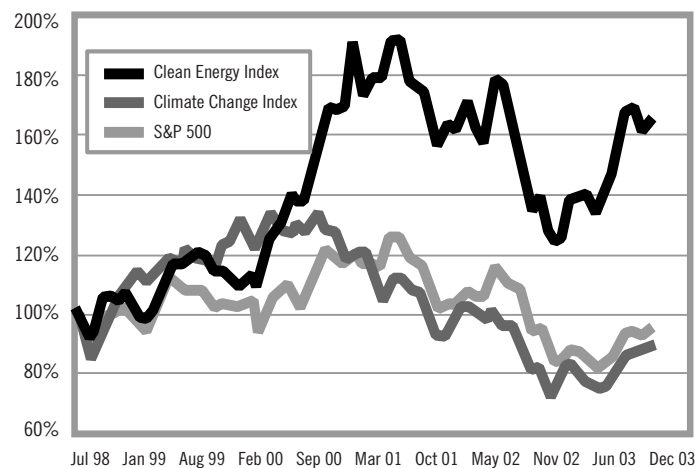
If you want a healthy portfolio, we believe you

perfluorocarbons (PFCs), and sulphur-hexafluoride (SF6). When released into the atmosphere, greenhouse gases absorb and trap heat resulting in global warming. Eighty-two percent of these emissions come from fossil fuels burned to generate electricity and to power cars and trucks.

While most of the countries in the world are endorsing the Kyoto Protocol, a treaty to reduce the emissions of greenhouse gases, the Bush administration is actually relaxing the clean air rules for

the fossil fuel industry including coal-burning utilities, oil companies, and domestic automobile manufacturers. In our opinion, this willful disregard of the evidence will increase the financial risk of investing in such industries. By ignoring the health consequences of greenhouse emissions and global warming, these companies could eventually set them-

**Clean Energy Index vs. Climate Change Dirties and S&P 500, 5 year Performance**



\* Past performance does not guarantee future results

should avoid companies that are contributing to global warming, especially those emitting "greenhouse" gases. Already threatening the health of people, wildlife, and economies around the world, such companies are also, in our view, putting their stock prices at risk.

According to the U.S. Environmental Protection Agency (EPA), greenhouse gases include carbon dioxide, methane, nitrogen oxide, ozone, and industrial generated hydro-fluorocarbons (HFCs),

selves up for expensive liabilities, whether legal settlements, government-imposed fines or enforced remediation. The end result in some cases could be catastrophic.

As a reminder of the devastating effect that environmental-related liabilities can have on companies, we need look no further than the current predicament facing tobacco, steel, asbestos, and perchlorate companies. Obviously, companies that manufacture or sell products that harm human beings frequently

end up in bankruptcy. We believe this is a likely scenario for many companies that are contributing to climate change, particularly those whose directors and managers are ignoring the evidence.

The looming risk for climate changing dirties is not going unnoticed by the insurance industry. For example, Swiss Re, one of the largest reinsurance companies in the world, is asking corporate customers seeking directors and officers insurance about their preparations for government regulation of greenhouse-gas emissions. Clearly, Swiss Re does not want to be insuring

companies that are not properly governing themselves with regard to climate change. And according to a recent article in *The New York Times*, Munich Re, a large German insurance company, is predicting

that the annual costs of global warming to polluting companies, insurers, and society could reach \$350 billion by the middle of this century. As the world's scientists and technicians connect the dots between corporate polluters and global warming, the capital markets are taking note. Institutional shareholders are awakening to the fact that they may face big financial risks and are requesting more information. And as the world gets hotter, we see the stocks of companies associated with climate change melting away, especially when compared to companies that are developing solutions to global warming.

To quantify the impact on the stocks of greenhouse gas related companies, we made two separate queries on KLD Research & Analytics' Socrates Database, an independent, and social responsibility-ranked universe that covers the S&P 500, Dow Industrials, and the Domini 400.

The first query identified companies with one or more "Climate Change Concerns" as determined by KLD. This produced a list of 54 companies that includes most of the coal-burning utilities, integrated

oil companies, and big automobile manufacturers.

In the second query, we identified companies in the universe with one or more "Clean Energy Strengths" which produced a list of 48 companies. This list includes many gas-related companies, utilities that have exceeded compliance in emissions reductions, and companies such as FPL Group, Inc. that are actively developing wind power or other forms of alternative energy. No automobile companies made this list.

Using the Factset financial database and equally

	1 YEAR	3 YEAR	5 YEAR
<b>Cleans</b>	+119.5%	+107.1%	+166.0%
<b>Dirties</b>	+99.9%	+84.3%	+95.6%
<b>S&amp;P 500</b>	+105.9%	+67.2%	+89.5%

\* Data obtained from KLD Research & Analytics and Factset, as of August 22, 2003. Past performance does not guarantee future results.

weighting each of the two categories, we then measured the performance of the "Climate Change" portfolio against the "Clean Energy" group and the S&P 500 for the last one, three, and five years. (see graph).

The results reveal a trend that isn't at all healthy for those who own stocks in the Climate Change portfolio. While the Clean Energy portfolio has produced positive absolute and relative returns over each of these time periods by 20 to 70 percentage points, the Climate Change portfolio has lost money every time.

At Winslow, we believe that positive and negative stock trend indicators are important and predictive data points. If the Climate Change portfolio companies do not quickly grasp the severity of the problems they are creating and take corrective actions, we don't think all the Bush administration duct tape in the world can protect them from the inevitable consequences. We believe this group of stocks should be avoided as long positions. But they look to us like wonderful shark-bait candidates for the hedge funds that feed on unaddressed liabilities. □

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*FUEL TECH continued from page 1*

(EIA), "Coal is used to generate more than half of all electricity in the United States." To regulate ozone and smog emissions from coal-fired utilities, the US Environmental Protection Agency (EPA) in 1998 finalized the NOx State Implementation Plan (or SIP Call). Under this rule, 22 states and the District of Columbia must submit plans to address the transport of ground level ozone by reducing emissions of nitrogen oxides (or NOx, a precursor to ozone). The compliance deadline is May 31, 2004, and as unit managers scramble to get emissions in line, Fuel Tech's suite of NOxOUT solutions is leading the charge. This near term growth vehicle should drive company revenues into 2006 as more utilities come into compliance with the SIP Call.

With no mandate as to which technology should be adopted by plants, managers are seeking the method that will provide the lowest cost per NOx reduced. Fuel Tech's NOxOUT products use the common chemical urea (rather than ammonia, a dangerous alternative) to convert nitrogen oxides to water and nitrogen gas (which already makes up 79% of the air we breathe).

#### **ROI-driven emerging business**

By contrast, Fuel Tech's emerging business, Fuel Chem, addresses the costly problem of "slagging" in

utility and industrial boilers. Slagging occurs when boiler ash builds up as a result of coal burning. The slag can have a consistency ranging from glassy to cement-like, with chunks sometimes as large as a small car. Besides causing significant structural damage, these "clinkers" can reduce efficiency by preventing effective fire production. Traditionally, coal

burners have eliminated slag by blasting the boilers with dynamite or high-pressure washing systems.

To get a better understanding of the problem, WEN contacted two customers using Fuel Chem.

Running average sized coal-fired boilers, each plant had been losing \$3.5 million annually in revenues, or 70,000 megawatts of lost energy that then needed to be purchased on the open market, due to downtime removing slag. Before using Fuel Chem, company boilers were taken off line for seven days twice a year at a cost of \$250,000 per day.



*The infrared image above shows the inside of a coal-fired boiler prior to treatment with Fuel Chem. The bright, white areas are slag that has built up on the pipes. Below, the same boiler is shown after only a few weeks of Fuel Chem treatment. Note almost no white areas depicting slag in that image.*



Rather than dynamite or washing systems, Fuel Chem offers a proprietary Targeted In-Furnace Injection program (TIFI), using the chemical magnesium hydroxide (Mg(OH)<sub>2</sub>). In order to determine exactly where the slagging occurs, a patented computer-modeling program called ACUITIV is used, which allows engineers to "see" how fluids move and behave inside the boiler. After pinpointing trouble spots, the technicians can inject magnesium

hydroxide through small valves—while the boiler runs at its normal rate.

The major cost benefit to customers comes through the elimination of downtime. In some cases, the return on investment (ROI) has been over 200% annually. Indeed, one unit manager stated that his initial \$1.5 million investment returned \$4 million in just one year.

What's more, Fuel Chem allows boiler managers to purchase cheaper western coal, which because of its high sodium content is known to cause significant slag buildup. Using Fuel Chem also helps boiler units meet emissions standards by reducing the amount of oxygen in the boilers. Previously, when slag was a problem, managers would increase the amount of oxygen in the boilers to help prevent buildup. But this practice exacerbated nitrogen oxide emissions, resulting in greater NOx control costs. When Fuel Chem is used, less oxygen is required, so nitrogen oxides are reduced. Another plus is that less coal needs to be burned

per megawatt produced when the surfaces inside the boiler are clean.

#### **While on the path to renewables, coal must get cleaned up**

With Fuel Chem just emerging, boiler unit managers who have been historically reluctant to invest in new technologies are starting to catch wind of the good news. (For example, one of the managers we spoke to reported that his unit running Fuel Chem had been on line for 11 months and 11 days consecutively, with no signs of slowing.)

So far, the company has just a handful of boilers up and running, but interest is high and the pipeline is filling up.

Though it would be environmentally beneficial to have a power system fueled entirely by renewables, it's important to remember that in the near term we must still rely on fossil fuels. It is of utmost importance that we do the best we can with existing technologies. In that arena, Fuel Tech is a proven leader. □

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## ALL-STAR SUSTAINABLE STOCKS

A company that manufactures solar-powered lawnmowers and a furniture maker using wood from sustainable forests are among those named to the 2003 Top 20 All-Star Sustainable Stock Picks. Also known as the SB 20, the environmental honor roll has been compiled annually for the last two years by SustainableBusiness.com.

Winslow Management Company President Jackson W. Robinson was among the stock pickers who chose the second batch of SB 20 honorees. As announced in *The Progressive Investor*, the stocks were selected based on their contributions toward a sustainable environment and their financial strength.

New to the list this year are Itron (ITRI), whose software enables utilities to collect usage data and optimize the flow of water, electricity and natural gas; Novo Nordisk (NVO), a Danish pharmaceutical company; Novosymes (NVZMEPK), a Nordisk spin-off that produces "green chemicals" made from benign enzymes and microorganisms; Power Integrations (POWI), which produces a chip that makes appliances more energy efficient; U.S. footwear company Timberland (TBL); and

Wainwright Bank (WAIN), a U.S. bank that emphasizes environmental impact in its lending practices.

Making the SB20 list for a second time were Electrolux (ELUX), a Swedish company that makes a solar-powered lawnmower and water-efficient appliances; STMicroelectronics (STM), a French semiconductor company that is an industry leader in recycling and conservation; Chiquita (CQB), the U.S. banana company; Ballard Power Systems (BLDP) and Fuel Cell Energy (FCEL), leaders in fuel-cell technology; Green Mountain Coffee (GMCR), which incorporates fair trade and sustainability practices into coffee production; Henkel (HNKG.BE), an environmentally efficient German chemical company; U.S. furniture designer Herman Miller (MLHR); British dairy company Horizon Organic Dairy (HCOW); JM Inc. (JM.ST), a Swedish real estate company; Swiss Re (RUKN:SWX), which bases insurance premiums on clients' environmental impact; United Natural Foods (UNFI), a U.S. natural food distributor; Vestas (VEST.CO), a Danish wind turbine manufacturer, and U.S. natural foods retailer Whole Foods (WFMI). □

## PORTFOLIO UPDATE

### Vestas Wind Systems

(CSE:VEST.CO)

RINGKØBING, DK – In early September, Vestas Wind Systems A/S announced that it has received turnkey contracts for a total of 34 MW (megawatts) with options to supply an additional 24 MW in Portugal. Scheduled for completion in 2004, and located in central Portugal, the order is composed of 17 V80-2.0MW turbines, towers, remote monitoring systems, foundations, electrical and civil infrastructure, as well as service and maintenance of the power plants.

This announcement comes on the heels of a positive 2003 half-year report. Growth in sales during 1H'03 was 24% and growth in MW deliveries was 40%. The company did not change guidance for remainder of '03, but reiterated a solid backlog, and a good number of conditional orders expected. Backlog at the end of 1H from unconditional orders is at a level of about 5 months' average production, which is an increase over the same time period in 2002.

Over the long term, Vestas

estimates the wind power industry to grow at an average annual rate of more than 25%, as measured in installed wind capacity.

### PolyMedica Corp.

(NASDAQ: PLMD)

WOBURN, MA – The Securities and Exchange Commission (SEC) has determined that, in the absence of a change in the Company's fundamental business model, PolyMedica should continue to capitalize its direct response advertising costs related to the acquisition of new customers, rather than expensing them as incurred.

Since acquiring Liberty Medical in 1996, PLMD has capitalized its direct response advertising costs and amortized them, generally over two to four years. This practice is in accordance with American Institute of Certified Public Accountants' (AICPA) Statement of Position 93-7, that allows such a procedure when, among other things, the advertising elicits sales to customers who respond to a specific advertisement. Some members of the investment community had expressed concern about PLMD's accounting for those costs, and that sentiment spurred the SEC review.

In a recent press release, Samuel L. Shanaman, lead director and interim CEO, stated, "The predictable, long-lived revenue stream generated by our loyal base of customers sets us apart from most other companies, and is the basis of our capitalization of advertising costs." He added,

"We have now confirmed that our historical method of capitalizing and amortizing advertising costs is correct, and that there are no acceptable alternatives going forward."

### Sonic Solutions

(NASDAQ: SNIC)

MARIN COUNTY, CA – Sonic Solutions announced in late July that it has licensed its AuthorScript® CD and DVD formatting and burning engine to Microsoft® Digital Image Suite 9. The embedded Sonic engine adds key features for advanced image editing and photo organization. It will allow end-users to create video-CDs of photo slideshows that can be viewed both on computers and DVD set-top boxes.

That same week, the Company announced an agreement with Toshiba to license Sonic's My DVD® for a new line of Media Center Laptops. Having successfully wooed two top-tier vendors, Sonic is staking out a position as a market leader in OEM DVD burning software at a time when unit volumes are poised for rapid growth.

Since those two announcements, Sonic also disclosed news that Verbatim, a leading data storage and media products company, has selected Sonic's line of CD/DVD creation, copy, backup and playback applications for its new DVD+/- Producer 44 Dual Format DVD drive.

We believe all this news bodes well for SNIC as it extends its business into the consumer electronics market.

### Flamel Technologies

(NASDAQ: FLML)

LYON, FRANCE – Recently, Flamel Technologies and Bristol-Myers Squibb (NYSE: BMY) announced that the two companies have entered into a licensing and commercialization agreement to develop and market Basulin®, the world's first controlled-release, unmodified human insulin.

Designed as an alternative to traditional insulin analogs, Basulin will be developed as a once-daily injection for patients with type 1 or type 2 diabetes. The new medication is formulated using Medusa®, Flamel's proprietary nanoparticulate technology. According to the World Health Organization, 177 million people suffer from diabetes worldwide, and that number has the potential to double by the year 2025. Nearly 40% of those patients require insulin injections.

As Basulin enters Phase II clinical development, Bristol-Myers Squibb will direct and assume all costs for development and manufacturing, and will have worldwide exclusive rights to the product, under the terms of the agreement. FLML will continue to provide additional support as the product moves forward through development. BMY will compensate Flamel with \$20 million in up-front fees and \$145 million in additional milestone payments for a total of \$165 million. Bristol-Myers Squibb will also pay double-digit royalties to Flamel on sales.



Scientists' Global Change Conference, Nov. 16-19.

Even the United States, which has only reluctantly confronted the issue, has jumped into climate science research. In July, the Bush administration announced a \$103 million two-year plan to accelerate the deployment of new global observation technologies. The government also introduced a new Climate Change Strategic Plan that brings together the resources and expertise of 13 federal agencies.

Wary environmental activists, pointing to such administration recidivism as the recent easing of New Source Review emissions regulations, can argue with some justification that further studies only postpone remediation. However, there is general agreement that climate science is so complex that more knowledge can only aid efforts to ease warming.

#### What do we know now?

The gold standard for climate science today is the three assessment reports issued by Working Group I of the Intergovernmental Panel on Climate Change (IPCC). Established in 1988, the IPCC recruited several hundred scientists from throughout the world to contribute to the ongoing study. The most recent assessment, published in 2001, offers numerous sobering conclusions:

- Global average surface temperature has increased over the 20th Century by about 0.6 degrees C.
- Globally, it is likely that 1990-1999 was the warmest decade and 1998 the warmest year in the instrumental record, since 1861.
- According to analysis of climate-proxy data, the increase in temperature for the Northern Hemisphere during the 20th Century is larger than in any century during the past 1,000 years.
- Between 1950 and 1993, nighttime daily minimum

air temperature over land increased by about 0.2 degrees C – even more than daytime increases. This has lengthened the freeze-free season in many mid- and high latitude regions.

- Snow cover and ice extent have decreased. Satellite data show approximately 10% reduction in snow cover since the late 1960s. There has been a 10% -15% decline in Northern Hemisphere spring and summer sea-ice extent since the 1950s. Along with widespread retreat of mountain glaciers, there has also been a 40% decline in Arctic sea-ice thickness during late summer and early autumn.
- Global average sea level has risen and ocean heat content has increased.
- Weather changes have occurred principally in the Northern Hemisphere with increases in rainfall and heavy precipitation events noted in mid- and high-latitude regions, but decreases in rainfall over the sub-tropical areas (10 degrees N – 30 degrees N).
- Since 1950, there has been a reduction in the frequency of extreme low temperatures with a smaller increase in the frequency of extreme high temperatures. Warm episodes of the El Nino phenomenon have been more frequent and intense.
- In some regions of Asia and Africa, the frequency and intensity of droughts have increased in recent decades.

(Statistics taken from the IPCC Summary for Policymakers, January 2001)

The panel concluded that “concentrations of greenhouse gases (including carbon dioxide, methane, ozone, and perfluorocarbons)...have continued to increase as a result of human activities,” that the “warming over the past 100 years is very unlikely to be due to internal variability alone,” and

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that "most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations."

#### **The present limits of climate science**

Although our understanding of global warming has been greatly enhanced since the IPCC's first report, much remains unknown or unexplained. The National Academy of Science, in reviewing the 2001 IPCC report, focused on some of the outstanding issues while "generally agreeing with the IPCC's assessment of human-caused climate change."

The academy observed "the range of natural

climate variability" can be "quite large," and that, over a lengthy time frame, "it is difficult to estimate the natural variability of global mean temperature because of the sparse spatial coverage of existing data and difficulties in inferring temperatures from various proxy data."

What's more, current atmospheric physics has not yet been able to completely unravel the complexities of cloud feedback effects. These are the often-contradictory effects in which warmer air temperature increases the formation of water vapor in the atmosphere, which increases global warming but also increases the formation of clouds that tend to lower temperature. Finally, because of these complexities, it is not yet possible to create truly reliable projections of future climate change.

What's needed, of course, is more and better research. The academy concluded that we need "(1) a global observing system in support of long-term climate monitoring and prediction, (2) concentration on large-scale modeling through increased, dedicated supercomputing and human resources, and (3) continuing support and management of climate research to ensure innovation, effectiveness, and efficiency." □

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