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Helping the Environment Online

BY STEFANIE HAUG

WHOEVER THOUGHT THAT WORKING AT THE COMPUTER COULD BE GOOD FOR THE PLANET? DR. JOSEPH ROMM, HEAD OF THE CENTER FOR ENERGY AND CLIMATE SOLUTIONS (CECS), BELIEVES THERE ARE A NUMBER OF WAYS IN WHICH THE EXPANDING USE OF THE INTERNET — GROWING AT 36% A YEAR — IS HELPING TO SLOW GLOBAL WARMING. "THE INTERNET CAN REPLACE BUILDINGS WITH WEB SITES AND WAREHOUSES WITH SUPPLY-CHAIN SOFTWARE," HE SAID. "IT CAN TURN PAPER AND CDS INTO ELECTRONS AND REPLACE TRUCKS WITH FIBER-OPTIC CABLE. THAT MEANS SIGNIFICANT ENERGY SAVINGS."

A CECS study predicts that over the next three years, the economy will show a 13% growth with only a two percent growth in energy consumption. The reason is e-commerce. As Romm explains, businesses that sell online do not need as much floor space as traditional retailers because they can advertise and display product in cyberspace and ship goods from distribution centers. Using this model, entire businesses are being built on foundations of electrons instead of bricks and mortar.

The State of the Environment

"Global economic trends during the 1990s were remarkably bullish, but environmental trends were disastrous," says the Washington, D.C.-based Worldwatch Institute in its annual State of the World report.

"Caught up in the growth of the Internet, we seem to have lost sight of the Earth's deteriorating health," contends Worldwatch president Lester Brown. In fact, the institute reports that the Earth's surface temperature has risen about 0.4 to 0.8 degrees Celsius or 0.7 to 1.4 degrees Fahrenheit in the last century.

"It would be a mistake to confuse the vibrancy of the virtual world with the increasingly troubled state of the real world," said Brown.

The Environmental Impact of the Internet

These dire predictions notwithstanding, a recent EPA analysis concluded that energy savings from reduced building construction could mean that the standard estimates for US energy and carbon dioxide (CO₂) emissions in 2010 may be overstated by the equivalent of 175 power plants and 300 million metric tons of CO₂. What's more, Romm predicts that by 2007, B2B and B2C e-commerce could eliminate the need for 1.5 billion square feet of office space—about 5% of the nation's total—and as much as one billion square feet of warehouse space. Internet technology may also eliminate as much as two billion feet of commercial office space—the equivalent of almost 450 Sears Towers.

Through reduced operations and maintenance alone, that translates to about 53 billion kilowatt hours of energy saved each year—the

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FEATURED COMPANY

S1 Corporation: Banking for the Environment

BY DENISE GARCIA

ATLANTA, GA — What if you could pay your bills, do your taxes, buy insurance and check frequent flier miles with the click of a button? What if you never had to write a check or fill out a deposit slip? How much gas would you save if you didn't have to drive to your local bank to transact business? Check out online banking. As electrons replace bricks-and-mor-



tar banks, we are making the move from a physical to an electronic world—a world that will leave behind the wasted paper and energy of the past.

Already, many businesses and consumers are taking advantage of online services. As of 1998, almost 6.6 million households were banking online and, by 2003, that number could surge to 32 million. According to James Culberson, president of the American Bankers Association, "half of all financial transactions in the US will soon be conducted electronically," with one-third of all bank branches closing as a result.

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E-commerce and Valuation

BY JACKSON W. ROBINSON

Since mid-1998 we have witnessed an unprecedented and ever widening performance gap in the stock market. Value stocks are languishing, growth stocks are growing, and Internet stocks are booming. Is there a rational explanation for these new valuations?

The chart below illustrates the new paradigm in performance of four indexes: the S&P500 Index, the S&P500 Barra Value Index, the S&P500 Barra Growth Index, and the Hambrecht & Quist (H&Q) Internet Index as defined in the separate table. Since the creation of the H&Q Internet Index in 1995, the spread in total returns for the four indexes is substantial.

Over the last four years, the S&P500 gained +122%. During the same time period, the S&P Barra Value Index is up +81% versus its Growth counterpart which outperformed the first two indexes with a +178% total return. But by far the best return is being produced by the Internet index which was up a stunning +869%.

As Warren Buffet once stated in one of his well publicized Berkshire Hathaway annual reports, "there can be great value in growth...", certainly a truism for the last few years for the growth and Internet indexes. Of course, we at Winslow agree with Mr. Buffet because of his proven track record and the fact that the most interesting "green" companies are emerging growth stocks, companies with generally high price-to-book ratios.

But the rationale for the current spread in performance goes well beyond traditional financial measures such as the price-to-book ratios that Barra uses to separate the S&P500 into growth and value stocks. Something new is happening that cannot be explained or justified by traditional analytical techniques. Indeed, most seasoned financial analysts are at a loss to explain the "high" valuation for Internet stocks.

One new tool for understanding the explosive moves in E-Commerce stocks is the "Value Creation Index" (VCI). Introduced by the Center for Business Innovation, the think tank subsidiary of Ernst & Young, LLP, the VCI correlates the change in a stock's market value to financial and non-financial drivers. It demonstrates that non-financial value drivers can impact stock prices equally as much as financial performance.

We recently learned of the VCI because one of the high value characteristics in the Index is—not surprising to us—the environmental profile of a company. Environmental performance is, of course, something we evaluate in all of our investments.

In measuring a stock's worth, VCI looks at eight non-financial value drivers that might apply to any conventional company: innovation, management, employees, quality, alliances,

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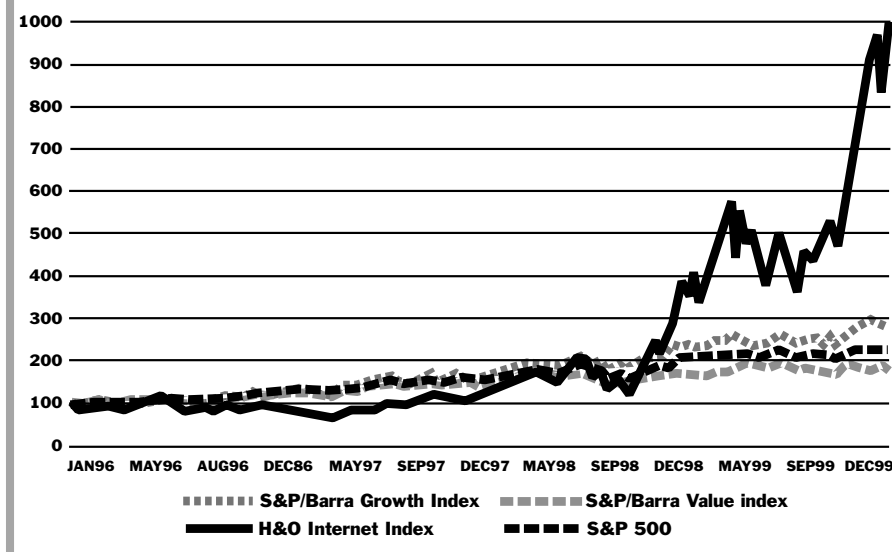
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Growth Stocks are Soaring



branding, technology, and customers...all logical considerations, especially for growth companies.

But in evaluating Internet or E-Commerce stocks, VCI adds an enhanced lens. Here the value drivers include: alliances, innovation, and "eyes" (visitors) along with branding, minutes per page, change in usage, and change in percentage reach. Although still new, the VCI seems to be on to something as demonstrated by the high correlation between the E-Commerce VCI and the market value of Internet stocks.

It will take some time to see if the VCI sustains its promise. In the meantime, it is certainly a much welcome compass in a powerful and revolutionary sea of change. 

Index	Description
S&P 500 Index	500 stocks chosen for market size, liquidity, and industry group representation. Market-value weighted
S&P / BARRA Growth Index	S&P 500 Index selection of companies with higher price-to-book ratios.
S&P / BARRA Value Index	S&P 500 Index selection of companies with lower price-to-book ratios.
Hambrecht & Quist Internet Index	Cross section of publicly traded Internet-related companies, including access vendors, software, on-line services, and hardware. Market cap weighted.

Source: Standard & Poor, Chase Hambrecht & Quist

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output of more than 21 power plants and 67 trillion BTUs of natural gas. Such a savings would also prevent the release of 35 million tons of greenhouse gases into the atmosphere. The environmental savings in construction costs would equal 10 more power plants and another 40 million metric tons of greenhouse pollution.

No, We Don't Mean Internet Traffic

A review of US traffic conditions points to another area where the Internet can help. As the global community gets bigger, transportation becomes more of a problem. A study by the Surface Transportation Policy Project (STPP) found that 13% of the increase in driving between 1983 and 1990 was due to population growth. But as more roads were built to accommodate more people, all drivers began traveling more frequently, resulting in more congestion. Indeed, the amount of highway per resident in the 68 metro areas studied in the US grew by 10% over 16 years, but the slowdowns experienced by drivers grew by 235%.

Another reason for the increase in driving is sprawling metropolitan areas. A US Department of Transportation study found that as much as 69% of the increase between 1983 and 1990 was due directly or indirectly to sprawl. For example, in 20 years, metro Chicago swallowed up 46% more land area although the population only grew by four percent. That means residents in this far-flung region have to drive longer and farther to get to work, school, shop

ping areas. All this driving has taken its environmental toll: as the US loses an estimated one million acres of farmland annually to urban and suburban sprawl, 117 million Americans live in areas where the air is unhealthy to breathe, according to E-magazine (1-2 /2000). But the Internet can reduce and optimize traffic even as urban sprawl continues apace in the new century.

Companies Providing Solutions

Many companies have started to use the Internet in innovative ways that ameliorate the traffic problem. One example is the National Transportation Exchange, an online company that auctions empty space on cargo trucks. By some estimates, up to one half of the 18-wheelers on American highways at any one time are traveling empty—a major waste of fuel. NTE's business helps to consolidate loads and harness empty space, thereby reducing the number of trips.

In addition, many businesses are now using the Internet to save office space, materials and transportation costs by letting employees work from home. The number of home offices is growing by about three million a year, according to the International Data Corporation. Telecommuting can reduce overhead for companies as well as cut traffic congestion. For example, AT&T, which is becoming a leading player in the commercial Internet explosion, encourages telecommuting. Fifty-six percent of its employees telecommute, resulting in real estate savings of \$1 billion in five years and an

estimated cut in CO2 emissions last year of 55,000 tons.

A further development is the rise of "click and mortar" stores. Egghead Software (NASDAQ: EGG), for example, decided in January 1998 to close every one of its retail stores, becoming the first bricks-and-mortar company to go entirely virtual,— a move which may positively impact earnings in the future. Similarly, the increase in online book sales is making a dent in energy use. CECS reports that the ratio of energy consumption to books sold in traditional bricks-and-mortar stores versus that of Amazon.com is 16 to 1. Such environmental benefits are even greater when one considers that shipping 10 pounds of packages by overnight air uses 40 percent less fuel than driving roundtrip to the mall.

For example, some companies are turning to the Web instead of paper catalogues to market their products—a move that could cut back on the estimated 17 billion catalogues mailed annually in the US (according to 1998 figures). Moreover, BCG projects that Internet substitution will cut total newsprint demand by 1.2 million tons by 2003. Already, every major newspaper offers its news online. Winslow is no exception—WEN is now distributed by email upon request.

However, while the Internet may reduce traffic on the road, it certainly increases online

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congestion. One company that targets online traffic problems is NetOptix (see WEN, Dec. 1999) which develops and manufactures components that expand the bandwidth capacity of existing fiber optic cables.

Kill the Messenger?

The Problem of Computer Junk

While the Internet may be environmentally friendly, computers themselves are not—especially at current rates of consumption. A National Public Television report (1/24/00) estimated that in just five years, every purchase of a new computer in the US means an old computer will be discarded—resulting in 500,000 tons of computer junk. With most hardware becoming obsolete within two years, increasing numbers of computers are ending up in landfills where toxins such as lead, cadmium and mercury found in the hard drives and switches can leach out into the ground water.

Arguably the most effective method is to eliminate the creation of waste in the first place by forcing producers to take cradle-to-grave responsibility. John McNabe of Clean Water Action says that computer waste could be avoided if manufacturers designed them for take-back and recycling. However, he adds, take-back programs must be mandatory to work. Tax payers, he said, don't realize that they are already paying for the disposal of computer waste, a hidden cost to buying a computer.

The Silicon Valley Toxic Coalition recently praised Apple and IBM for their green policies


on hazardous material use, product upgradability, and take-back plans. Apple, for example, offers open disclosure of its environmental policy and management, and has implemented a program called "Design for Environment." Similarly, Dell Computers has started leasing home PCs. "This is an encouraging trend," states "Tomorrow" magazine, "because a manufacturer that retains ownership of its products has an incentive to maximize their recyclability."

Here again, the Internet can help reduce the amount of manufacturing across the board. Some companies are using the Net to survey what people really want to buy, so that they can avoid making goods no one wants. Other Internet companies are "recycling" goods that are already built. Online auction houses such as eBay.com sell millions of dollars in pre-owned items. By purchasing used goods, buyers avoid encouraging the consumption of raw materials and limit what is thrown away. Basically, the Net helps people connect more efficiently with goods and services and that save energy.

Conclusion

Meanwhile, some businesses are even trying to improve on the Internet by making it wireless. Although the number of mobile Internet subscribers worldwide is now only about 450 million, companies like Nokia predict an increase to 1 billion by 2002.

Of course, one can argue that the simple act of using a computer uses energy. While this is true, the Internet is not a major energy consumer, largely because it draws heavily on existing communications and computing infrastructure. What's more, the average PC and monitor use just 150 watts of power. As greater efficiencies are encouraged by the market, this wattage may well decrease.

Until then, computers could very well be the most environmental method of transmitting information and doing business. It's true that computers themselves raise some challenges about dealing with manufacturing and waste. However, considering the youth of the Internet age, the business and environmental benefits seem to be transmitting loud and clear. 

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S1: First in its Field

Leading the charge towards online banking is S1 Corporation (NASDAQ: SONE), formerly known as Security First Technologies Corporation. The Atlanta-based company makes software that enables financial institutions to open their own Internet portals. Through these gateways, consumers can conduct business directly with a bank using any available Internet device. What's more, with S1's Virtual Financial Manager, customers can perform a wide variety of tasks with one-stop convenience, accessing credit card, banking, loan, insurance, and investment accounts. The one-stop portal can also provide customers with personalized information on news, weather, products and services.

James "Chip" Mahan, CEO of S1, is clearly aware of the banking revolution his company is helping to bring about. "The world is going through a transformation as significant as the invention of agriculture or the industrial revolution," he states. Anticipating the booming market, his company recently opened a new Data Center with a main server room of 7,000 square feet that can service 15-30 million accounts.

The virtual bank has been Mahan's dream for five years ever since he and his brother-in-law Michael McChesney decided to form the first Internet bank in 1995. Pooling their expertise from careers in banking and software development, the two entrepreneurs created Security First Network Bank. Although innovative, that online bank couldn't turn a profit, and the founders were unable to open any physical branches. So, they sold the banking operations to the Royal Bank of Canada. And under Mahan's leadership, the company began to develop the software that would put existing banks online. S1 went public in 1996.

Mahan's persistence and flexibility have paid off. With 18 offices in 11 countries on five continents, and with customers including Bank of America, Chase Manhattan, Royal Bank of

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Winslow will spotlight Green Energy

Jack Robinson will lead a panel of alternative/renewable energy companies at the Adams, Harkness & Hill Consumer Growth Conference to be held March 15 & 16, 2000 in Boston, MA. For more information contact 617-371-3792 or visit www.ahh.com.

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Canada, Deutsche Bank, FleetBoston Financial, JP Morgan, Prudential and others, the company is expanding rapidly. In late September, it reported record Second Quarter revenues of \$24.8 million, a 279% increase over the previous year. As Steve Frankel, an analyst for Adams, Harkness & Hill, puts it, "Virtually every financial institution is exploring its Internet strategy and S1 has emerged as the clear market leader."

Chopping Away Waste with the Click of a Button

Not only do S1 applications make doing business more convenient, they are bringing about unexpected benefits to our environment. As all forms of e-commerce rapidly increase, enormous amounts of both paper and energy will be saved.

Take paper, for instance. Its production exacts a high toll on the world's tree population—about two to three-and-a-half tons of trees are required to make a ton of paper. It also accounts for a huge percentage of our municipal solid waste—about 40%. Clearly the environment would benefit if we could reduce our excessive paper use. While the computer age will not bring about a paperless society, technology such as that developed by S1 Corporation can help. So, for example, consider Bank of America, one of S1's star customers. Using S1 technology, it has been able to reduce its paper

consumption by 25% in the past two years by switching to online reports and forms as well as email, double-sided copying, and lighter paper.

Cooling Our Energy Expenses

The years of 1997 and 1998 have shown us that economic growth can continue even as energy intensity decreases. (See accompanying article, "Helping the Environment Online.").

From the late eighties until 1996, cheap energy prices and economic expansion resulted in escalating demand for power. But, in 1997 and 1998, energy intensity suddenly decreased by 3.4% and 3.9% respectively.

One reason for the decline is Internet efficiency. The average personal computer and monitor uses only 150 watts of power. As more people make the shift from driving to e-commerce, the Internet is making and should continue to make a dramatic impact on our country's energy consumption.

But S1's Virtual Financial Manager can even improve on the Internet's energy efficiency by reducing the amount of time a customer has to be online to complete their business. With one-stop service, a customer no longer needs to spend hours surfing the Web, logging in to different sites, typing and retyping personal information.

Online Bill Payment Can Save Billions of Dollars

COST TO PROCESS EACH BILL

	Today	Online
Cost to biller	\$1.65 - \$2.70	\$0.60 - \$1.00
Cost to customer	\$0.42	\$0
Cost to bank	\$0.15 - \$0.20	\$0.05 - \$0.10
U.S. annual cost*	\$38 B - \$57 B	\$11 B - \$18 B

Potential savings: \$19 B - \$46 B

Total U.S. annual cost is determined by multiplying the processing cost by 17 billion checks a year.


Source: 1998 Department of Commerce

Less time online means less power used.

S1's services can also help reduce energy through indirect paths. Because of the reduced demand for paper, the energy needed by the paper industry to process pulp will decrease 0.25% over the next three years and net greenhouse gas emissions by a similar percentage. By 2008, declines are expected to be more than twice as great, according to the Center for Energy & Climate Solutions.

The Beginnings of an End-to-End Solution

S1 is thinking even farther into the future. The Company has spread its markets globally and initiated an aggressive acquisitions strategy. Late last year, for example, it acquired Edify Corporation with its voice e-commerce technology; FICS Group of Brussels, Belgium, a vendor of financial e-commerce and regulatory reporting software; and VerticalOne, a consolidator and presenter of personal account information. "We're already beginning to see voice-over IP, data-over IP, video-over IP," Mahan explains. To compete, "you've got to have an end-to-end solution that's a mile wide and a mile deep, all the way back to the customer-care piece. We will pretty well be able to provide every bit of that."

Still a young company with big aspirations, S1 may not yet have accomplished all of its goal. But, already, it is offering a financial alternative for customers who care about the environment. 

Letter to the Editor

Your cogent analysis of United Natural Foods, Inc., (UNFI) [see Dec WEN] convinced me to include some of its shares in my portfolio. You told the company's story well, that a serious, albeit repairable computer/delivery problem had caused the stock price to tumble from \$30 to \$7 between June and December 1999. The problem was now fixed. What better time to get aboard! The health food sector is a growing one, reflecting popular concern over additives, genetic engineering, fertilization and pesticides. Even in a sour economy, the market for healthful foods will remain strong. Given United Natural Foods dominance in the distribution of such produce, the long-term prospects for UNFI seem strong. Thanks for opening my eyes to this company.

T.R.Sunde, NYC

PORTFOLIO UPDATE

AstroPower (NASDAQ: APWR)

NEWARK, DE—It was another good year for photovoltaics. According to the "Annual PV Market Survey" published by Paul D. Maycock (PV Energy Systems), shipments of photovoltaic cells and modules in 1999 increased 23%, from 153 MW to 188MW. These growth rates have been driven mainly by European and Japanese markets. US shipments also increased, but they still fall below the industrial average. Sustained growth in the future is predicted at 20%-25%.

United Natural Foods (NASDAQ: UNFI)

DAYVILLE, CT—After a rocky Fall that culminated with the resignation of its founder and CEO, UNFI appears to be on the comeback trail. "The new management team has made great progress in rectifying the issues in the Eastern region," reports Matt Patsky, an analyst for Adams, Harkness & Hill. There is clear progress being made on many of the issues confronting the company. The failed computer conversion has been largely fixed, and the system stabilized at 80-85% efficiency. This has allowed the company to reduce by 25% the number of emergency IT staffers from Keane Consulting. Fulfillment rates have returned to the 90% level and should reach historical rates in the mid-90s by the end of February. On-time deliveries are running at 96%, versus 90% last month. UNFI continues to migrate business to the previously closed New Hampshire facility. Inventory levels were reduced to 65 days from a peak of 70 days and should continue to decline to 55 days over the next two to three months.

Due to one-time costs involved in closing the Chicago facility and the severance deal of former CEO Norman Cloutier, the company

announced a second quarter loss of 21 cents to 26 cents per share. It expects to return to profitability over the next six months.

York Research (NASDAQ:YORK)

BROOKLYN, NY—York is advancing further into the solar energy field with its patented Solar Energy Enhanced Combustion Turbine (SEECOT) system. SEECOT enables the integration of solar trough technology with gas turbines. The resulting process benefits the atmosphere by controlling the NOx in gas turbines. SEECOT is also cost effective, allowing for cheaper electricity than other competing solar technologies. In some instances when federal tax incentives are included, SEECOT can be competitive with purely gas turbines.

Meanwhile, YORK recently reported a strong third quarter the end of January with revenues at \$287 million compared to \$233 million in the comparable prior period. Buidling on the Big Spring, TX windpower project, YORK has been concentrating on developing new projects particularly in Texas to meet the demand created by the new TX Renewable Portfolio Standard of 2,000 mW of renewable power over the next 9 years. Additional projects are projected for Arizona which is projected to finalize its portfolio standard in the next few weeks.

KTI (NASDAQ: KTIE)

GUTTENBERG, NJ—We had at one time considered KTI "Best in Class," but that evaluation has changed since the company's merger with Casella Waste. We have sold our stock in the new company because of the environmental risks associated with landfills and the parent company's lack of commitment to recycling.

Casella, concentrated in Vermont, New Hampshire, Maine, New York, and

Pennsylvania, operates six landfills, 54 transfer stations, and 38 collection operations. The acquisition of KTI will add two waste-to-energy facilities in Maine, other waste-to-energy and biomass-to-energy facilities, as well as residential and commercial recycling operations. Casella plans to closely monitor the recycling operations. If they are not profitable, they will be shut down, according to Stacey Gray, Deutsche Bank. The profits Casella realizes from recycling are about the same as for waste collection, but below average for other services. Recycling has reached a plateau and short-term growth will probably only be achieved through increased prices. In the meantime, Casella is seeking to acquire a new landfill in Franklin County, VT and others over the next couple of years.

Balance Bar (NASDAQ: BBAR)

CARPINTERIA, CA —Kraft Foods, a subsidiary of Philip Morris Co., has acquired Balance Bar for \$268 million in cash. Paying \$19.40 a share for the manufacturer of nutrition and energy bars, Kraft expects to close the deal in February.

Winslow has subsequently sold all positions held in BBAR, a key holding in its Healthy Living industry sector. We had previously commended BBAR (see December 1999 WEN) for offering a product, the Outdoor Balance Bar, that was free of genetically modified organisms.

It is ironic that Philip Morris, a company whose products damage human health and the environment, would buy a company that promotes it. The Kraft subsidiary has made some efforts at being environmentally responsible: several plants have received ISO 14001 certification and initiatives are in place to reduce waste. Philip Morris, however, has been implicated in the pollution of 15 Superfund sites, has violated air quality standards in California, and—as of 1996—is the fifth largest toxic chemical emitter in Virginia.

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