

## **MEMORANDUM**

Date: January 25, 2007

To: SEA Clients, Friends of SEA and Other Interested Energy Consumers

From: Sieben Energy Associates

Re: Carbon in Our Future

What do a global consortium of 211 institutional investors with assets of \$31 trillion under management, the new Speaker of the U.S. House of Representatives and California Governor Arnold Schwarzenegger all have in common?

All of them are aggressively pursuing initiatives focusing on the measurement, containment and future reduction of greenhouse gas emissions.

Greenhouse gas emissions are the by-product of burning carbon-based fuels and include nitrogen and sulfur oxides. The greenhouse gas most commonly discussed in the media is carbon dioxide, simply referred to as CO<sub>2</sub>. In 2003 world carbon dioxide emissions were just over 25,000 million metric tons. By 2030 the U.S. EPA estimates that annual world output of CO<sub>2</sub> will exceed more than 43,000 million tons. The U.S. contribution toward this projected increase is just over 8,000 million metric tons annually from approximately 5,800 million metric tons in 2003. Although one-third of all U.S. annual emissions result from burning fuels for transportation, fully one-half of all emissions are attributed to the commercial and industrial sectors of the economy, either through the burning of carbon-based fuels for manufacturing or through the indirect use of electricity and natural gas.

Regardless of one's views on the science of human-caused emissions and their impact on the environment, it's clear that the attention focused on carbon dioxide in 2007 appears already exponentially greater than the focus of just a year ago and it's projected that this focus will continue to increase in 2008 and 2009.

The Carbon Disclosure Project, the collaboration of global investors asking for disclosure of investment-relevant information about corporate greenhouse gas emissions, went through its fourth iteration in 2006, soliciting information from 1,800 of the world's largest companies by market capitalization. The previous three years' requests were sent to the 500 largest corporations in the world. The CDP aims to encourage development of a common emissions methodology and facilitate its integration into general investment analysis to better understand businesses' climate change risks.





House Speaker Nancy Pelosi is intent on putting global warming atop the Democratic agenda and is moving to create a special committee to recommend legislation for cutting greenhouse gases. The proposed committee would give the Speaker a vehicle to push legislation that may require mandatory emission reduction guidelines with specific target dates for achieving them.

California Governor Arnold Schwarzenegger signed an executive order in Sacramento last week to reduce carbon emissions from transportation fuels – the first of its kind in the U.S. – setting a standard to cut carbon levels in vehicle fuels by at least 10% by 2020. As the nation’s largest transportation fuel market, the low-carbon fuel standard has the potential to develop California into a market that will attract significant investment and development in emission-reducing technologies.

And as recently as Monday, January 22, a day before President Bush announced his own goals to manage carbon growth in the atmosphere during his State of the Union message, a coalition of ten major companies with operations across the U.S. economy have banded together with environmental groups to call for nationwide limits on carbon-based emissions. Industry giants General Electric, DuPont Corporation and Alcoa Aluminum are leading this coalition to send a strong signal that businesses want to get ahead of the political momentum for federal emission controls.

This activity speaks to the growing awareness of impending carbon regulation upon U.S. business interests, either directly or indirectly. Most often such impact is directed at the sources of direct consumption of carbon-based fuels, such as coal-burning electric utilities, transportation fuel providers and the automobile industry itself. However indirect sources of emission, represented by the rest of us that consume electricity and burn natural gas in our homes and businesses to keep warm, will likely be a target by the time carbon-reduction regulation hits its full stride. Carbon markets, in their infancy still today, will mature into robust trading regimes enabling those that can reduce their emissions to trade with those that can’t. Many U.S. companies are already evaluating their carbon risks and mitigation strategies out of concern that investors (i.e. the Carbon Disclosure Project) and insurers will include carbon management in their underwriting criteria. At a minimum, costs imposed upon the sources of carbon emissions will be passed through to all consumers.

Stimulated by the Clean Air Act in the 1990’s, the Chicago Climate Exchange opened in 2003 to create a voluntary greenhouse gas reduction and credit trading platform followed by a wave of regional and state-initiated carbon-allowance trading platforms. Concerned about the cost of managing disparate carbon-reduction programs that vary state-by-state, U.S. companies are demanding the certainty of a national standard that can be implemented cost-effectively and with consistency across their operations. The states themselves, arguing that because CO<sub>2</sub> is a major contributor to global warming and is a



threat to the “public health and welfare,” make a strong case for intervention at the federal level.

What are electricity and natural gas consumers, the indirect emitters of carbon into the atmosphere, to do? After committing to measure and track their carbon equivalents, the most significant impact can be achieved by a deliberate effort to reduce energy consumption and thus an organization’s share of total carbon output. Not only will this effort result in reduced emissions but it will also mitigate the impact of anticipated cost pass-throughs on units of energy supplied by electric utilities and other electricity generation sources.

For further information about how to manage energy price risk through the efficient use and cost-effective purchase of energy, contact Craig Sieben, Jerry Burin or Charlie Saville at Sieben Energy Associates.