Pergamon

European Management Journal Vol. 23, No. 4, pp. 383–391, 2005

Printed in Great Britain
doi:10.1016/j.emj.2005.06.010
0263-2373 $30.00

Gaining Competitive Advantage in a Carbon-constrained World: Strategies for European Business

KARL SCHULTZ, *Energy Edge Ltd., United Kingdom*
PETER WILLIAMSON, *INSEAD, France*

Beginning in 2005 over 12,000 industrial facilities throughout the European Union were granted allowances to emit carbon dioxide, the most common of greenhouse gases. A trade-able asset, these allocations will be but the first in what is likely to be an ever stricter limitation on greenhouse gas emissions. This article makes the case that companies need to view ''carbon exposure'' as more than just an environmental compliance issue, but rather a key factor in future corporate competitiveness.

Karl Schultz and Peter Williamson discuss the impacts on different types of companies of both policies to address global warming, and climate change's direct potential to impact business decisions. They then assess the various risk exposures of companies.

A number of strategies are provided for corporate managers and boards to understand their corporate exposure, and take steps to mitigate risk and, in many cases, come up with competitive advantage in a business environment that is becoming increasingly carbon constrained.

Keywords: Climate mitigation, Climate policy, Methane, Greenhouse gases, Environmental policy, Carbon dioxide, Carbon exposure

Climate Change: A Strategic Issue

The earth is getting warmer, and weather patterns are becoming more erratic. The reason, most climate scientists believe, is because concentrations of ''greenhouse gases'' have been rising in the atmosphere. The most important of these gases is carbon dioxide, which is emitted when fossil fuels, such as oil, natural gas, and coal are burned. So far, temperatures have increased by an average of about 1 degree centigrade. Projections of future warming are for temperatures to increase by an additional 2 to 5 degrees in the next century – even with measures taken to reduce emissions.

The impacts of this climate change will vary by-region. Sea levels are projected to rise by 0.3 to 0.8 meters this century. Some regions will experience more droughts, while others more floods. One leading concern for Europe is that the Gulf Stream, that currently warms Europe, will cease, leaving the continent with a climate similar to Labrador's. Storms are expected to be more severe, as more energy is in the atmosphere.

Since the late 1980's the prominence of climate change as an environmental issue (and by extension, an energy issue) has skyrocketed. Many in the policy arena consider it the greatest long-term

environmental challenge facing the earth. Some consider it the greatest challenge facing humanity.

Today European businesses may be exposed to climate change in up to three broad ways. First, governments are imposing limits on greenhouse gas emissions. Secondly, some of the impacts of climate change will directly impact the business environment. And finally, public perceptions of corporate behaviour have the potential to impact the bottom line. Before turning to the impacts on corporate strategies and possible sources of competitive advantage, it is worth briefly elaborating each of these drivers of increased business exposure to climate change in turn.

Regulatory Actions

The Kyoto Protocol, which was negotiated in 1997 and has been ratified by 134 nations, invokes binding limits on emissions. With Russia's ratification, the treaty went into force on 6th February of 2005. Kyoto's limits are generally viewed as just a small step towards stabilizing atmospheric concentrations of greenhouse gases at a level that will have acceptably manageable consequences on the global environment, human health, natural resources and physical infrastructure.

The European Union is taking a leading position in limiting its greenhouse gas emissions. Starting in 2005 approximately 12,000 industrial facilities were granted allowances to emit carbon dioxide into the atmosphere. Total allocations are designed to create a shortage of allowances in order to stimulate companies to reduce emissions. The total real shortage is debatable, but current estimates place the EU-wide shortage at around 50 million tonnes of carbon dioxide pollution per year. If companies are not able to reduce their own emissions cost-effectively, they have the option to purchase allowances from other facilities that have sufficient allowances, or to purchase project-based credits from other countries throughout the world (Kruger and Pizer, 2004).

It is also important to note that the EU Emissions Trading Scheme (EU ETS) is only a part of the necessary steps that European nations must take in order to comply with their targets under the Kyoto Protocol. In 2008 phase two of the Scheme starts, and it is expected that allocations will be further limited, new industries will face caps on emissions, and additional greenhouse gases, such as methane, will be incorporated into the Scheme. Nations are also developing emissions credit purchasing pools to pay for project-based emissions reductions developed outside of the EU. And additional policies are being implemented, such as carbon taxes and renewable energy purchase requirements.

Overall, the Kyoto target for Europe is estimated to result in an annual shortage of carbon dioxide allowances of over 300 millions tonnes. At a cost to comply with Kyoto estimated at roughly €10 per allowance, the total cost/year may amount to approximately €3 billion. But since trading in allowances began, prices have risen steadily (as evident from the trading data in Exhibit 1) and some observers put the cost burden at between €6 billion and €9 billion. European companies will pay for most of these costs, either directly or indirectly.

But while limits on greenhouse gas emissions set by Kyoto will have significant impacts on industry, it will not even come close to solving the problem of climate change. A drastic reduction in global emissions is necessary to stabilize concentrations in the atmosphere at what will be considered an acceptable level. Kyoto only limits industrialized nations' emissions at approximately 5.2% below 1990 levels in the period 2008–2012. World-wide cuts of between 15 and 50% below 1990 levels are necessary to stabilize concentrations at manageable levels, and European nations are expected to have to reduce their emissions by even more in order to make this happen. Discussions are already underway to consider next steps beyond Kyoto's period of 2008–2012 (Pearce).

Business Impacts of Climate Change

The costs of climate change to EU industry will not all stem from regulations. The direct impacts of climate change on infrastructure, agricultural production, and human health will be varied but very real. Those companies involved in developing countries are likely to be even more exposed, as many of the most severe impacts will face theses nations. The U.S. Pentagon prepared a report on the impacts of climate change on international security. It states, ''warfare may again come to define human life . . . As the planet's carrying capacity shrinks, an ancient pattern re-emerges: the eruption of desperate, all-out wars over food, water, and energy supplies'' (Schwartz and Randall, 2003).

> Climate change is a phenomenon that is starting to have a major impact on Swiss Re, its partners, and our clients. The question is no longer whether global warming is happening, but how it's going to affect our business.
>
> John Coomber, CEO, Swiss Re

The industries most exposed to climate change are not always the obvious, heavy energy users. In fact, one of the industries most likely to be impacted is insurance. A recent study by Swiss Re, the world's second largest re-insurer, estimated that the costs of claims to insurers from climate change related weather events will be between $30 and $40 billion per year in ten years (Swiss Re, 2004).