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Getting Ahead of the Curve: Corporate Strategies That Address Climate Change

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PEW CENTER ON Global CLIMATE CHANGE

Staying One Step Ahead on Climate Change, Not Two

Swiss Re*

Where other companies in this report are motivated by the potential risk of future climate change regulation, Swiss Re stands out as being more at risk from the physical impacts of climate change itself. The insurance industry may experience dramatically increased costs due to a growth in climate-related effects; including growth in natural disasters, disease vectors and mortality rates over the next ten years.[107] But in keeping with the nature of reinsurance, the company has been working hard to integrate this risk into its business model. According to former Chief Executive Officer John Coomber (retired at the end of 2005), "While companies in most industries aim to avoid risks, reinsurers create value by analyzing risks and providing coverage for those they judge to be insurable."[108] "Climate change is a phenomenon that is starting to have a major impact on Swiss Re, its partners and clients. The question is no longer whether global warming is happening, but how it will affect our business, as well as our personal lives."[109]

Table 9

Swiss Re's Footprint (2005)

Headquarters:	Zurich, Switzerland
Premiums earned:	CHF 27.8 billion ($22.4 billion)
Employees:	8,882
Percentage of Emissions in Kyoto-Ratified Countries:	90 percent
Direct CO_2 Emissions:	6,829 MTons*
Indirect CO_2 Emissions**:	42,863 MTons
Aggregate CO_2 Emissions:	49,693 MTons
Target:	GHG Neutral by 2013
Year Target Set:	2003

* Metric tons.

** Measured as electricity use and business travel.

According to Chris Walker, Head of Sustainability Business Development, climate change is a central concern to the company because, "It could change the predictive model. If we don't have that model right, we could face problems in pricing some business going forward." In short, climate change undermines the fundamental model upon which reinsurance is based: that the earth's systems, though somewhat unpredictable in the short term, are stable in the long term. "What Swiss Re wants most is statistical regularity," says Brian Thomas, Manager of Content and in-house editor. But that statistical regularity is disappearing. According to Swiss Re, the insurance industry recorded around $40 billion weather-related natural catastrophe losses in 2004, the largest amount up until that date (see Figure 11). In 2005, the company estimates that total insured natural catastrophe property, and business interruption losses for the industry reached $78 billion. The total economic loss for windstorms in 2005 was estimated at approximately $209 billion.

Considering the company's substantial climate-related risk, Swiss Re has worked hard to promote understanding and action on climate change for more than a decade. Though the company received public notoriety for its early actions to address the issue, efforts at creating business opportunity through climate

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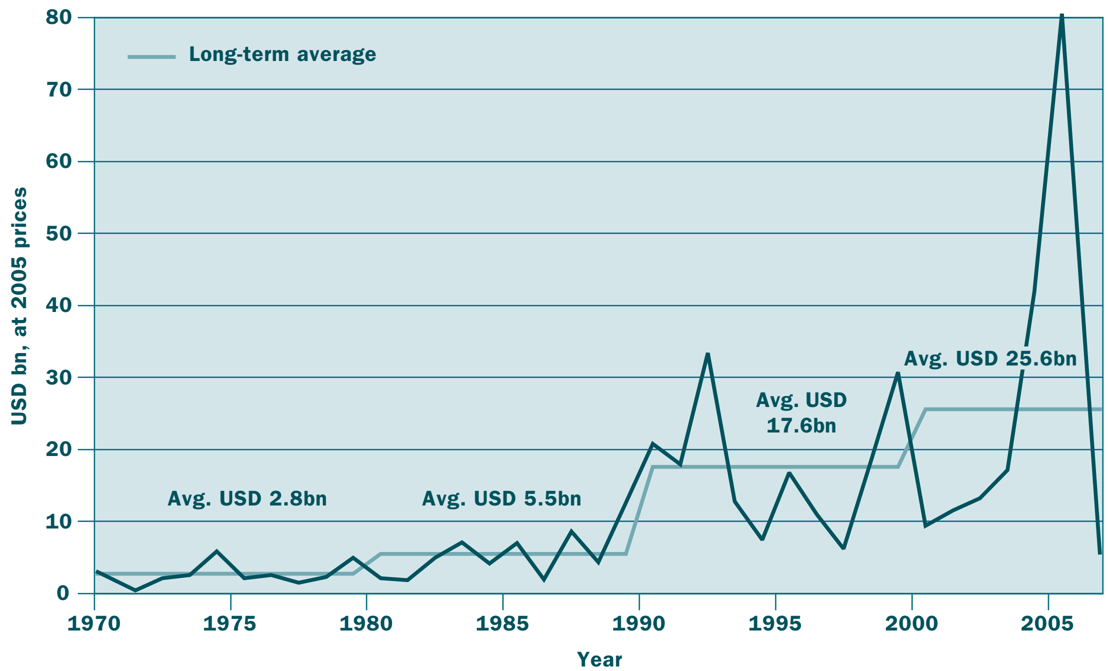
Figure 11

Rising **Natural Catastrophe Loss** Trends

Weather-related Natural Catastrophe insured losses 1970–2006 (property and business interruption)*



**Includes storm, flood, cold, drought, hail* *Source: Swiss Re sigma Catastrophe database*

change mitigation-related products and services have fallen short of financial expectations. Walker feels that, "Considering how the political climate subsequently developed we were in the game too early; as a consequence, we lost momentum." Where Swiss Re was once the most visible financial services company on this issue,[110] that may no longer be the case. A 2005 *Business Week* article ranked the company eighth among its peers, behind climate newcomers such as HSBC and JP Morgan Chase.[111] Walker believes this is a result of a recent increase in attention to new entrants rather than a judgment of Swiss Re's 10 years of activity and commitment to the issue.

But the company is careful in its attempts to rectify this situation, wishing to be sure that there is no discrepancy between the company's external perception and internal reality. According to Mark Way, Head of Sustainability Issue Management and Reporting, "This is not about PR. We believe that the materiality of our commitment is comparable with the best of our peers. However, there is a danger to being perceived as a leader." David Bresch, Head of the Atmospheric Perils Group, agrees. "You should always remain one step ahead of the competition. But if you are two steps ahead, you lose the crowd. The ideal is for you to be the leader of the pack and everyone pulling in the same direction."

Company Overview

Headquartered in Zurich, Switzerland, Swiss Re is the world's largest reinsurer.[112] With operations in 70 offices spanning 30 countries, the company has three divisions: Products, Client Markets and Financial Services (which includes Asset Management). Forty-nine percent of Swiss Re's premiums come from North America, 38 percent from Europe and 13 percent from other parts of the world, mainly Asia. "We're a Swiss company with an American accent," quips Cosette Simon, Senior Vice President for Government Relations and Public Policy.

Swiss Re has historically operated as a quiet company in a low public profile industry. That said, there is a strong sense of pride within Swiss Re about its roles as a "knowledge company" and an "enabler" with a very long-term perspective. The company, for example, tries to avoid advocating a particular policy or regulation. Rather, it wants to be called upon for objective expertise on informing the development of that policy. "We want to be the first or second call someone makes if they want advice on the financial side of climate change," says Walker. As an "enabler," the company makes business deals and development projects possible by providing the necessary instruments to offset and diversify risk.

Because Swiss Re is a reinsurance company, it naturally tends toward more long-term and global perspectives when it comes to risk diversification. Climate change fits perfectly with that focus. According to Simon, "Climate change is a conservative issue with Swiss Re. It's about caretaking, stewardship, and a 50-year time horizon." As a result, Swiss Re has distinguished itself through a relatively long-standing strategy of external awareness building. In fact, more so than other companies in this report, awareness building, external outreach, and scientific research programs are as important to Swiss Re's climate-related strategy as innovative climate adaptation products such as the use of weather derivatives and catastrophe bonds, where the company is the market leader.

Climate Change Program Implementation

Swiss Re produced its first publication on climate change—*Global Warming, Elements of Risk*—in 1994. This report was ground breaking for the simple fact that it came from a financial services company and argued that the repercussions from climate change "could be enormous, with threats posed not only to citizens and enterprises, but also to whole cities and branches of the economy, even entire states and social systems."[113] With that as a starting point, the company has continued to establish its leadership position on this issue through efforts aimed at building awareness with clients and the broader public. Between 1995 and 1998, the company released four publications and conducted three client seminars on the topic.

Moving beyond education, Bruno Porro, former Chief Risk Officer (retired in 2004) tasked Walker in July 2000 to look at potential business opportunities related to climate change through a group-wide feasibility study. Walker identified nine areas of possible relevance to the company's business lines and, with the support of two executive board members on his advisory board, he identified nine champions within those areas who were willing to dedicate the extra time needed to explore them. In this process, Walker took special care to make sure that he brought the right people on board, remarking that he "only wanted intrinsically motivated managers—people who would read things at night."

Six months later, Walker presented his findings to the executive board. Not surprisingly, the central question following his presentation was, “Is this going to make money?” Though Walker admits that he did not have specific numbers to back up his rationale, he said that it would. The executive board supported the creation of Greenhouse Gas Risk Solutions (GHGRS) by approving a staff of four. “Before this,” says Walker, “climate change was more a scientific concern. Now it was becoming more of a business development issue.” The company narrowed the original list of nine areas to four business elements: investments, third party asset management, insurance/derivatives and emissions trading. Swiss Re’s general approach to climate change is centered on the elements of research, products and services, management of its own emissions profile, and awareness building.

Research. Similar to DuPont, Swiss Re seeks to better understand its business exposure to climate change by developing internal expertise in climate science. According to Bresch, “The role of science at Swiss Re is to know what is possible because it helps the company identify, analyze, mitigate, and then, if possible, transfer our risk.” Bresch also notes that while most reinsurers employ scientists, Swiss Re is unique in that it is one of the few that does all its modeling in-house. As a leading reinsurer, Swiss Re develops and maintains Natural Catastrophe (NatCat) state-of-the-art in-house models for all major perils worldwide, relying both on the knowledge and expertise of 30 NatCat experts in Zurich, Armonk (New York), Munich, and Hong Kong, as well as on active collaboration with leading scientific institutions worldwide.

The NatCat modeling did not always have such a prominent role in the company. As recently as 1980, Swiss Re employed only two full-time scientists within the NatCat unit. The staff grew over time to cope with the increasing complexity and the growing demand for detailed NatCat risk assessment and proper portfolio management. Starting from earthquake and windstorm models for key markets, the unit further developed tropical cyclone and flood models and now covers all relevant reinsurance markets worldwide.

While climate change has been monitored by climate specialists within the NatCat team since about 1990, quantitative analysis and integration in risk assessment and management processes started only when detailed impact studies became available. Where Swiss Re has been able to establish quantitative relationships, it has started to account for climate change risk in reinsurance pricing. This actually happened when Swiss Re decided to adjust its hurricane model in September 2005 to reflect the effects of natural climate variability, any superimposed human-induced trend, and increased modeling uncertainty. Swiss Re’s NatCat experts follow and participate in actual research through collaboration with leading scientific institutions in order to identify climate effects at an early stage.

Products and Services. To be more proactive, Walker has adopted the mantra, “Distinguish ourselves relative to our peers.” In that vein, he is searching for ways to improve underwriter’s ability to bring climate change into policy decisions. “In Property and Loss (P&L), this is a stronger pitch,” says Walker. “In Life and Health (L&H), it is harder.”

One area where the company sees a possible link between its products and climate change is Directors and Officers coverage (D&O). According to Walker, “As soon as the obligation to reduce greenhouse gas (GHG) emissions becomes regulated, failure to comply or a mismanagement of carbon exposure could affect a company's performance and potentially create personal liabilities for directors and officers. Such regulations are already in force in some countries and are likely to become effective in the reasonably near future in the United States."

Signifying the risks of being a leader on climate change, Walker was once misquoted in the *Wall Street Journal Europe* as stating that Swiss Re will not provide coverage for climate change-related D&O risks. Instead, the company uses climate change as one measure among many to determine risk exposure. For example, with corporate clients, Swiss Re now looks to see if the applicant company has responded to inquiries from the Carbon Disclosure Project. If not, the company may add climate-related questions to its standard questionnaire to D&O insurance applicants.

The company is also testing the waters of integrating climate change-related risk factors into other traditional offerings. Business Interruption (BI) coverage is one promising area that Walker is evaluating. While BI insurance traditionally provides coverage for a plant that is forced to close temporarily, Walker is analyzing whether this coverage should include the value of tradable credits for ceased emissions during the shut down. In another area, the new Environment and Commodities unit has received a mandate to trade emissions. This unit is the combination of the old weather unit (insurance and derivatives) and emissions (SO_X/NO_X and GHG) and is presently in the process of staffing and has not yet started to trade.

Another important area of products and services is asset management, which had an investment portfolio of CHF 114.9 billion in company assets as of the end of 2005. Of these assets, 89 percent are invested in fixed-income, seven percent in equity, and the remaining four percent in alternative investments, including real estate. As early as 1996, Swiss Re asset management started to build up a dedicated Sustainability Portfolio comprised of investments which support sustainable development and efficient resource utilization. By 2004, approximately CHF 90 million had been invested in this area. In 2005, the company integrated the Sustainability Portfolio (including staff) into the alternative investments unit to benefit from a dedicated, institutionalized investment process.

Today, the company channels its sustainability investments into a number of sectors including alternative energy, water and waste management/recycling. More specifically, the company seeks opportunities representing medium to high risk-return profiles in: infrastructure investments such as wind-farm, biomass, and solar projects; investments in publicly quoted, small- to medium-capitalized growth companies; and cleantech venture capital investments, representing the highest risk-return profile. Lastly, the team seeks to invest in different geographical regions, with the target to reach a solid portfolio diversification in different markets. As tightening policy frameworks increase demand for such projects, the company's investment strategy is beginning to pay off. The portfolio's market value rose substantially in 2005 thanks to strong share performance as well as new investments.

Emissions Reduction. In October 2003, Swiss Re was the first company in the financial services industry to announce that it would eliminate or compensate for all of its GHG emissions, with a goal of becoming carbon neutral by 2013.[114] According to Walker, "We need to do this if we are going to be seen as credible."

At present, the company's GHG emission footprint is roughly 50 thousand metric tons, an amount management acknowledges is merely "a rounding error" of many of the companies in this survey. Direct emissions come from the combustion of office heating fuels (13 percent), and indirect sources include office electricity use (44 percent) and business travel (43 percent). Swiss Re plans to achieve a 15 percent reduction of these emissions through actual facility reductions and the remaining 85 percent through the World Bank Community Development Carbon Fund. The company is committed to increasing its purchase of renewable energy from 14 percent of the company's total worldwide energy consumption in 2005 to 37 percent in 2006 and 50 percent in 2007. Although the majority of this energy will come from wind, the particular source and quality in each location will depend upon regional availability.

Andreas Schlaepfer, Head of Internal Environmental Management, heads up the initiative and believes that for non-manufacturing companies like Swiss Re, substantial reductions in emissions resulting from energy conservation are quite easy; "If you've never focused on energy efficiency before, achieving 30 percent reduction is simple." However, achieving a 15 percent reduction will not be easy for Swiss Re since this target excludes savings made in previous projects. To achieve the company's goals, the program will focus on two primary areas: curbing emissions from Swiss Re's offices around the world and business travel.

Office emissions come from the nine buildings that the company owns and another 61 in which it rents space. While the nine owned buildings are responsible for 87 percent of the company's total energy consumption, the company includes rented office space in its carbon neutral initiative. Swiss Re employs a three-tiered approach to reduce its energy consumption. The first tier is zero-cost investments, such as turning down heating and cooling, and turning off lighting systems during non-working hours. The second tier focuses on small investments with paybacks of one year or less, such as motion sensors and compact fluorescent light-bulbs. The final tier includes refurbishments of property and buildings owned by Swiss Re, such as replacing cooling towers, generators, insulation or windows. The payback period for these investments can be as high as 10 years. Swiss Re has not established a formal budget to address these tiers, but will draw from the company's annual logistics budget.

To date, the company has conducted energy audits and provided recommendations for corrective measures in its three highest carbon-emitting offices. Based on the recommendations, local action plans have been drawn up for the next three years. Meanwhile, the company has learned some key insights into why some offices have more emissions than others. In some cases, it may just be age, location or that one building manager is more energy conscious than another. In other cases, operations that are split between two separate buildings with different property managers minimize the company's leverage with property management. Swiss Re is consolidating office space wherever possible and actively organizing tenant groups to create change within the management company.[115]

One prominent example of the company's efforts to become more energy efficient (and more visible) is its new office building at 30 St. Mary Axe in London. The building, known as the "Gerkin" after its unique shape, utilizes natural ventilation in addition to air conditioning. Due to this efficient design, it is expected that for much of the year the heating, ventilating and cooling (HVAC) systems can be switched off, thus reducing energy consumption and CO_2 emissions.

Emissions from business travel are the second, and more difficult, component of Swiss Re's carbon neutral initiative. Responsible for 43 percent of total company emissions, these emissions have been growing in both nominal and relative terms in recent years and are expected to overtake other emissions within the next two years. The reduction strategy is directed exclusively at reducing short-distance trips for internal meetings. According to Schlaepfer, it would be unrealistic and inconsistent with Swiss Re's business growth strategy to regulate business travel aimed at meeting current or potential clients, particularly in rapidly growing regions of the world such as Asia.

Although the company has not created any formal incentives encouraging employees to reduce internal travel, Schlaepfer has the support of top management for this initiative. In a CEO Newsletter in 2005, CEO Coomber touted the environmental and economic benefits from reducing business travel for internal meetings. Employees are required to secure the approval and signature of an immediate supervisor before taking such a trip. According to Schlaepfer, the most significant challenge is overcoming the human hurdle and unspoken professional incentive to network face-to-face with employees in other offices. To overcome this bias, Swiss Re provides employees with the latest telephone or video conferencing technology, and Schlaepfer arranges video conference training sessions to help mitigate any potential technological hurdle.

While the company plans to register its emissions reductions with the World Economic Forum's Greenhouse Gas registry, Schlaepfer states that Swiss Re will retire them rather than sell them. The company will also retire any renewable energy credits (RECS) that it purchases to meet a goal of 30 percent of its electricity purchases coming from green sources in the United States in 2006. The company may place carbon on the Chicago Climate Exchange (having joined in 2005) for trading purposes in the future, but initially the goal is to spur the market by demonstrating fungibility between markets by exchanging United States-based carbon credits with those from another jurisdiction. Explains Schlaepfer, "Our aim is to do something for the climate. This is a voluntary action, and it is not triggered by profit thinking."

Awareness Building and External Outreach

Of all the companies studied in this report, Swiss Re places the most emphasis on external awareness building within its climate-related strategy. The irony is that the company has historically sought to remain quiet and not draw attention to itself or its positions. Although the company had been in the United States for over 100 years, "no one knew who Swiss Re was," states Walker. "We were always a B2B[116] company." The company's approach to global warming ended this anonymity.

In July 2002, Swiss Re orchestrated a watershed event by sponsoring, along with AON, Duane Morris LLP and Natsource, a two-day conference at the New York Museum of Natural History called *Emissions Reductions: Main Street to Wall Street—The Climate in North America*. Bringing together more than 200 business, government and environmental leaders, this meeting was among the first instances in which Wall Street engaged on the climate change issue. More importantly for Swiss Re, it successfully garnered enormous attention from the press, public and financial community.

Building off this success, the company has continued to work to educate those within the financial industry. Using its in-house conference center (the Swiss Re Centre for Global Dialogue at Ruschlikon), the company creates forums to discuss “global risk issues and to facilitate new insight into future risk markets.” The center has hosted three forums on climate change, including one in 2003 cosponsored by the International Emissions Trading Association (IETA) that focused on developing carbon markets.

In another ground breaking move, Swiss Re partnered with Stonehaven CCS Canada in 2003 to develop an educational video about climate change designed for the general public. *The Great Warming* is a three part (45 minute installments) television documentary highlighting the roots of climate change and its possible implications in the future. Narrated by singer/songwriter Alanis Morissette and actor Keanu Reeves, the internationally promoted series was filmed in eight countries on four continents and was endorsed by dozens of the world’s leading scientists. First aired on Discovery Canada in 2004, it was subsequently broadcast in the fall of 2005 on the Public Broadcasting System (PBS) in the United States under the title *Global Warming: the Signs and the Science*. It has also been edited into a theater version which was shown in the spring and summer of 2006. In retrospect, *The Great Warming* is considered a huge success for the company. Not only did it distribute well to major television studios around the world, but Swiss Re has received only positive feedback on the final product.

From a more academic perspective, the company partnered with the United Nations Development Program (UNDP) and the Center for Human Heath and the Global Environment at the Harvard Medical School in 2004 to host a conference involving 250 scientific and business experts. They gathered to examine the physical and health risks of climate instability and formulate climate change scenarios and potential impacts on the environment, human health and the economy. Released in 2005, the final report—*Climate Change Futures: Health, Ecological and Economic Dimensions*—explains the links between climate change and human health.

Through such events and materials, the company has steadily transitioned from producing strictly client-centered publications to producing materials for a much broader public. It is clear that climate change has significantly altered the company’s approach to external outreach. In Baker’s estimation, “Climate change is one issue where we moved from internal to external dialogue.” For example, according to Baker, “There was a lot of soul searching within the company on whether to get into television. Reinsurance is traditionally faceless.” But he believes that *The Great Warming* is largely responsible for giving “a faceless Swiss company” some public recognition, particularly in the United States. “Although people may not know what we do, they know our name.” Toward this end, CEO Coomber was instrumental in helping the company overcome internal concerns.

More importantly, the company’s broader outreach approach is critical for creating awareness of climate change, and therefore its business interests. According to Baker, “Our clients’ clients (such as you and me) are also a part of the problem. Reinsurers are at the back end of the game. Some insurers may be under less pressure to change the behavior of their clients because it doesn't hurt their pockets as much as ours. But we can't dictate. We must try to gradually build awareness." For example, *The Great Warming* was aimed largely at a North American audience, a demographic that the company believes is in critical need of climate change awareness building. As Gerry Lemcke, Deputy Manager of the Catastrophic Perils Unit, explains, "this TV series comes at the right time in the right country."[117]

Organizational Implementation

Within Swiss Re, some of the most significant future areas of group-wide strategic relevance are categorized as "top topics." Climate change has been a top topic since the program was developed in 2001. The selection process for top topics is currently run by the Issue Management Unit. Using sources such as SONAR (Systematic Observations of Notions Associated with Risk), this group of three employees conducts four or five meetings a year with staff to get input about relevant, emerging business issues. After a brief is drafted about each particular issue, it is submitted to the 15-member Issue Steering Committee, a diverse group of senior employees, up to executive board level, from areas such as property, casualty, and HR. It is the responsibility of this committee to determine whether a particular suggestion is categorized internally as an "issue," "topic," or "top topic," in increasing order of importance. Each categorization receives differing levels of attention and budgets. Beyond climate change, the other eight top topics, most of which come from the risk side of the business, are: natural catastrophes, water, insurance linked securities, liability regimes, mortality, nanotechnology, solvency and terrorism.

While top topics signify internal and external commitment to issues such as climate change, there are organizational challenges to generating internal consensus and support for the issue. Way argues that "internal awareness is built by making a clear link between climate change and our business bottom line." To increase awareness within the Asset Management Division, for example, the company has worked with Sustainability Asset Management (SAM) to bring in sustainability professionals to educate portfolio managers on how climate change, environmental, and social issues impact stock prices and the valuation process.

The company also works to educate employees on the changes they can make in their own lives to benefit the environment. And again, "You have to try and link the issue to employee's daily lives," says Schlaepfer. "Remind them to live up to Swiss Re standards (such as integrity) and take them home with you." Schlaepfer believes the company can do this because, in return, Swiss Re encourages employees to bring their diverse values and ways of thinking back to the company. But, says Schlaepfer, "the key is not telling employees what to do."

Educational efforts begin with new employees. In Zurich, a component of new employee orientation specifically focuses on climate change. In the last three years, the company has also held a series of marketing and educational initiatives during lunch hours to make the connection between climate change and employees lives more clear. The voluntary events focus on energy, business travel, commuting, video conferencing and other issues. In one event, the company arranged for 15 hybrid-electric vehicles to be brought to the Zurich office for all employees to test drive. The company has also arranged a series of "Lunch and Learn" sessions, during which internal and external speakers present climate change related research and information to all employees over lunch. Finally, the company recently organized an on-site climate change art exhibit that depicted glacial melting in various regions of the world by contrasting postcard images from the early 20th century with photo images from the early 21st century. Although all previous marketing efforts have been in the Zurich office, the company plans to repeat similar, tailored events in offices around the world.

Policy Perspectives

Swiss Re's foray into government relations is a relatively recent effort. In the United States, the company's operations are primarily regulated by individual states rather than the federal government. Cosette Simon, who joined the company in 2001, is the company's first government relations professional. (The company has recently hired a second person to work in this area.)

Although Simon admits that climate change issues account for less than five percent of her time, the company has leveraged its resources and has been vocal on Capitol Hill. Walker has traveled to Washington D.C. no less than 25 times and has testified before the Senate. In addition, Walker has testified before the New York state legislature's insurance committee, and the company has supported both California's Greenhouse Gas initiative by serving on the California Climate Change Advisory Board and the Regional Greenhouse Gas Initiative (RGGI), a cap-and-trade system covering seven states in the Northeast United States. These efforts are viewed by many within the company as an extension of the "knowledge company" mantra. As Simon explains, "We feel an obligation to share our expertise with policy makers. We search for the proper public policy, not just what is good for Swiss Re. We sometimes even engage in issues where we have expertise but we may not have a dog in the fight." She adds, this allows her to go to Congress "without an axe to grind."

When it comes to specific policy, the company is very open to suggestions. Given its vulnerability to the physical implications of climate change, what is most important to the company is progress of any kind. As Walker notes, Swiss Re has no vested interest in engaging conversations about "whether we need five percent or six percent reductions. We need 60 percent reductions to stabilize climate change. Period." According to Simon, "Swiss Re supported McCain-Lieberman because it is progress and has been the only game in town. We're just trying to get traction someplace. We may have supported something else if it had a chance of passage." In short, the company is willing to endorse policies in which the government is involved, compliance is mandatory, and, according to Simon, which include "market mechanisms that strike the right balance between environmental and societal policy objectives."

Swiss Re has also been involved in a number of global forums on climate change. For example, the company joined 23 multi-national companies in signing the declaration prepared by the G8 Climate Change Roundtable in 2005. The statement calls on the world's governments to create a long-term policy framework to allow for "clear, transparent, and consistent price signals" for carbon. In addition, the company has been participating for the last four years in discussions of the issue in the World Economic Forum in Davos, and has been closely involved in the climate change efforts of Prime Minister Tony Blair as part of the United Kingdom's leadership in the G8 process and elsewhere.

Moving Climate Change from the Periphery to the Core of the Organization

Like incubators at many companies, the dissolution of GHGRS was planned. When the group was formed, the intent was for it to serve as a center of competence on the emissions reduction issue and to look for business and investment opportunities for Swiss Re's existing areas of business. As such, it was to be a climate change knowledge facilitator for the company and was not intended to replicate existing business and investment functions. The concept was to develop lines of business in conformity with existing products and then pass them on to mainline offerings when the business was mature. With the emergence of the European ETS and Kyoto market mechanisms, the need for a separate unit was diminished as the Capital Markets and Advisory Units were convinced that the trading and derivative areas represented a complementary businesses opportunity to their existing weather business. As such, GHGRS, was successful in integrating the issue into various core businesses within the company, such as Capital Markets and Advisory (trading related products), risk awareness (D&O insurance) and Carbon/clean energy asset management (Conning).

Challenges Ahead

Given its early action on climate change, Swiss Re provides a wealth of lessons on how to act, as well as notable impediments that could be faced by a broad array of companies. Like other companies in this report, a key lesson from Swiss Re has been the importance of executive-level buy-in for the company's strategy. Walker says that whenever he approached senior management for support and resources for climate change activities, "I've always felt like I was knocking on open doors." According to Swiss Re's Menzinger, upper management's commitment to the issue is the most important factor ensuring that climate change remains a strategic area of focus. These comments were echoed by Baker who remarks that, in general, "Board level support silences internal opposition."

But recent events have altered the internal landscape at Swiss Re for moving forward. In the summer of 2005, Swiss Re was restructured just before a new CEO, Jacques Aigrain, was announced. Implications for on-going GHG initiatives include the creation of a centralized logistics department to oversee office space management and carbon neutrality. Also, the formal structure of GHGRS was dissolved. The group's mature offerings—including carbon trading and weather derivatives—were redistributed to mainline product groups. (see "Moving Climate Change from the Periphery to the Core of the Organization" on this page)

In addition to continuing his focus on D&O and BI insurance, Walker has been reassigned to act as a manager of Sustainability Business Development, which aims to bring other climate change and sustainability related products to market. Walker admits that "these efforts may not be huge potential revenue streams, but they will help to better manage risk both for clients and ourselves and integrate sustainability into the business and investment lines. This has benefits in technical knowledge and risk awareness, as well as leveraging the reputation of Swiss Re." More succinctly, Walker sees four areas of benefits for the company: leverage Swiss Re's knowledge of sustainability matters to generate high-quality investment opportunities and additional fee income; attract new clients to Conning Asset Management (Swiss Re's third party asset management company); provide superior risk-adjusted investment returns for its investors; and protect Swiss Re's brand by reinforcing its position as a leader in the corporate sustainability area, and avoiding association with "sustainability laggards."

Walker is also working to develop applications to assist companies to achieve carbon footprint neutrality. For example, the company tried partnering with the Commonwealth Bank of Australia to offer a GHG neutral initiative. This program offered companies three critical tools: a "platform for communicating climate change issues and a way to differentiate their products in a pre-regulated marketplace"[118]; a management system for calculating and obtaining the necessary offsets, as well as a system to manage potential compliance obligations; and a way to better enable the creation of carbon markets by allowing project developers the opportunity to monetize the environmental benefit that the project is providing. This program has evolved into the "Footprint Neutral" concept which the company is creating along with the UNDP to enable businesses, communities and consumers to voluntarily offset their footprints.

But, while initiatives like this hold promise for the company, limits in central coordination stand in the way. Although climate change is relevant for many departments within the company, "This is very much driven by individuals who have a commitment," says Menzinger. "The loss potential is enormous and our ability to diversify is limited. But there is also a huge opportunity in areas like weather derivatives. To get there, we need to make more internal consistency and coordinate our efforts on climate change better across the business as a whole." Like other companies, Swiss Re is challenged by the task of directly linking climate change to the balance sheet. Says Baker, "A lot of research is lacking on modeling to connect the science and economics." Dudle wants to see more work in "getting the numbers to make the business argument for investment decisions."

But in the end, Swiss Re remains persistent. Due to the nature of climate change and the impact it can have on the company's business model, it is imperative that Swiss Re continue on the path it began in the early 1990's to build more robust bridges between science, human health, environment, and economics on the climate change issue. At times, the company has gotten too far ahead on the issue. Walker, for example, expresses disappointment at the lost opportunities when the market for carbon collapsed with the Bush administration's refusal to ratify Kyoto. "We got in too early and lost some momentum." But, he adds, "As a change agent, you have to be willing to take your lumps. Luckily, as a reinsurer, we're patient. Now it is easier to make the business case." Recent policy developments on climate change around the world are leading to greater opportunities for the company's efforts. According to Simon, "I've seen a real change in the last 12 months. I'm sensing a real shift." So, while the company may have gotten too far ahead at times, Menzinger believes that its early approach paid off because "it moved the market and raised the company's profile."

95. Based upon Department of Energy (Energy Information Administration) 2004 data, combustion of coal accounted for approximately 85 percent of CO_2 emissions from the electric power sector in the United States in 2004. The electric power sector accounted for approximately 40 percent of CO_2 emissions in the United States. Total CO_2e emissions in the United States were approximately 7.6 billion tons in 2004.

96. Cinergy. 2004. *Air Issues Report to Stakeholders.* (Cincinnati, Ohio: Cinergy Corp.): 26.

97. David, J. and H. Herzog. 2002. *The Cost of Carbon Capture.* (Washington DC: U.S. DOE, National Energy Technology Laboratory) http://www.netl.doe.gov/publications/proceedings/01/carbon_seq_wksp/David-Herzog.pdf, viewed 2/7/06.

98. Op. cite, Cinergy. 2004. *Air Issues Report:* 29.

99. Ibid, Cinergy. 2004, *Air Issues Report*: 2.

100. Ibid, Cinergy. 2004, *Air Issues Report:* 2.

101. Ibid, Cinergy. 2004, *Air Issues Report:* 26.

102. Ibid, Cinergy. 2004, *Air Issues Report:* 26.

103. Cinergy. 2004. *Annual Report.* (Cincinnati, OH: Cinergy Corp.): pp. 14-15.

104. Op. cite, Cinergy. 2004, *Air Issues Report.*

105. Op. cite, Cogan, D. 2006.

106. The full scale of Duke Energy is changing as it has announced the sale of Duke Energy North America (DENA) and its 6,200 MW of generating capacity for $1.54 billion. Duke Energy 2006. "Duke Energy Announces Sale of DENA Power Generation Assets to LS Power." http://www.duke-energy.com/news/releases/2006/jan/2006010901.asp, viewed 2/1/06.

107. UNFI. 2002. *CEO Briefing on Climate Change*. http://unepfi.org, viewed 1/29/06.

108. Swiss Re. 2004. *Sustainability Report 2004*, http://www.swissre.com, viewed 1/29/06.

109. Swiss Re. 2004. *Climate Change Matters to All of Us: The Great Warming*, http://www.swissre.com/, viewed 1/24/06.

110. Schmidheiny, S. and F. Zorraquin. 1996. *Financing Change: the Financial Community, Eco-Efficiency, and Sustainable Development.* (Cambridge, MA: MIT Press).

111. Aston, A. and Helm, B. 2005. "Financial Services Leaders." *Business Week*, December 12.

112. Reinsurance is a contract by which an insurer is insured wholly or in part against the risk he has incurred in insuring somebody else.

113. Swiss Re. 1994. *Global Warming, Elements of Risk.* (Zurich: Swiss Re).

114. In December 2004, HSBC made a commitment to become the world's first major bank to achieve carbon neutrality. The target was achieved in 2006.

115. Swiss Re also works to meet MINERGIE® standards, the European equivalent of LEED®, in all its new buildings in Switzerland, and in refurbishing projects whenever financially, technically, and architecturally feasible. MINERGIE® certified buildings are 60 percent more efficient in their heating systems than is required by current Swiss regulations. Also, the standard requires that construction costs not exceed standard costs by more than 10 percent, and in practice they tend to be only about two to four percent higher. Since 2000, the company has received MINERGIE® certification for 13 real estate projects with a total floor space of 151,000 square meters (1,625,350 square feet).

116. B2B—Business to business, as opposed to B2C—Business to customer.

117. Swiss Re. 2004. *Swiss Re Climate Specialist on TV*, http://www.swissre.com, viewed 1/29/06.

118. Swiss Re. 2003. *Becoming Carbon Neutral*, http://www.swissre.com, viewed 1/29/06.

119. Black powder is the oldest ballistic propellant for muzzleloaders and early cartridge arms composed of a mixture of potassium nitrate (saltpeter), charcoal and sulfur.

120. DuPont. 2006. *DuPont Heritage*, http://heritage.dupont.com/, viewed 1/8/06.

121. Solae is a manufacturer of soy protein and fiber ingredients in a joint venture with Bunge.

122. Pioneer Hi-bred International is a seed company specializing in biotechnology and genetic engineering.

123. Op. cite, Aston, A. and B. Helm. 2005.

124. Op. cite, Cogan, D. 2006.

125. DuPont. 2006. *Company at a Glance*, http://www2.dupont.com/Our_Company/en_US/glance/index.html, viewed1/8/06.

126. Ibid, DuPont. 2006. *Company at a Glance.*

127. DuPont. 2006. *Sustainable Growth.* http://www2.dupont.com/Our_Company/en_US/glance/sus_growth/sus_growth.html, viewed 1/21/06.

128. Op. cite, Aston, A. and B. Helm. 2005.

129. Thiemens, M. and W. Trogler. 1991. "Nylon Production: An Unknown Source of Atmospheric Nitrous Oxide." *Science*, 251(4996): 932-934.

130. The industry-wide agreement of N_2O producers included Asahi, BASF, Bayer, DuPont, ICI and Rhone-Poulenc.

131. HCFCs are generally considered interim replacements for CFCs. Their phase-out schedule is delayed compared to CFCs under the Montreal Protocol.

132. Warren, S. 2006. "DuPont Warns High Energy Costs will Hurt Profit", *The Wall Street Journal*, January 12: A6.

133. Reasons for shedding the nylon business were that the technology was "socialized" and it was not seen as a growth area for the company; it generated 25 percent of revenue but represented 40 percent of assets and was heavily dependent on fossil fuel.

134. Ranieri, J. 2005. *DuPont BioSciences: A Climate Change Best Business Practice*, Speech delivered to the California Public Utilities Commission, February 23, San Francisco, CA.

135. Tyvek® is a synthetic material made of high-density polyethylene fibers; the name is a registered trademark of the DuPont Company. It is a spunbonded olefin product that offers maximum protection and durability at a very light weight. For example, 100 10" x 12" envelopes weigh the same as 57 envelopes of the same size in 28 pound Kraft. Tyvek® is unaffected by moisture and inert to most chemicals. It has a number of uses, including siding for houses, envelopes, floppy disk and microfiche carriers where protection from acid, lint, and abrasions is needed.

136. DuPont. 2006. *Press Release: DuPont and BP Announce Partnership to Develop Advanced Biofuels*. (Wilmington: DuPont).