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A SUMMARY REPORT OF THE REDUCING GREENHOUSE GAS EMISSIONS 2002: ADDRESSING THE NEW BUSINESS IMPERATIVE
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SUMMARY OF THE CONFERENCE ON REDUCING GREENHOUSE GAS EMISSIONS 2002: ADDRESSING THE NEW BUSINESS IMPERATIVE 8 – 9 OCTOBER 2002

The conference on Reducing Greenhouse Gas Emissions 2002: Addressing the New Business Imperative was held from 8-9 October 2002 at the Swiss Re Centre for Global Dialogue in Rüschlikon, Switzerland. Organized by Swiss Re and co-sponsored by Aon, the International Emissions Trading Association (IETA), Natsource, and the Worldwide Fund for Nature (WWF), the conference was attended by close to 200 participants from the financial and business communities as well as governmental, intergovernmental and nongovernmental organizations. The participants included experts from the energy and power generation sectors, energy-intensive industries and financial institutions, as well as greenhouse gas service providers.

The conference sought to explore greenhouse gas-related business risks, foster a common understanding of the financial bottom-line, and investigate practical financial solutions to manage these risks, by considering the following questions:

- What is the status of international and national climate policies?
- What are the economic drivers that expose business to greenhouse gas risks?
- What are the opportunities and risks of the global greenhouse gas market?
- How are leading companies responding to the challenge?
- What is the role of the financial community, and what practical experience is available in applying financial products and solutions in the greenhouse gas context?

The first day of the conference focussed on the business impact of carbon constraints, while the second day focussed on financial solutions for managing carbon risks and assets. Participants met in plenary sessions and in workshops to explore sector specific exposure and responses to the climate change issue, as well as examining issues such as insurance, project finance and investment solutions to emissions reduction, financial instruments to mitigate risk, and corporate governance.

The conference continued a process that had been initiated a year earlier with the conference on Reducing Greenhouse Gas Emissions 2001, held from 11 - 12 October in Rüschlikon, and that had continued with the conference Emissions Reduction: Main Street to Wall Street – The Climate in North America, held from 17 - 18 July 2002 in New York City. A follow-up conference is anticipated for 2003.

REPORT OF THE MEETING

The conference on Reducing Greenhouse Gas Emissions 2002: Addressing the New Business Imperative opened on Tuesday morning, 8 October 2002. Participants met in plenary sessions to examine issues relating to the political climate, the financial risks of emissions reductions, the state of the greenhouse gas market, as well as carbon risks and opportunities, and the role of the financial sector. They heard presentations and panel discussions, and took part in question and answer sessions. In the late afternoon, participants convened in four parallel workshops to explore corporate exposure and responses, focusing on the following sectors: utilities; energy intensive industry; oil and gas; and the financial sector.

On Wednesday morning, 9 October 2002, participants considered possible financial solutions for managing carbon risks and assets, meeting in three workshops on: insurance solutions for emissions reduction activities; project finance solutions for emissions reduction activities; and investment solutions for emissions reduction activities. These workshops were followed by two parallel workshops on the potential of specialized financial instruments, and on corporate governance issues for directors and officers. All participants reconvened in an afternoon plenary session to hear concluding remarks and for the closing of the conference.

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OPENING SESSION

WELCOME ADDRESS BY SWISS RE: John Fitzpatrick, Swiss Re CFO, noted that the conference continues a dialogue that had begun a year earlier in Rüschlikon, and that had continued in July 2002 in New York City. He said that as a re-insurer, Swiss Re is positioned to consider long-term issues such as climate change and sustainability, looking over the horizon to prepare for the future.

He identified three drivers for addressing the emerging issues of climate change and its prevention: corporate governance, reputation and shareholder expectations.

On corporate governance, he stressed that although climate change has become an urgent societal concern, the issue has yet to be developed into a major strategic and operational issue in the corporate sector. He noted however that some multinational companies are taking the lead in this regard, achieving a better risk profile and long-term business practices. He said Swiss Re is working with its clients on greenhouse gas issues in order to improve their risk profiles. Swiss Re has also created a business unit called Greenhouse Gas Risk Solutions to deal with this topic, thereby demonstrating that for Swiss Re, "action counts."

He also suggested that reputation counts, noting that the equity markets were beginning to factor in long term threats due to unsustainable practices, and that investors were "putting their money where their values are." He said shareholders were also becoming active, noting several pension funds recently had enacted climate friendly shareholder resolutions.

He observed that in a carbon constrained future, climate change becomes a financial issue, and the financial services industry needs to develop financial solutions and risk mitigation techniques to assist clients in achieving global emissions reductions. He said this conference seeks to give pointers in the right direction for responding to this new strategic business imperative.

Fitzpatrick concluded by stressing the need for both vision and action. He said that companies will have to move without waiting for governments, and that they will need to move beyond the tokenism of reporting. He expressed the hope that the conference would play the role of raising awareness and building trust between stakeholders, noting that the various participants bring unique experiences, as well as useful and practical solutions. He thanked participants for attending the conference and called on them to assist in transforming ideas into solutions.

EARTH SUMMIT, JOHANNESBURG FEEDBACK: Klaus Töpfer, UNEP's Executive Director, highlighted the 30 years that have passed since the UN World Summit on the Human Environment, noting a shift towards poverty reduction and sustainable development. He highlighted globalization as a major issue over the past ten years, and said that as opposed to the "visionary" World Summit on Environment and Development in Rio in 1992, the Johannesburg Summit had been a summit of implementation and partnerships. On implementation of the Rio goals, he said that some progress has been made, especially in environmental regulation in the developed world, but noted that the problem of poverty remains. He mentioned poverty reduction targets endorsed at Johannesburg, including the Millennium Development goals, and urged prompt action in order to fulfill these targets. He outlined achievements with regard to the chemical and biodiversity agendas. On energy, he said that no specific targets had been set in Johannesburg, but pointed to advances in the renewable energy sector. In conclusion, Töpfer said that although the WSSD had not met expectations it had not been a disaster. He called for action in the form of partnerships, including initiatives from the business and financial community.

CLIMATE AND HEALTH EFFECTS OF CLIMATE CHANGE: Paul Epstein, Associate Director of the Centre for Health and Global Environment, Harvard Medical School, provided an introduction to climate change and its health effects. He said that although temperatures and CO2 concentration in the atmosphere had fluctuated historically – impacting, *inter alia*, human evolution – the current concern is the speed at which warming is taking place. Illustrating historical oscillation patterns, Epstein described the forecast trends, which may lead to infectious diseases spreading more widely. He noted the resurgence of infectious disease in the late 20th century due to the growing frequency of extreme weather events and to changing climate patterns. He outlined the spread of infectious diseases and their vectors, providing as examples the movement further north of ticks in Sweden and the appearance of mosquitoes at higher altitudes in mountainous regions. He also noted clusters of vectors, rodents and water-borne diseases associated with extreme weather events. He highlighted that research is necessary to avoid "surprises" associated with issues such as synergies between air pollution, CO2 fertilisation and ragweed pollen, possibly leading to more incidents of asthma, pests and pathogens in agriculture, and to impacts on tourism. He expressed concern that the rate of global warming and the sensitivity of biological systems have been underestimated, and concluded that there are economic and social benefits from developing clean energy technologies and greater energy efficiency.

THE POLITICAL CLIMATE

EUROPEAN CLIMATE POLICY: Henry Derwent, Director of Emissions Trading at the Department of Environment, Food and Rural Affairs (DEFRA), United Kingdom, highlighted the UK climate policy experience and its new Emissions Trading Scheme (ETS). He noted that the UK has had limited success in reducing carbon dioxide emissions, attributing this to low pricing in the coal and gas sector. He highlighted barriers to achieving real emissions reductions, including political reluctance to issue a fuel tax. On key achievements to date, he outlined its climate change levy (CCL), a Carbon Trust that supports energy efficiency, and the new ETS. He stressed the need to look beyond the Protocol's first commitment phase and underscored the urgent need for real action on emissions reductions.

UNITED STATES CLIMATE POLICY: In a video address, Eileen Claussen, President of the Pew Center on Global Climate Change, noted that both Russia and Canada have signaled their intention to ratify the Kyoto Protocol. Highlighting the situation in the US, she said that although the approach of the Bush administration relies on voluntary reductions, leading to business as usual, new initiatives are underway in other areas. She drew attention to drafting activities in Congress to address climate change, including parts of the energy bill. She said real emissions reductions are being achieved at the state level, citing examples of action "with or without the Kyoto Protocol," and "with or without Washington." She further stressed that a number of companies are taking on voluntary targets to improve their competitive positions in a future carbon constrained reality, and said that when governments provide clear rules, markets will respond, allowing the mobilization of expertise and technology.

CLIMATE POLICY IN THE DEVELOPING WORLD: On scenarios for climate change mitigation, Luiz Gylvan Meira, Secretary of Policies, Science and Technology Programs, Brazilian Science and Technology Ministry, said the Kyoto Protocol and US domestic mitigation regimes are likely to converge in some form to provide a general framework. He highlighted the concept of burden sharing, stressing the need for the economic cost of mitigation and adaptation to be taken on by countries in proportion to their emissions. On the discussion of possible developing-country targets in the second commitment period, he underscored that a project-based approach provides for greater certainty of reductions where national inventories are unreliable. Looking into the future, he noted the need to start considering the criteria for establishing targets for future commitment periods. He highlighted the problem of attribution of emissions, noting implications such as possible liability issues with regard to climate change. In conclusion, he said that developing countries see the Clean Development Mechanism (CDM) as the vehicle for participating in climate change mitigation, which can lead to changes in public policy, decreasing the rate of emissions growth.

FINANCIAL RISKS OF EMISSIONS REDUCTIONS

CARBON IN YOUR BALANCE SHEET: Robert Casamento, Senior Manager of Emissions Trading, Deloitte Touche Tohmatsu, spoke about progress in the development of financial accounting for greenhouse gases. Recounting two practical experiences he noted that companies express two key concerns: improving the financial bottom-line, and developing financial performance indicators. He noted that the financial implications of emissions trading are not captured in companies' financial reporting due to the recent emergence of the compliance market. He stressed that barriers include the lack of national accounting standards and criteria guidance, and said that companies face the problem of identifying, valuing, classifying and disclosing relevant data. He noted that understanding asset recognition and liabilities, pricing and accounting treatment of Renewable Energy Certificates is also limited. In conclusion, Casamento delivered a "step-by-step" practical list of actions for companies preparing for emissions trading, including: asking many accountants the same set of key questions; creating a list of practical scenarios; addressing the issue of accounting jurisdiction; involving the accounting department in scenarios; and providing preliminary tangible numbers to the CEO.

WHAT INVESTORS NEED TO KNOW AND WHY THEY NEED TO KNOW IT: Martin Whittaker, Managing Director, Innovest, said carbon trading involves both risks and opportunities, and emphasized private sector engagement as critical at this point. He said climate change policy development raises many issues relevant to the private sector, including international issues such as capital flight from Canada to the US, and national issues such as company responsibility with regard to shareholders and regulators. At the company level, he noted that there will be winners and losers, and that stakeholder engagement is an emerging issue related to climate change policy. He highlighted two main sources of risk: economic and competitive risk from climate change, and adaptation risks. He underlined the importance for investors to know regional impacts, adaptation and mitigation policies, sector impacts, corporate strategies, marginal abatement costs, and upside opportunities. In closing, he outlined key action points for companies on climate change issues: seeking expert advice; undertaking a portfolio; encouraging best practice; benchmarking; and improving information. He suggested that future steps should consider shareholder pressure, a culture of best practice, rigorous analysis of impacts, quantitative methods and accounting tools for carbon.

WHAT DOES CLIMATE POLICY MEAN FOR COMPANY SHAREHOLDER VALUE?: Duncan Austin, Senior Associate, World Resources Institute (WRI), presented on new WRI research, highlighted in the publication "Changing Oil: Emerging Environmental Risks and Shareholder Value in the Oil and Gas Industry" (http://pubs.wri.org/pubs_description.cfm?PubID=3719). He introduced a prototype tool developed by WRI to evaluate carbon risks and opportunity at the company level, noting it can be integrated into conventional valuation and management frameworks. He presented an assessment made of 16 oil and gas companies, using the WRI methodology, highlighting the oil-gas mix, the balance of upstream and downstream activities and the geographical location as determinants of company exposure. He demonstrated changes in shareholder value for the companies under different future mitigation scenarios. He said that few companies inform shareholders about climate change policies as a possible risk to future earnings, and emphasized the need for reporting on greenhouse gas emissions.

PANEL DISCUSSION: Jeremy Smith, Carbon Disclosure Project (CDP), introduced the CDP, a collaborative initiative involving 35 participants from the fund management sector. He noted that the CDP had issued a letter and questionnaire in May 2002 to the 500 largest quoted companies in the world by market capitalization, requesting climate change related information. This will be analyzed and compiled into a report in February 2003. Smith emphasized the role of the CDP as protecting and improving shareholder value, legitimizing climate change as a relevant subject, and reducing greenhouse gas emissions.

David Russell, Environmental Responsibility Advisor, Universities Superannuation Scheme (USS), spoke on the institutional investors view. In the management of a large pension fund such as USS, third largest pension fund in the UK, he said the implications of climate change and mitigation policies on certain companies, sectors and markets should be taken into account.

Sister Patricia Daly, Executive Director, Tri-State Coalition for Responsible Investment, spoke on shareholder activism. She said her organization, which represents the pension funds of various religious denominations, in access of US$ 100 billion, works on issues relating for example to the environment, human rights, and labor issues, with climate change being a top priority. She drew attention to the recent surge in shareholder resolutions, and to the Campaign ExxonMobile, which involves shareholders challenging Exxon's position on global warming.

In response to a question by the moderator on distinctions between the US and the UK, Smith said European institutional investors are willing to discuss climate change both from a shareholder value perspective and an ethical perspective. He said environmental issues are considered to belong to the domain of public policy in the US, with institutional investors avoiding taking a proactive stance.

On the question of whether climate change and environment can be an issue in the boardroom during current market conditions, Russell cited an example of a share price drop resulting from news of a potential coal levy in Japan, indicating that environmental issues affect company value and should be considered.

STATE OF THE GHG CARBON MARKET

Andrei Marcu, Executive Director of the International Emission Trading Association (IETA), served as the moderator of a discussion panel on the state of the greenhouse gas market. He raised the issue of disparity between predicted and real prices for environmental services in the market place. Frank Joshua, Managing Director of Natsource-Tullett Europe Ltd., responded that the US rejection of the Kyoto Protocol had resulted in predictions dropping from US$10-20/tCO2 to a reality or around US$1/tCO2. He highlighted a Natsource study that illustrated that managers perceived carbon prices in 2005 and 2010 at US$5/tCO2 and $10/tCO2 respectively. In comparison, he noted that the World Bank Prototype Carbon Fund (PCF) valued carbon at US$3-5/tCO2, while the largest existing compliance market in the UK market valued it at £5/allowance (allowance = 1tCO2). He concluded that once a compliance and regulatory system is in place, a true carbon market would be established.

Garth Edwards, Shell International, said that the current market for *ad hoc* emission reduction projects was based on voluntary actions, and was likely to die out and be replaced by a new formal market. He noted significant developments in the UK's regulated market where government is allocating rights and where companies are starting to get involved in risk management and real trading of property rights. He proposed that a future carbon market will depend on allocation and penalty levels, and that it will be registry-based and similar to other commodity markets.

On the role of the Russian private sector in providing potential JI projects, Marina Martynova, CEO of Energy Carbon Fund, stressed the need for Russia to ratify the Kyoto Protocol. She noted work in progress, including a project eligibility inventory, spanning several Russian regions. She said that the government has set the target for developing the national registry by 2007 in partnership with the private sector. Martynova stressed that a Russian national legal and regulatory system is needed for carbon trading, energy efficiency and international trade. She emphasised the importance of developing sound institutional structures.

Makoto Katagiri, Senior Manager of the Environmental Finance Development Office, Mitsubishi Corporation, shared information on Japan's private sector involvement in emissions trading. He provided an update on domestic climate change policy and action, including a review of guidelines for climate change action for 2004 and 2007, a voluntary emissions trading pilot scheme involving 20 companies sponsored by the government, business sector voluntary targets, the CDM registry tender, and the establishment of memorandums of understanding between private companies with the World Bank's Community Development Carbon Fund and the Bio Carbon Fund.

On demystifying the CDM in Brazil, José Roberto Moreira, Nega-watt Ltd., said that both the private and government sectors are actively engaged, including through the creation of an Inter-ministerial Council for Climate Change. He noted that over 20 letters of approval for potential CDM projects have been issued, while the development of universal criteria for project qualification is underway. In conclusion, he stressed the importance of the CDM for developing countries in achieving sustainable development.

In response to a question on what it will take for big investment banks to get involved, Joshua stressed the need to move the carbon business from the international policy realm to the level and language of the financial sector, and to demonstrate that there is a real market where carbon opportunities can be converted into money. Edwards stressed the need for compliance tools, noting that without the regulatory framework in place there will be no sustained demand. A speaker from the audience pointed out that the UK market is not a true carbon market due to its link to a carbon taxation system.

Katagiri said that from the perspective of a company like Mitsubishi, with 650 offices around the globe, a unified market would be preferable to the several different markets now developing. Moreira expressed concern at the low value of carbon and the small size of the market for the CDM. He said that projects are moving due to collateral benefits rather than carbon benefits. On the emerging EU trading scheme, Martynova underscored the importance of including JI and the CDM in order to stimulate cooperation with external partners. Joshua called for a system that is simple, effective, workable, and most importantly, up and running.

CARBON RISKS, OPPORTUNITIES AND THE ROLE OF THE FINANCIAL SECTOR

RISK & REPUTATION MANAGEMENT: Peter Zollinger, Executive Director, SustainAbility, highlighted the broadening scope of corporate responsibility, encompassing financial, environmental, social, and ethical issues. He said actions related to sustainability affect brand value and reputation. On reputational risk, he said that negative publicity, whether true or not, would cause a decline in the customer base. He recommended that companies engage stakeholders through consultation, dialogue and sharing, in order to build trust and to move forward on issues such as climate change.

Randy Nornes, Managing Director, Aon Risk Services, Aon, provided a US perspective on risk and reputation management. Drawing attention to a study of 140 US companies, he said that 75% of the companies had undertaken some sustainability project, and that 90% of those taking action had cited reputational benefits as the motivational factor. He highlighted reputational value as a reason for companies in the US to move on climate change prior to regulatory requirements.

CUSTOMER ACTIVISMN & CLIMATE CHANGE - THE BLICC PROGRAMME: Mei Li Han, Respect Europe, presented the Business Leaders Initiative on Climate Change programme (BLICC). She stated that BLICC's mission is to: establish a value-based programme for the exchange of business-related experiences with a range of actors; promote business action to combat climate change; and to support a socially, ecologically and economically stable society. She said that the programme encourages partnerships between private sector companies and their customers. She described a new model linking customers and companies in their efforts to reduce emissions, encouraging greater public involvement. Outlining the importance of practical action, she identified the Body Shop's energy and climate change campaign, which engages customers by making petitions available in their shops for local action on renewable energy, and she also drew attention to IKEA's efforts to promote public transport to its stores.

VALUE ADD – ENVIRONMENTAL EXTERNALITIES: Melville Haggard, Executive Director of Impax Group plc., spoke on the Renewable Obligation (RO) policy in the UK. The RO requires licensed electricity suppliers in the UK to purchase a specified percentage of electricity from renewable sources, and introduces a trading mechanism for Renewable Obligation Certificates (ROC), with the aim of stimulating a market for renewable energy. The RO will operate until 2026 and requires an annual increase in the percentage of electricity sourced from renewables until a 10% target is reached.

Haggard said that the RO replaces a system that encouraged a "project finance" approach, which had resulted in fragmentation and many small players. The RO, on the other hand, facilitates the entry of larger players into the renewables sector.

Discussion: Participants discussed the future of voluntary schemes, renewable energy and costs, and the issue of US participation in the carbon market. Zollinger commented that the private sector will comply with regulation. Nornes suggested that a significant contributor to voluntary agreements is the personal motivation of CEOs. The issue of corporate scandals and companies leaving their "values at the door" was raised. Nornes said that there is "room for change" depending on the shifting landscape of "value" drivers of the financial world. On renewable energy and price uncertainties, Haggard said that the equity community needs to come on board to understand the project cycle, including time frames. Nornes said that the appropriate marketing pitch is essential to encourage CEOs to "get on board" the carbon market.

BANKING PANEL – AN EMISSIONS REDUCTION ROLE FOR THE BANKING SECTOR? Jack Cogen, Natsource LLC., chaired a panel addressing the potential emissions reduction role for the banking sector. Three panelists gave brief presentations, followed by a discussion open to the floor.

Michael Rubino, New Funds Development, Carbon Finance, World Bank, highlighted the Bank's carbon finance initiatives, including the Prototype Carbon Fund, the Dutch Fund, the Community Development Carbon Fund and the Bio Carbon Fund. He said that carbon finance could make a difference, particularly in the case of methane emissions. He noted that carbon finance presents a new source of capital for clean technology in developing countries at a time when ODA is decreasing, and that it encourages less carbon intensive development paths. He identified a convergence of interests between business and the World Bank with regard to carbon finance, and encouraged companies to join the World Bank's carbon finance programme.

Simon Mathis, Head of New Products, Commonwealth Bank of Australia, spoke on the development of carbon brand products in Australia. He highlighted the "Greenhouse Friendly" initiative, under which carbon emissions of an eligible product must be offset within 12 months of the point of sale. Certification takes five years, and the programme involves products in the energy, transport and travel sectors. He highlighted certified BP petroleum products.

Justin Mundy, Senior Adviser, Global Markets, Deutsche Bank, spoke about the broad effects of climate change relating to energy security, demographic and socioeconomic changes, and political destabilization. He noted that financial institutions have great exposure to these challenges, and he highlighted the need to address risks and be aware of long-term economic impacts in asset management. On the CDM and JI, he said they are no panacea and that they cannot be the driving force for policy change in developing countries. He said that unless the projects are attractive to the lender, i.e. bankability is ensured, they will remain marginal. He expressed support for public-private sector risk management instruments to increase bankability.

Discussion: Participants discussed differences between public and private sector banking, the position of the banks toward the market, the late arrival of the insurance industry in financial, legal and insurance structuring of projects, awareness and understanding of the carbon market in the financial sector, and the role of subsidies.

Rubino suggested looking at how energy policies and subsidies skew markets towards fossil fuels and said that a package of regulatory reform, JI and CDM are needed to establish a functioning market. On Deutsche Bank's participation in the market, Mundy referred to its PCF and potential WWF links. He noted that banks have long-term concerns that might be at odds with short-term project concepts. Rubino noted that the larger banks have the capacity to address reputation, operational and credit risk. Mathis said that carbon is considered integral to the Commonwealth Bank's focus on renewables, waste, and wastewater management. Mundy said that financial sector involvement in the market is limited because the urgency of environmental crises has yet to be absorbed by people's consciousness.

THE CORPORATE EXPOSURE AND RESPONSE

In the afternoon of Tuesday, 8 October 2002, participants met in a brief plenary session to hear some remarks by Claude Fussler of the World Business Council for Sustainable Development (WBCSD) and then broke into four workshops that considered corporate exposure and responses, focusing on the following sectors: utilities; energy intensive industry; oil and gas; and the financial sector.

WALKING THE TALK: Claude Fussler, Vice President of Dow Europe and Director for Stakeholders Relations, WBCSD, stressed that not only is sustainable development good for business, but solving environmental and social problems essential for future growth. He shared his views on the Johannesburg Summit, stressing partnerships and dialogue between stakeholders as positive aspects. He said that now is the time for implementation, highlighting the areas of sustainable consumption, poverty reduction and corporate accountability. On the WBCSD contribution, he highlighted three publications: The Business Case, Tomorrow's Markets, and Walking the Talk. Fussler emphasized the importance of delinking economic growth from negative environmental and social effects, and underscored the need for innovation and proactive positioning. He also highlighted the WBCSD Greenhouse Gas Protocol Initiative, which develops and promotes the use of standards to measure and report on corporate greenhouse gas emissions. He noted future plans to engage the private sector in the CDM.

WORKSHOP ON UTILITIES

Jean-Claude Steffens, Director of International Affairs, Tractebel, presented "Managing Carbon to Respond to Climate Change." Steffens spoke about inventories and challenges in consolidating many subsidiaries. He said that barriers to entering the market include lack of historical emissions data from 1990, the geographical spread of subsidiaries, uncertainties on internal abatement costs, and market liquidity. He suggested the following approaches to utilities that are considering entering the carbon market: to learn and experiment; to engage actively in the market; to focus on energy and waste for carbon reductions; to engage with multiple-actors; to harmonise and co-ordinate action; to diversify a portfolio of assets; and to avoid early purchase.

William Kyte, Head of the Corporate Sustainable Development Department at Powergen UK plc. presented "A UK Player's Perspective." He said that there are conflicts between industry and policies that require long-term strategies. He said that a successful emissions trading scheme requires delivery of environmental and economic objectives, a flexible transition, transparency, freedom from the "double jeopardy" of taxation, and flexible but clear guidelines. He concluded that Powergen's strategy opts for a low carbon economy, noting that it evaluates new business opportunities, strategies, costs, and technology investments.

Helmuth Groscurth, Head of Future Energy Concept, Hamburgishe Electricitäts-Werke Ag (HEW), presented "Trading of Environmental Certificates" in which he described two pilot schemes established in Germany. He said that the Hamburg CO2-Contest pilot-trading scheme provided companies with incentives to reduce CO2 emissions, to assess the abatement costs, and to gain experience of the flexible mechanisms. He explained that the Green Certificate Project in Hamburg City aims to establish a Renewable Energy Certificate System with green electricity generated from low cost wind energy, biomass and small hydropower. He emphasised that experimenting domestically has its advantages over more costly international investments.

Discussion: Participants discussed a range of issues including: guidelines for accounting and reporting; CDM project criteria selection; 1990 emissions data; environmental integrity; acceptance of non-Kyoto credits and CDM compliance with the EU system; the status of Activities Implemented Jointly (AIJ); electricity and gas price fluctuation; and risk in the utilities sector.

WORKSHOP ON THE ENERGY INTENSIVE INDUSTRY

David Findlay, Vice President, Infrastructure, Dupont Canada, said Dupont had started focusing on climate change in the early 1990s in order to protect the brand and avoid the reputational damage experienced with regard to the ozone issue. He said that Dupont had managed to decrease its GHG emissions by 40% between the early 1990s and the year 2000, and noted that it is working to dematerialize the business portfolio. On climate change regulations, he said Dupont is advocating some protection for early movers. Findlay concluded that by getting in early, Dupont has benefited from the learning experience and from creating a sustainable business portfolio.

Bruno Vanderborght, Vice President, Holcim, spoke on the cement industry, highlighting the high CO2 emissions per US$ of sales revenue, and their vulnerability to climate change policies. He emphasized the emissions reductions opportunities in the industry. On risks, he noted distortion of competition due to climate change regulation and the relocation of production outside of Europe. He said European carbon allowance allocation decisions may pose a risk, and expressed preference for benchmarking for the cement industry over grandfathering. He outlined Holcim's policy, including improving information on emissions and reduction potential.

The discussion moderated by Urs Brodmann, Partner, Factor Consulting + Management Ltd., focused on: the level of exposure of companies to climate policy; the potential of passing on costs resulting from carbon policies to consumers; views on EU allocation allowances; experiences with the UK emissions trading system and CDM pilot projects; and the presentation of climate change issues to institutional shareholders.

WORKSHOP ON THE OIL AND GAS INDUSTRY

Workshop moderator Duncan Austin, Senior Associate, World Resources Institute (WRI), started off the session by asking which themes were of interest to the audience. The topics that arose included: ownership and accounting of carbon credits in joint ventures; the economics of carbon-reduction measures from a business standpoint; the basics of carbon-credit valuation and allocation; and the issue of transportation costs for energy.

Kathryn Shanks, British Petroleum (BP), recounted BP's success in carbon-reduction, notably a 10 percent drop since 1990 (adjusted to account for subsequent acquisitions), with the benefit estimated at up to US$650 million in savings to BP. Looking forward and beyond BP, she said that market-driven mechanisms are critical in providing carbon-reduction incentives for both consumers and corporations.

Mark Brownstein, Environmental Issues, Public Service Enterprise Group (PSEG), detailed how PSEG has expanded from a New Jersey utility to wholesaling energy in states stretching from Connecticut to Indiana, as well as having 2.7 million customers in South America. Brownstein's work inside the company involves making carbon impact a factor – albeit not the deciding factor – within the decision process. He noted however that the absence of a clear regulatory structure complicates this, and said that the other entities he deals with often lack knowledge regarding carbon credits.

Discussion: Austin pointed out that while much environmental legislation had foundered on fears of the costs that might be imposed upon corporations, both Shanks and Brownstein had cited cost savings from their company's carbon-reduction measures. In response to audience questions, Brownstein suggested that many companies will have to go "out-of-system" to continue gaining on the carbon front. Shanks said that a major effort is needed to make sure that those in charge of business development, as well as the lawyers negotiating deals, are conscious of the carbon values involved, otherwise after contracts are signed, potential gains may be lost.

WORKSHOP ON THE FINANCIAL SECTOR

Martin Whittaker, Managing Director of Innovest, served as the workshop moderator. Andrew Dlugolecki, Director of Andlug Consulting, outlined a recent project that he had managed under the auspices of the UNEP Financial Initiative (FI), whose members include Bank of America, City Group, HSB Group Inc. and Swiss Re. He said the extensive (80-page) study addressed the threats, opportunities and activity around four key areas impacted by climate change, including Property and Casualty Insurers/Reinsurers, Asset Management, Banking and Project Management, and Other Financial Sectors (http://www.unepfi.net/cc/ceobriefing_ccwg_unepfi.pdf). Brian Pearce, Director of the Center for Sustainable Investment, discussed his organization's "Financing the Future: The London Principles of Sustainable Finance" project, and addressed the role of fund managers within the institutional investment community. He noted that the project report includes an overview of the cognitive, political, analytical and operational barriers of progress for the industry (http://www.forumforthefuture.org.uk/aboutus/default.asp?pageid=205).

Discussion: Participants discussed the economic feasibility of the Kyoto targets, the importance of emission reductions as a means of stabilizing greenhouse gas concentration in the atmosphere, and the steps necessary to make this a reality within the financial sector. Throughout the discussion, participants stressed the need to move beyond Kyoto, to create targets, and to work out the future implications for the industry. Others highlighted the need to create policies and viable measures to define the value of carbon and raise awareness. Support for developing countries and public/private sector collaboration were also mentioned as critical issues.

Moderator Whittaker elicited the opinions of several workshop participants relating to the historical impact of financial institutions on energy projects, risk management, conditional contracts, liability and legal action, as well as the overall role that the insurance industry will play. Problems discussed included the lack of institutional funds, the overall complexity for the segment, the need for a clear and transparent set of rules, and the need for acceptable minimum standards agreed upon by all. Ongoing requirements mentioned included raising awareness and developing methodologies for asset management, project finance and other finance-related areas.

DAY TWO OPENING SESSION

On Wednesday morning, 9 October 2002, participants met in a plenary session to hear a welcome address as well as a legal counsel's perspective on two presentations that had been made on the first day of the conference. This session was followed by workshops, with participants reconvening in an afternoon plenary session to hear concluding remarks and for the closing of the conference.

WELCOME ADDRESS: Charles Crosthwaite Eyre, Project Management and Development, Aon Carbon, touched on changes since the conference in 2001, including: the crash in the financial markets, corporate failures, and the threat of war. He said, however, that these developments have not weakened the case for sustainable business practices in the protection of shareholder value. On climate change, he supported assessing the company level impact of emerging policies in the EU and Japan in order to reduce risk, and said that carbon should appear on companies' balance sheets. He noted that Aon has developed strategies for measuring and defining company risk, and stressed that now is the time to work together on solutions, with the input of all stakeholders.

LEGAL COUNSEL 'S PERSPECTIVE ON DAY 1: Gray E.Taylor, Partner, Davies, Ward Phillips & Vineberg LLP, Canada, highlighted the situation in Canada, noting that it is characterized by the "Kyoto wars" between the federal government planning ratification, and the provinces and business community opposing. He noted that the debate has been transformed from the policy level to the implementation level, with direct impact on companies. From his own experience, the underwriter community is beginning to support climate change disclosure, as "Kyoto risk" is becoming real.

Taylor highlighted the presentations and discussions from the first day of the conference, noting that climate change is becoming a real driver in the business community, with sophisticated analysis and concrete efforts well under way. In conclusion, he questioned how different regional blocks with different ways of dealing with climate change can link up and interact, including through emissions trading.

Caroline May, Senior Environmental Partner at Hammond Suddards Edge, United Kingdom, provided an enforcement perspective on implementation liabilities in the UK and Europe. She challenged the assumption of the distinction between socially responsible and mainstream companies, and suggested that future financial trading and regulation would bring them together. Regulated trading, she said, is the way forward, and urged for compliance benchmarks, transparency across the global networks and strong enforcement. Comparing liability in Europe and the US, she said that the European approach is "soft" in enforcing environmental liability and fines. She referred to Europe as an unlevelled playing field, highlighting its fragmented markets and policies. She noted a recent emergence in legal liabilities in risk and responsibilities, using the UK trading scheme as an example. She identified a number of key challenges that need to be overcome for a functioning market to be established, and urged lawyers and bankers to get on board now to prepare for a mandatory system.

WORKSHOP ON INSURANCE SOLUTIONS FOR EMISSIONS REDUCTION ACTIVITIES AND TRADE

The workshop was moderated by Dirk Forrister, Managing Director of Natsource in London, UK. Charles Crosthwaite Eyre, Project Management and Development at Aon Carbon, provided an overview of the European compliance regime, reporting on the risk obligations and exposures of a capital trade scheme on buyers and sellers. He also outlined corporate baseline allocations and the related risks and opportunities, including abatement options, annual emission reductions requirements for buyers and sellers, and benchmarking against competitors. Within a typical trading scenario, key issues include setting the appropriate benchmarks and compliance costs, with a particular focus on business interruption losses, the implied duty of the insured to mitigate losses and the overall impact on compliance.

Nigel Baker, Greenhouse Gas Risk Solutions, Swiss Re, focused on the potential insurance solutions for emission reduction activities. Baker stated that Swiss Re views emissions reductions as a potential new business with a "new currency" represented by the carbon component. These organizations plan to apply typical market scenarios, create acceptable risk projections based on projected loss exposure and act accordingly.

Discussion: Participants explored the pooling concept proposal, including the screening process as related to typical risk management calculations and exposures are performed in the industry. The discussion included the risk of baseline changes and its effects on the amounts of carbon credits, the implications of counterpart risk and possible financial guarantees. Panel members also addressed insurance bundling capabilities and projected premiums based on carbon credits, and asked the audience for guidance regarding several central issues.

Moderator Forrister reiterated the positive impact of having surplus allowances, and the related impact on insurers and their clients. Challenges addressed included the determination of basic indemnities based on such aspects as physical perils, the realities of required guarantees, certification and verification, the liabilities associated with fines and penalties, as well as evolving timeframes and the steps needed to develop the insurance solutions.

WORKSHOP ON PROJECT FINANCE SOLUTIONS FOR EMISSIONS REDUCTION ACTIVITIES

The workshop, focusing on how to value carbon in project financing and assessing risk, was moderated by Justin Mundy, Senior Adviser, Global Markets, Deutsche Bank. Loredana Mazzoleni, Structured Finance, Swiss Re, gave a presentation identifying the risks involved in project finance and JI and CDM activities. She also identified the means for structuring the risk elements to increase investment flows, and outlined Swiss Re's role in financing emissions reduction projects. She said that Swiss Re can provide financial guarantee insurance, hedging solutions and contingent loans for JI and CDM projects, in order to improve the viability of the project and the quality of the debt service. She emphasized however the necessity of the regulatory framework for JI and the CDM.

Justin Mundy gave a presentation on behalf of Jacquelin Ligot of the European Bank of Reconstruction and Development, noting the EBRD's mandate to cover countries with economies in transition, its focus on the private sector, and its position in the public/private interface. He said the bank is the largest financier of emissions cutting projects in the transition countries, noting that it seeks to help "monetize the carbon cash flow," and that it is prepared to lend against the carbon flow. Mundy commented that finding bankable projects in this area is a great challenge, and highlighted an EBRD case study involving the reconstruction of a district heating system in Uzbekistan. He stressed that the manner the EU trading scheme will deal with accession countries is critical.

Gail Jackson, FE Energy (formally Fondelec), highlighted experiences from managing funds focused on energy efficiency and renewable energy in the CEE. She said the investments are made on the anticipated return from energy savings alone, with carbon credits as a potential future add-on. Noting that certification of the carbon credits is ongoing, she said the process is complex and the regulatory framework still needs to be defined before the credits can be banked.

Discussion: On the bankability of projects, Mazzoleni explained how a financial guarantee can be used to make a marginally bankable project bankable, in which case the insurer functions as a catalyst, or facilitator, for making the JI or CDM project actually happen on the ground. Speakers highlighted changes in the electricity market, where power purchase agreements are no longer available. There has been a shift in financing solutions to deal with this change, and finance for climate change investments will similarly be developed once there is a carbon market.

Participants discussed the integration of carbon finance with regular finance, and carbon as revenue enhancement. One speaker noted that transaction costs for JI and CDM projects will be key to their viability, and suggested the bundling of projects across common elements.

They also discussed how the project investment grade can be enhanced, how contingent capital works, the difficulties financial institutions are having in understanding the carbon market and associated risks, and the need for early movers to get the carbon market started. Mundy noted that the market is beginning to develop as we move towards a EU trading scheme.

WORKSHOP ON INVESTMENT SOLUTIONS FOR EMISSIONS REDUCTION ACTIVITIES

Simon Mathis, Head of New Products, the Commonwealth Bank, served as the moderator of this workshop. David Brand, Director of Carbon Programs at Hancock Natural Resource Group Australia Pty Ltd., presented a paper on "Investment in Forests-Past Performance and Future Opportunities." He described Hancock Natural Resources Group (HNRG) a subsidiary of John Hancock Financial Services, and the world's largest institutional investment advisory and management business in forestry with assets of US$2.5 billion. He said that forestry is facing a revolutionary shift from timber-based industry to natural infrastructure, noting that the environmental services that forests provide have been treated as externalities and are now being commoditised. He described the Australian Forest Fund, Ltd., a carbon scheme involving carbon rights and value schemes. The scheme has acquired 84000 hectares of rural land, which is being systematically reforested with native species, and will provide domestic carbon credits, co-develop wind-and bio-energy and land repair, and enhance biodiversity. He emphasised that returns will exceed the traditional forestry model.

John Forgach, President of A2R Fundos Ambientais, provided a Latin American regional perspective on CleanTech. CleanTech is a proposed US$35 million equity fund focusing on renewable energy and efficiency, pollution prevention, recycling, and transport in Brazil, Mexico and Argentina, with current funding primarily from multilateral investors. Forgach emphasised that carbon projects would provide much needed capital to the region, hedge foreign exchange rates, and create real opportunities for environmental sustainability, and urged the private sector to contribute investments. Pipeline projects include hydrogen, fuel cells, and transportation solutions, the recycling of solids, waste water and paper recycling, small hydro-electric projects, and hybrid electric-fuels. These projects he said, are estimated to generate 6 M tCO_2 over 10 years.

Frederik Wijsenbeek, Securitas Capital, Swiss Re Group, presented a paper entitled "Sustainability Investments - an Institutional Investors Perspective." He outlined Swiss Re's investment framework, investment process, and evaluation process. He noted barriers to investment, including the emphasis of past investments on low returns, a young and emerging sector, uncertainties regarding regulatory environment, and the timing. Wijsenbeek emphasized Swiss Re's commitment to developing innovative insurance and capital markets, such as insurance pooling, of emissions reductions, weather derivatives, and contingent capital.

Discussion: Participants discussed a range of issues including: the concept of environmental value streams; specific versus general project principles; ensuring carbon stocks; management of risk and disease; Kyoto compliant forestry; accounting for plantations; pioneers and perceptions; the PCF and existing funds; timber versus sugar cane for biomass energy; price prognoses for future markets; institutional barriers to sustainability investors; technical risks of renewable energy investments; project valuation; and Swiss Re potential carbon related funds.

On values, Brand explained that the new business model deals with separating carbon rights from land and forest. He noted that considering values, such as land leasing, complex structures and different interests should improve management over time. He noted that sufficient carbon stocks would be maintained through a "Fort Knox" approach. He said that on the risk side, forest fires and tree disease is tackled through a broad portfolio approach, involving diversity in planting locations and species choice. He suggested that Hancock's pioneering role would allow it to gain competitive advantage in the market. Forgach commented that institutional barriers include legal weaknesses and advised investors to seek reliable and credible exit clauses. Brand urged governments to take a regulatory role. On project valuation it was noted as necessary to generate the appropriate level of return irrespective of the carbon market.

WORKSHOP ON FINANCIAL INSTRUMENTS – THE POTENTIAL OF SPECIALIZED FINANCIAL INSTRUMENTS TO MITIGATE RISKS

Martin Collins, Head of Markets, Europe, Natsource Tullett Europe, noted that companies need to position themselves in the greenhouse gas market place, as not taking action presents a risk. He said that to do so, they need to consider the following issues: the role of their risk management team; their preferred hedging tools; their appetite for risk; cash flow requirements; and accounting standards. He then outlined ways of transacting in the carbon market, through forwards, spreads, swaps and options. He

Frank Caifa, Weather Team, Swiss Re Financial Products Corporation, spoke on weather derivatives, noting that weather has an impact on businesses in sectors spanning from agriculture to entertainment. He presented Swiss Re's weather risk management instruments, which provide financial protection from weather conditions that adversely affect earnings. He said the market for these products is recent and has been steadily growing since 1996. He drew parallels to the emerging greenhouse gas market in that clients first have had to understand how weather affects their business.

Discussion: In response to a question from the floor on how the market for weather risk managing instruments and for greenhouse gases compare, Caifa noted that the baselines and systems for the greenhouse gas market are not yet in place, but that once the rules are there, a similar demand and growth could be expected. On whether weather risk management instruments take into account changes due to climate change, Caifa responded that this is not yet the case, noting that calculations are made based on long term weather averages. On a question of whether it is quantity or quality of transactions in the greenhouse gas market that matter, Collins responded that as a buyer he would care about quality, and would buy little and often and widen the portfolio. He stressed that it is high time to get out into the market, to explore, get products out and get company boards to think about the greenhouse gas market.

WORKSHOP ON CORPORATE GOVERNANCE AND POTENTIAL DIRECTORS AND OFFICERS EXPOSURE

Ariane van Buren, Senior Project Manager of the CERES Sustainable Governance Project, presented a recent CERES report titled "Value at Risk: Climate Change and the Future of Governance," which focuses on the fiduciary negligence of climate risk. Van Buren said the current breakdown in corporate trust reflects a crisis in governance and transparency. CERES' Sustainable Governance Project aims to assist CEOs in assessing the risks of climate change to business and sustainability. The risks are two-fold: economic and financial from remediation and damage; and costs induced by mitigating greenhouse gases. She said that failure to address these risks carries the potential of breaching fiduciary duty and potentially resulting in increased shareholder activism. The report she cited recommends Corporate Directors to: ensure sufficient expertise; insist on the assessment of risk exposure; insist that company executives fully examine cost reduction opportunities; require benchmarking; develop, announce and implement an explicit strategy; link executive compensation to company's performance; explore new strategic alliances; ensure best practices; and create accountability.

Roger Wenger, Risk Solutions, Swiss Re, spoke about insurance and liabilities in relation to climate change policy. He provided an overview of the processes involved in insuring the claims process of Directors and Officers (D&O), underwriting and its relevance to climate change regulation. He noted that D&O's seek insurance coverage based on personal liability. He explained that in the US shareholders mainly file suits on companies, directors and officers. Protection is extended to the insured, which excludes the company, except in the case of security claims. He said that coverage extends to defence costs and settlement judgement costs, as well as those resulting from third party claims. Underwriting criteria include company location, subsidiaries, activities, company foundation, insured persons, shares publicly traded, and greenhouse gas compliance with regulatory regimes. Regarding climate change regulation, he illustrated the EU 2005 directive, which would be the start of possible sanctions and claims. This is significant for private investors in terms of avoiding "wrongful" action. He noted that Swiss Re had developed a greenhouse gas questionnaire to extrapolate client strategies, company operations, carbon accounting systems, plans for Kyoto obligations or similar legislation. He stressed that the key role of the insurance sector was to provide education to companies.

Discussion: Participants discussed gross negligence, the role of the CEO, and differences between US and European judiciary systems. Van Buren highlighted the role of CERES as an educator. Wenger explained that the US differs in terms of the contingency fee principle, jury awards, punitive damages, class actions, and high claims awareness.

CLOSING SESSION

Claude Martin, Director General of WWF, provided closing remarks to the conference participants. He said that climate change is the most serious issue confronting humanity, and drew attention to the synergies between climate change and the changing biomes of the world, including mountain ecosystems, agricultural systems, biodiversity, and tropical moist forests and coral reefs. Coining the term "carbon addiction" he emphasised that under normal circumstances the multilateral system would take care of this craving. Reflecting on his recent experience of Johannesburg, he suggested however that weak multilateralism and negotiation fatigue –or "the race to the bottom" – is prevalent, leaving us in an uncertain space. He emphasized that humanity cannot do without the multilateral system, maintaining that a completely voluntary system would be anarchy. He said that the Kyoto Protocol, although weak and difficult to ratify, is the only credible framework, which also acts as an important guide to the private sector. He concluded that the future would be riddled with questions regarding Kyoto, voluntary contributions, and carbon trading, coupled with increasing customer activism. On a final note, he emphasised that ways forward would entail coalitions and alliances between NGOs and the private sector, broad based climate change strategies, private sector ingenuity and consideration of long-term horizons.

Christopher Walker, Greenhouse Gas Solutions, Swiss Re, thanked organizers and participants and said he looked forward to a follow-up meeting in 2003. He then closed the meeting.

THINGS TO LOOK FOR

EIGHTH CONFERENCE OF THE PARTIES TO THE UNFCCC (COP-8): 23 October 2002 - 1 November 2002. New Delhi, India. For more information contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; Internet: http://unfccc.int/sessions/sessions.html

TRIPLE BOTTOM LINE INVESTING CONFERENCE 2002: 7 November 2002 - 8 November 2002. Brussels, Belgium. Organized by Brooklyn Bridge, this international conference will focus on sustainable investment. For more information contact: Internet: http://www.tbli.org/

RESPONSIBLE FINANCE AND INSURANCE: 14 November 2002 - 16 November 2002. Monaco, Monaco. The 2002 edition of the Global Responsibility Forum will focus on the role of the financial services industry and insurance sector in promoting social and environmental responsibility. For more information contact: tel: +377-97-975960; Internet: http://www.global-responsibility.org

CLIMATE POLICY FOR THE LONGER TERM FROM HERE TO WHERE?: This meeting will take place from 21-22 November 2002 at the Royal Institute for International Affairs Chatham House London. The event is organized by the Royal Institute For International Affairs (RIIA) in association with Climate Strategies. For more information contact: Georgina Wright; tel: +44 (0)207 9575754/(0)207 9575700; fax: +44 (0)207 3222045/(0)207 9575710; e-mail: conferences@riia.org; Internet: www.riia.org

THIRD MEETING OF THE GLOBAL FORUM ON SUSTAINABLE ENERGY: 27 November 2002 - 29 November 2002. Graz, Austria. GFSE-3 will focus on public-private partnerships for rural development. For more information contact: Irene Freudenschuss-Reichl, UNIDO; tel: +1-212-963-6890; fax: +1-212-963-7904; e-mail: freudenschuss-reichl@un.org;

AIR POLLUTION 2003 - 11TH INTERNATIONAL CONFERENCE ON MODELLING, MONITORING AND MANAGEMENT OF AIR POLLUTION: 17 September 2003 - 19 September 2003. Catania, Italy. For more information contact: Conference Secretariat; tel: +44-0-238-029-3223; fax: +44-0-238-029-2853; e-mail: shobbs@wessex.ac.uk; Internet: http://www.wessex.ac.uk/conferences/2003/air03/index.html