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Risk Management

Research on Risk Management, Assessment and Prevention

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Liability Issues Related to Climate Risk

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The issue of a potential liability of insurers related to climate risk has taken on a dynamic which only few had foreseen. Yet one lesson which risk experts had learnt from 9/11 was that risk management has to focus on “think the unthinkable”.

The two following in-depth papers apply this maxim to the topic of climate risk liability. However, this topic is no longer unthinkable, and is not even an emerging risk. It has within a very short time become a “risk iceberg”, a real hazard of which only a minor part is visible, but the shape and size of the iceberg remain unknown.

The first paper, by Dr Richard H. Murray, Special Advisor to The Geneva Association, discusses the subject of “The U.S. Supreme Court Speaks on Liability for Climate Change: But What Did it Say and Will it Have Implications Elsewhere?”.

The second paper, by Lindene E. Patton, Chief Climate Product Officer, Zurich Financial Services, discusses “Why Insurers Should Focus on Climate Risk Issues”.

The Geneva Association does not give recommendations, but publishes the opinion of leading experts on topics that we believe are relevant for insurers. Liability issues related to climate risk is such a topic. We recommend that insurance companies give due consideration to whether this topic could impact their activities and results in the coming years.

The Geneva Association has been the leading voice in recognising the concern on liability issues in general, and related to climate risk. Our Annual Liability Regimes Conferences began in 2003 to seek insight into why and how new major risks emerge. Climate- risk appeared on the horizon in the years following Hurricane Katrina, and have been part of our conference attention for the past three years. By 2010, the topic was addressed at the Association's General Assembly in Zurich, and by this year's Assembly at Rio de Janeiro, it has gained an even more prominent status as one of three industry challenges warranting full Plenary discussion.

Walter R. Stahel

Vice Secretary General and Head of Risk Management Research

The U.S. Supreme Court Speaks on Liability for Climate Change: But What Did it Say and Will it Have Implications Elsewhere?

*by Dr Richard H. Murray**

The scientific debate about the causes of climate change is of interest to insurers in their investment policy, especially as it is the industry with the most comprehensive information and expertise about extreme weather events. But that debate has little relevance to underwriting policy.

What matters for underwriting is whether extreme weather events and shifting patterns of rainfall and drought, presumed related to climate change, will be determined by law and regulation to be the basis for imposing liability on emitters of greenhouse gases (GHGs)—or at least large emitters since every human activity and the very fact of life give each of us and every living creature a carbon footprint.

Insurers understand that first party property and mortality risks are enlarged by the increasing frequency and severity of windstorm and rainfall extremes. Incorporating this knowledge into underwriting decisions is the expertise of the industry. But efforts to socialise extreme event losses to third parties by crafting new principles and applications of liability law is a new phenomenon that cannot be ignored by insurers, since such changes in exposure frequently occur with retrospective effect, as was the case with tobacco and asbestos liability, increasing insurers' exposure after the terms of liability cover were agreed.

Climate risk liability is a new but rapidly proliferating threat. The first few suits were filed in the U.S. between 2003 and 2005, asserting liability under the ancient common law theory of public nuisance. In 2010, more than 120 suits were filed under a variety of theories, more than one third of them originating outside the U.S.

This wildfire of liability litigation has had no definitive testing or shaping by the courts of any country, but one case reached the U.S. Supreme Court in 2011, with the outcome widely anticipated as a harbinger of the viability of climate risk liability exposure for insurers and insureds alike. The suit, known as the American Electric Power (AEP) case, was filed by several states and cities against numerous large emitters in the power industry and relied on the public nuisance theory and raised some uniquely U.S. questions about the suitability of litigation to deal with the complexity of extreme event loss distribution. The outcome of the AEP case was widely anticipated as the first determination of the susceptibility of extreme events to liability law and insurance. And it was also widely expected to curtail the use of liability claims to distribute climate-related losses.

The Court issued its decision on 20 June, with a rare unanimous ruling. But the meaning and future implications of the decision are obscure. To understand this curious condition, it is necessary to understand that the U.S. Supreme Court is not required to hear all appeals. It accepts those that it believes are ripe for attention that will help shape the state of the law and address social conflict. It often goes about that task with the narrowest possible rulings, sometimes in order to achieve a majority opinion and sometimes with a view toward addressing the same issue in small bites over many cases and years.

The AEP decision was unusually opaque, generating a multitude of conflicting interpretations. Its meaning and intent will launch a small tsunami of liability claims in the lower U.S. courts, based on multiple theories of responsibility, until the Supreme Court, The Congress or the Environmental Protection Agency next speak on the subject. It is quite possible that a decade could pass before the issues are resolved in the U.S.

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AEP is too complex in substance and procedure to justify an explanation here. But it is possible to explain why it has opened the floodgates to climate risk claims in the U.S. and is likely to stimulate a similar escalation of claims and theories of liability worldwide.

- The Court made only one definitive declaration: the principle of public nuisance liability under the laws or judicial interpretation of any state is available to be used in asserting climate risk liability claims. That is a decision of considerable consequence, since state law based claims can in most cases be filed in the federal as well as the state courts, and GHG emissions do not respect state or national borders. The most favourable state laws will attract the claims, which will be presented in both those states and in the federal courts.
- The Court cast doubt on whether the federal common law of public nuisance would be applicable to climate-related liability claims, but didn't entirely foreclose that possibility.
- It had been anticipated by many that the Court would declare this to be an issue of the sort appropriate only for attention by Congress or administrative agencies. It did not do so, although on that issue the decision was a four to four split, with one justice unable to participate. A future change of course would be no great surprise.
- It had also been speculated that the Court might hold that the issue should be determined entirely by the U.S. Environmental Protection Agency (EPA). It did not do so, but left it unclear whether that might change depending on what the EPA did or did not do on the subject.

The decision may fairly be described as either approving, or not specifically disapproving, of any of the avenues for climate risk liability that were presented in the case. That is why the U.S. floodgates of liability claims will be open for the foreseeable future. Those who see liability as a device for regulating emissions behaviour through the legal rights of the private sector are rightfully encouraged. Those who believe the issue is one of public policy suitable for attention only in the public sector will find words of encouragement in the Court's opinion, though not in this decision. Those who view climate risk in a global perspective will find no specific application of AEP, but will take great encouragement that the concept of using liability theories by and against governmental entities has passed the first hurdle in the U.S.

How widespread might the global implications be? AEP in many ways mirrors the position in Japan regarding the liability of TEPCO for the radiation consequences of the March earthquake and tsunami. And it is at least a cousin in principle to the pending suit by the island nation of Micronesia against the Czech Republic seeking to prevent the commissioning of a large new coal fired generating plant on the grounds that the Environmental Impact Study did not take into account the effect the plant might have on hastening the flooding of all of Micronesia. One assumes that if the plant is commissioned, a liability claim will follow.

How much is at stake? A study performed by consultant Trucost in late 2010 for the UNEP Finance Initiative concluded that the ANNUAL cost of human behaviour as a contributor to extreme weather event damages exceeds US\$ 6 trillion. For insurers that could evoke fond memories of asbestos and tobacco which generated total losses over decades of about US\$150 billion and US\$750 billion respectively. It is enough to put insurers on the alert for appropriate actions to address the hazards and the opportunities before the floodgates produce floodtides.

**Introduction to “Why Insurers *Should* Focus on Climate Risk Issues”,
by Richard H. Murray, Special Advisor to The Geneva Association**

The article presented here is an important and timely report on developments of significance to the climate risk issues facing insurers. It is authored by Lindene E. Patton of Zurich Financial Services, who has been one of the industry's most active participants in global attention to climate matters. She describes the conditions created by the Accords reached at the most recent meetings of the United Nations Framework Convention on Climate Change (UNFCCC) Conferences of the Parties (COP) held in Copenhagen and Cancun.

The Geneva Association believes the conditions Ms Patton describes are of vital importance to insurers in determining both individual business strategies and views on the challenges and opportunities facing the industry. Several years ago, the Association commissioned a programme dedicated to the study of climate risk and insurance—increasing resilience to extreme events, under the leadership of Walter R. Stahel.

Earlier this year, the Association elevated the programme to priority status, adding a supplementary project dedicated to the rapidly emerging use of liability theories and insurance as a resource for compensating losses from severe events, including climate-related ones. That new initiative (the Liability Subcommittee) was a leading focus of attention at the recently concluded 2011 General Assembly in Rio de Janeiro. Ms Patton is the Vice Chair of that initiative, which I am honoured to Chair.

The article addresses two aspect of Climate Risk that are timely and urgent. The COP Accords launched a series of funding commitments—US\$30 billion in “fast start” cash funds and US\$100 billion “green funds” annually after 2012, dedicated to facilitate climate change adaption. If successfully implemented, these programmes will impact the risk profiles of society by financing infrastructure and other activities that will require insurance. The terms under which these “green funds” would be deployed are already in active negotiation. Participation by insurers in matters of such consequence will be vital to the soundness of the planning processes and to the quality of the insuring opportunities.

The other aspect—the emerging liabilities risks—are also in rapid evolution. Proposals for modifying liability laws are proliferating, with likely retroactive effect, as we have painfully seen in tobacco and asbestos claims, but in this case with more numerous new theories affecting vastly larger losses. They range from public nuisance claims in the U.S. to a proposed constitutional law change in Bangladesh.

The article identifies the key business challenges and issues these developments raise for insurers. In regard to climate risk, the industry must understand the conditions as they develop in order to avoid the crises and seize the opportunities they present. Specific actions are the responsibility of insurers. Awareness of the conditions is a necessity for the industry.

Richard H. Murray
Special Advisor to The Geneva Association

Why Insurers *Should* Focus on Climate Risk Issues

by Lindene E Patton⁺

Author's note

After this article was approved for publication, the U.S. Supreme Court's decision in the AEP case was released on 20 June 2011. As the article notes, the U.S. Supreme Court's decision in December 2010, to grant a *certiorari* in *American Electric Power v. State of Connecticut* (AEP) could have potentially altered the course of current and future litigation. Although an opinion was released on 20 June 2011 supported by all eight Justices, what they agreed upon was quite narrow, leaving much room for "mischievous litigation" according to the Cato Institute (see <<In Global Warming Case, Supreme Court Reaches Correct Result But Leaves Room for Mischievous Litigation Cato @ Liberty.htm>> <http://www.cato-at-liberty.org/in-global-warming-case-supreme-court-reaches-correct-result-but-leaves-room-for-mischievous-litigation/>). In the opinion of Michael Gerrard, Andrew Sabin Professor of Professional Practice and Director of the Center for Climate Change Law, Columbia Law School, the Justices ruled solely that the Clean Air Act displaced (and did not pre-empt) federal common law with respect to nuisance claims. Read his blog cited here for more context.

(see <http://www.lexisnexis.com/community/environmental-climatechangelaw/blogs/environmentallawandclimatechangeblog/archive/2011/06/20/today-s-supreme-court-decision-in-aep-v-connecticut-michael-gerrard-columbia-law-school-arnold-porter.aspx>).

In summary, the article stands even in the face of this recent ruling.

I. Executive Summary

Climate change-related risks pose a growing challenge for the insurance industry as the gap in governance on global climate policy is on course to collide head-on with a series of increasing exposures, demands and damages related to climate change. Combine this with the continuing fall in the ratio of insured loss to total loss for such exposures¹ and the industry may have the perfect storm for mass torts.

In other words, society at large appears increasingly underinsured for the impacts of climate change at the time of its greatest need.

At the same time, the recent rise in litigation involving natural catastrophes and natural resource damages suggests that society as a whole is increasingly unwilling to tolerate the destruction of or damage to natural resources as a result of human activities.²

In theory, stakeholders in society should take action in the face of a governance gap such as the one addressing climate change risks to allocate damages in a manner that is least economically disruptive from their individual or organisational perspective.

However, history suggests that this has not always happened, sometimes with serious consequences. The industry needs look no further than the divergence of our industry's experience with worker's compensation / employer liability and contrast that experience with developments in the areas of

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The opinions expressed in this article are those of the author and do not necessarily reflect the view of the Zurich Financial Services Group or any of its subsidiaries.

¹ Prof. Dr Peter Hoeppe, *Worldwide Natural Disasters - Effects and Trends*, http://www.munichre-foundation.org/NR/rdonlyres/E7ED6B1D-2D9F-4E64-9FB3-5C8A4539AD9B/0/20051116_Hoeppe_Hohenkammer_short_WEB.pdf

² See, e.g., "Chevron ordered to pay \$8B in Amazon environmental suit", *Business Insurance* (Feb. 14, 2011) <http://www.businessinsurance.com/article/20110214/NEWS01/110219974>; *Turner v. Murphy Oil USA, Inc.*, 582 F. Supp. 2d 797, 800 (E.D. La. 2008); Aaron Schwabach, *The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution*, 16 *Ecology L.Q.* 443, 453-54 (1989).

asbestos, tobacco and hazardous waste. This comparison demonstrates that the insurance industry can be part of the solution, or it can wait for the rest of society to determine how the insurance industry should be used without meaningful input from us.³

Unless global societal risk management of climate change improves, the mismatch between the loss exposure and monies needed to cover economic loss associated with climate change-related severe weather events and other impacts will only become more extreme.

Make no mistake, this mismatch is present in both developed and emerging economies. In fact, in developed economies, assets that are not sufficiently resilient may cause more economic disruption than those in developing economies on a pure gross revenue and loss basis.⁴ And those parties damaged in a developed economy have greater expectations – rightly or wrongly – that someone else should pay for their damage. Perhaps this is the irony of the economic success of insurance in facilitating economic development.

Luckily, or by design, the insurance industry is uniquely qualified and placed to help avert this negative economic consequence – e.g., the diversion of capital to frictional costs (litigation and defence expenses) and away from potential use in managing risk related to climate change adaptation and supporting transition to a low carbon economy.

However, the insurance industry certainly cannot act alone. With the collaboration of public policy makers and other essential stakeholders, a socially and economically desirable outcome – like those seen with workplace safety and fire protection systems – becomes possible. But, should the insurance industry decide not to engage – or should public policy makers shun our collaboration or should other essential stakeholders reject our risk management input – then the industry may well find itself in an economically unsustainable position more akin to its experiences with asbestos.

Because the exposures and impacts involving climate change are far broader than a single insured product or insurance product and the parties impacted cut across the economic landscape (and are not limited to merely a product manufacturer or the insurance industry), the stakes may be even larger than previously experienced emerging issues.

In sum, the insurance industry may well have to take action if it wishes to avoid the diversion of large amounts of valuable working commercial capital that could be spent to facilitate global society's adaptation to and mitigation of climate change risks, to "frictional" transactional costs (e.g., defence costs).

In the presence of the ongoing global governance gap with respect to climate change policy; insurance companies must use their skills to assess exposures, underwrite risks and communicate the results by sending our risk-based price signals (premium charges) to stakeholders to allow cogent risk management decision taking and assist society to spread and manage those risks.

II. Current Climate Change Risk Management Approach – Property Exposure Focus

To date, the insurance industry has primarily focused its efforts with respect to climate change on:

- (i) Understanding and modelling extreme weather events and their economic impacts;
- (ii) Underwriting extreme weather event risks;
- (iii) Accepting a defined amount of that risk by controlling the aggregate exposure to such events by region or geography or other permissible criteria.

³ *New York Marks 100th Anniversary of Triangle Fire*, MSNBC (Mar. 25, 2011), http://www.msnbc.msn.com/id/42273592/ns/business-us_business/.

⁴ *Japan forecasts earthquake damage may swell to \$309B*, Business Insurance (Mar. 23, 2011), <http://www.businessinsurance.com/apps/pbcs.dll/article?AID=/20110323/NEWS/110329965>; Nathan Golia, *Japan Domestic, Global Reinsurance Market Should Be OK Following Quake, Tsunami: Towers Watson*, Insurance & Technology (Apr. 4, 2011), <http://www.insurancetech.com/claims/229400816>.

While successful from a corporate risk management perspective, this approach when combined with certain economic, political and other social actions—resulting in concentration of human populations and assets in harm's way—has been the catalyst for a trend of decreasing percentage of insured loss when calculated as a percentage of damages from extreme weather events on an annualised basis.⁵

Unfortunately, where there are uninsured or underinsured parties damaged by an event, like the experiences in Hurricane Katrina or in Micronesia, litigation often emerges as a means to find funds to compensate for the uninsured or underinsured losses.

It has been argued that these and other emerging climate change-related torts will fail because of causation barriers, but the history of such mass torts and growing efforts to overcome these barriers by particular stakeholders suggest that the outcome of such cases is by no means certain.

III. The Emerging Climate Change Tort Liability Risk: Like Y2K or the Next Asbestos?

Numerous academic scholars and practitioners have studied the demands, claims and legal actions emerging with respect to climate change tort liability.

While the debate about what to do to mitigate the risks associated with and adapt to climate change rages on with little progress at any level, a large and growing group of both sophisticated and unsophisticated stakeholders is growing more frustrated and strident. These stakeholders are creating “pressure points” to incentivise action by developing evidence and aggregating data in attempts to both change behaviour and create liability for the failure to act.

These actions include the creation of voluntary and mandatory disclosure obligations related to climate change and GHG emissions. Some are attempting to create new liability theories while others seek to use and modify old liability tools.

As public policy makers fail to set clear goals, activists and other interested stakeholders march along, pursuing activities designed to incentivise private parties—especially large emitters—to reduce GHG emissions.

A. Disclosure:⁶

If climate-change cases get to the discovery stage, and if targeted GHG emitters possess potentially incriminating e-mail messages and memoranda similar to those that proved devastating to tobacco companies, “it’s a hammer” that could drive industries to the negotiating table.⁷

As an example, the Inupiat Village of Kivalina, Alaska, alleged in its complaint against ExxonMobil (and others) that the energy industry conspired “to suppress the awareness of the link” between emissions and climate change through “front groups, fake citizens organisations and bogus scientific bodies.”⁸ That

⁵ See Hoeppe, footnote 1, *supra*.

⁶ The Carbon Disclosure Project (CDP) was created in the 1990s and formally launched on 4 December 2000. The CDP is a voluntary association where many corporations participate to demonstrate corporate social responsibility – and the best intention to reduce emissions. What some did not expect is that those disclosures would be used (1) to pressure further reductions by shareholder activists (see SEC and other filings); and (2) in litigation as evidence / admissions of emissions. The standards of reporting have become more stringent every year.

Similar standards of voluntary reporting inquiry apply to the Dow Jones Sustainability Index (DJSI) project. The standards of judgment are relative to the entire applicant pool. That is, judging is based on a relative curve not a standard curve. So a company may attain a position on the DJSI one year – only to lose it the next year because someone else did more. The problem is that the loss of such a designation could be viewed by some as an indication of repudiation of commitment to CSR related to sustainability.

The scope of these voluntary reporting systems has expanded every year – some even going beyond the original mandate. For example, the CDP now inquires about water management.

Each disclosure creates the potential for liability if there is behaviour inconsistent with the representations made in that disclosure.

⁷ John Schwartz, *Courts as Battlefields*, New York Times (Jan. 26, 2010) (quoting James E. Tierney, Director, National State Attorneys General Program at Columbia Law School).

⁸ *Id.* (quoting Tierney).

claim echoes those in suits against the tobacco industry that ultimately led to industry settlements and increased government regulation.

Michael B. Gerrard, a professor at Columbia University law school and director of its Center for Climate Change Law, said the first efforts to sue tobacco companies had appeared to be weak as well. "They lost the first cases; they kept on trying new theories", Mr. Gerrard said, "and eventually won big."⁹

By interpreting existing disclosure requirements to require disclosures related to climate change in some circumstances, the U.S. Securities and Exchange Commission (SEC) has created a scenario where a corporation could be held liable for failing to make adequate disclosures.¹⁰ Accordingly, there is a framework under which securities class action lawsuits could potentially be filed against public companies on the basis of an alleged connection between a drop in share price and a climate change event.

B. Fractional Allocation and Universal Liability Theories: Efforts to Overcome the Causation Barrier to Link GHG Emissions to Climate Change Damages

A multitude of demands, administrative claims and lawsuits have been filed world-wide attempting to link bodily injury damages, property damages and other damages to GHG emissions from specific entities. Many of these claims appear to be patterned after asbestos, tobacco and hazardous waste litigation seen in the past.

Development of law providing a broader base for retroactive liability for past resource damages,¹¹ combined with a general erosion of legal theorem which would hold parties to be responsible for understanding obvious risks, and a multitude of types of claims filed, suggests a broad social change in expectation of what is required as a "social license to do business" as respects natural resources – including impacts related to GHG emissions and climate change.

Increased litigation relating to climate change and GHG emissions could result in costs to commercial and corporate entities. These costs will most likely take the form of defence costs as litigation proceeds, but may ultimately result in significant court awards to plaintiffs. The key issue is whether this remains a low level, defence cost only issue which goes away over time (the "Year 2000 Millennium Bug" scenario) or progresses to a breakthrough judgement leading to significant insurance industry payouts (the asbestos or tobacco scenario).

Lawsuits related to climate change have grown substantially in recent years. In 2010, 132 climate-related cases were filed in U.S. courts, almost triple the tally of 48 for 2009.¹² In 2003, just a single case was filed.¹³

Litigation outside the U.S. is at a far lower level, but slowly growing with at least 67 cases in the past decade, 32 of which have been filed over the past three years.¹⁴ In 11 cases, appeals have been filed or the outcome is unknown.¹⁵ Jurisdictions include Australia, Britain, Canada, the Czech Republic, France, Germany, New Zealand, Nigeria and the European Union, so this is not just a U.S. tort issue.

⁹ *Id.*

¹⁰ SEC, Commission Guidance Regarding Disclosure Related to Climate Change (effective Feb. 8, 2010).

¹¹ See, e.g., Hugh Bronstein, *Chevron Fights Potentially Historic Damages Case*, Reuters, Aug. 23, 2010, <http://www.reuters.com/article/2010/08/23/business-us-ecuador-chevron-feature-idUKTRE67M5GJ20100823>; *Chevron ordered to pay \$8B in Amazon environmental suit*, Business Insurance (Feb. 14, 2011), footnote 2, *supra*; Comprehensive Environmental Response. Compensation and Liability Act (CERCLA); EU ELD reference Directive 2004/35/CE.

¹² Deutsche Bank Climate Change Advisors, *Growth of U.S. Climate Change Litigation: Trends and Consequences* (Nov. 3, 2010); for updates, see also Climate Change Litigation in the U.S. at <http://www.climatecasechart.com/>.

¹³ *Id.*

¹⁴ *Climate Change Litigation*, The Vancouver Sun (Jan. 23, 2011); Columbia Law School, Non U.S. Climate Change Litigation Chart, http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=163021.

¹⁵ *Id.*

Compensation claims could theoretically impact those who emit GHGs. In the courts, these cases have run into uncertainty about judicial jurisdiction / competence and legal responsibility. A major case has reached the U.S. Supreme Court.

Many academic pundits have focused on the challenges facing the plaintiffs' ability to demonstrate a causal link between a specific entity's GHG emissions and a specific alleged damage. It is important to note, however, that both the activist and academic stakeholder communities have turned their focus and efforts to this matter. They seek to overcome the barriers to tort liability, creating a legal theory that would allow plaintiffs to attribute damages to a specific emission or sets of emissions by individual companies or industries.

In fact, in February 2010 Trucost, a stakeholder desiring investors to pressure entities in which they invest to reduce GHG emissions, sponsored a study to create the basis for a fractional allocation scheme. The final executive summary was released at the PRI (Principally Responsible Investors) conference in San Francisco in November 2010.

The report claims that more than US\$6 trillion in environmental damages are caused by human activity annually. Of that, they assert, US\$2.3 trillion of that amount can be attributed to the top 3100 publicly traded companies by market cap. Further, the report asserts that approximately 80 per cent of those companies can be organised around just five business sectors.

In other words, they appear to be patterning their arguments to overcome the "causation" barrier by modelling the successful market share theory applied in many product liability cases and combining that with an implied assertion of the 'de minimus' theory applied in hazardous waste cases to create a path for activist judges to find liability associated with / attributable to past, current and / or present GHG emissions.

Industry vigorously argues in jurisdictions where applicable that this is an issue best reserved to public policy.¹⁶

C: Litigation Decisions "On Deck"

The U.S. Supreme Court's decision, in December 2010, to grant a *certiorari* in *American Electric Power v. State of Connecticut (AEP)* could potentially alter the course of current and future litigation. One of the Supreme Court justices, Sonia Sotomayor, has had to recuse herself citing prior involvement in the case as a judge on the Second Circuit. As a result of her recusal, it appears that only eight justices will hear the case, raising the possibility of a 4-4 deadlock by the end of the current session around June of this year (2011).

In such an event, the Second Circuit's ruling in favour of the plaintiffs would remain intact allowing the plaintiffs' claims to proceed and potentially opening the door for further litigation. At the very least this would create defence costs for many industrial companies that emit GHGs with implications for their insurers. This may ultimately end up over a number of years in dedicated, repeated efforts by plaintiffs to find a legal theory that "sticks" as happened in tobacco or asbestos.

In a report issued in 2009, Swiss Re compared climate change-related lawsuits to those that led dozens of companies in asbestos industries to file for bankruptcy and predicted "climate change-related liability will develop more quickly than asbestos-related claims". The report added "the frequency and sustainability of climate change-related litigation could become a significant issue within the next couple of years."¹⁷

¹⁶ For additional information, see <http://www.lexisnexis.com/Community/emergingissues/blogs/emergingissueslawblog/archive/2010/09/27/michael-gerrard-s-climate-change-litigation-in-the-u-s-chart-columbia-law-school-center-for-climate-change-law.aspx> and the associated Climate Change Litigation Chart

¹⁷ <http://www.arnoldporter.com/resources/documents/ClimateChangeLitigationChart.pdf#page=1&view=fit>.
Swiss Re, *Globalisation of Collective Redress* (2009).

Alternatively the Supreme Court's justices may judge that the issues that the case raises are inherently political and must therefore be dealt with by Congress and the executive branch. In that case litigation should decline and the issue may follow a "Year 2000 Millennium Bug" scenario where the potential risk of litigation rapidly diminishes. However, the *AEP* case only addresses nuisance cases and does not address broader theories under tort liability law. A verdict for the defendants on the nuisance issue may not arrest the flow of cases and associated defence costs. The plaintiffs bar may still continue to file demands and claims for other types of tort damages.

IV. What Insurers Are Doing Now and Why Limited Behavioural Change Results

Interestingly, some insurers are underwriting climate change-related risks today. Scholars including Evan Mills have evaluated the state of insurance products and the industry's response to climate change.¹⁸ What these studies show is that our industry is quick to embrace underwriting of specified perils arising out of the deployment of specific technology – "green buildings"; low carbon power; pollution controls, hybrid vehicles and plug-in hybrid electric vehicles (PHEVs). But these studies also show that the industry is not quick to offer liability coverage, surety, efficacy or other performance related guarantees for low carbon conversion.

No one in the industry appears to be underwriting climate change liability at this time – other than that for D&O, professional liability, and new construction. But these are specialty risks.

Significant investment in underwriting resources would be required to train underwriters to be sensitive to the potential tort liability risks associated with GHG emissions. And, because the issue is only emerging now, it may not be fully clear what the rules are with respect to such liability.

Further, even a cursory review of the industry structure and the climate change challenge reveals that risk-based price signals related to climate change are often distorted by regulation or undisciplined competitor behaviour.

Additionally, the differential in the risk-based price signal (premium charges) related to the reduction of risk attributable to the insured risks is most often less than the capital cost of making the changes to improve resiliency (adaptive capacity) or mitigate risk in the form of emission reduction. The insufficiency of risk-based price signal to drive / incentivise behavioural change occurs precisely because the benefits of improving resilience or mitigating risk inure to parties outside of the insurance contract and / or involve risks not insured under the insurance contract.

For example, if a homeowner invests in a resilient retrofit such as improving a structure to meet the Insurance Institute for Business & Home Safety's (IBHS) Fortified standards, should a severe weather event occur, the homeowner will have both insured and uninsured assets protected, thereby mitigating against lost time at work and emotional distress. If 1000 homeowners and the utilities in the area all improve – should a severe weather event manifest, economic disruption of an entire community might be avoided – jobs spared and economic functionality sustained.

To get policy makers to support and embrace insurers as part of the solution – rather than seeing insurance as part of the problem – will require that our industry spend time articulating (once again) with specific application to climate change risks – the value of insurance as a risk-based price signal, a smoothing vehicle, and as a mechanism to incentivise risk-reducing behaviour. In many ways, this observation is obvious. If that is so, why is it that insurance companies cover less and less of the damage from severe weather events? Why do risk decisions and levels appear to aggregate, and why does the industry see the emergence of tort litigation?

¹⁸ See, e.g., E. Mills (2009) "A Global Review of Insurance Industry Responses to Climate Change", *The Geneva Papers on Risk and Insurance—Issues and Practice*, 34(3): 323-359; E. Mills (2009) *From Risk to Opportunity 2008: Insurer Responses to Climate Change*, published by Ceres.

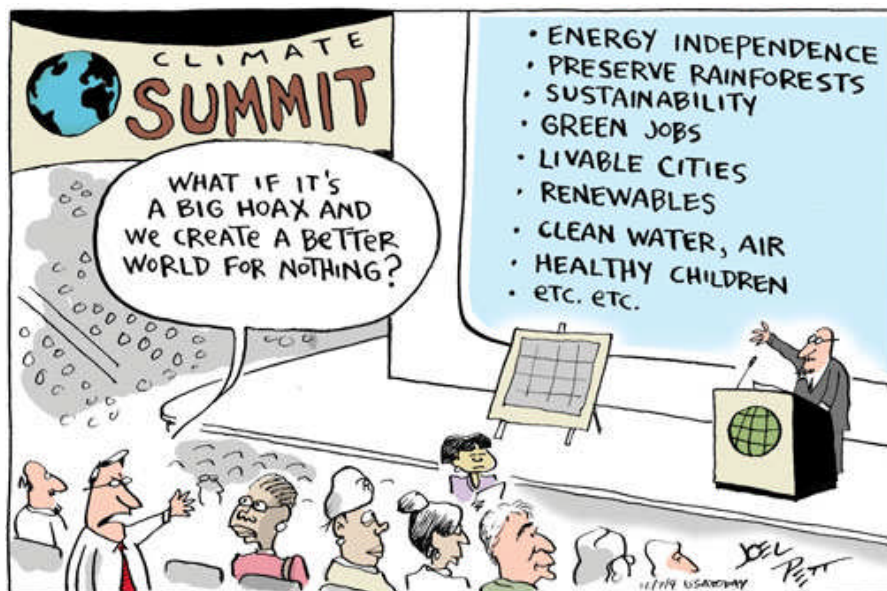
V. Climate Change is Happening...What Science, History and Human Behaviour Are Trying to Tell Us

The insurance industry understands climate change is happening. The insurance industry also understands that climate change is characterised by “fat tail events”.

The challenge facing the insurance industry and society at large in the area of climate change is that while we know “what” many of the risks associated with climate change are or could be, we just cannot pin point – precisely when, where or how big the events or consequences will be. So, climate change is not a “black swan” as many would like to characterise it – but, rather, a vexing aggregation of reasonably predictable events characterised by limited precision.

In a sound bite society, driven by spreadsheet based decision making, single cell spreadsheet entries with overlapping values give little comfort.

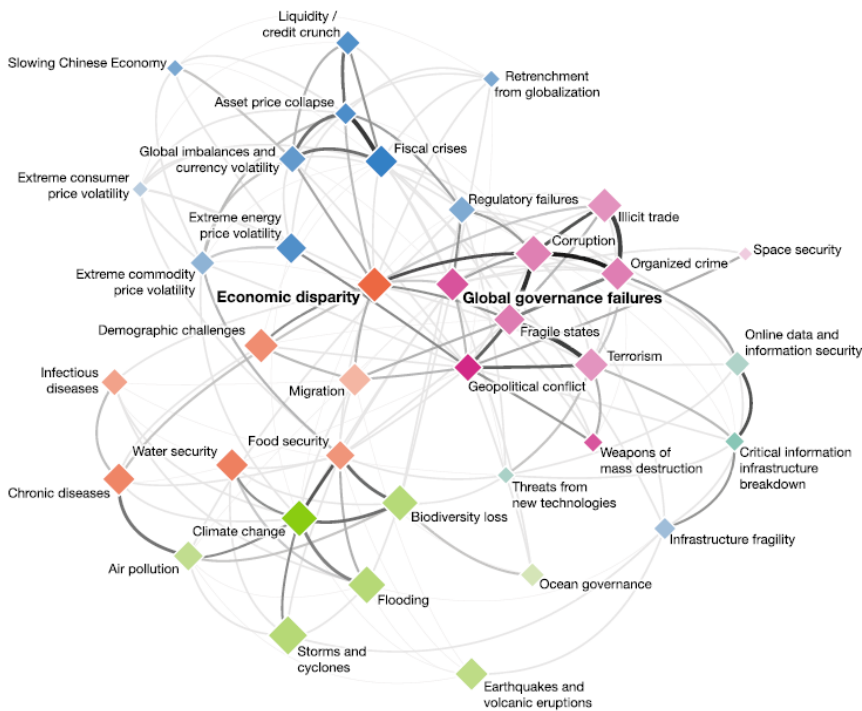
For our industry, the most immediate challenge is changing human behaviour. And, trying to determine whose advice about what behaviours should be changed is sufficiently reliable to warrant action. Decision makers fear being second guessed.



What is certain is that significant investments will be required to address and adapt to these issues. Furthermore, all major global risks are interrelated so taking action – or failing to do so – can impact related risks.¹⁹

¹⁹ See, e.g., World Economic Forum, *Global Risks Report 2011* (6th ed.).

VI. Human Behaviour in the Face of Climate Change and Other Big, Complex, Global Risks



Source: WEF, *Global Risks Report 2011*.

Expert scientists tell us that the longer humanity waits to act, the more severe the consequences are likely to be when climate change-related events occur.²⁰ But this lack of “precision” in predictability is precisely what stops policy makers and individuals from taking action.

What if a decision is taken to act to protect against an “event” and that event does not manifest during the decision taker’s term of office or appointment?

Will they be re-appointed / re-elected? Criticised? Sued? What if they do not act and an event occurs? Same questions?

What about individuals? How can the insurance industry – the experts in risk management – help these decision takers address this imprecision?

History would suggest that the insurance industry can add tremendous social economic value by understanding the technical conditions that lead to loss or damage and incentivising those who control such conditions to change their behaviour to reduce the frequency and / or severity of such conditions in a manner which reduces the frequency and severity of loss or damage.

Basically, insurance underwrites and provides allied risk management services related to the insured risks, and sends risk-based price signals (premium) to reinforce the value of the risk reduction.

But, where the science is still developing, and the effects attributed by scientists to climate change vary by location and cut across a multitude of insured and uninsured assets and social and economic activities, the importance of attention to detail can be daunting / overwhelming at first glance. However, if we step back and recognise that insurance cuts across the economy already, and that insurance companies already have industry and natural resource experts, the opportunity for a solution begins to emerge.

The solution is not simple – as it requires that insurance must do what the balance of society must do – it must adapt its structures to climate change. It must slightly rearrange existing resources and leverage

²⁰ *IPCC Fourth Assessment Report (2007)*; see also *Stern Review on the Economics of Climate Change (2006)*.

them to a new height of understanding to identify how to facilitate adaptation and mitigation to the risks of climate change.

But to recognise how that might be done, the insurance industry must look at the economic structures that fossil fuel built that frame the current environment which our industry insures.

VII. The House that Fossil Fuel Built ... Needs a Remodel to Survive Climate Change ... And So May the Insurance Industry

First, stand in the shoes of the public policy maker, the individual customer and other stakeholders. From that perspective, it is clear that our society is invested in a fossil fuel based economy. Current risk management tools respond to the existing social and economic structures. To facilitate change to a lower carbon and sustainable economy, the insurance industry must remodel its risk management products in response to new legal requirements, new technologies and new governance gaps.

In some cases, mitigation and adaptation can be much easier in emerging markets – if you have the investment capital – because there are no or fewer existing assets.

In many economies today there appears to be a governance gap on the issue of climate change compounded by a conflict of laws which discourage action;

- The fossil fuel paradigm frames all current economies;
- Consumer protection legislation prohibits incorporation of costs for externalities unless mandated;
- Current laws do not address many “rights” of interest in a low carbon economy; and
- Judicially made law and administrative action “fill the gaps” where government leadership fails to act – creating inconsistency / unpredictability – volatility.



And there is no “safe haven” in “Low Carbon Economics” unless you are lucky enough to be able to identify a consumer or buyer cohort that is willing to pay more for or otherwise differentiate and prioritize buying decisions based upon low carbon emission and other sustainability characteristics. This is true for all major economic actors, including insurers.

In other words, there is no clear demand / price signal in most markets to support decisions takers. And public policy makers fear that trade barriers will spark trade wars. So the insurance industry and in global society at large finds themselves with distorted markets characterised by largely supply side policy actions.

Distorted marketplaces present risks of volatility and instability to risk profiles. Given that climate change already presents a significant risk of volatility, it is somewhat ironic that current public policy solutions may, in fact, exacerbate some volatility.

So, the question is who will move first? And will first movers win? Or lose? Or both? If you do not move, will others move and allocate liability to insurance?

And, which of the climate change-related risks can the insurance industry manage effectively and efficiently, as contrasted with those best managed by others in society?

VIII. Where Do We Go From Here? Should Insurers Invest in Underwriting Resources? Act or Face Potentially Escalating Litigation, Defence Expense and Indemnity Exposure Risk

So, what can a company do to “tame the alleged black swan” of climate change? How can insurers “de-risk” the value chain of low carbon conversion?

Risk assessments are one path. But who should pay for such assessments? Some suggest government should perform such assessments. However, if performance to date is any indicator, the assessments and social agreements will be slow and may be too late to manage the risks of climate change. To the extent that our customers have imperilled value chains – our industry might be best positioned to facilitate such assessments.

In fact, the industry is investing in such work. Whether it is the work of individual reinsurers and insurers (which is too voluminous to properly list here) or whether it is the work of industry supported groups like the Institute for Building and Home Safety (IBHS) or ClimateWise – the industry is investing in research and doing pilot projects and trying to share information and options with those who will listen but insurance companies are outnumbered. The number of people in society who need to hear and understand our information is overwhelming us at this time and we need new ways to leverage and communicate our expertise.

A. Underwriting Climate Change Risk

Today, the insurance industry underwrites indicia of climate change. Our skills in taking predictions for extreme weather events and applying private asset damage consequence projections are unparalleled. Further, insurance firms have the capacity and skills to provide cogent advice on risk reduction and identify measures to improve resiliency to climate change extreme weather events.

So, when asked, can the insurance industry underwrite climate change? Clearly we can – and the evidence suggests that we should. Our industry is in a strong position to align the function of sending risk-based price signals with the risks of climate change – to allow society to make informed choices.

For that reason alone, the insurance industry should consider investing in specialty underwriting resources and take those specialists who underwrite natural resources and pollution-related matters and leverage them across industry and consumer verticals to better understand exposures. Our industry has a clear incentive to examine how we can assist stakeholders to mitigate the risks posed by climate change to supply chains and facilitate improved sustainability. And it is in our industry’s interests to do a better job of communicating the importance of climate risks to homeowners and businesses to assure that these asset owners and importance socio-economic contributors see the value of investing in

resilience – whether that is related to wildfire, drought, wind, flood or related consequential impacts. Our industry also needs to look at new options for application or extension of parametric coverage. We need to carefully understand how economic development and continued economic prosperity are integrally intertwined with human capacity in risk management knowledge.

The insurance industry is at a crossroads. It has the opportunity to lead with risk management knowledge to facilitate adaptation to and mitigation of the many risks of climate change – or it can wait to see how society deems our skills and capital capacity best applied.

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