Business/Insurance and Industry Sector Report

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INTRODUCTION

The sectoral group meeting during the New England Regional Climate Change Impacts Workshop to discuss climate change issues facing the insurance, business, and industry areas of the economy was represented by members with the following affiliations:

Energy industry - 2
Insurance industry - 2
Pharmaceutical industry -1
Business and Industry Association - 1
Geology consulting firm - 1
State legislator - 1
Climate change scientists - 3
Data analyst - 1
Water resource management - 1

This document has been circulated and reviewed by members of the group.

SIGNIFICANT FINDINGS

The statements below represent the common conclusions reached by all members of this sectoral group from our discussions at the workshop.

- Direct scientific evidence establishes that global warming has occurred and will likely continue to occur.
- A preponderance of scientific evidence suggests that the human contribution to climate change is discernible.
- The consequences of climate change and associated global warming have the potential to be substantial.
- Most all current stresses on insurance, business, and industry are expected to be exacerbated with climate change.
- Losses of biodiversity (hence, sources of drug discovery and drug substance to pharmaceuticals) is expected to worsen with climate change.
- Definitive information is lacking as to the exact impacts of climate change, particularly at the regional level, and quantification of sources of climate change.
- A centralized, authoritative source of data on natural resources, sea-level rise, and high risk areas does not exist.
- Technologies currently exist for controlling heat trapping gas emissions from most all sources.
- Incentive programs, such as a carbon tax or tax credits, do not exist to provide the impetus to reduce CO_2 emissions by investment into renewable and efficient energy technologies.
- Incentive programs to preserve existing CO_2 sinks do not exist.
- The political will and conviction to act in face of the current scientific understanding to implement necessary mitigation and coping measures to climate change do not exist.

THE FOUR QUESTIONS ADDRESSED

1. What are the current concerns and stresses facing regional stakeholders in the business, insurance and industry sector?

- Shoreline erosion and retreat causes damage to existing and new development, in part due to coastal subsidence. Governmental regulations and subsidies in states which do not allow the full force of the free market mechanism to discriminate premiums on the basis of hazard and lack of an archive of shoreline data to allow a good measure of trends in retreat and erosion have collectively resulted in increased claims and consequential losses for the insurance industry.
- Loss of coastal resources (such as estuaries) impacts those businesses deriving their value from coastlines and coastal resources.
- Air pollution generated in the Midwest is transported to the northeast, making it possible for the Midwest region to reach its National Ambient Air Quality (NAAQ) standards

* See Appendix V for authors' affiliations and addresses.

without implementing substantial emission control measures. At the same time this makes it more difficult, perhaps impossible, for the New England and upstate New York industries to meet NAAQ standards. Businesses and industries in the New England and upstate New York areas are struggling with the need to balance this uneven "playing field" with regard to current air pollution control regulations. This is being addressed by suggesting that industries in the Midwestern states and other countries either meet the same standards of pollution control or incur a pollution tariff, thereby removing the unfair competitive market advantage these regions have over those in New England and upstate New York.

In addition, there is an ongoing effort to streamline the bureaucratic burden placed on business and industry by the implementation of pollution controls without compromising the information and enforcement needs of the regulators. An important example of this are the delays in time to market caused by many state agencies through their requirements for lengthy permit reviews.

- Potential and unquantifiable loss to the pharmaceutical industries in New England and New York of natural sources for drug discovery and drug substances has resulted from losses around the globe of ecosystems supporting microbial and higher fauna and flora biodiversity.
- It is essential for business and industry to avoid building long-term cumulative liabilities, such as those experienced under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) whereby past, irresponsible disposal practices (such as Love Canal) have, and continue to, cost business and industry billions of dollars.
- High energy costs, temporal and regional variability in energy costs, and allocation of energy use by energy commissions place continual stresses on business and industry, impacting profit margin and ability to compete.
- Availability of potable water (which varies with surface water quality, precipitation, runoff quality, and storm events) impacts business and industry.
- Pollution and weather conditions add stress on forest health and soil quality, impacting the forest products industry.
- The agricultural industry is highly susceptible to weather conditions such as temperature and precipitation.

We recognized the essential and continual need for business and industry to devote resources to maintaining a corporate "good neighbor" status within the community. A more discouraging observation was the degree of apathy that abounds and impedes the efforts to address many of the climate change related problems facing the insurance, business, and industry sector.

2. How will climate variability and climate change modify the current concerns anad stresses of the business, insurance and industry sector in the region?

The insurance, business and industrial sector in New England and upstate New York, as represented in this work group, accepts the direct record derived from ice cores and other earth measurements as adequately demonstrating a level and rate of increase in concentration of heat trapping gasses occurring in this century and unprecedented in the 150,000 year record. This sector accepts the scientific evidence that global warming has occurred within the last century and will likely continue into the next century.

This sector does not purport to know with a high degree of certainty the exact consequences of global warming or whether anthropogenic contributions to the increases in heat trapping gasses and global warming are significant. Nonetheless, this sector accepts the following:

1) the preponderance of scientific evidence weighs more heavily toward the premise that the anthropogenic contribution to heat trapping gasses in the atmosphere is significant;
2) the consequential global warming and climate change have the potential to be substantial;
3) all of the previously mentioned concerns and stresses will be adversely accentuated, with the exception of apathy which would be expected to disappear.

Based on these statements, the following would be anticipated:

- Insurance companies will be expected to incur greater losses and the availability of insurance to the insured will be expected to diminish in proportion to a growing unwillingness of insurance companies to take on new exposures.
- Loss of coastal resources is expected to increase as the sea level rises and storm magnitude and frequency are impacted by climate change.

- The implications for air pollution control are less clear. Major changes in air mass temperature and precipitation patterns expected from climate change can either exacerbate or reduce air pollution control challenges, depending upon the specific nature and magnitude of the changes.

If removing heat trapping gasses, CO_2 in particular, from industrial gas streams becomes a necessary mitigation measure, then industry will be challenged with re-thinking its current strategy for controlling its hazardous air pollutants (HAPs), volatile organic compounds (VOCs), and waste organic solvents, which are currently the ultimate mineralization of these contaminants to CO_2. At a minimum, controls downstream of those used to mineralize HAPs and VOCs will have to be added to remove CO_2. A stronger emphasis on organic solvent recycling and recovery is likely. To the extent these contaminants induce forest decline, control standards for such pollutants could conceivably become more stringent.

- Potential losses to the pharmaceutical industries are expected to increase, resulting from accelerated losses around the globe in ecosystems supporting biodiversity. As a result, sources for drug discovery and drug substances become more limited.
- Business and industry's ability to maintain its "good neighbor status" and its ability to avoid building long-term cumulative liabilities are likely to become a greater challenge with climate change. This ability will depend upon the extent to which business and industry become involved in climate change issues and act responsibly in light of this.
- Energy costs, temporal and regional variability in energy costs, and allocation of energy use are likely to become a more significant issue since the underlying parameters that influence these factors are altered with climate change and any effort to mitigate climate change. Costs of individual types of technology, such as photovoltaics and wind power, can be expected to decline with further development and mass production.
- Availability of potable water which varies with surface water quality, precipitation, and runoff quality is likely to become a more significant issue as the underlying parameters that influence these considerations will change with a fluctuating climate.
- Climatic stress to forests, will cause increases in pests, migration or local extinction of tree species (many incapable of keeping pace with the predicted rate of climate change), and dieback due to an increase in freeze-thaw cycles.
- Increasing water temperatures will impact the species distribution of fish.
- Warm weather agriculture (such as corn, soybeans, beef cattle) is expected to benefit, while cool weather agriculture (such as broccoli, dairy, apples) is expected to suffer. There will be a general need for farmers to shift their agricultural emphasis.
- Redistribution of world population as a result of sea-level rise and economically forced migration is expected to have an impact on taxes, income, etc.

It is expected that some companies will benefit and new industries will arise, namely those that address problems arising out of a climate change, such as environmental firms and investment firms.

3. What information and data are needed by businesses, insurance companies and industry to fully understand and address climate-related issues?

Business and industry requires more specific and quantifiable information from the scientific community discerning between the anthropogenic and natural contributions underlying climate change. This information is essential to solidify the business community's conviction about global climate change and facilitate its commitment to developing coping strategies that address and mitigate climate changes. In addition, we have identified the following areas where information and data are currently needed:

- We need definitive information about the impacts of climate change on weather and precipitation patterns. Many storm systems converge on New England and upstate New York; hence, any small change in one or more of these tracks may have substantial impact.
- An inventory of emission sources of carbon (both direct and indirect) and other heat trapping gasses is needed to better quantify their impact on climate change and the potential cost of mitigation.
- Improved communication of scientific findings in plain English from the research community, in both character and scope, is needed to better understand the stake and role of business and industry in climate change.

- A central and authoritative source of precise, regional data on natural resources, sea-level rise, high risk areas (flood maps, mud slide, hurricane potential), population figures and property values for high risk areas would assist insurance companies in writing policies and setting premiums in proportion to risk or damage potential.
- A cost analysis for implementing control technologies to reduce or eliminate heat trapping gas emissions (CO_2 in particular) is needed.
- Policy analyses that prioritizes the most effective and equitable means of climate change mitigation that can be implemented by business and industry are necessary.
- Dissemination of information about renewable energy alternatives and conservation practices applicable to the business/industry sector is a requirement for assisting decision and policy making.

4. What types of strategies and approaches are available for coping with, or mitigating, climate change stresses for this sector?

Technologies currently exist to either reduce or eliminate CO_2 emissions from industrial and residential gas streams: conservation (renewable technologies like wind turbines and solar hot water heating), energy efficiency (high-efficiency combined-cycle gas turbines, more energy efficient appliances), fuel switching, technology substitution (fuel cells, integrated green building designs), and CO_2 gas scrubbing.

Application of an appropriate mix of these technologies is the most direct, least complex, and probably most cost effective method of mitigation to all of the above stresses. The extent of mitigation would be proportional to the anthropogenic CO_2 contribution to climate change.

Industry also possesses the technology to control the other heat trapping gasses (O_3 and its VOC and NO_x precursors, CFCs and HCFCs) in most of its industrial processes.

- Mathematical models of energy systems exist for ranking the most cost effective CO_2 reduction schemes.
- A change to electric powered transportation would further concentrate CO_2 emissions to an industrial point source where they are most easily controlled.
- An increase in organic solvent recycle and reuse programs, as opposed to incineration, could reduce CO_2 emissions.
- Incentive programs are needed to preserve existing CO_2 sinks (such as forests and ocean ecosystems) and to develop new sinks.
- United Nations procedures could be instituted to preserve and mitigate losses to biodiversity.
- A tempering of regulations by states restricting the free market forces for risk based premiums would be helpful in reducing construction in high risk areas and mitigating losses to insurance companies, as would encouraging community attention to planning and zoning in high risk areas.
- Involvement of business and industry in policy and regulatory development to improve regionally and globally equitable regulations should be encouraged.
- Energy and environmental regulations established with foresight and cost/benefit considerations are needed. These must be regionally equitable, flexible, and incorporate the greatest possible stability.
- A regional, as opposed to local, approach to water management would help to stabilize fluctuations in water availability.
- Shoreline erosion and coastal resources can to some extent be protected by coastal engineering measures (i.e., levees, dikes, etc.). Measures need to be introduced that reduce population and development of the coastal areas at risk, such as "land swap" programs, where homeowners in the coastal areas most at risk can exchange their property for a similar property owned by the state or county further inland.

In all cases, the political will must be present to implement necessary mitigation and coping measures.