Economic Implications of Climate Change: Public Policy Statement

October 2015

Summary

Based on expert scientific findings, the Actuaries Institute recognises that climate change has major environmental, economic and social impacts, and poses a serious risk to the industries that actuaries advise.

The Actuaries Institute supports and encourages:

► ongoing research into understanding and managing the financial and economic implications of climate change, and informing the public debate;

► development of Government policy to improve resilience against natural disasters that includes the funding of mitigation and adaptation measures supported by comprehensive cost benefit analyses; and

► measures for the reduction in carbon emissions, improved energy efficiency and the development of renewable energy sources and the development of policy to address the significant implications for Australian business and society from the transition to a low-carbon economy.

The Actuaries Institute encourages actuaries to collaborate with business, government and society in order to understand the long-term economic consequences of climate change, to develop potential mitigation and adaptation strategies and to contribute to a well-informed public debate about effective policy responses. The Actuaries Institute seeks to develop and build on this policy position over the coming year.

Issues

Based on the scientific findings of the IPCC, climate change will have a major impact on four major areas:

► **Natural perils**: The frequency, severity and location of extreme weather-related events, bushfires, coastal erosion and sea levels;

► **Population and health**: including the spread of diseases and changes in population;

► **Scarcity of resources**: including water, terrestrial and marine food production, forestry, and tourism; and

► **Economic value of energy assets**: including investments in fossil fuels and renewable energy.

These impacts will have significant economic implications for business, government and society.
The Australian and other governments have agreed that deep cuts in global emissions are required to address climate change, and to take action to limit the increase in global temperature to below 2 degrees Celsius. Emission reduction policies will also have significant economic implications for business, government and society.

**Potential impacts on Insurance and Banking risks**
Actuaries will need to consider the impact of climate change on general, life and health insurance and banking risks, and to provide advice on coverage, premiums, reserves and capital levels, so that the insurance and banking markets continue to operate on a sound and sustainable basis and that insurance coverage and premiums are adequate and competitive.

**Potential impacts on Investments**
Measures to address climate change and the changing energy sector are likely to have significant impact on the value of different assets, particularly in the longer term. Actuaries will need to consider the potential impact of climate change on investment risks and investment arising out of climate change.

**Policy principles**

**Public benefit**
The Actuaries Institute recognises that climate change has major environmental, economic and social impacts. As a professional body, the Actuaries Institute believes it is in the public interest to develop a comprehensive policy for addressing the economic implications of climate change.

**Risk focus**
In developing solutions to the public policy challenges raised by climate change, the Actuaries Institute takes an evidence-based approach that focuses on risks of climate change, including:

► identifying the risks, who currently carries them, and who should carry them; and
► identifying strategies for managing the risks, including mitigation, adaptation, and risk transfer through insurance and other mechanisms.

**Transparency and disclosure**
The Actuaries Institute recommends the public availability of data and information on climate change that will allow governments, businesses and consumers to more accurately assess and manage their risk through informed choice.

**Equity**
The Actuaries Institute recognises that both climate change itself and policy responses to climate change will have an impact on intergenerational and intragenerational equity. These impacts will need to be accurately assessed and taken into account when formulating policy on climate change.
Regulation

The Actuaries Institute notes that excessive or unnecessary regulation can obstruct an efficient market and undermine the public interest. Any regulatory solution for climate change must be proportional to the problem. Unless market failure can be clearly demonstrated, insurance and investment markets should be free to operate in response to policy aims.

Policy positions

1. The Institute supports and encourages ongoing research into understanding and managing the financial and economic implications of climate change, and informing the public debate.

The Institute considers it is important that the economic consequences of climate change are widely understood, mitigation and adaptation strategies are properly assessed, and policy options are carefully evaluated.

Climate change is a global systemic challenge, and thus requires a multi-disciplinary response and collaboration between stakeholders such as climate scientists, actuaries, accountants, economists, governments, businesses and the public about key issues.

Such research may include:

- assessment of the impact of climate change on the frequency, severity and location of natural disasters;
- assessment of the impact of climate change on health;
- implications for the feasibility of insurance as a means for transferring risk away from consumers;
- appropriate funding mechanisms for the costs of mitigation and adaptation to improve resilience against natural disasters and climate change;
- comprehensive mapping of geographical areas that may be impacted by natural disasters both currently and in the future, and the public availability of such maps to improve risk assessment and planning by government, industry and consumers;
- implications for asset values and investment options for superannuation and wealth management due to transitions to a low-carbon economy; and
- implications for intergenerational and intragenerational equity from the transition into a low-carbon economy.
2. The Actuaries Institute supports the development of Government policy to improve resilience against natural disasters and to design funding mitigation and adaptation measures supported by a comprehensive cost benefit analysis. Any such analysis should:

- comprehensively assess the cost of natural disasters for the economy as a whole, including allowance for the impact of climate change;
- consider the cost and benefits of mitigation and adaptation strategies to improve resilience against natural disasters.

Mitigation and adaptation funding strategies should be investigated where the benefits exceed the costs of mitigation. Mitigation and adaptation are best achieved through the active collaboration of insurers with local, state and Federal government.

3. The Actuaries Institute supports measures for the reduction in carbon emissions, the development of renewable energy sources, and improved energy efficiency. Such measures may include emission targets and market-based incentives.

The Actuaries Institute notes that the Australian economy is currently heavily reliant on fossil fuels, and such a transition to a low-carbon economy will have significant implications for Australian businesses and society. The Actuaries Institute recommends assessing the economic and social impacts and planning for these implications on government, business and society in the development of economic policy.

Annexures
A: Background – How may climate change impact on actuarial work?
B: Actuarial contribution
C: Endnotes/references

END OF PUBLIC POLICY STATEMENT
Annexure A: Background – How may climate change impact on actuarial work?

Natural perils: The frequency, severity and location of extreme weather-related events, bushfires, coastal erosion and sea levels

Climate change, through its impact on physical systems, will have a direct impact on insurance and banking risk due to the expected increase in frequency, severity and change in location of extreme weather events, such as tropical cyclones, storms, floods, droughts, heat waves, coastal erosion and high sea levels.

These risks will have a direct impact on property insurance classes, both personal and commercial, and may have spill-overs into professional indemnity and other liability classes. Increased injuries and deaths caused by natural perils will also have an impact on life and health insurance, as well as on medical and health costs.

Insurance actuaries are intimately involved in the pricing, reserving and capital assessment of such insurance risks, and will increasingly need to assess the impact of climate change on these analyses. This work will span data analysis, modelling, assumption setting, stress-testing and strategic advice. Over the longer term, climate change will have an impact on insurance products, coverage, affordability, viability, and capital and reinsurance structures for the industry.

Actuaries are also well placed to advise on the relative value of different mitigation and adaptation measures, as well as other natural disaster resilience initiatives, both by insurers and by government.

Actuaries involved in investment and banking will need to consider the implications for property values, particularly those exposed to flood and other natural perils.

Population and health: including the spread of diseases and changes in population

Changes in climate are likely to lead to a higher incidence, and change in geographic distribution, of certain diseases such as asthma due to more pollen and other aeroallergens in the air, or water-borne diseases and diseases transmitted through insects such as mosquitoes.

Actuaries can help manage the risk to population health, analyse the mix of diseases and the implications for health systems, and analyse the changes needed to the built environment and its financial costs, and any flow on effects for private health insurance.

Scarcity of resources: including water, terrestrial and marine food production, forestry, tourism and biodiversity

Changes in climate will greatly impact on resource availability. Industries such as forestry, agriculture, fisheries and tourism will be directly affected by climate change. In turn, this will affect the values of both terrestrial and marine property, and directly impact infrastructure needs. Over time this may also lead to significant movement in human populations.

Actuaries involved in investment will need to consider the impact of these changes on the profitability of different industries, and the impact on expected future cash flows from investments, changes in credit risk, and the valuation of investments.
Changes in diet and access to clean water will have population health impacts, thereby impacting the advice provided by actuaries on government health systems, particularly in developing countries.\textsuperscript{6,7,8}

\textbf{Economic value of energy assets: including investments in fossil fuels and renewable energy}

In order to limit the increase in global temperature below 2 degrees Celsius, significant reductions in emissions will be required.

This will have implications on the values of investments in fossil fuel assets,\textsuperscript{16,17} such as coal mines and fossil fuel power generators,\textsuperscript{18} particularly in the longer term. This has led to the divestment of carbon intensive assets by insurers\textsuperscript{19} and superannuation funds,\textsuperscript{20} as well as broader consideration of environmental, social and governance\textsuperscript{21} issues in investments.\textsuperscript{22,23}

It will also give rise to additional opportunities to invest in renewable energy. Banks have been issuing green bonds\textsuperscript{24} to finance investments in renewable energy, technology and research. Banks may also facilitate carbon emissions, energy and other resource markets through local and international trading schemes.\textsuperscript{25}
Annexure B:
Actuarial contribution

Actuaries have a reputation for a high level of technical, financial and statistical expertise and integrity. They apply their risk management expertise to allocate capital efficiently, identify and mitigate emerging risks and to help maintain system integrity across multiple segments of the financial and other sectors.

Actuaries are well qualified to compare the long term uncertainty, costs and benefits of strategic policy options and provide fact-based information to help decision-makers in managing risks arising from climate change.

Actuarial work often depends on the application of scientific knowledge in order to assess economic outcomes. Actuaries have a well-developed skill set in interpreting and applying scientific evidence in order to solve financial problems and develop risk management strategies.

Actuaries have a valuable set of skills combining statistical and business backgrounds, which allows them to work with risks and uncertainties that can otherwise be a challenge to quantify and manage. Actuarial expertise combined with stakeholder collaboration can assist with forecasting and managing financial contingencies associated with the different threats to sustainability.
Annexure C:
Endnotes / references


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