



Institute of Actuaries of Australia

2004 Financial Services Forum ...The New Environment

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Financial Services Forum

...The New Environment



Institute of Actuaries of Australia

How climate change is impacting financial services?

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AGENDA

1. Climate Change

- **What changes are happening to our climate?**
- **What's causing climate change?**
- **World's reaction**

2. Impact on financial services

- **Carbon Emissions Trading**
- **Measurement and reporting of GHG emissions**
- **Role of sustainability in investment policy**
- **Impact of government GHG abatement policies**
- **Human Health**

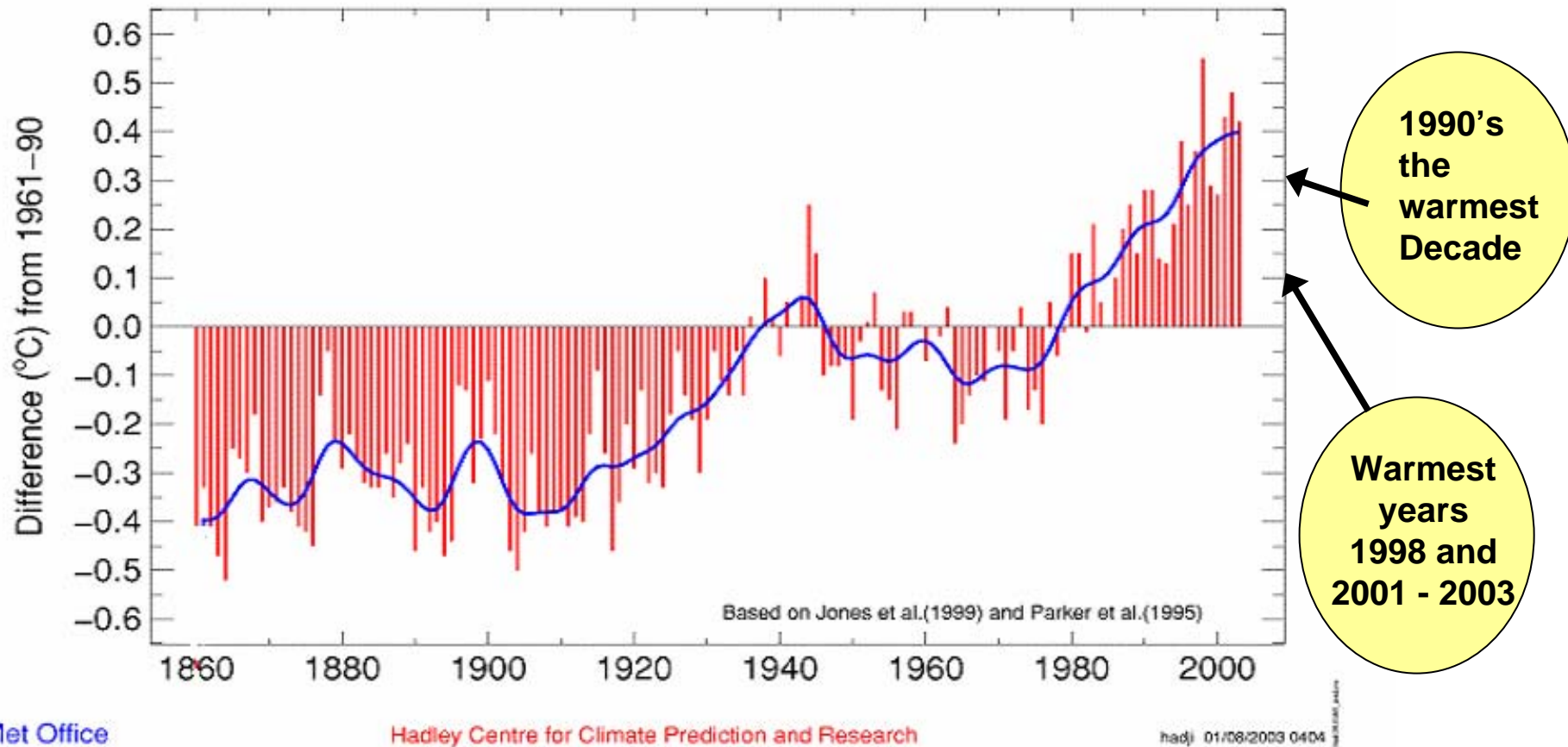
Climate change - Early signs !

- 2002 Australian **drought** – climate change link
- 3 worst **hailstorms** in Australia's history have occurred since 1990
- 5 of the most intense **cyclones** ever recorded in Australasia occurred in the last decade

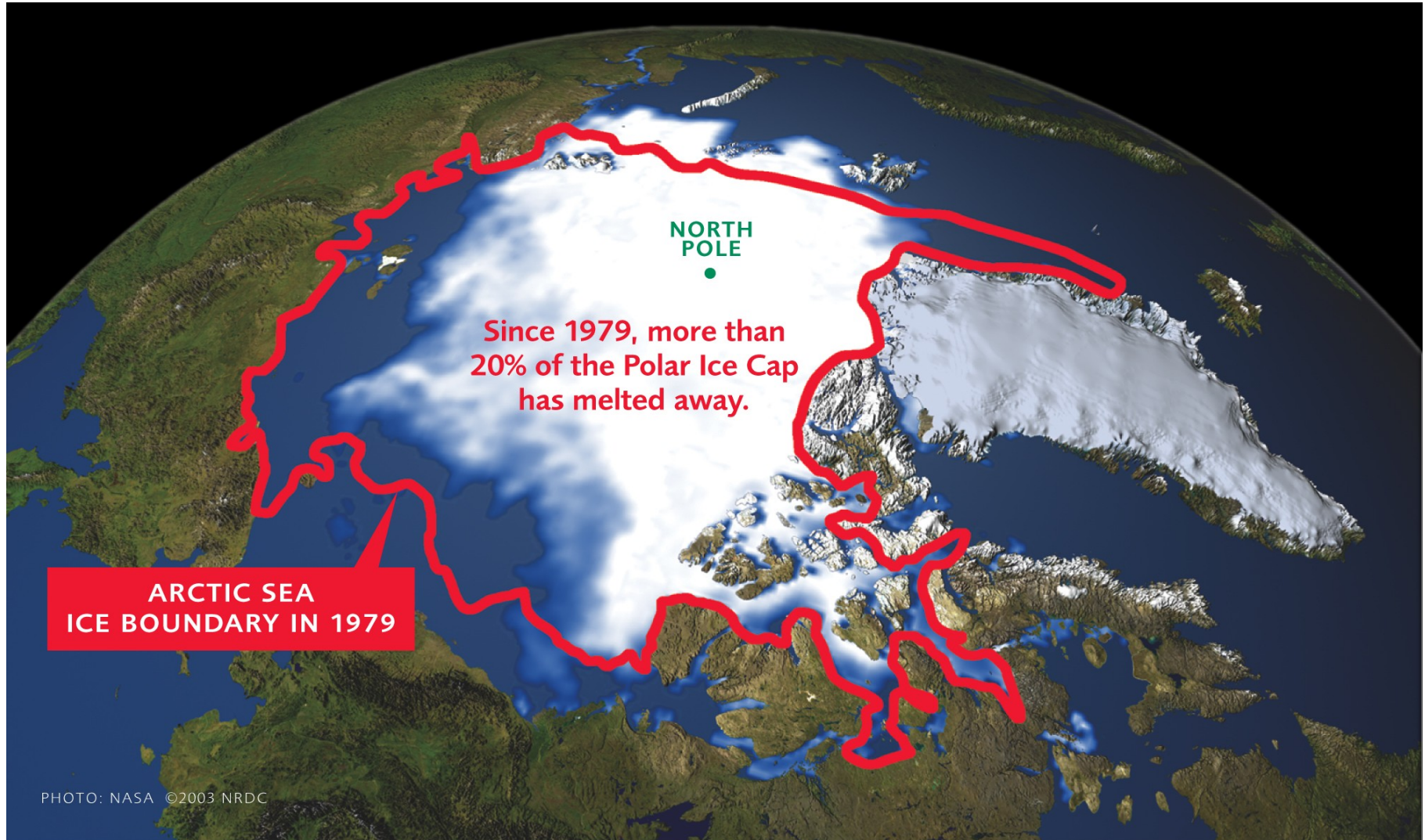


Global temperatures have increased

Global temperatures – difference from 1961-90 average



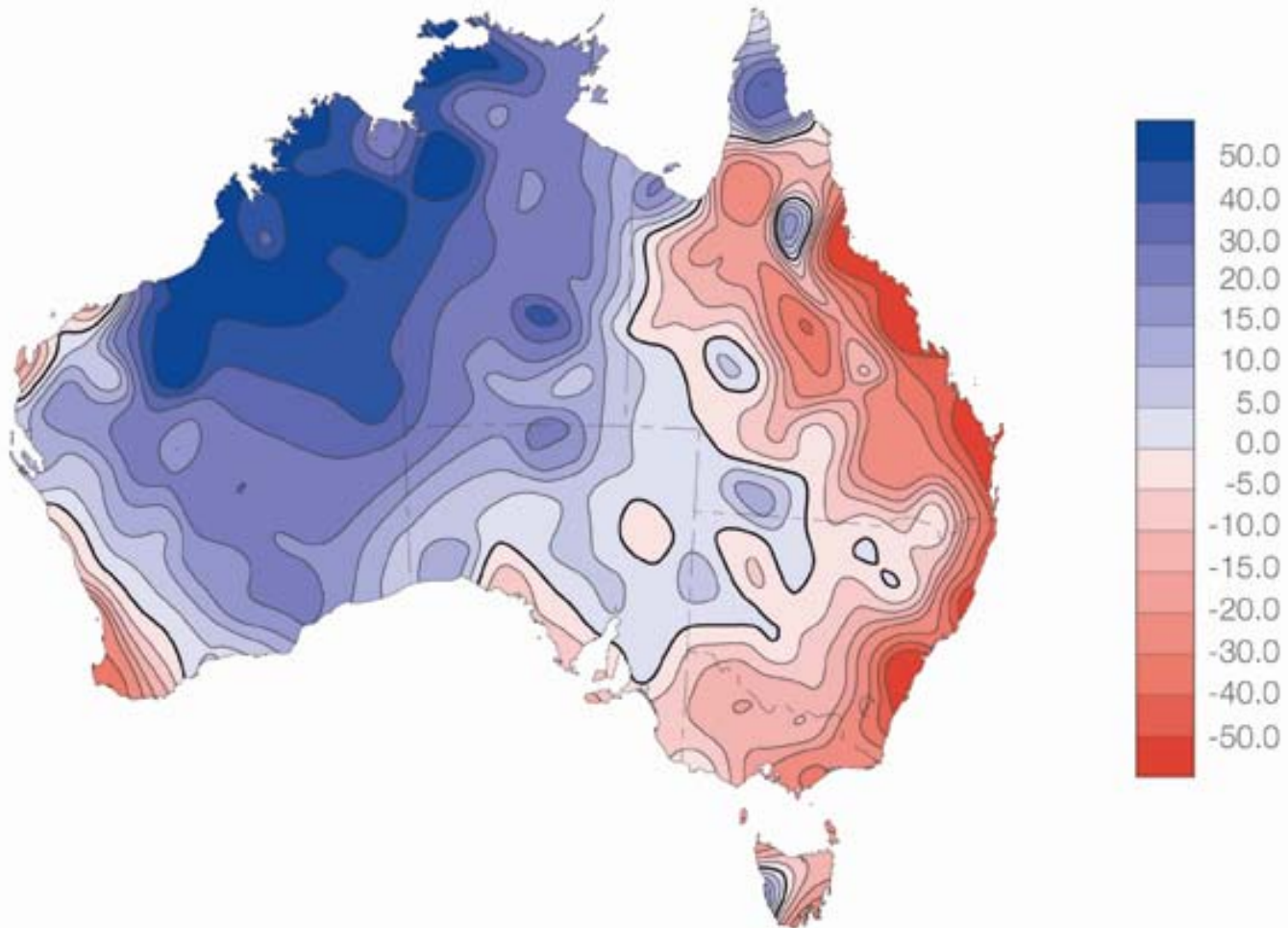
Small changes have a big impact



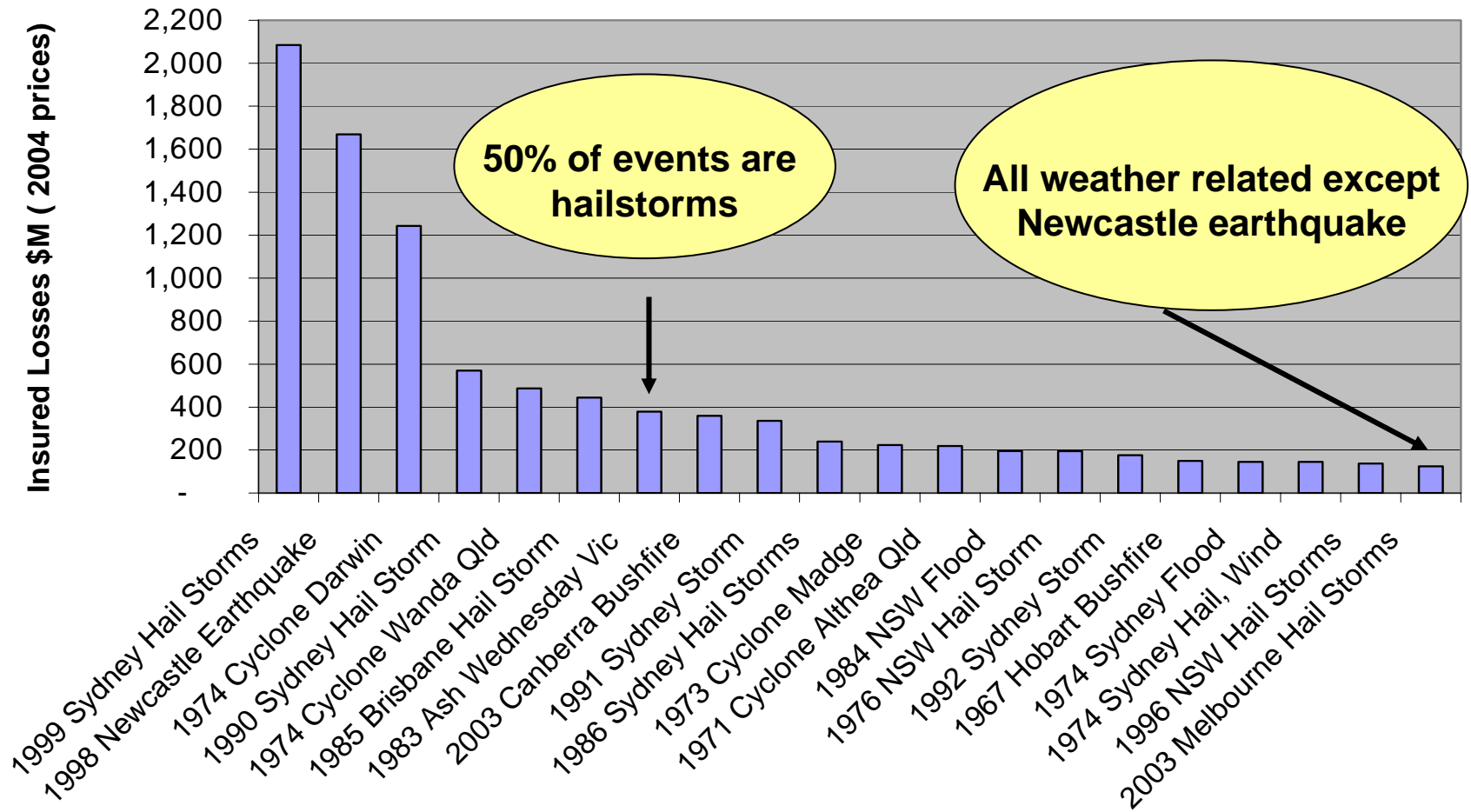
Rainfall in most populated areas decreased

Trend in annual total rainfall 1950 – 2003 (mm/10 yrs)

Source: Bureau of Meteorology, 2004



Consider Australia's most costly property insurance disasters



Small changes in mean climate can increase hazards dramatically

Hazard	Change in climate	Resulting change in hazard
Cyclone	2.2°C mean temperature increase	Increase of 5-10% in Cyclone wind speeds
Bushfire	1 ° C mean summer temperature increase	17-28% increase bushfires
Drought	1.3°C maximum temperature increase	25% increase in evaporation leading to increased bushfire risk
Floods	25% increase in 30 minute precipitation	1 in 100 yr Flood becomes 1 in 17 yr Flood

Source: Mills et al(2001)

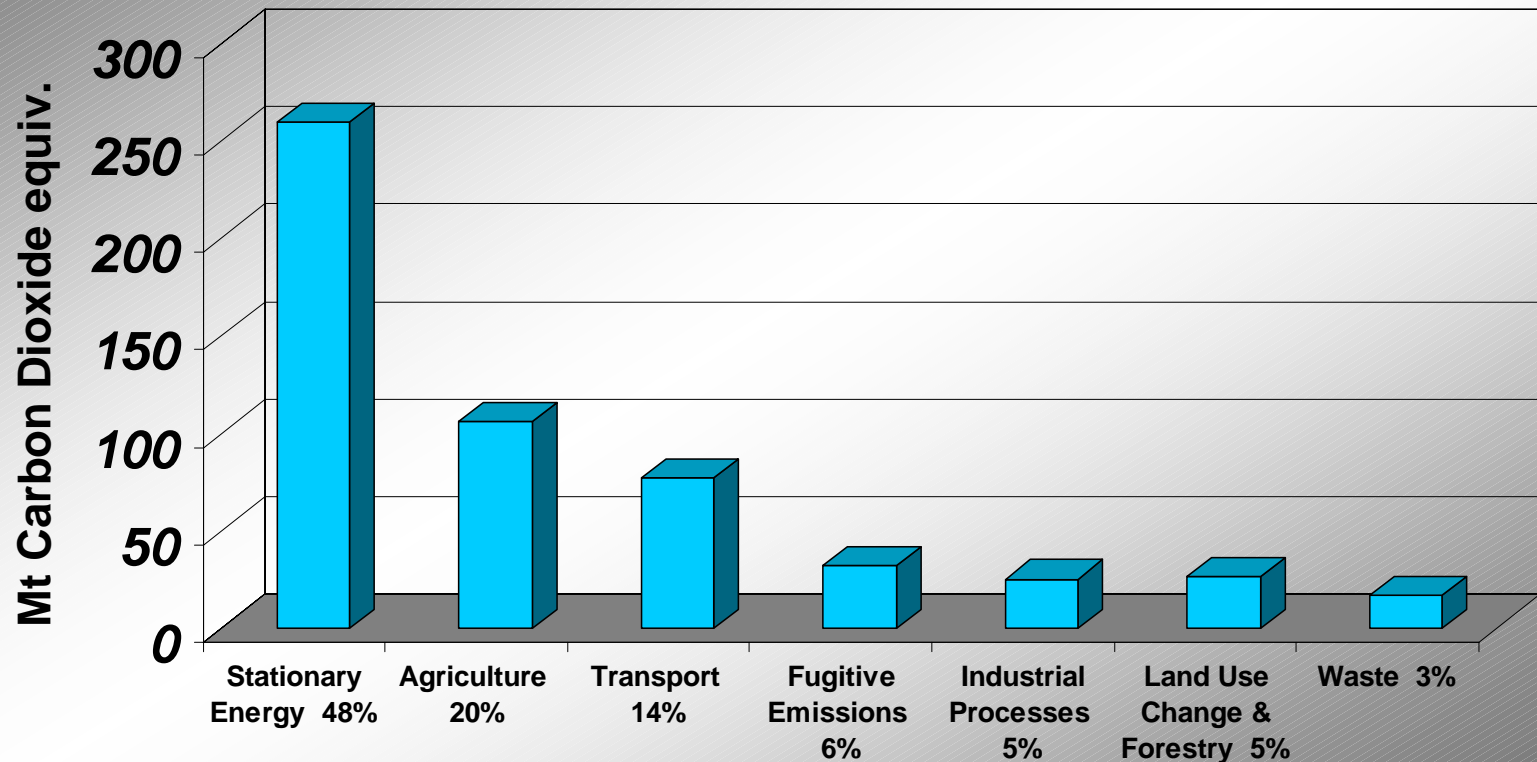
Global warming caused by increased greenhouse gas emissions

- **Warming trend** in Australia cannot be explained by natural climate variability alone
- Trend explained by **increasing greenhouse gases**:
Science is well established and widely accepted
- Main greenhouse gas is carbon dioxide



Where do emissions come from ?

2001 Australian emissions by sector
Total 542 Mt Carbon Dioxide equivalent



How do we reduce the threat of climate change ?

Reduce carbon dioxide emissions

Sounds easy but

Our economy is currently dependent on the energy that causes these emissions



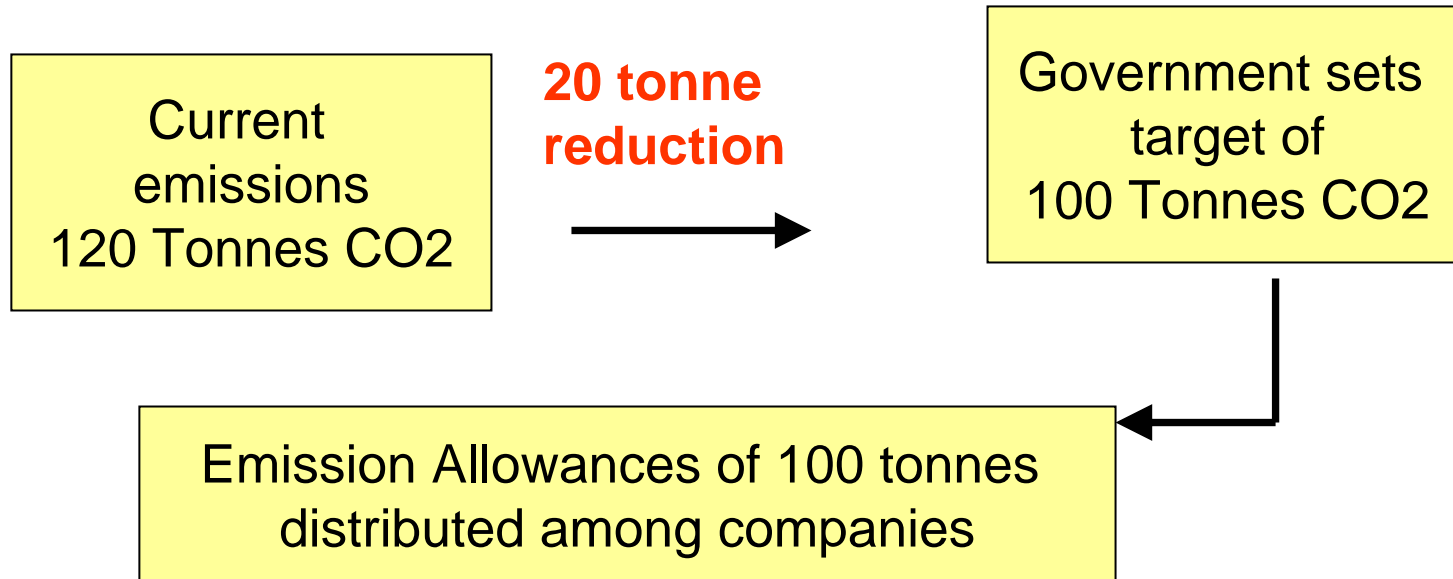
-> **Need to encourage a less carbon intensive economy**

World's reaction to climate change

- Intergovernmental Panel on Climate Change (IPCC)
 - established in 1988 by World Meteorological organisation & United Nation Environment programme to access climate change research
 - Strength of IPCC's conclusions has led national and regional governments to establish policy regarding mitigation and adaptation
- United Nations Framework Convention on Climate Change (UNFCCC)
 - Signed by 153 nations at Rio "Earth Summit" in 1992
 - Ultimate objective " to achieve stabilisation of atmospheric concentrations of greenhouse gases at levels that would prevent dangerous anthropogenic (human-induced) interference with the climate system.."
 - Legally binding commitments adopted in Kyoto, Japan in 1997

How is move to low carbon economy encouraged?

Government Regulation or **Emissions Trading**



Companies must

1. Reduce their own emissions or
2. Buy Carbon credits to offset additional emissions

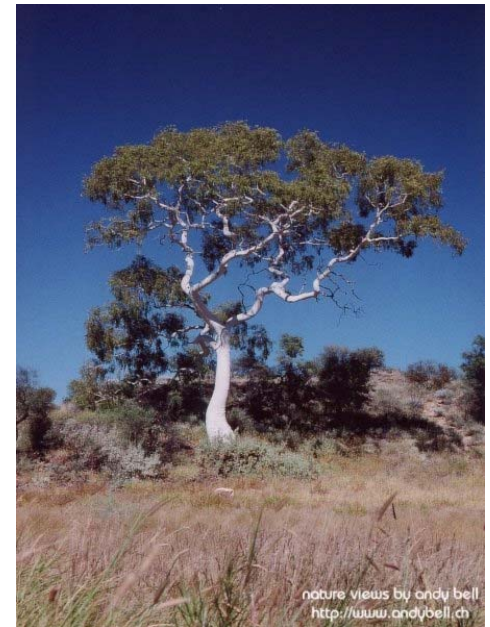
Carbon Credits

Created through greenhouse gas emission reduction projects

1. Reducing emissions below level they would have been
e.g energy efficiency projects or renewable energy
2. Removing carbon dioxide from the atmosphere
e.g Carbon sequestration eg tree planting

Similar to shares or bonds

- Sold through spots, forwards, options and swaps
- International, regulated and audited trading



Emissions trading schemes

Principal tool used by industrialised countries to reduce GHG

How it works

- Only regulates heavy industrialised emitters e.g. Electricity, Aluminium
- Regulator controls volume of emission reductions
but “per unit cost” of reductions is determined by market

Benefits

- Lowers cost of meeting target.. (maybe cheaper to buy carbon credit)
- Distributes cost more effectively across a wide range of sectors

Risks

- Competitiveness of economy at risk if trading partners are not subject to the same emission regime

In the new low Carbon Economy...

Carbon Dioxide emissions will have a cost

Industry and product prices do not currently carry the externalised cost of emitting greenhouse gases into the atmosphere



Placing a cost on emissions

- Encourages the reduction of carbon emissions
- Helps to mitigate the threat of climate change

GHG Measurement and Reporting

Global Reporting Initiative (GRI)

- Reporting on economic, environmental and social dimensions of a company's activities, products and services
- Aims to support global progress towards sustainable development

Carbon Disclosure Project

- Released second report (CDP 2) in May 2004. Survey of FT500 largest companies, signed by 95 institutional investors.
- Key findings included: i) the mainstream investment community is now starting to see the risk and opportunities of climate change; and ii) companies are facing increased pressure from fiduciaries and financial market authorities to deal with climate change

“Carbon trading is going to happen, and we want to know how our investee companies are dealing with it”, Bob Welsh, Vic Super

GHG Measurement and Reporting

Reporting of GHG emissions by Australian companies

- Survey reported in the *AFR*, July 2004, showed that two in three respondents did not produce triple-bottom-line reporting and more than 60% of executives thought ratification of the Kyoto Protocol would not affect their company.
- The CDP 2 report included a 'Climate Leadership Index' of 50 "best in class" responses. The index included four listed Australian companies – BHP Billiton, Rio Tinto, National Australia Bank and Westpac.
- The Australian signatories of CDP 2 are: VicSuper, AMP Capital Investors, Catholic Superannuation Fund (CSF) and the Public Sector Superannuation Scheme / Commonwealth Superannuation Scheme (PSS/CSS)

"What we're seeing is an emerging area of climate litigation. As the impacts of climate change worsen, the number of potential plaintiffs, and the range of legal actions available to those plaintiffs, will undoubtedly increase", Peter Cashman on behalf of CANA

Impacts on investment policy

ASIC guidelines

- Section 1013DA disclosure guidelines requires product disclosure on how labour standards, environmental considerations, social consideration and ethical considerations are taken into account when selecting, retaining or realising an investment
- Where labour standards or environmental, social or ethical considerations are not taken into account this must be explicitly stated

“ACF’s review of investment product disclosures reveals that many mainstream investment managers still do not appreciate the relationship between ethical corporate behaviour and long-term financial performance. By failing to integrate these considerations into investment decision-making, Australia’s investment community is still not doing enough to look out for the long-term interests of investors and the Australian environment, community and economy”, Charles Berger, Law & Corporate Responsibility Coordinator, Australian Conservation Foundation, report August 2004

Impacts on investment policy

Reports for Commonwealth Department of Environment and Heritage

- Ernst & Young report 'The Materiality of Environmental Risk to Australia's Finance Sector', 2003
 - "....points to a possible disconnect between the sector's growing awareness of environmental issues such as greenhouse, and a lag in terms of how the sector understands it should respond or accurately factor in these issues to investment decision-making"*
 - "The insurance sector also observes that determining material environmental risks, despite the relatively high levels of understanding in this sector, is still often difficult even with actuarial support"*
- 'The Mays Report, Corporate Sustainability – an Investors Perspective'. This report concluded that sustainability behaviours add value to commercial endeavour, and as a result companies should be including sustainability into strategic decision-making and risk management processes

Impacts on investment policy

Socially Responsible Investment (SRI) industry in the UK

- The UK has actively embraced SRI concepts for some years. In July 2000, the Pensions Act was amended to require occupational pension trustees to disclose to fund members the extent to which social, environmental and ethical considerations are reflected in the buying, selling and holding of investments.

“Climate change issues, long seen as a specialist interest, are impacting more widely through the changing political and regulatory environment. This will have implications for investment strategies which fiduciaries, fund managers, and advisers will need to understand so as to manage the risks and opportunities in, their portfolios ”, ABI report ‘A Changing Climate for Insurance’, June 2004

“..... it is suggested that companies with well developed Corporate Social Responsibility (CSR) policies and climate change risk strategies often perform well and the presence of such policies may be taken as an indicator of future equity value”, ABI report

Impacts on investment policy

‘Mainstream’ Funds

- The UK ABI Report suggests two factors that influence the ability of investment funds to anticipate climate change effects are: i) the lack of clear information and impeded information flows; and ii) the short time horizons on which fund managers work

“Given the uncertainties currently affecting climate change predictions, the main driver, assuming gradual climate change will be investor requirements coupled with Government regulations on emissions. If investor requirements remain short-term returns, fund managers will have no option other than to provide these. However, if investors increasingly require climate change to be incorporated into funds’ risk management strategies, that will drive a shift in stance”, ABI report

- Climate change is not just an issue for SRI funds but also for ‘mainstream’ fund managers as it affects the companies that they have funds invested in.

GHG Abatement Schemes

Australian abatement schemes

- In Australia, the main scheme aimed at encouraging renewable energy is the Mandatory Renewable Energy Target (MRET), which commenced in 2001
 - The Renewable Energy (Electricity) Act 2000 requires the generation of 9,500 gigawatt hours of extra renewable electricity per year by 2010. The effect of the legislation is to place a legal liability on wholesale purchasers of electricity to proportionately contribute towards the generation of the additional renewable energy.
 - The Government has decided to continue the MRET but not to extend or increase the target. It claimed extending the scheme would pose significant economic costs through higher electricity prices.
- “Any significant reduction in Australia’s long-term greenhouse signature must involve changing the way we produce and use energy”, Securing Australia’s Energy Future’ White Paper, June 2004*

GHG Abatement Schemes

Clean Energy Future Group

- A report from the Clean Energy Future Group confirmed that it was possible to achieve a 50% reduction in current CO₂ emissions from stationary energy by 2040.

“Coal will be the most severely affected fossil fuel and natural gas the least affected”, ‘A Clean Energy Future for Australia’, Clean Energy Future Group, March 2004

Australian Climate Group

- The Australian Climate Group released a paper ‘Climate Change, Solutions for Australia’ in June 2004. The group was convened in late 2003 by WWF Australia and the Insurance Australia Group in response to the increasing need for action on climate change in Australia. The paper calls on all Australians to act on climate change to help reduce GHG emissions by 60% by 2050

GHG Abatement Schemes

Impact of GHG abatement schemes on companies

- The actual impact on companies from the mechanisms used to reduce carbon emissions will depend upon such issues such as how emission credits are granted, how well companies utilise new technology to reduce emissions, and to what degree companies can pass through higher input costs into product prices.

Industry	Energy costs as a proportion (%) of production costs	Earnings before interest and taxes (EBIT) margin	Effect on EBIT margin of a 10% increase in energy prices
Aluminium smelting	20	14	-14
Paper manufacturing	20	9	-22
Chlor/Alkali production	20	15	-13
Brick manufacturing	18	10	-18
Steel production	11	14	-8
Nickel production	10	17	-6
Copper/Uranium prodn	10	8	-13
Gold production	8	7	-11
Cement production	7	8	-9

Source: Business Council of Australia (2000)

Human Health

Australian Greenhouse Office Report, 2003

- The report says that impacts of climate change on human health can be both direct and indirect
- Direct effects are those readily attributed to climate include heat stress and the consequences of natural disasters
- Indirect effects include disrupted agriculture, reduced food security in developing countries, and increase incidence of vector or food borne diseases in developed countries
- Overall the adverse health impacts of climate change will be greatest in vulnerable lower income populations, especially the elderly, sick and those without access to good housing and adequate fresh water supply
- Bad human health directly affects life and disability insurance

Summary

Climate Change is Happening

- Stabilisation of carbon dioxide concentrations in the global atmosphere will require major reductions of emissions in the future therefore the sooner the global community addresses the challenges of reducing emissions the better.
- Climate change will occur despite these mitigative actions and thus we will need to be prepared for adaptation.
- The prognosis for Australia is for warmer and mostly drier conditions. The pervasive effects of weather and climate is that it impacts on all sectors – agriculture, natural resource management, water resources, health, commerce, manufacturing etc.
- This change presents a challenge for the insurance, investment and financial services industry.

“We are on the precipice of some major changes to the business world for this century”