Today’s climate change challenge

Kate Mackenzie, The Climate Institute
What we know
Temperature change since 1910

Australia’s mean temperature has warmed by around 1 °C since 1910.
How a climate scientist sees it:

At regional scales, extremes will warm by between 1x and 1.5x the local mean

<table>
<thead>
<tr>
<th>Temperature change</th>
<th>2</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global average</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Mid-latitude land</td>
<td>5</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Regions</td>
<td>7-10</td>
<td>12-15</td>
<td>Who cares</td>
</tr>
</tbody>
</table>
The difference 0.5°C makes

“The difference [between 1.5°C and 2°C] might be decisive for the survival of coral reefs worldwide, and in particular the Great Barrier Reef.”

Climate Analytics, 2016
“Was that climate change?”

- Louisiana Downpours, August 2016
- Great Barrier Reef Bleaching, March 2016
- European Rainstorms, May 2016
More granular modelling

This presentation has been prepared for the 2016 General Insurance Seminar. The Institute Council wishes it to be understood that opinions put forward herein are not necessarily those of the Institute and the Council is not responsible for those opinions.
<table>
<thead>
<tr>
<th>Temperature</th>
<th>Duration</th>
<th>Chance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2°C</td>
<td>25 years</td>
<td>&gt;66% chance</td>
</tr>
<tr>
<td>1.5°C</td>
<td>20 years</td>
<td>&gt;50%</td>
</tr>
<tr>
<td>0.9-1°C</td>
<td>Since 1880s</td>
<td>Av 40bn C02/year</td>
</tr>
</tbody>
</table>
The emissions cliff:

- Red line: Govt -26% by 2030
- Dashed red line: Govt -26% by 2030 (shift to <2 degree C needed)
- Blue line: ALP -45% by 2030, net zero by 2050
- Dashed blue line: ALP -45% by 2030 (shift to <2 degree C needed)
- Black line: Historical
- Gray line: Minimum 2020 target

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Global financial system

“Risks to financial stability will be minimised if the transition begins early and follows a predictable path”

Mark Carney, Governor of the Bank of England, Chairman of the G20's Financial Stability Board
Security

“[Climate change] will cripple the security environment”

Navy Adm. Samuel J. Locklear III, former commander of U.S. Pacific Command
How good is insurance?

“Your genius has been to recognise that the past is not prologue and that the catastrophic norms of the future can be seen in the tail risks of today.”

- Mark Carney, Lloyds of London, September 2015
Public perceptions
Media perceptions

Sydney storms: Beachfront homeowners deprived of adequate insurance cover

Esther Han and Clancy Yeates
8 Jun 2016, 6:17 a.m.
Policymaker perceptions

NSW Infrastructure Minister says insurance company needs to pay for damaged Tathra wharf

ABC South East NSW  By Bill Brown
Posted Mon at 12:28pm

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Silos and horizons

- Changes will affect all kinds of industries and professions
- “It takes forever, and then it takes a night”
- Don’t be a Kodak!
Thankyou

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