

Policy and public engagement



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Early history of climate-change research in CSIRO

- **1971-72: Rutherglen wheat CO₂ measurements**
 - **Garratt & Pearman**
 - Interhemispheric CO₂ exchange seemed very small?
 - Is there an increase of CO₂ going on or drifting standards
- **1973-75: Confirmation of increase**
 - With aircraft measurements
- **1976: Establishment of Cape Grim Observatory**
- **1977: Greenhouse87 Conference**
 - To engage the wider impact science community
- **1978: CSIRO/Commission for the Future**
 - Conference for public education

Early history of climate-change research in CSIRO

- **1978-1980:**
 - Construction of first Australian global carbon cycle model
 - Construction of first Australian two-dimensional global carbon cycle model with atmospheric transport, with Peter Hyson
- **Ian Graham Enting (Aug. 17, 1980)**
- **1980: First Academy of Science Conference, *Carbon dioxide & climate change* (Sept. 15-17, 1980)**
- **1985: Building the first climate model, Hunt *et al.***

Policy settings late 1980s-1990s

- **1988: Toronto UN conference recommends national targets of 20% reduction of emissions by 2000**
 - **Accepted by Hawke government (Richardson, Jones); largely bipartisan**
- **1989: First climate change science briefing to PMSEC (Bob Hawke)**
- **1994: Second climate change science briefing to PMSEC (Paul Keating)**
- **1990+: Policy commitments to targets do not eventuate – slow abandonment of commitment**
- **1998: Third climate change science briefing to PMSEIC (John Howard)**

Explaining the changing policy climate

- **Work of Maria Taylor***
 - Carbon intense industries get their act together
 - Sections of media support new narrative
 - Essential role of coal
 - Scepticism concerning the science
 - Role switching between bureaucracy & industry
 - Cultural change

*Taylor, M. (2015). Global warming and climate change: What Australia knew and was buried... then framed a new reality for the public. Australian National University Press, Canberra, 215pp.

Cultural change

Emerging dominance of:

- **Neoliberal economics**
 - Economists trained in a common paradigm
 - 50,000 between 1947 & 1986
 - Belief that wealth generation leads to well-being, welfare & happiness
 - Belief that markets ensure delivery of best outcomes
- **“Corporate good” replacing “public good”***

* Douglas, B and Wodak, J. (Edts.) (2015). Who speaks for and protects the public interest in Australia?
39 essays by notable Australians. *Australia 21*. 96pp.

**Rise in the
dominance of**

**Neo-liberal
economic ideology**

**Private sector
interests**

Cultural change

**Assume wealth
generation equates to
wellbeing & welfare**

**Diminish role of expert advice in
policy development; increased
importance of beliefs/ideologies**

**Demise of “public good”
as a major factor in
policy development**

**Subjugation of efforts to
understand the physical,
biological & social constraints
of the real world**

**Narrow view of the role of
Science in modern
societies & the nature of a
knowledge-based society**

Cultural change is a function of human behaviour & societal structures?

Role of:

- **Constructivism**
 - Much of our view of the world is constructed from myths
- **Coping mechanisms**
 - Denial, avoidance, blame others, ignore, etc.
- **Probability**
 - Making of risk assessments poorly based

The Real World

Individuals interpret the real world

Community at large

Experts in the community, scientists, economists, engineers, etc.

Constructivism

Ideas of the way the world is, constructed from & heavily influenced by:

- Observations
- Culture
- Rules
- Education
- Beliefs
- Myths → Opinion

Rationalism

Ideas of the way the world is based on:

- Formal observations
- Hypothesis testing
- Experimentation
- Deduction

The “non-reality world”

Holistic rationalism

Based on the integration of disciplinary descriptions

Evidence based information

Filtered by, vested interests, special pleading, conservatism, etc.

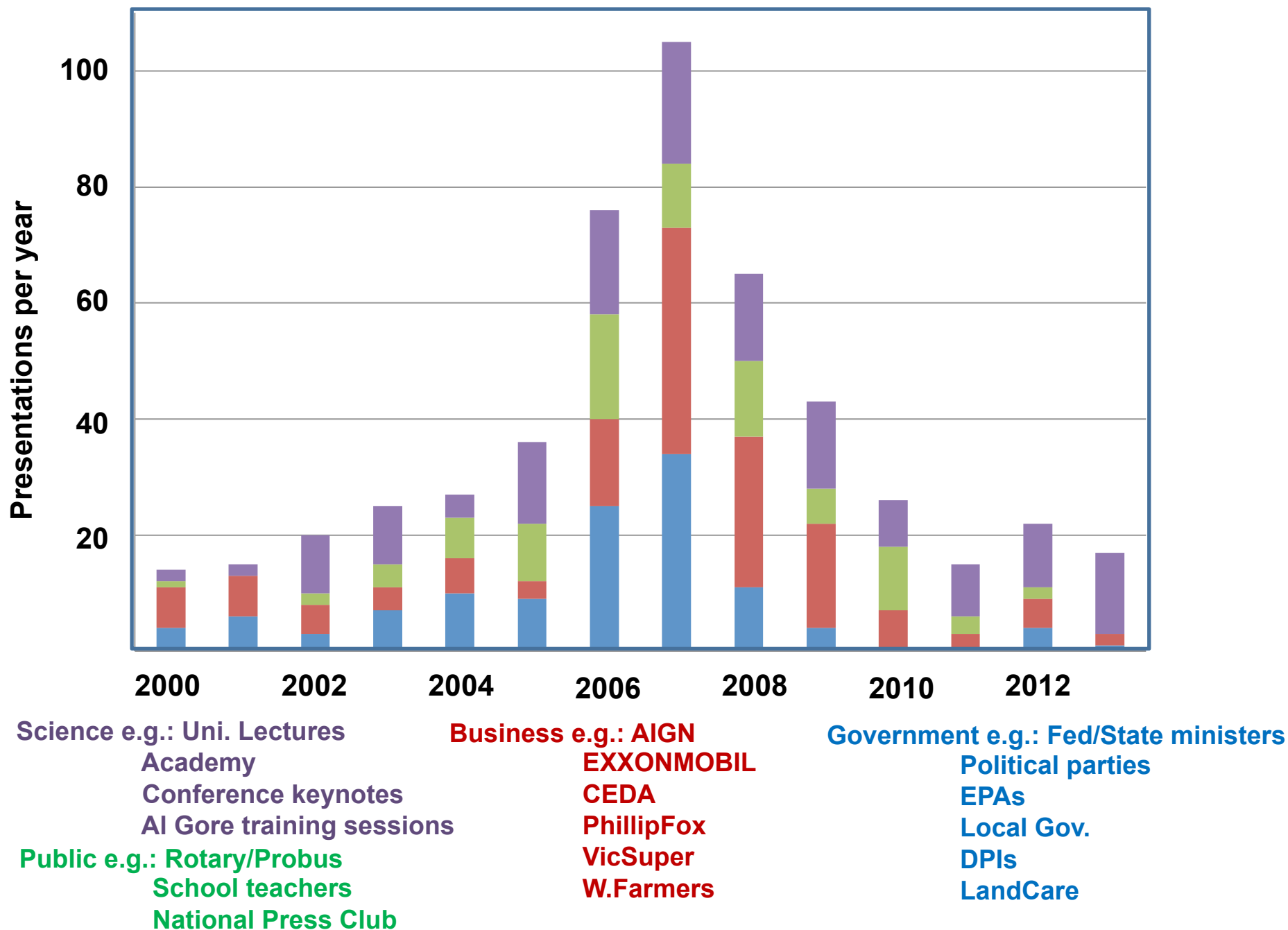
Policy development

The role of science in policy development *

Simplistic views can divert attention from the complexity of the process, many:

- **Avenues exist for science to influence policy, e.g.**
 - IPCC, PMSEIC
 - Contracts largely driven by clients
 - Via the media & public opinion
- **Barriers exist to the effect that to the effectiveness of each pathway, e.g.**
 - Gatekeepers
 - Ideological filters
 - Human behaviour
 - Societal structures

* Pearman, G.I. (2012). *Australasian J. Environ. Mang.*, 19(3), 144-163.



Science and evidence-based policy

Slowly being eroded, e.g.

- Strong ideological commitments deny the need for expert advice (science, engineering, economics, sociology)
- Research directions driven by non-scientific needs
 - CSIRO – External earnings
 - CSIRO – Co-investment
 - Together weakening commitment to scientific view of new knowledge opportunities
 - Short time-scale view of needs is contrary to strategic/sustainable futures

Example of resource exploitation: Two gas fields

Reservoir	Company	Stated resource				Production (Mt yr ⁻¹)		Multiple of annual emissions		Fraction of emissions "budget", %
		10 ¹² ft ³	10 ¹² m ³	GtC	GtCO ₂	CH ₄	CO ₂	Annual	Secular	
Cooper Basin	Beach Energy	120	3.4	1.82	6.68	N/A	N/A	N/A	11	80
Gorgon/Jansz-lo	Chevron	35.3	1.0	0.54	1.96	15.6	42.9	0.07	3	23

e.g. Chevron:

- Annual emissions, wherever they occur, are 7% of current Australian emissions, excluding ejected well CO₂ and CH₄ leakage
- Reservoir emissions are 23% of long-term budget (8,400 Mt) if Australia is to contribute to avoiding greater than 2°C warming

Potential Upside: Secure energy resources
Export earnings
Jobs

Potential downside: Commitment to exceed emissions target
Conflict with other land use
Societal displacement
Stranded assets/risk management

Conclusions

- **Exchange of “public good” for “corporate good”**
- **Assumption that wealth generation equates to welfare, wellbeing & happiness**
- **Lessens apparent need for expert advice**
- ***Leads to decline in investment in Science***
- ***“Customers” rather than “customers and stakeholders”***

Many thanks Ian and best wishes

