ALCAS Weightings Workshop

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19 August 2010

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Impact Assessment Classification

Classification

Which causes what?
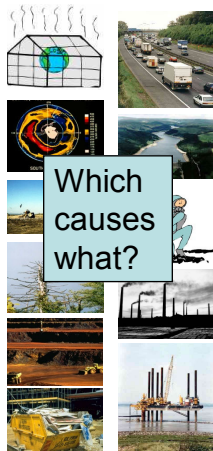
2

Impact Assessment
Characterisation

Classification

Characterisation

How potent is each cause?

3

Impact Assessment
Normalisation

Classification

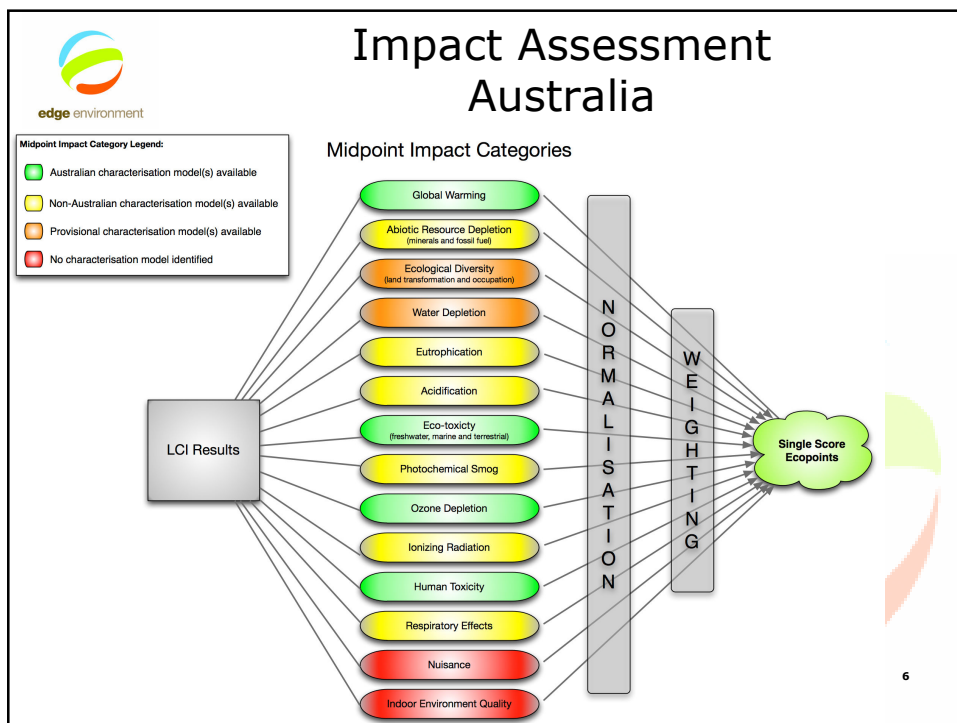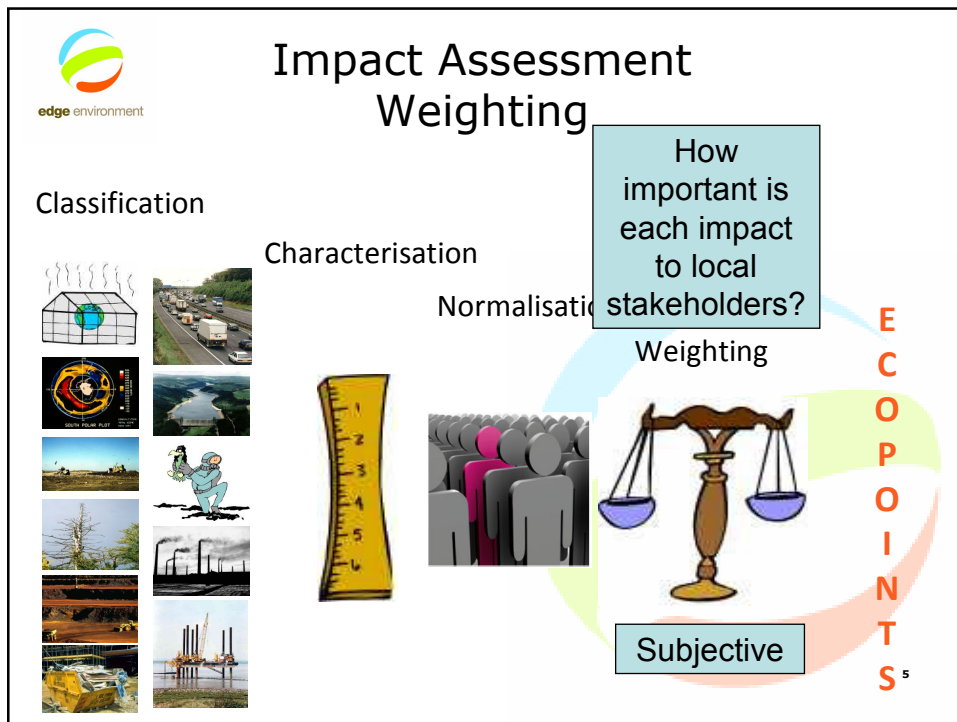Benchmark Au Av Citizen?

Characteris

Normalisation

Weighting

Dimensionless

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Some Questions

- **Please stand up if you are an LCIA practitioner.**
- **Please remain standing if you conduct LCA across more than one impact category.**
- **Please remain standing if your work results in recommendations that affect the public or business.**
- **Please sit down if the LCIA's that you do always result in ALL impacts favoring one outcome.**

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Some More Questions

- **Please stand up if you are an LCIA practitioner.**
- **Please remain standing if you conduct LCA across more than one impact category.**
- **Please remain standing if your work results in recommendations that affect the public or business.**
- **Please sit down if the LCIA's that you do always result in ALL impacts favoring one outcome.**

This workshop is for you

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So If Some of Us Need Weightings where should we get them?

- **Three basic methods – many variants:**
  - **Distance-to-target – Political targets as a basis for weighting**
  - **Externality costs – Market methods to determine peoples' priorities/preferences**
  - **Panel methods – Asking stakeholders**

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Looking for Consistency and Representativeness

- **Three basic methods – many variants:**
  - **Distance-to-target – Political targets as a basis for weighting**

  Consistency x   Representative ✓

  - **Externality costs – Market methods to determine peoples' priorities/preferences**

  Consistency x   Representative ✓

  - **Panel methods – Asking stakeholders**

  Consistency ✓   Representative x

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**Weightings Work
BPIC/ICIP Project**

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**Australia – BIG– Different Pressures
& Priorities in Different Regions**
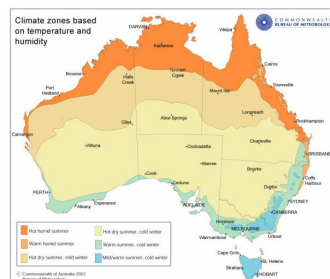
Different
Climate Zones

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Australia – BIG– Different Pressures & Priorities in Different Regions
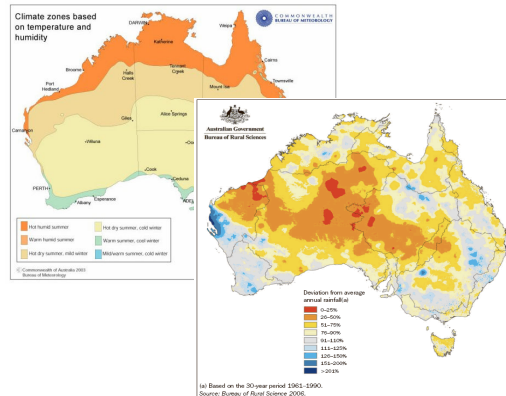
Different levels of water stress

13

Australia – BIG– Different Pressures & Priorities in Different Regions
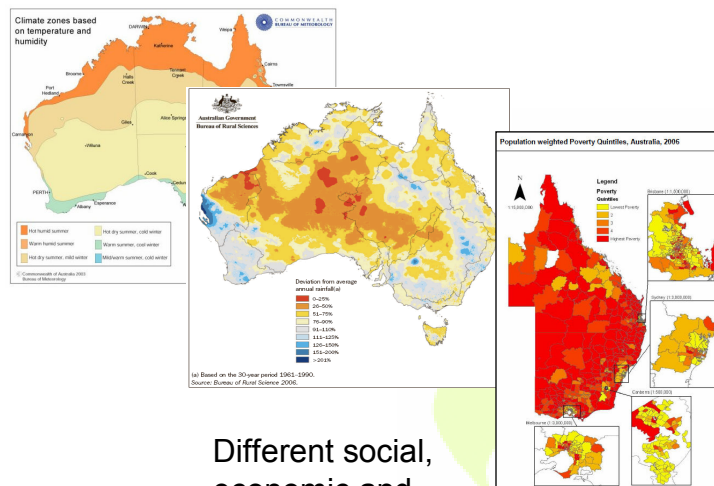
Different social, economic and cultural pressures

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Weightings Need to involve different stakeholders, but also be repeated in different Regions

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Who we asked/tried to ask:

Government Policymakers/Regulators (Federal and State)
Construction Professionals - Builders/Designers/Surveyors
Local Authorities
Materials Producers/Manufacturers
Developers/Investors
Activists and Lobbyists
Academics

Homebuyers
Consumer Groups
School Students
Retireees
Agricultural Workers
Parks and Forestry
Community Groups
Teachers and Parent Groups

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Slide 17

Locations

edge environment

Rank	Statistical Division/District	State	June 2008 Estimated Resident Population[2]	Climate Zone
13	Townsville	Queensland	162,730	1
14	Cairns	Queensland	142,001	1
16	Darwin	Northern Territory	120,652	1
	Alice Springs			3
3	Brisbane	Queensland	1,945,639	2
6	Gold Coast-Tweed	Queensland/New South Wales	558,888	2
10	Sunshine Coast	Queensland	237,562	2
21	Mackay	Queensland	81,148	2
25	Rockhampton	Queensland	75,497	2
26	Bundaberg	Queensland	66,176	2
29	Hervey Bay	Queensland	56,165	2
30	Coffs Harbour	New South Wales	51,538	2
32	Gladstone	Queensland	48,796	2
18	Albury-Wodonga	New South Wales/Victoria	102,894	4
28	Wagga Wagga	New South Wales	56,911	4
31	Mildura	Victoria	49,280	4
33	Shepparton	Victoria	47,710	4
34	Tamworth	New South Wales	45,615	4
37	Dubbo	New South Wales	36,653	4
43	Kalgoorlie/Boulder	Western Australia	31,509	4
1	Sydney	New South Wales	4,399,722	5
4	Perth	Western Australia	1,602,559	5
5	Adelaide	South Australia	1,172,105	5
7	Newcastle	New South Wales	531,191	5

ABS Population Data

Sorted by:

1 Climate Zone

2 Population

3 State

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Slide 18

Locations

edge environment

Rank	Statistical Division/District	State
13	Townsville	Queensland
14	Cairns	Queensland
16	Darwin	Northern Territory
	Alice Springs	
3	Brisbane	Queensland
6	Gold Coast-Tweed	Queensland/Ne
10	Sunshine Coast	Queensland
21	Mackay	Queensland
25	Rockhampton	Queensland
26	Bundaberg	Queensland
29	Hervey Bay	Queensland
30	Coffs Harbour	New South Wa
32	Gladstone	Queensland
18	Albury-Wodonga	New South Wa
28	Wagga Wagga	New South Wa
31	Mildura	Victoria
33	Shepparton	Victoria
34	Tamworth	New South Wa
37	Dubbo	New South Wa
43	Kalgoorlie/Boulder	Western Austra
1	Sydney	New South Wa
4	Perth	Western Austra
5	Adelaide	South Australia
7	Newcastle	New South Wales

Locations Selected:

1 Sydney

2 Melbourne

3 Brisbane

4 Perth

5 Adelaide

6 Canberra

7 Hobart

8 Darwin

9 Albury-Wadonga

10 Alice Springs

11 Townsville

ABS Population Data

Sorted by:

1 Climate Zone

2 Population

3 State

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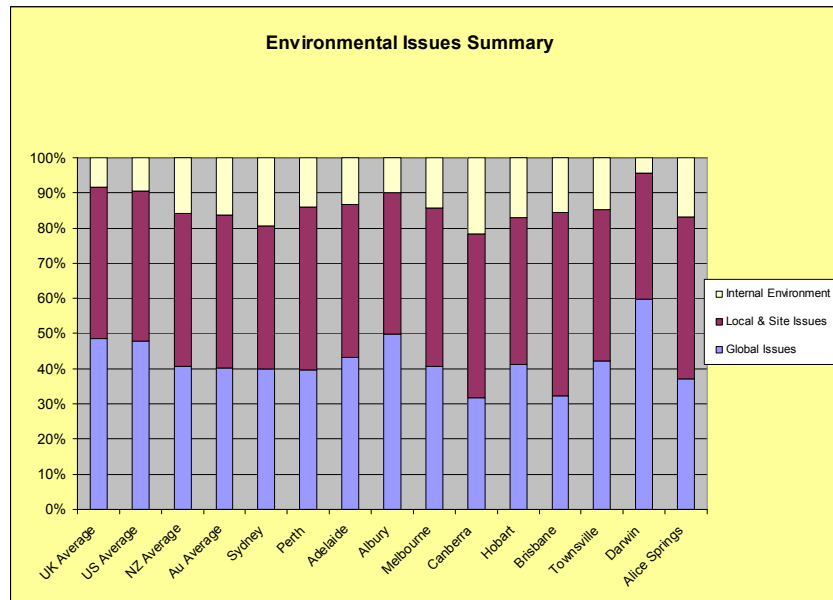
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Some Results

Summary Weighting of Environmental Issues

Environmental Issues Summary

Weighting of
Global Environment Issues

Global Issues Summary

Weighting of
Local Environment Issues

Local Issues Summary

Weighting of Internal Environment Issues

Internal Issues Summary

Summary Weighting of Environmental Issues

Environmental Issues Summary

Weighting of
Global Environment Issues

Global Issues Summary

Weighting of
Local Environment Issues

Local Issues Summary

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Weighting of Internal Environment Issues

Internal Issues Summary

Summary Weighting of Environmental Issues

Environmental Issues Summary

Weighting of Global Environment Issues

Global Issues Summary

Weighting of Local Environment Issues

Local Issues Summary

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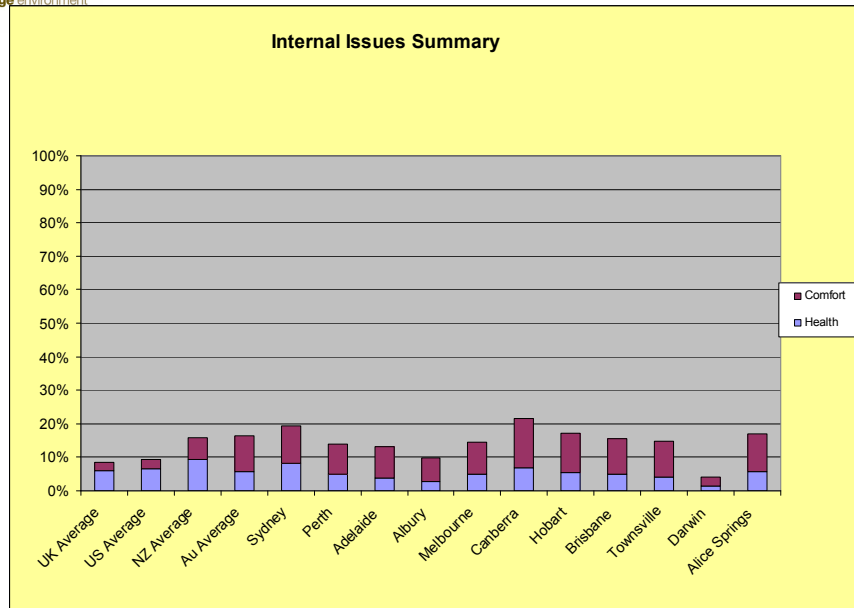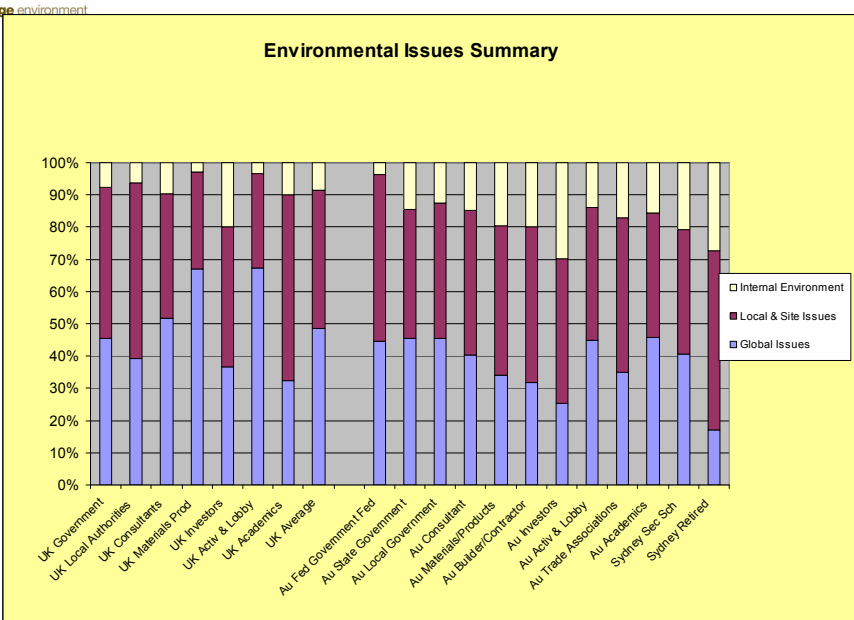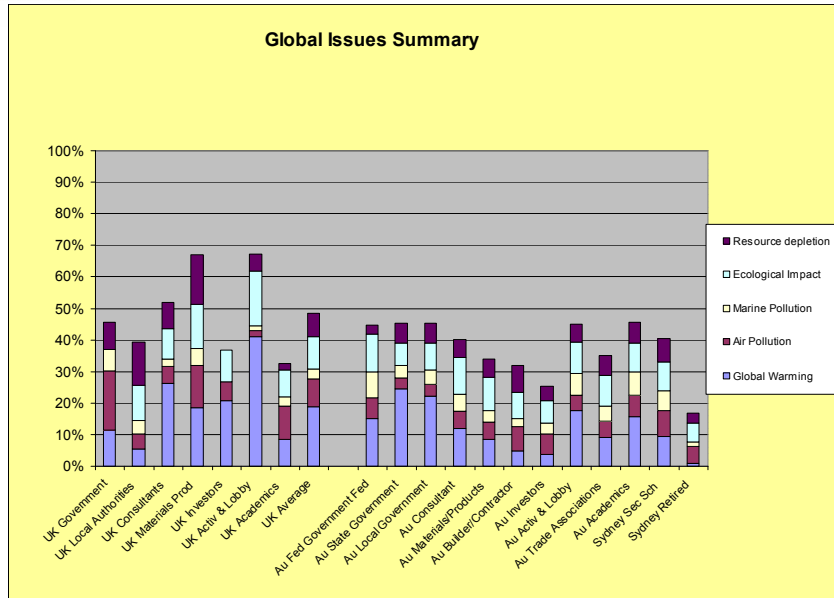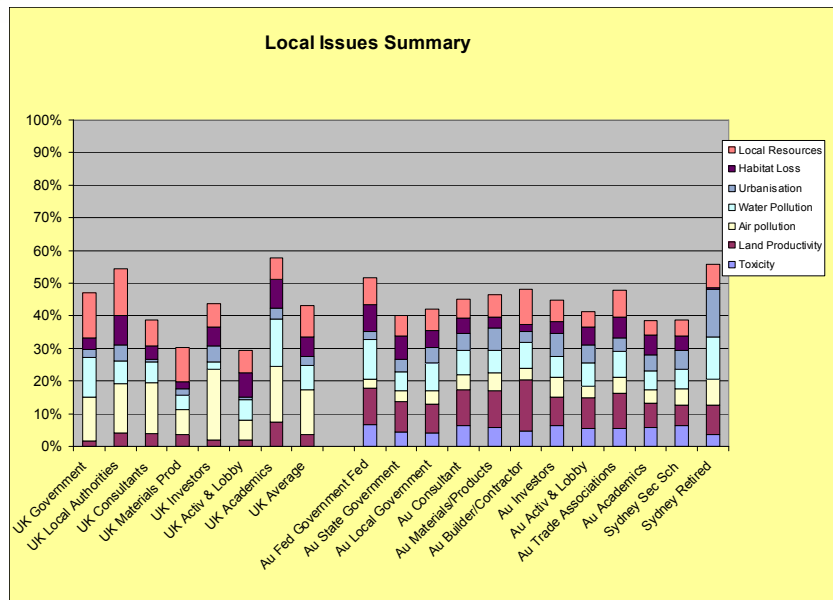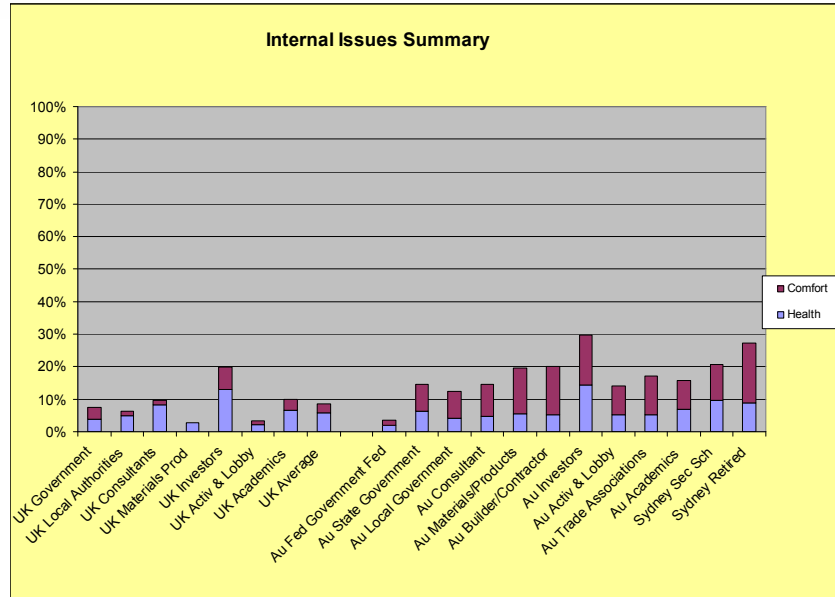
Weighting of Internal Environment Issues

Internal Issues Summary
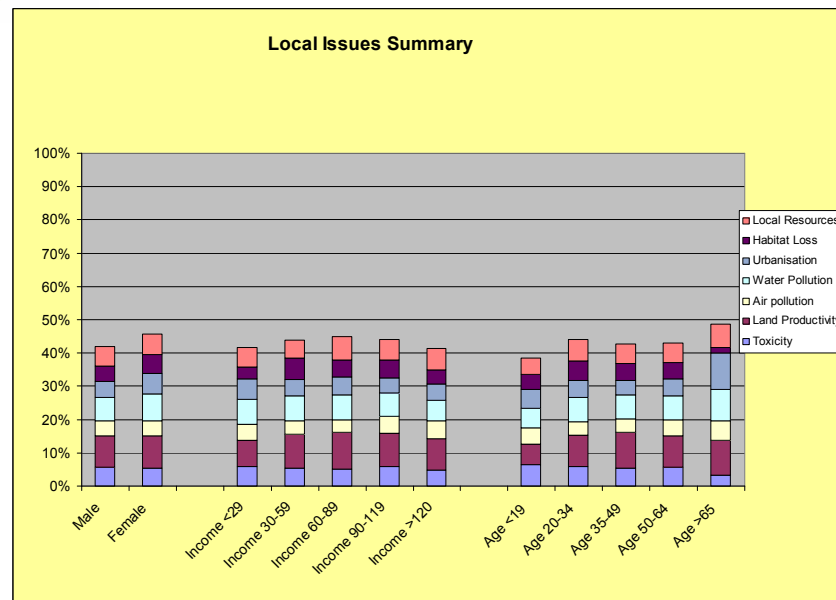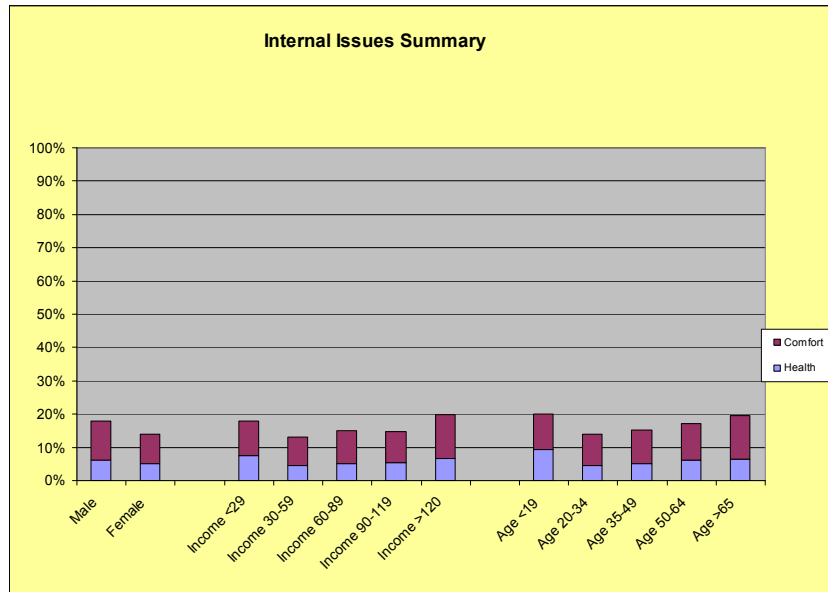
Statistical Validity

- **Not claiming statistical representation – 217 people across 11 locations do not represent 14M**
- **Small samples – only 26 out of 411 results showed variance beyond that expected at a 1% confidence limit**

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Weightings

Environmental Issues	Sydney	Perth	Adelaide	Albury	Melbourne	Canberra	Hobart	Brisbane	Townsville	Darwin	Alice Springs	Au Average
Global Issues	**40%**	**40%**	**43%**	**50%**	**41%**	**32%**	**41%**	**32%**	**42%**	**66%**	**37%**	**40%**
Global Warming	12%	15%	12%	38%	13%	7%	17%	9%	9%	24%	12%	13%
Air Pollution	7%	4%	4%	4%	5%	6%	6%	3%	6%	9%	8%	6%
Acid Rain	3%	2%	2%	1%	2%	2%	2%	1%	3%	4%	3%	2%
Ozone Hole	3%	2%	2%	3%	3%	3%	3%	2%	4%	4%	5%	3%
Marine Pollution	6%	4%	8%	5%	6%	4%	5%	5%	9%	8%	6%	6%
Ecological Impact	9%	11%	12%	9%	10%	9%	10%	9%	11%	14%	8%	10%
Terrestrial ecotoxicity	3%	3%	4%	2%	3%	3%	3%	2%	3%	5%	2%	3%
Bioaccumulative toxics	3%	3%	4%	2%	3%	3%	3%	3%	3%	5%	2%	3%
Tropical forest clearing	4%	5%	4%	5%	5%	4%	4%	4%	4%	6%	4%	4%
Resource depletion	6%	6%	7%	5%	7%	6%	4%	6%	7%	4%	4%	6%
Fossil Fuel Depletion	3%	3%	3%	2%	4%	2%	2%	3%	4%	2%	3%	3%
Mineral Resource Depletion	3%	2%	4%	2%	3%	4%	2%	3%	3%	2%	2%	3%
Local & Site Issues	**41%**	**46%**	**43%**	**40%**	**45%**	**47%**	**42%**	**52%**	**43%**	**36%**	**46%**	**43%**
Toxicity	5%	6%	5%	3%	7%	6%	6%	4%	6%	5%	6%	5%
Human Toxics	2%	2%	1%	1%	3%	3%	2%	2%	2%	1%	2%	2%
Ecotoxics	2%	2%	3%	1%	2%	2%	2%	2%	2%	2%	2%	2%
Radionuclides	1%	2%	1%	1%	2%	2%	1%	1%	2%	1%	2%	1%
Land Productivity	8%	10%	11%	10%	9%	11%	10%	16%	12%	7%	7%	10%
Contaminated Land	2%	2%	2%	1%	2%	3%	2%	3%	3%	2%	2%	2%
Soil Degradation / Erosion	2%	3%	4%	3%	2%	2%	3%	5%	3%	2%	2%	3%
Soil salinisation	2%	2%	3%	2%	3%	3%	2%	3%	3%	2%	2%	2%
Loss of agricultural Land	3%	3%	3%	3%	3%	3%	3%	5%	3%	1%	2%	3%
Air pollution	5%	4%	3%	3%	5%	5%	4%	4%	4%	3%	7%	4%
Particulates	2%	2%	1%	1%	3%	3%	2%	2%	2%	2%	4%	2%
Photochemical smog	3%	2%	2%	2%	2%	2%	2%	2%	2%	1%	3%	2%
Water Pollution	7%	8%	9%	8%	7%	9%	6%	8%	7%	6%	8%	7%
Sediment	3%	4%	5%	5%	3%	3%	3%	4%	3%	3%	3%	4%
River Pollution	1%	1%	3%	1%	2%	2%	2%	2%	2%	1%	2%	2%
Eutrophication	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Urbanisation	6%	5%	4%	4%	6%	6%	5%	6%	6%	2%	8%	5%
Heat Island - Cities	1%	2%	1%	1%	1%	1%	1%	1%	2%	1%	1%	1%
Noise & Vibration	2%	1%	1%	0%	1%	1%	1%	1%	2%	0%	1%	1%
Light Pollution	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	1%	1%
Open Space	2%	2%	1%	2%	2%	2%	1%	2%	2%	1%	2%	2%
Habitat Loss	4%	7%	4%	5%	5%	3%	5%	6%	4%	7%	6%	5%
Local Resources	6%	6%	7%	7%	6%	7%	6%	9%	3%	5%	7%	6%
Water Scarcity	4%	4%	5%	5%	4%	6%	4%	7%	2%	4%	5%	4%
Landfill Capacity Scarcity	2%	2%	2%	1%	2%	1%	2%	2%	1%	2%	2%	2%
Internal Environment	**19%**	**14%**	**13%**	**10%**	**14%**	**22%**	**17%**	**16%**	**15%**	**4%**	**17%**	**16%**
Health	8%	5%	4%	3%	5%	7%	5%	5%	4%	1%	6%	6%
Indoor Air Quality	3%	3%	2%	1%	3%	4%	3%	3%	2%	1%	3%	3%
Legionnaires Disease	3%	1%	1%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Dust Mite	2%	1%	1%	1%	1%	2%	2%	1%	1%	0%	1%	1%
Comfort	11%	9%	8%	7%	9%	15%	12%	11%	11%	3%	11%	10%
Heating & Cooling	2%	2%	2%	2%	2%	3%	3%	2%	2%	1%	2%	2%
Humidity	2%	1%	1%	1%	1%	2%	1%	2%	2%	0%	1%	1%
Ventilation	2%	1%	1%	1%	2%	2%	2%	3%	2%	1%	2%	2%
Internal Noise	1%	1%	1%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Odour	1%	1%	1%	1%	1%	2%	1%	1%	1%	0%	1%	1%
Access to sunlight	2%	2%	3%	2%	2%	3%	2%	2%	1%	1%	2%	2%
Visual	1%	1%	1%	1%	1%	2%	2%	2%	1%	0%	2%	1%
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Participant Numbers	67	24	10	13	29	19	20	15	12	5	3	-

Variance exceeds a 5% confidence limit
Variance exceeds a 1% confidence limit

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Weighting

BPIC/ICIP LCIA Impact Category	Australian Average	Australian Average Demog. Adj.
Global warming	19%	21%
Acidification	3%	4%
Ozone layer depletion	4%	4%
Marine aquatic ecotoxicity	10%	12%
Terrestrial ecotoxicity	6%	6%
Abiotic depletion: Non renewable fuels	4%	3%
Abiotic depletion: Minerals	4%	4%
Human toxicity	3%	3%
Ionizing radiation	2%	2%
Land transformation and use	20%	17%
Respiratory effects	3%	3%
Photochemical smog	3%	3%
Freshwater aquatic ecotox.	10%	10%
Eutrophication	3%	3%
Water depletion	6%	6%
TOTAL	**100%**	**100%**

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Why We Need Weighting
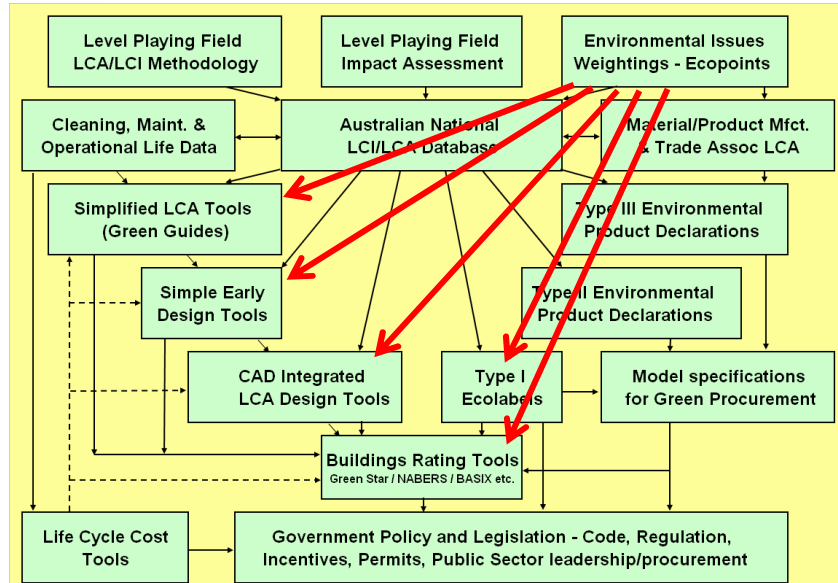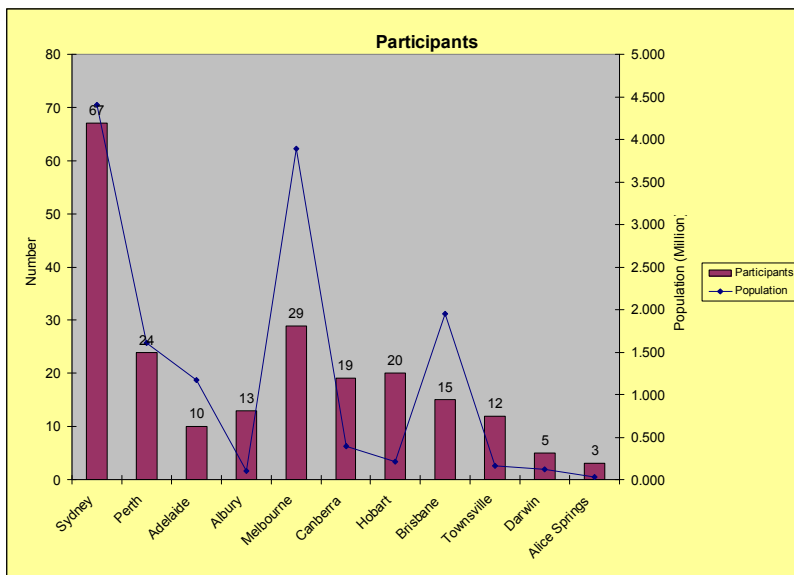

Why we Need Weighting

- **To assess and ecolabel materials and products**
- **To assess and rate buildings for their environmental impacts**
  - **Voluntary tools – Green Star, NABERS…**
  - **Sustainability Regulation – BASIX (NSW), Building Code of Australia**
- **To prioritise environmental policy and expenditure**
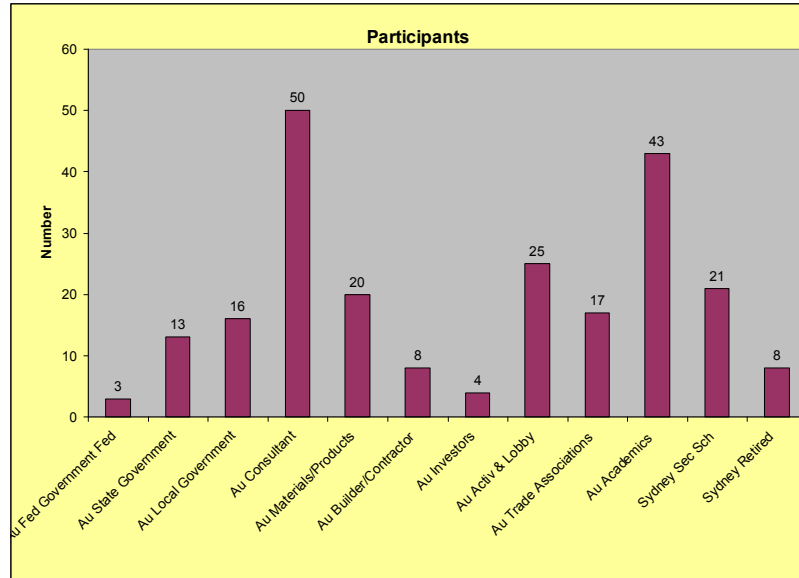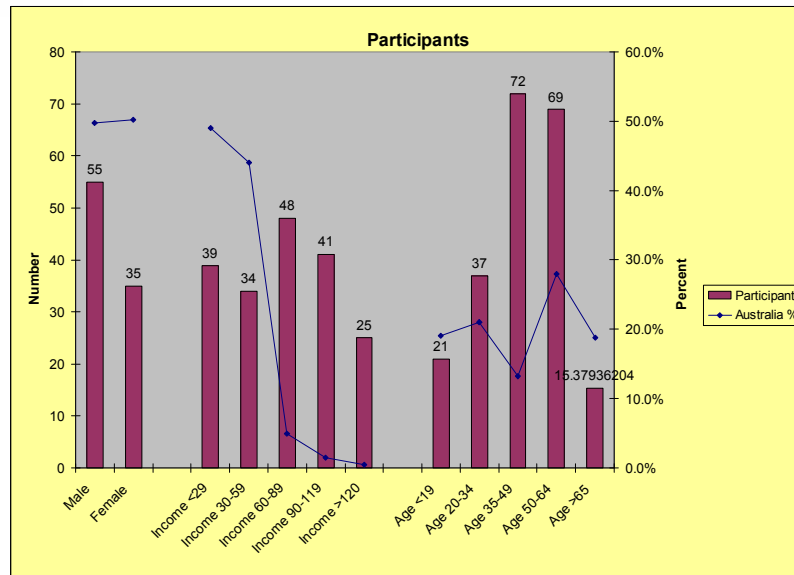- **To ensure that assessments are appropriate to location (climate and local priorities)**

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The Weighting Sheets - Demographic

Occupation				
Sex			M/F	
Organisation				
Community groups that you are involved in:				
Are you planning to purchase a house in the next 10 months?			Y/N	
	Please circle			
Annual Income (Optional)	Under $30k	$30 - 60k	$60 - 90k	$90 - 120k
Age	19 or under	20 - 34	35 - 49	50 - 64

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The Weighting Sheets – Hierarchy of Impacts

Environmental Issues		Weight
1.1 Global Issues		
	Global Warming	
	Air Pollution	
	Acid Rain	
	Ozone Hole	
	Marine Pollution	
	Ecological Impact	
	Terrestrial ecotoxicity	
	Bioaccumulative toxics	
	Tropical forest clearing	
	Resource depletion	
	Fossil Fuel Depletion	
	Mineral Resource Depletion	
1.2 Local & Site Issues		
	Toxicity	
	Human Toxics	
	Ecotoxics	
	Radionuclides	
	Land Productivity	
	Contaminated Land	
	Soil Degradation / Erosion	
	Soil salinisation	
	Loss of agricultural Land	
	Air pollution	
	Acid particulates	
	Particulates	
	Photochemical smog	
	Water Pollution	
	Sediment	
	Eutrophication (excess nutrients)	
	Urbanisation	
	Heat Island - Cities	
	Noise & Vibration	
	Light Pollution	
	Open Space	
	Habitat Loss	
	Local Resources	
	Water Scarcity	
	Landfill Capacity Scarcity	
1.3 Internal Environment		
	Health	
	Indoor Air Quality	
	Legionnaires Disease	
	Dust Mite	
	Comfort	
	Heating & Cooling	
	Humidity	
	Ventilation	
	Internal Noise	
	Odour	
	Access to sunlight	
	Visual	

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