



Sydney Coastal Councils Group Climate Change Forum: For Councillors.

Sunday August 30 2009
The Barnet Long Room
Customs House
Circular Quay
Sydney

This event has been kindly supported by:



Topics Include: Science Investment **Adaptation** Change
Systems Thinking **Case Studies** Community Vulnerability
Mitigation Envisioning



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For More Information Please Visit:
www.sydneycoastalcouncils.com.au



General Information:

The Sydney Coastal Councils Group was established in 1989 to promote co-ordination between member councils on environmental and natural resource management issues relating to the sustainable management of the urban coastal environment.

The Group consists of 15 councils adjacent to Sydney marine and estuarine environments and associated waterways (Botany Bay, Hornsby, Leichhardt, Manly, Mosman, North Sydney, Pittwater, Randwick, Rockdale, Sutherland, City of Sydney, Warringah, Waverley, Willoughby and Woollahra).

The Group represents over 1.4 million Sydneysiders.

This area encompasses the waterways of Broken Bay; Pittwater; Port Jackson, the lower Lane Cove River, Middle and North Harbour; Botany Bay, the Lower Georges and Cooks River; and Port Hacking.



The Sydney Coastal Councils Group would like to thank the Sydney Metropolitan Catchment Management Authority and the City of Sydney for their generous support of this event.

Many thanks also go to the presenters who have invested time and effort in making this such an informative and empowering event for Sydney's Councillor's.



Program

Time	Topic
10:45am	Registration + Refreshments
11:00am	Opening and Welcome Clr. Wendy McMurdo, Chairperson, Sydney Coastal Councils Group Mr. Geoff Withycombe, Executive Officer, Sydney Coastal Councils Group
11:10 am	Keynote Address Responding to Climate Change in the Sydney Region: From Assessment to Adaptation Dr. Benjamin Preston CSIRO Marine & Atmospheric Research, Climate Adaptation Flagship
12:00 pm	2nd Keynote Address Business Case for Climate Change Action Mr. Ian Dunlop, Fellow, Centre for Policy Development, Sydney
12:40 pm	Lunch
1:10 pm	LGSA Climate Change Initiatives Ms. Amy Lovesey, Climate Change Mitigation and Adaptation Project Officer, Local Government and Shires Association
1:30 pm	Local Government Case Studies: Climate Mitigation Mr. Nik Midlam, Manager Environmental Strategy, City of Sydney
1:55 pm	Adaptation Using Systemic Practices Mr. David Morrissey, Director, Sustainability Learning Institute, Sydney
2:20 pm	Afternoon Tea
2:40 pm	Towards a City of Melbourne Climate Change Adaptation Strategy: A Risk Assessment and Action Plan Ms. Donna Lorenz, Associate Director - Climate Change, AECOM
3:05 pm	NSW Community Climate Summit: Learnings from Meaningful Community Exchange Ms. Marnie Kikken, Climate Project Coordinator, Nature Conservation Council of NSW
3:25 pm	SCCG Climate Change Community Forum Feedback Presentation Mr. Ragnar Haabjoern, Project Officer - Capacity Building, SCCG
3:40 pm	Closing



Presenters

Mr. Ian Dunlop, Fellow, Centre for Policy Development

Ian Dunlop has wide experience in energy resources, infrastructure, and international business, for many years on the staff of Royal Dutch Shell. He has worked in oil, gas and coal exploration and production, in scenario and long-term energy planning, competition reform and privatization.

He chaired the Australian Coal Association in 1987-88, and the Australian Greenhouse Office Experts Group on Emissions Trading in 1998-2000. From 1997 to 2001 he was CEO of the Australian Institute of Company Directors. Ian has a particular interest in the interaction of corporate governance, corporate responsibility and sustainability.

An engineer from the University of Cambridge, he is a Fellow of the Australian Institute of Company Directors, the Australasian Institute of Mining and Metallurgy and the Energy Institute (UK), and a Member of the Society of Petroleum Engineers of AIME (USA). He is Deputy Convenor of the Australian Association for the Study of Peak Oil, a Director of Australia 21, a Member of The Club of Rome, a Fellow of the Centre for Policy Development, a Director of Safe Climate Australia and advises on governance and sustainability.

Mr. Ragnar Haabjoern, Project Officer - Capacity Building, SCCG

Thus far in his career, Ragnar has had a notable and extensive teaching and learning journey. Starting out as a science teacher he found his passion was in researching and developing the human-nature connection. From this realisation he became a sustainability education officer in the private sector and also had a brief tenure as a lecturer of pre-service teachers. He turned his focus from teachers and teaching to change and action, Program coordinating for a not-for-profit Education for Sustainability provider. Alongside his vocational journey he has also obtained postgraduate knowledge from a Masters in Science and Environmental Education, a Graduate Certificate in Sustainable Practice and presently he is a PhD Candidate at Macquarie University studying ecological philosophy.

Ms. Marnie Kikken, Climate Project Coordinator, Nature Conservation Council of NSW

Marnie Kikken is Team Leader (Community Engagement) at the Nature Conservation Council of NSW (NCC). Having worked at the NCC since 2005, her role is responsible for the development and delivery of programs around community engagement and education on environmental issues, particularly climate change. Marnie recently coordinated a community engagement program, which utilised the innovative approach of deliberative democracy to enable representative groups of everyday citizens in NSW to contribute to policy and program development on climate change at a both a local and State level. Marnie has a background in tourism and spent five years between 1999 – 2004 travelling and working overseas.

Ms Donna Lorenz, Associate Director - Climate Change, AECOM

Donna is a climate change specialist with extensive risk, strategy and communications experience across Australia, Asia, the UK and US. Focusing on climate change and carbon risks, governance, opportunities and policy analysis and compliance, she advises boards, business and government on developing responses and management frameworks to address expected environmental, market and social changes.



Presenters

Ms. Amy Lovesey, Climate Change Mitigation and Adaptation Project Officer, Local Government and Shires Association

Amy Lovesey is the Climate Change Mitigation and Adaptation Project Manager at the Local Government and Shires Associations of NSW. Amy manages the Environmental Trust funded project, 'Climate Change Action Planning for Local Government' which will deliver a workshop package designed for councils to use in planning local responses to climate change. Her role also involves addressing various climate change issues to provide assistance and advocacy for NSW Local Government.

Prior to joining the Local Government and Shires Associations, Amy worked as an Environmental Sustainability Officer at Mosman Council, addressing water conservation, coastal issues, education for sustainability and internal environmental performance. Amy began her career in government policy, project management and stakeholder engagement, working for the Department of Agriculture, Fisheries and Forestry in Canberra on a national approach to marine pest management.

Amy has a Bachelor of Environmental Science from the University of Sydney with first class honours for her research into evaluating marine park management.

Mr. Nik Midlam, Manager Environmental Strategy, City of Sydney

Nik Midlam is Manager of Environmental Strategy at the City of Sydney. Since joining the City in 2002, Nik has developed a variety of environmental programs, reports and strategic advice. Nik has been integral to the City becoming the first carbon neutral council in Australia, and is now actively working on plans to reduce the carbon intensity of how energy is generated, distributed and used in the LGA.

Mr. David Morrissey, Director, Sustainability Learning Institute, Sydney

From a background in Social Sciences and Adult Education, David began working in Corporate Social Responsibility in the 1990's, and is now a Director in the Sustainability Learning Institute. His work has included planning and consulting on Indigenous issues, broad social and cultural programs, and increasingly on the social component of sustainability. Clients have included Federal, State and Local Government, Corporations and NGOs. Most recently, he has been bringing systemic approaches to sustainability into local government / community planning.

Dr. Benjamin Preston , CSIRO Marine and Atmospheric Research, Climate Adaptation Flagship

Benjamin is a research scientist with Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO). Within CSIRO, he is part of the Climate Change Research Group of the Centre for Australian Weather and Climate Research, and he is also active with CSIRO's inter-disciplinary Climate Adaptation Flagship research initiative. Benjamin's research focuses on the development and application of methods for assessing the spatial dimensions of climate change vulnerability and risk, particularly the use of geographic information systems to integrate biophysical and socio-economic data. He is also active in the development of probabilistic tools for managing climate uncertainty in decision-making and the assessment of the capacity of communities to adapt to the effects of climate change. Educated in the United States, Benjamin received a BS in Biology from the College of William and Mary and a PhD in environmental biology from the Georgia Institute of Technology.



Presentations



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Responding to Climate Change in the Sydney Region
From Assessment to Adaptation

Acknowledgements: Tim Smith, Cassandra Brooke, Russell Gorddard, Tom Measham, Geoff Withycombe, Kathleen McInnes, Deborah Abbs, Beth Beveridge, Craig Morrison, Peter Kirrade, Julian O'Grady, Ian Macadam, Michelle Justus

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Benjamin L. Preston, Research Scientist
Impacts, Vulnerability and Adaptation Team
Climate Variability and Change Research Group
CSIRO Marine & Atmospheric Research
Centre for Australian Weather and Climate Research

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Climate Adaptation **CSIRO**

Outline

- What is Adaptation?
- Why Adapt?
- What Are We Adapting to?
- Who Adapts?
- How Do We Adapt?
- What Do We Want to Accomplish?

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What is Climate Adaptation?

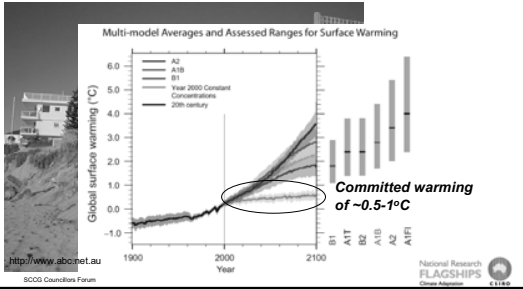
- Responding to climate change (IPCC, 2007)
 - "adjustments, or changes in decision environments, which might ultimately enhance resilience or reduce vulnerability to observed or expected changes in climate"
- Risk management (AGO, 2005)
 - "with relatively simple summary climate change information and a straightforward risk management approach, significant insights may be generated leading to early and effective action"
- Behavioural change (Preston et al., 2009)
 - "a process whereby institutional actors first abandon their traditional assumptions and behaviours and subsequently adopt a new set that is better-suited to the new circumstances"

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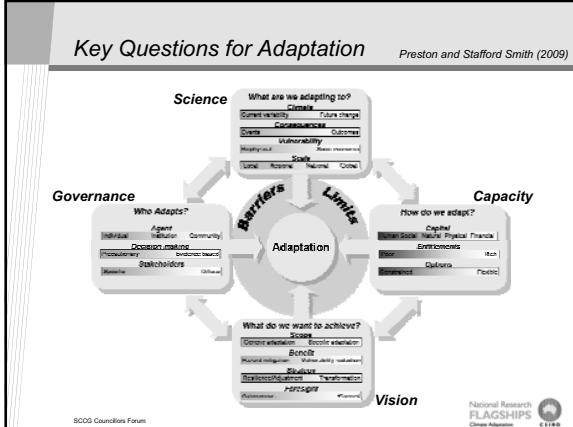
Why Adapt?

- There is persistent vulnerability to climate
- There is a commitment to future climate change. . .



Key Questions for Adaptation

Preston and Stafford Smith (2009)

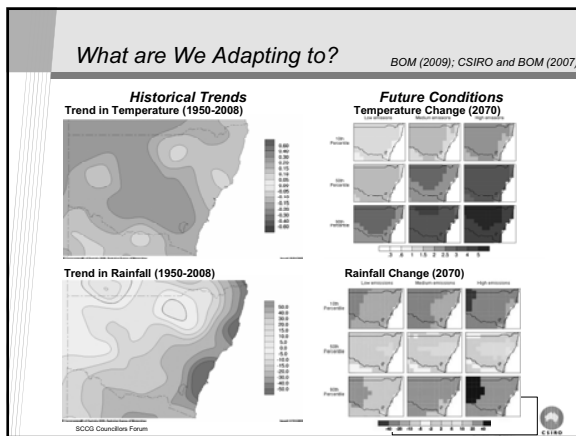


What are We Adapting to?



- "Warming of the climate system is **unequivocal**, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level."
- "Most of the observed increase in globally averaged temperatures since the mid-20th century is **very likely** due to the observed increase in anthropogenic greenhouse gas concentrations."
- "For the next two decades a warming of about 0.2°C per decade is projected for a range of SRES emission scenarios. Even if the concentrations of all greenhouse gases and aerosols had been kept constant at year 2000 levels, a **further warming** of about 0.1°C per decade would be expected."

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What are We Adapting to?

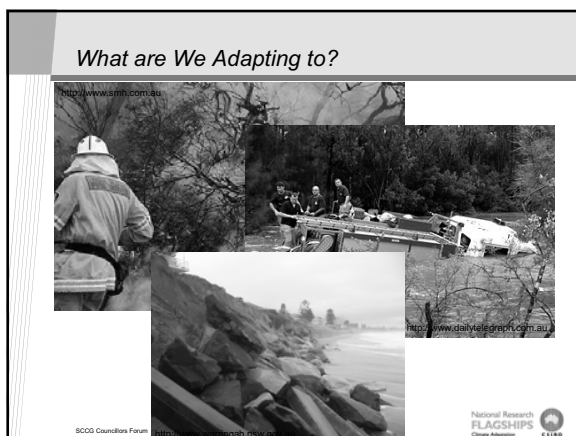
CSIRO and BOM (2007)

- Significant climate change is projected for the Sydney region in coming decades

Variable	2030	2070
Annual Temperature (°C)	+0.6 to +1.3	+1.1 to +4.3
Days >35°C	+4 to +5	+5 to +12
Change in Rainfall (%)	-9 to +3	-25 to +10
Change in Potential Evaporation (%)	+2 to +5	+3 to +15
Change in Wind Speed (%)	-5 to +4	-15 to +12
Change in Relative Humidity (%)	-1.3 to +0.4	-4.0 to +1.3
Solar Radiation (%)	-1.0 to +1.9	-3.2 to +6.0
Sea-Level Rise (cm)	79 to 140 cm by 2100	

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Assessing Climate Risk

- Which activities/assets are climate-sensitive?
- How is the climate likely to change?
- What other drivers are important?
- What do we do?

Pasture/Grazing
Livestock
Dairy

Forestry
Plantation
Native

Conservation
Recreation
Amenities

Regional Centres
Commerce
Manufacturing
Recreation
Services

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Local/Regional Assessment of Climate Risk

East Coast Cluster in Detail

Legend

- IA Human Settlements
- NCVA Case Studies
- LAPP Round 2
- LAPP Round 1
- Hunter Councils Study
- Australian Alps Study
- Cottlesloe Case Study
- MN and PPC RAs
- Road Water RA

Details

- GA = Greenhouse Alliance
- IA = Integrated Assessment
- LAPP = Local Adaptation Pathways Program
- MN/Melbourne Water
- NCVA = National Coastal Vulnerability
- PPC = Port Phillip Council
- RA = Risk Assessment
- RC = Regional Council
- ROC = Regional Organisation of Councils

Queensland: Sunshine Coast RC (LAPP1), Western Sub-ROC (LAPP1), Pinarra River (RCVA), Gold Coast Council (SMHS), Douglas RC (LAPP1), Cairns RC (LAPP1), Townsville Council (LAPP1), ACT Region.

New South Wales: New England Strategic Alliance (LAPP1), Hunter Councils, Inc. (LAPP2), Hunter Councils, Inc. Climate Change Study, Port Stephens Council (LAPP1), Hunter & Central Coast (NCVA), Blue Mountains Council (LAPP1), Sydney Council Councils Group, Inc. (SMHS), Manly Council (LAPP1), Rockdale Council (LAPP1), Randwick Council (LAPP1), Wollongong Council (LAPP1), Shellharbour Council (LAPP1), Kiama Council (LAPP1), Campbell and Murrumbidgee Councils (LAPP1), Sutherland Shire Councils (LAPP1), Rouse Water RA, Gosford GA (LAPP2), Australian Alps (LAPP1), Warrumbungle National Park (LAPP1), East Coast (NCVA), South Coast Authority (LAPP1), Clarence Council (SMHS).

Preston and King (2006)

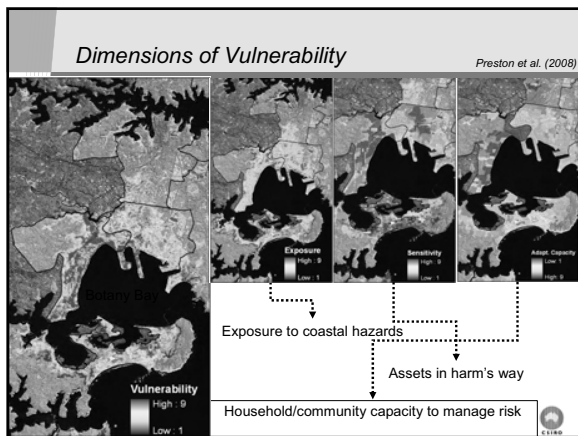
Preston et al. (2008)

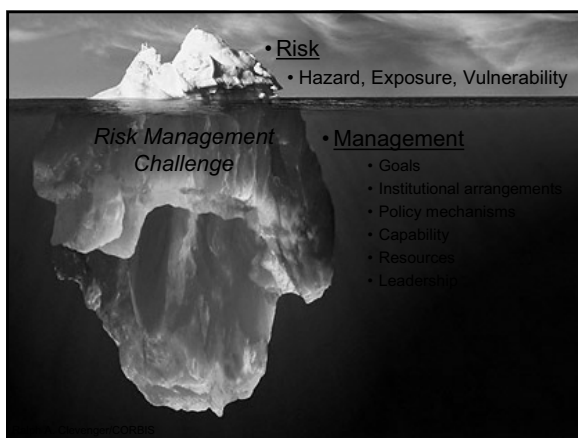
Vulnerability Assessment in the SCCG Region

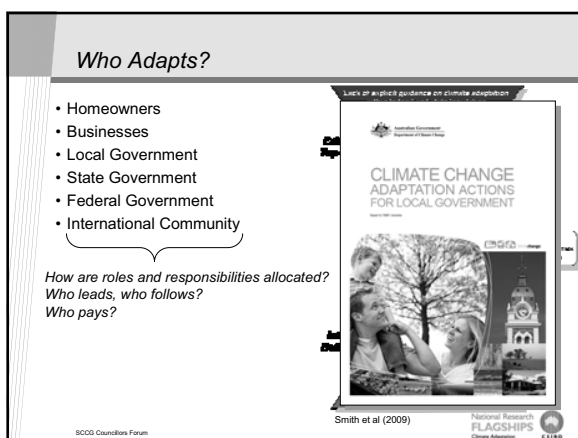
Extreme Heat Events **Sea-Level Rise** **Extreme Rainfall** **Bushfire** **Ecosystems**

- Implications of climate change vary across the landscape and vary with the impact under consideration
 - Where are the hotspots for certain types of consequences?
- However, the goal of vulnerability assessment, "is not to produce a score or rating of a particular community's current or future vulnerability. Rather, the aim is to attain information on the nature of vulnerability and its components and determinates (Smit and Wandel, 2006)."

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How Do We Adapt?

- Who's in control?
 - "The extent to which individuals, groups or communities are 'entitled' to make use of resources determines the ability of that particular population to cope with and adapt to stress." – Adger and Kelly (1999)
 - Channelling investment
 - Planning policy
 - Siting of infrastructure
 - Liability and insurance
- What options are available and feasible?
 - Public education
 - Planning
 - Infrastructure
 - Risk spreading
- What barriers stand in the way?
 - Availability of capital (human, social, financial)
 - Structure of existing legislation and policies
 - Conflicts among beliefs and values

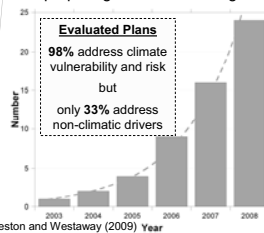
Addressing these issues requires a plan of attack!

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Adaptation Planning

- Adaptation planning is rapidly becoming a common mechanism for preparing for climate change



Preston and Westaway (2009) Year

- Addressing gaps in planning
- Building partnerships
- Building a community of practice

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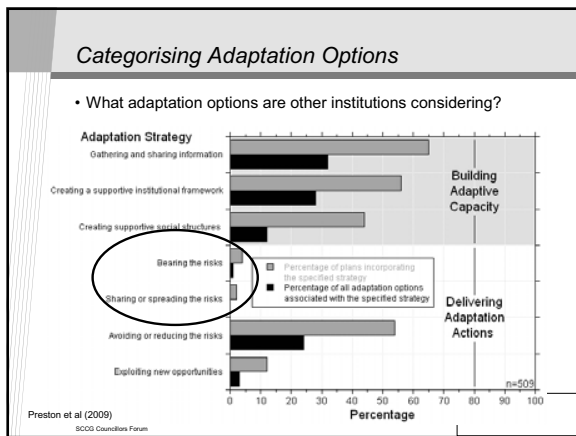


Strengths and Weakness of Adaptation Planning

- A review of 57 adaptation plans reveals what institutions are doing well, and what is falling through the cracks

Adaptation Criteria	% Plans Addressing Criterion
Assessment of impacts, vulnerability and/or risk	98
Communication and outreach	95
Articulation of objectives, goals and priorities	81
Assessment of climate drivers	82
Stakeholder engagement	79
Assessment of financial capital	33
Identification of success criteria	32
Assessment of non-climate drivers	33
Acknowledgement of assumptions and uncertainties	42
Assessment of natural capital	30

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Overcoming Barriers

Stream Name	Description of Covered Actions	n
“Know Your Enemy”	Enhancing understanding of social and ecological vulnerability	8
“Plan for Change”	Incorporating climate change into planning frameworks	10
“Get Smart”	Implementing education and outreach programs	8
“Watch and Learn”	Implementing monitoring, evaluation and reporting measures	6
“Put the House in Order”	Developing both internal and external institutional arrangements	8
“Money Talks”	Enhancing revenue streams to councils	8

Smith et al. (2009)
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CSIRO Marine and Atmospheric Research
Centre for Australian Weather and Climate Research

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Thank you

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Climate Change, Peak Oil and the Transition to Global Sustainability

- the business case for emergency action


Sydney Coastal Councils Group
Climate Change Forum
Customs House
Sydney
30th August 2009

Ian T. Dunlop
Member, Club of Rome
Director, Safe Climate Australia
Independent Governance & Sustainability Advisor
Deputy Convenor, Australian Association for the Study of Peak Oil



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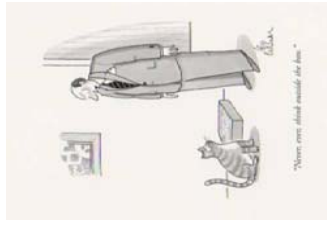
Today's Paradigm ?



G20 Leaders Hail Crisis Fightback

World leaders on Thursday heralded the G20 summit as the day the world "bought back" against the "dark forces" of a global financial crisis and stepped onto a new "future" for financial institutions.

Financial Times 27th April 2009



Source: New Yorker

"There's one thing outside the box."

"Never, ever, think outside the box"

- stimulate
- spend
- buy stuff
- grow

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But what if ---- ?

"Let's today step out of the normal boundaries of analysis of our economic crisis and ask a radical question: What if the crisis of 2008 represents something much more fundamental than a deep recession? What if it's telling us that the whole growth model we created over the last 50 years is simply unsustainable economically and ecologically and that 2008 was when we hit the wall — when Mother Nature and the market both said: "No more.""

The Infection is Near?
Tom Friedman, New York Times, 8th March 2009

"The world will not evolve past the current state of crises by using the same thinking that created the situation"

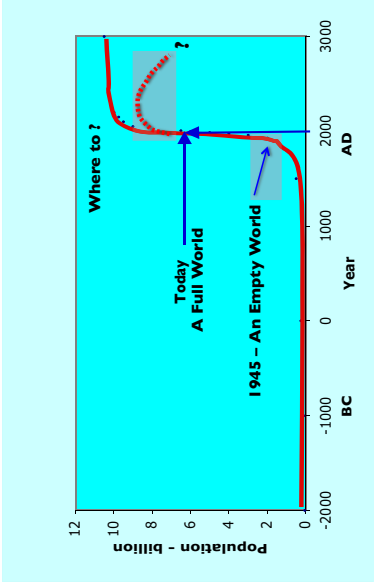
Albert Einstein



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World Population

- a unique point in history -



Population - billion

Year

AD

BC

1945 - An Empty World

Today
A Full World

Where to ?

Source: J.E. Cohen, Columbia University, New York, 2005

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The Market
- Food for a Week, Germany

Source: Menzel, 2005

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The Market
- Food for a Week, Darfur Refugees, Chad

Source: Menzel, 2005

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World Ecological Footprint
- humanity today needs 1.3 planets to survive-

Fig. 31: BUSINESS-AS-USUAL SCENARIO AND ECOLOGICAL DEBT

Source: Living Planet Report 2006, WWF, GPNZSL

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Poverty & Inequality
- where the wealth is

Source: UN Human Development Report 2005

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The Immediate Convergence

All Symptoms of an Unsustainable World

- Peak Oil
- Climate Change
- Water
- Food
- Financial Instability

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Cheap Energy

- has been the basis for our prosperity

energy demand and GDP per capita (1980-2004)

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Peak Oil

- will fundamentally change energy supply

Norway's production

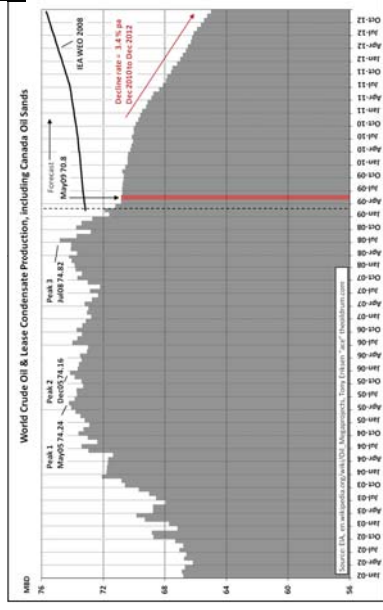
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The Growing Gap

THE GROWING GAP
Regular Conventional Oil

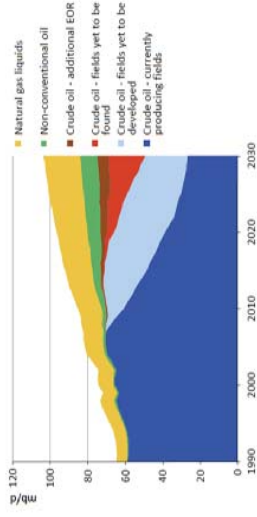
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Short Term Oil Supply - struggling to meet demand



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World Oil Production - IEA WEO 2008 – reference scenario 6 new Saudi Arabia's by 2030 ??



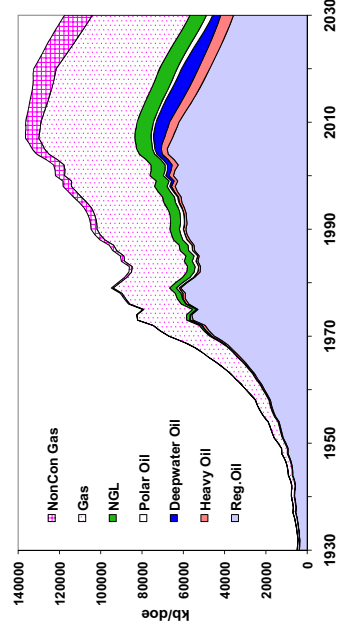
Production reaches 104 mb/d in 2030, requiring 64 mb/d of gross capacity additions – six times the current capacity of Saudi Arabia – to meet demand growth & counter decline
Source: © OECD/IEA – World Energy Outlook 2008
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Converting resources to oil flows is proving difficult

- Not discovering new oilfields quickly enough
 - certainly no giant fields
- Data on existing oil reserves is suspect
 - particularly in the Middle East - "the paper barrels"
- Many established oil provinces are in decline
 - depletion rates may be more rapid than officially admitted
- Unconventional resources proving difficult to develop
 - technically and economically
- Oil producing nations
 - using more oil domestically & exporting less
 - conserving for future generations

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Global Oil & Gas Depletion - ASPO 2008 Base Case



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Who Gets The Available Oil ?

- if oil supply contracts by 25-50% by 2030

- Market forces ?
 - the wealthy win – initially !
- The “Washington Consensus” ?
 - send in the marines to secure supply !
- A global “Oil Depletion Protocol” ?
 - sharing equitably
 - an oil equivalent of the Kyoto Protocol

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Climate Change

- The Safe Climate Zone

Average temperature over past 10,000 years = 15°C
 IPCC (2007) for 21st century: 2-3°C with band of uncertainty
 4.5°C
 1.5°C
 21st century: very rapid rise

The Holocene is 10,000 years of climate stability that enabled humanity to develop states we know our cultures today

Mesopotamia founders
 Agriculture emerges
 Vikings in Greenland
 Medieval Warm Period
 Little Ice Age (15-18th centuries)
 1940
 Younger Dryas

Number of years before present (quasi-log scale)

Source: Robert Corell, Heinz Center
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The World Has Warmed

Annual Trend 1901 to 2005
 Deg C/Century

Rank	Year
1	2005*
1	1988
3	2002
4	2003
5	2004
6	2001
7	1997
8	1990
9	1995
10	1999
11	2000
12	1991
13	1987
14	1986
15	1994
16	1983
17	1996
18	1992
19	1989
20	1993

2008: 10th warmest
 Widespread warming has occurred. Globally averaged, the planet is about 0.75°C warmer than it was in 1860
Northern polar temperatures are currently increasing at twice the rate of global mean trends.

Source: S. Solomon, NOAA, Remuneration & Fring, Scripps, 2008
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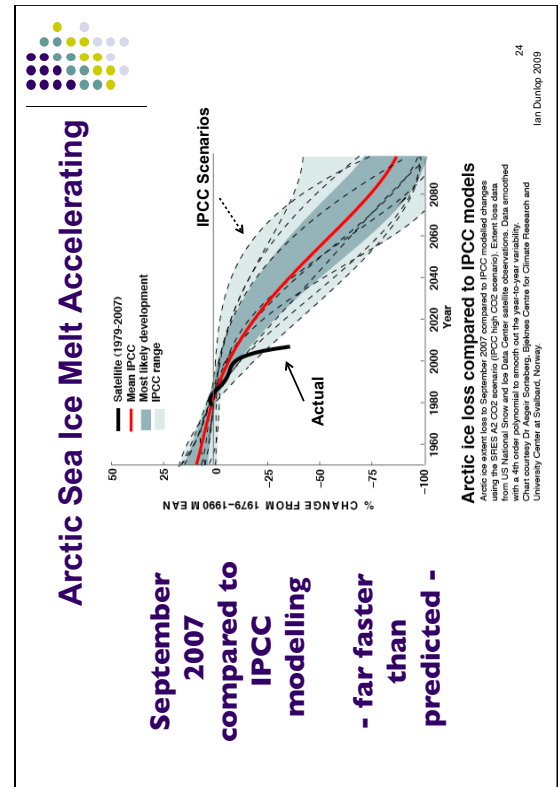
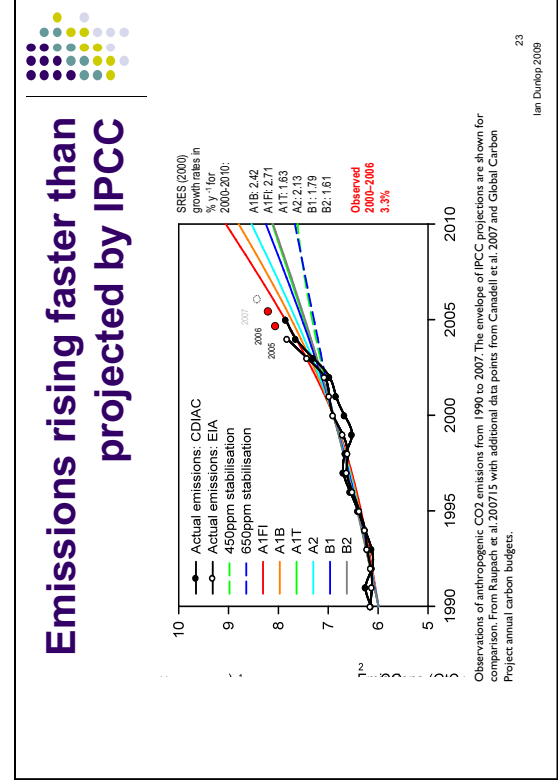
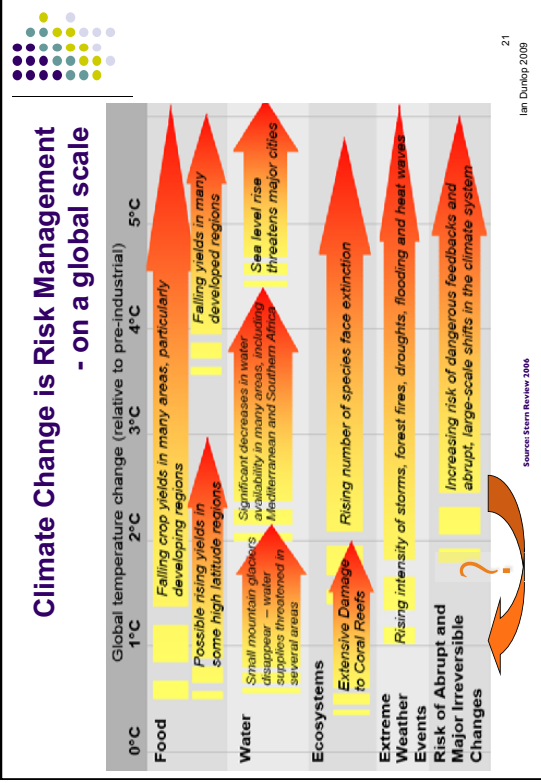
Warming trend has not stopped

- local variations occur regularly

NDSC Global Land-Ocean Temperature Anomaly Relative to 20th Century Avg


Similar variations occurred:
 - 1987 – 96
 - 1977 – 89 etc.

Source: Eschling et al., GRL, 2008; Solomon NOAA 2008
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Himalayan Ice-Sheet Loss

- severe water shortage for 2 billion people

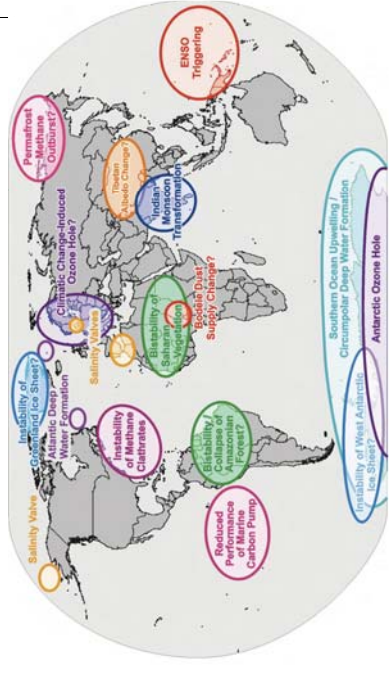


"Glaciers in the Himalaya are receding faster than in any other part of the world ---
--- the likelihood of them disappearing by 2035, and perhaps sooner, is very high if
the Earth keeps warming at the current rate"

Source: IPCC-AR4, 2007

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Potential Global Tipping Points

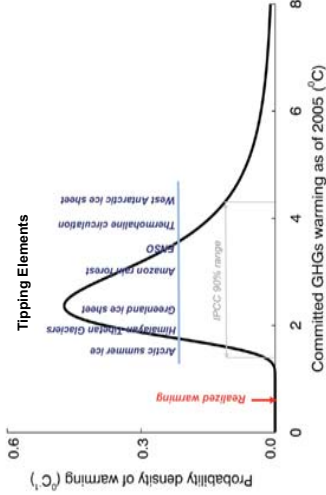


Source: Scheffbauer, after Lenton et al. PNAS, 2008

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Committed Warming as of 2005

- probably 2.4°C, range (1.4 to 4.3°C)



Source: Ramanathan & Feng 2008 PNAS

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Uncertainty is no excuse for inaction

"If you wait for 100% certainty on the battlefield, something bad is going to happen."

General Gordon R. Sullivan, former Chief of Staff, US Army.
National Security & the Threat of Climate Change - CNA Corporation 2008

Bad things are happening:

- European Heatwave 2003
- Hurricane Katrina, New Orleans 2005
- Greek Bushfires 2007
- Californian Bushfires 2007
- Cyclone Sidr, Bangladesh 2007
- Cyclone Nargis, Myanmar 2008
- Darfur, ongoing extreme drought
- North Queensland floods, 2009
- Victorian Bushfires, 2009

- None can be put down to global warming exclusively, but all are in line with its forecast evolution -

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Stabilisation Risk

- Current global greenhouse gas concentration is:
 - 387 ppm CO₂
 - 455 ppm CO₂e - including other gases
 - increasing at around 2ppm per annum
 - temporarily offset by aerosols, reduces this to 375 ppm CO₂e
- Current political negotiating range based on:
 - atmospheric carbon stabilisation at: 450 – 550ppm CO₂e
- Risk assessment:
 - 450 ppm is presented as equating to 2°C global mean temperature warming above pre-industrial
 - the analysis actually says 450 ppm gives at:
 - 26-78% chance of exceeding 2°C, say 50% on average
 - 4-50% chance of exceeding 3°C, say 25% on average
 - 0-34% chance of exceeding 4°C, say 17% on average

Even if 2°C were the right target, would you fly in an aircraft with a 50% chance of reaching its destination ?

Why do so with Climate Change ?


Source: Stern Review 2006, Meinhausen 2006
Ian Dunlop 2009 29



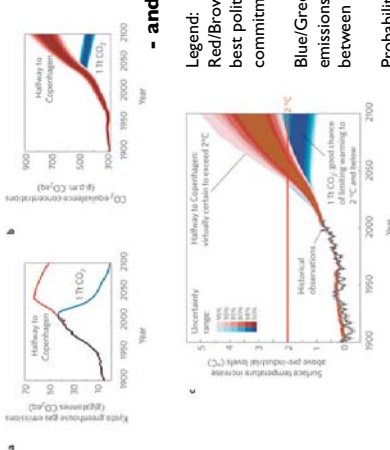
Temperature Rise Implications

- 1°C
 - Destruction of Arctic ecosystem, possibly triggering tipping point
 - More frequent, intense heatwaves & extreme fire events
 - Ongoing drought – for example Australia, sub-Saharan Africa, western USA
 - Shift retreat of mountain glaciers – Himalayas, Andes, Rockies, Europe etc.
 - Drying of Eastern Amazon, regular droughts, fires & large carbon emissions
 - Fresh water eliminated from 1/3 of global land surface by 2100
 - Low-lying states & coral reefs facing extinction due to bleaching
 - Accelerating coastal erosion
- 2°C
 - Large feedback loops triggered in oceans, ice-sheets, permafrost, forests & soils
 - Possible disintegration of Greenland & West Antarctic ice-sheets, leading to 5-10 metre sea level rise
 - Extinction of 15-40% of plant & animal species
 - Dangerous ocean acidification
 - Increasing methane release
 - Widespread drought & desertification – Africa, Australia, Mediterranean Europe, western USA
- 3°C
 - Northern hemisphere free of glaciers & ice-sheets – several more metres of sea level rise
 - Semi-permanent El Niño conditions
 - Extensive melting of permafrost with large-scale carbon dioxide and methane release
 - Possible tipping point for ocean-bed frozen methane deposits, leading to severe temperature escalation
 - Amazon turns to savannah grassland
 - Increased extreme weather events

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Best Global Emission Reduction Commitments Guarantee Temperature Increase Above 2°C



- and the loss of all coral reefs

Legend:
Red/Brown = implication of current best political emission reduction commitments
Blue/Green = implication of limiting emissions to 1 trillion tonnes CO₂ between 2000 and 2050

Probability ranges shown for each case 31
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Urgency - time for realism

- Current global negotiations are based on outdated science
- Latest science suggests 2°C temperature rise is far too high:
 - non-linear effects are already occurring at 0.8°C rise
 - tipping points may be already committed
 - we are probably well into the danger zone already
- The new objective, for a safe climate - restore Arctic summer sea ice
 - stabilisation target - around 300ppm CO₂
- This requires developed world emission reductions of:
 - 45-50% by 2020, not 5-25%
 - 95-100% by 2050, not 50-80%
- A far greater task than is being acknowledged politically or corporately

- But we have the solutions, given the will -


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Current Warnings

- **IPCC 4th Assessment Report 2007**
"Warming of the climate system is unequivocal, ----Most of the observed increase in global atmospheric temperature since the mid-20th Century is very likely due to the observed increase in anthropogenic GHG concentrations. ----"
- **IARU Climate Science Congress, Copenhagen, Synthesis Report, June 2009**
"Many key climate indicators are already moving beyond the patterns of variability within which contemporary society and economy have developed and thrived. ---- With unabated emissions, many trends in climate will likely accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts."
- **Climate Change 2009 – Faster Change & More Serious Risks – released by Penny Wong 3rd July 2009**
"The climate system appears to be changing faster than earlier thought. ---- Uncertainties still surround some important aspects ----. However, the majority operate in one direction – toward more rapid and severe climate change and thus toward more costly and more dangerous impacts."
- **NASA, US Naval Research Laboratory study, July 2009 (UK Guardian Report)**
"World will warm faster than predicted in next five years ---- due to increasing human emissions, the upturn in the solar cycle and re-emergence of the El Nino Southern Oscillation."
- **US National Oceanic & Atmospheric Administration (NOAA), July 2009**
"The world's ocean surface temperature was the warmest on record for June 2009 ----. The combined average global land and ocean surface temperature for June was second-warmest on record. (records began in 1880)"
- **New Scientist 17th August 2009 – National Oceanographic Centre, Southampton University**
"It's been predicted for years, and now it's happening. Deep in the Arctic Ocean, water warmed by climate change is forcing the release of methane from beneath the sea floor – (Svalbard Archipelago, north of Norway)."

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Why are the warnings ignored ?

Garmaut Climate Change Review 2008

- Vested interests & power structures maintain the status quo
- Short termism & incentives prohibit long-term thinking
- Ideology & Fundamentalism blunts the senses
- Managerialism triumphs over leadership
- Technology will save the day

But this challenge will not be solved by traditional political compromise or incremental change to business-as-usual

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We face a Global Sustainability Emergency

"This is an emergency and for emergency situations we need emergency action!"
Ban Ki-Moon, UN Secretary General 7th November 2007


"World leaders need to take action on the energy crisis that is taking shape before our eyes. ----We need to act before crisis turns into catastrophe!"
Mohamed El Baradei, Director General, IAEA Financial Times, London, 24th July 2008

"The world's energy system is at a crossroads. Current global trends in energy supply and consumption are patently unsustainable – environmentally, economically, socially. ---- It is not an exaggeration to claim that the future of human prosperity depends on how successful we tackle the two central challenges facing us today: securing the supply of reliable and affordable energy; and erecting a secure, efficient and sustainable energy system that meets the world's energy needs. ----What is needed is nothing short of an energy revolution."
International Energy Agency, World Energy Outlook 2008 12th November 2008

"The science is clear. Global emissions must peak in less than a decade to avert the worst consequences of climate change".
Ban Ki-Moon, UN Secretary General, World Business Summit on Climate Change, Copenhagen, May 2009




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Global Emergency Action - what does it mean?

- A Re-construction Programme akin to:
 - Mobilisation of US, UK, German economies on war-footing pre-WW2
 - US response post-Pearl Harbour
 - Marshall Plan for re-construction of Europe post WW2
- Rapid change can occur with the right incentive:
 - we now have that incentive
- Financial Crisis
 - an opportunity rather than a problem

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Emergency Action

- technical components

- Rapid phase out of high-emission assets
 - unless carbon can be safely sequestered quickly, which is unlikely.
- Major, nation-building, investments in:
 - Energy conservation & efficiency
 - Renewable energy
 - Latest generation nuclear
 - Transformative urban re-design, efficient public transport
 - High-speed broadband
 - Low-emission technologies
 - Terrestrial Carbon Sequestration
 - halt de-forestation, accelerate soil sequestration & re-forestation, farming practices etc.
- Technology transfer & financial support from developed to developing world
 - innovative technology may enable developing world to "leapfrog" developed world

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Our Great Opportunity

- for our current way-of-life is unsustainable

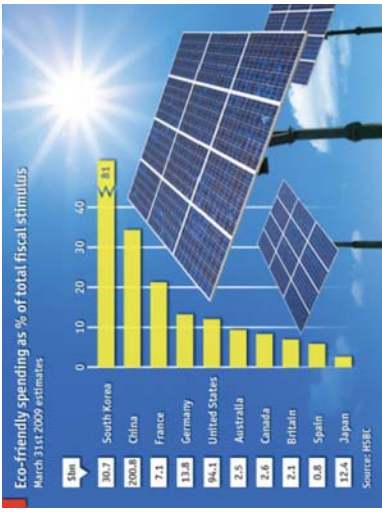
- Mobilisation to establish sustainable, resilient societies
 - conventional economic growth is untenable
- Re-defining success
 - based on long-term sustainability, not maximising consumption
- Re-designing markets
 - based on enhancing the "Commons", not short-term profit maximisation
- New forms of community involvement & democratic structure
 - essential given the extent of change required
 - traditional elites unlikely to provide leadership
- Developed / developing world cooperation
 - new paradigm built around climate / energy solutions
- Business & governance models re-structured
 - incentives re-focused
- Technology is critical
 - combined with changing values
- Peak Oil & the Financial Crisis
 - essential circuit-breakers to trigger a sustainability transformation
 - not an excuse for inaction

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Our Future - the Low Carbon Economy

- why are we wasting this opportunity ?



Country	Percentage (%)
China	31
South Korea	20.7
China	20.9
France	7.1
Germany	13.8
United States	9.1
Australia	2.5
Canada	2.8
Britain	2.1
Spain	0.8
Japan	12.4

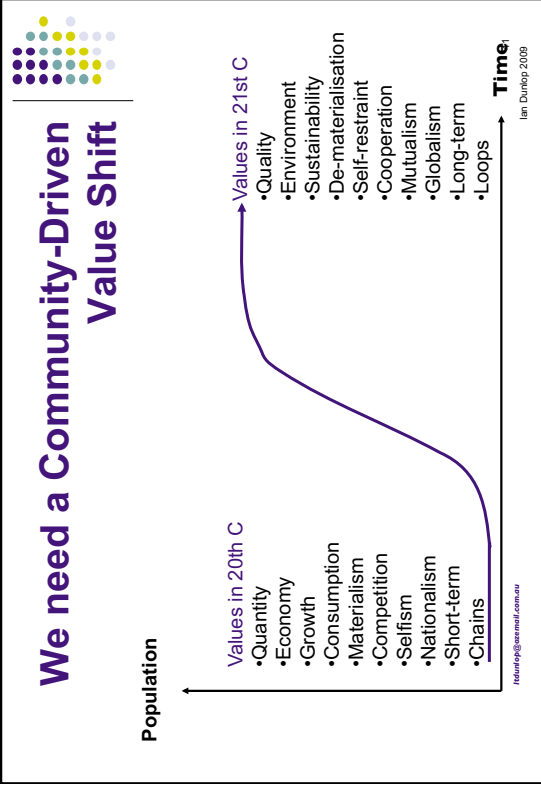
Source: HSBC
Ian Dunlop 2009



Critical Policy Elements

- Set key parameters (eg targets) based on science
 - not on a political view of the "art-of-the-possible"
- Acknowledge this is an emergency needing an emergency response
 - not incremental change to "business-as-usual"
- Base response primarily on moral & ethical grounds, not economics
 - economics is valuable to set the most efficient path, but not as determinant of targets
- Balanced portfolio of solutions, focusing on new opportunities
 - rather than shoring up and compensating established vested interests
- Genuine global leadership, with concrete proposals for developing world
 - convergence toward global per capita carbon & oil allocations
- Focus on integrated solutions
 - climate change, peak oil, water & food shortages, financial crisis are all inter-related.
- Honestly explain & educate community on implications of the emergency
 - to build commitment for action
- Take rapid, decisive action -

"All progress depends on not being reasonable"
George Bernard Shaw
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The Business Case

**“It is no use saying “We are doing our best” .
You have got to succeed in doing what is necessary”**

Winston Churchill

Time for real leadership
Please Join In

Thank you

itdunlop@ozemail.com.au
www.safecimateaustralia.org

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Local Government Climate Change

Amy Lovesey
Climate Change Mitigation & Adaptation Project Officer

Local Government Association of NSW | Shires Association of NSW

Local Government Association & Shires Associations of NSW

- Advocacy, Education, Training & Assistance
- Understanding Sustainability for Councillors Training
- Future projects may include NRM and Climate Change Training for Councillors

Local Government Association of NSW | Shires Association of NSW


Environment Team 2008

Climate change is everybody's business

- Community Health & Social Planning
- Planning, Assets & Infrastructure
- Open Space, Bushland & Biodiversity
- Rangers & Traffic Services
- Policy Officers, Managers & Directors
- Legal Advice


Newcastle 2007 by Marj K

NSW Coastal hazards:
\$200 million/year
200,000 buildings vulnerable



LGSA Support

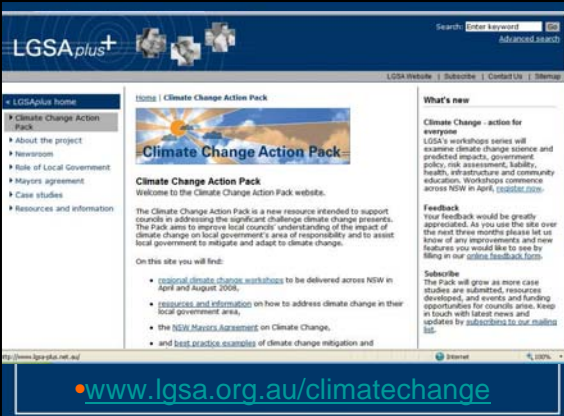
- Climate Change Summit ✓
- Needs Analysis Survey ✓
- Climate Change Action Pack ✓
- Regional Workshops ✓



Public Jetty Woy Woy by Phil Watson 2009

Climate Change Action Pack:

- Case studies; links; news; events; checklist of actions; action guides; templates; reports; subscribe for news.
- Continually updated, reviewed and revised with feedback



LGSA *plus*

Search:

LGSA Website | Subscribe | Contact Us | Sitemap

Home | Climate Change Action Pack

Climate Change Action Pack

Welcome to the Climate Change Action Pack website.

The Climate Change Action Pack is a new resource intended to support councils in addressing the significant challenge climate change presents. The Pack aims to improve local councils' understanding of the impact of climate change on local government's area of responsibility and to assist local government to mitigate and adapt to climate change.

On this site you will find:

- **regional climate change workshops** to be delivered across NSW in April and August 2009.
- **resources and information** on how to address climate change in their local government area,
- the **NSW Mayors Agreement** on Climate Change,
- and **best practice examples** of climate change mitigation and


What's new

Climate Change - action for everyone
 LGSA's workshops series will examine climate change science and predicted impacts, government policy, risk assessment, liability, health, infrastructure and community education. Workshops commence across NSW in April. [SUGGEST IDEAS](#)

Feedback
 Your feedback would be greatly appreciated. As you use the site over the next three months please let us know of any improvements and new features you would like to see by filling in our online [Feedback Form](#).

Subscribe
 The Pack will grow as more case studies are submitted, resources developed, and events and funding opportunities for councils arise. Keep in touch with latest news and updates by subscribing to our [mailing list](#).

www.lgsa.org.au/climatechange



'Climate Change Action Planning for Local Government'

- 4 local councils or ROCs as case studies
- Whole-of-council approach to adaptation planning
- Workshops with stakeholders to develop a *Local Climate Change Action Plan*
- Training package to be made available online
- Climate change as core business & across council




Further information

- Visit the Climate Change Action Pack:
www.lgsa.org.au/climatechange
 - Subscribe for Climate Change News
 - Submit a case study
 - Provide feedback
- Subscribe to sustainablenet discussion forum:
Email: robert.verhey@lgsa.org.au
- Get in touch: Email: amy.lovesey@lgsa.org.au

CITY OF SYDNEY
city of villages

Nik Midlam
City of Sydney carbon initiatives
August 2009

 *Sustainable Sydney*

Let's make Sydney
green, global and connected.

CITY OF SYDNEY
city of villages



 a city of villages

Let's make Sydney
green, global and connected.



www.know-the-number.com

Greenhouse Gases in our Atmosphere Carbon Counter

3,646,292,989,447

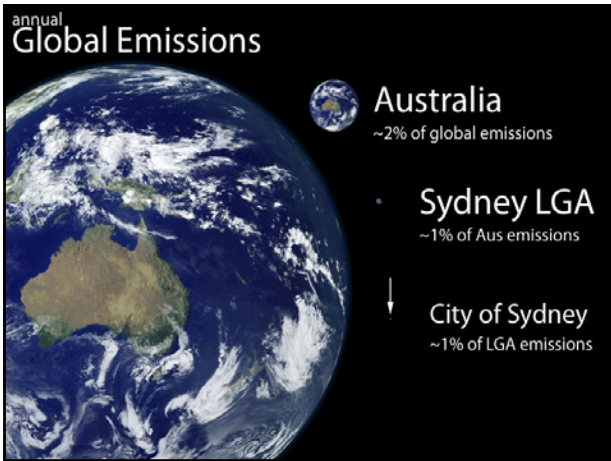
Metric Tons Today

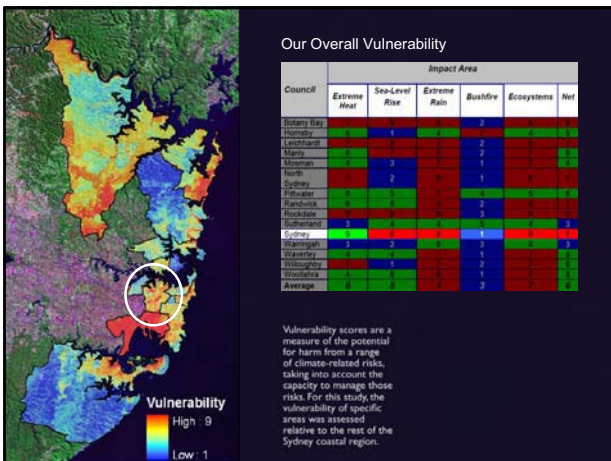
Greenhouse Gases Cause Climate Change

Our climate is changing. The scientific evidence is clear: our planet is getting warmer. Greenhouse gases (GHGs) - including carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons - are increasing rapidly in our atmosphere. Human activity such as burning fossil fuels and deforestation is a major source of these gases. Our choice will lead our future.

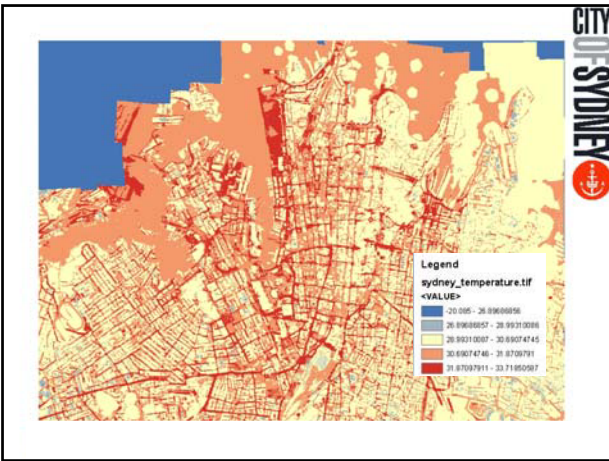
News

- June 10, 2009 Green + Green = 7
- February 19, 2009 Time is tight for green-tech stimulus
- February 1, 2009 Investing in Climate Change







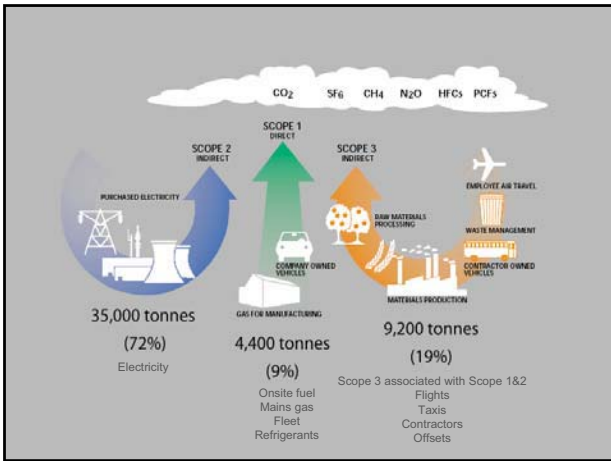




CITY OF SYDNEY
city of villages

- By 2008 the City will have zero net emissions, making us the first carbon neutral council in Australia
*Resolution of Council 20 November 2006
Environmental Management Plan (Action e06)*
- Avoid/reduce emissions by 20% by 2012 based on 2006
*Resolution of Council 18 February 2008
Local Government Emissions Trading Scheme*
- Use 100% GreenPower
Resolution of Council 23 October 2006

Let's make Sydney green, global and connected.

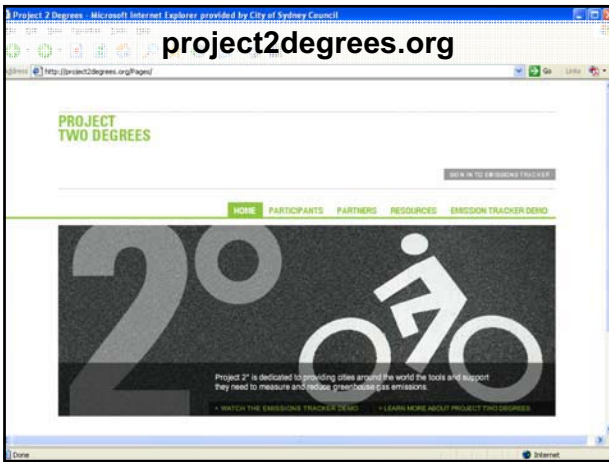


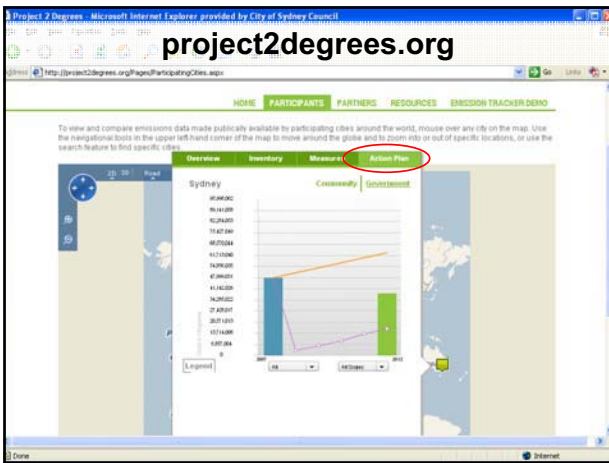
www.cityofsydney.nsw.gov.au/Carbon

The diagram shows the following carbon reduction strategies and their impact:

Strategy	Impact (TCO ₂ e)
Measure	50,974 TCO ₂ e
Avoid	Fleet downsize, lights off etc
Reduce	Energy efficiency
Switch	43,253 TCO ₂ e GreenPower
Offset	7,721 TCO ₂ e offsets

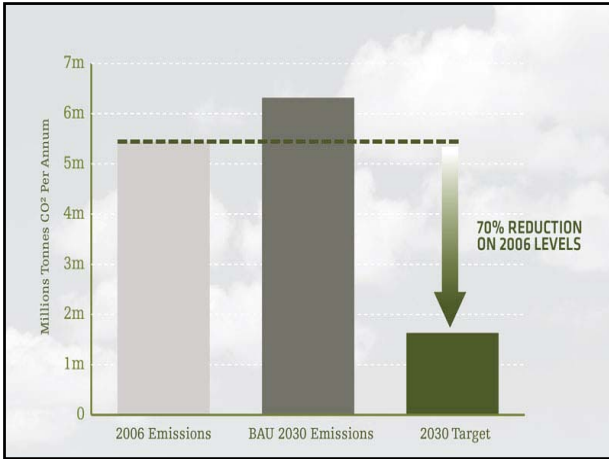
Let's make Sydney green, global and connected.







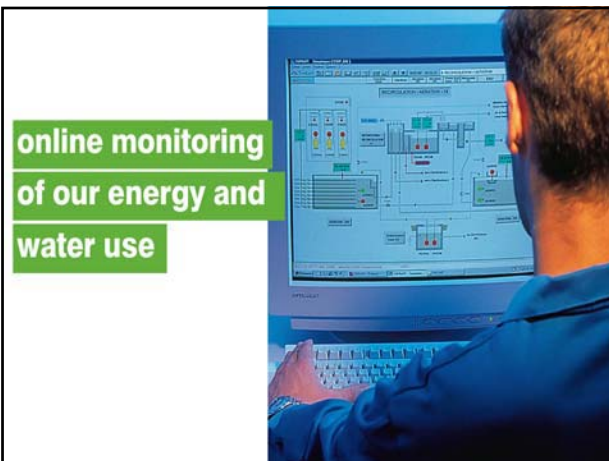


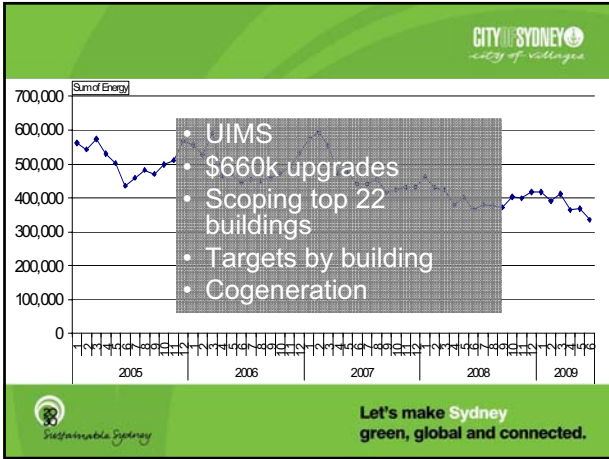


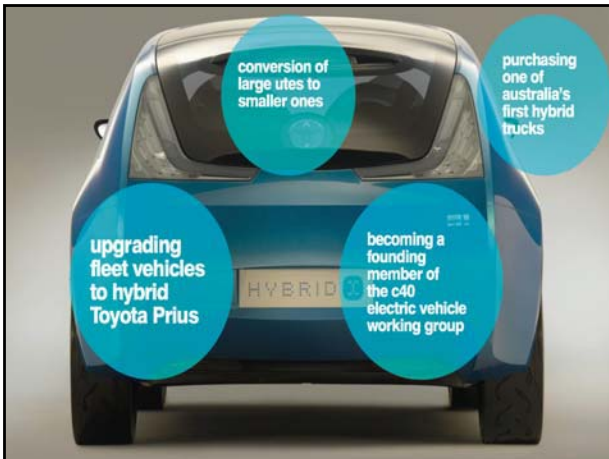










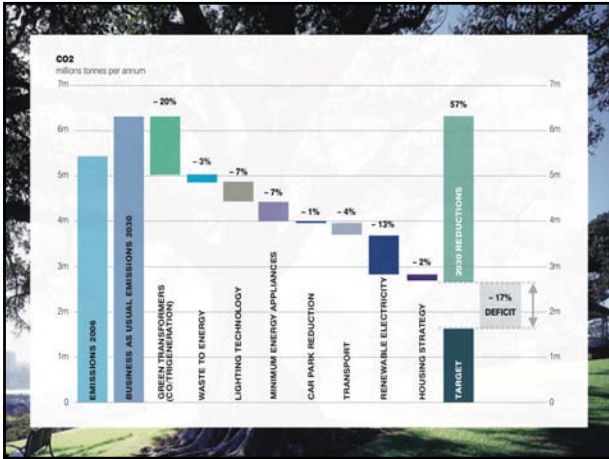


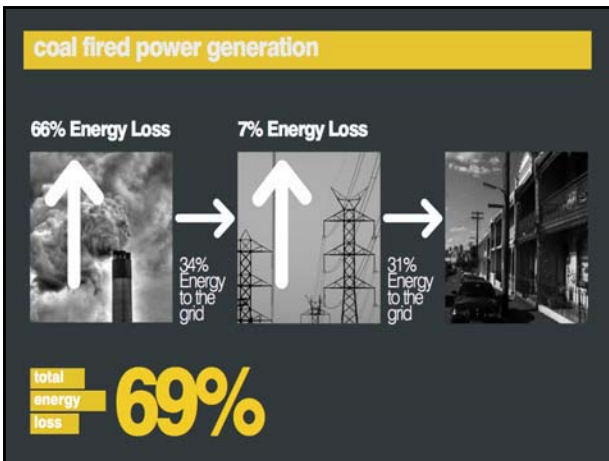


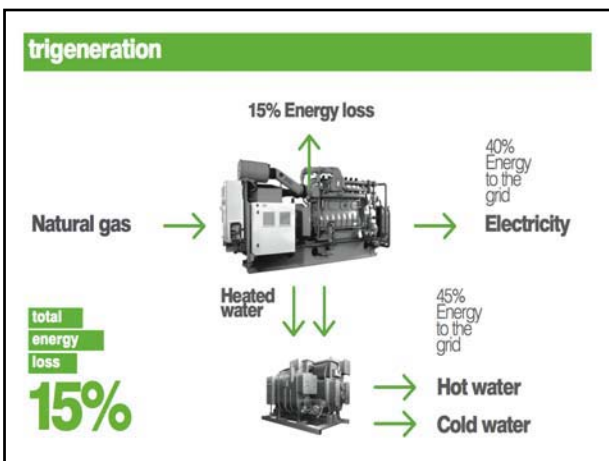






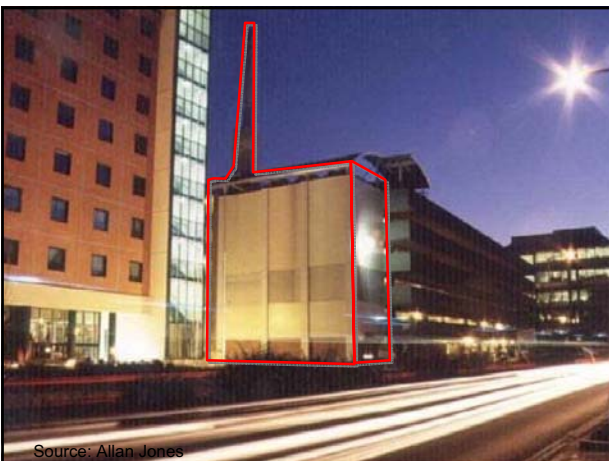


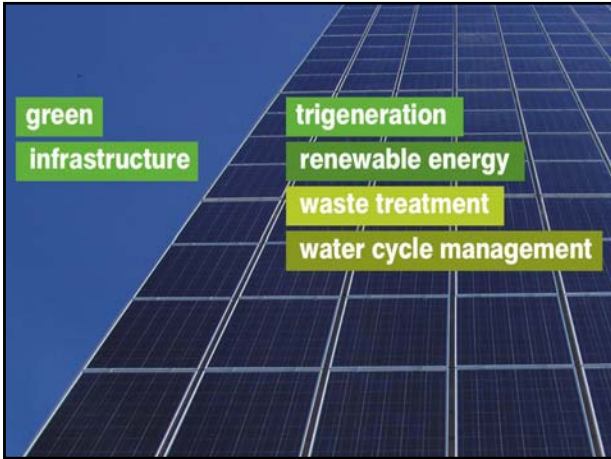


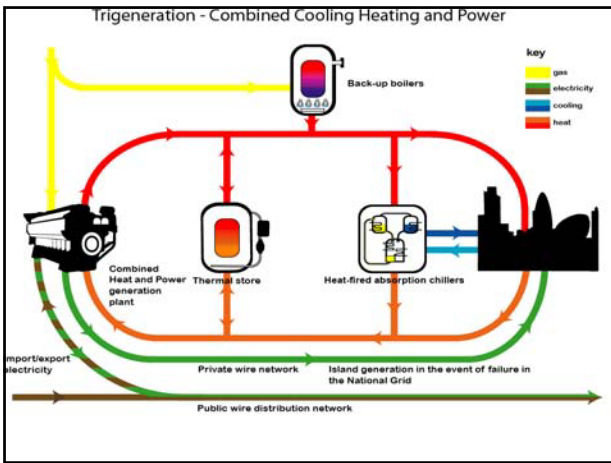








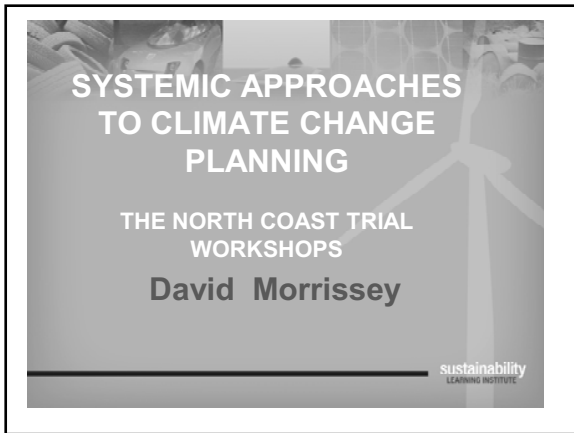






Bourke Street & Bowden Street intersection – cyclist priority





Systemic Approaches to Climate Change Planning

- Build stakeholder agreement and ownership
- Address relationships between CC, infrastructure, people, and financials
- Unlock paralysis of un-knowing
- Develop rolling long term planning
- Cut through complexity and uncertainty
- Engaging, fast, effective

www.sustainabilitylearning.com.au 2

Systemics: its the links that are critical

www.sustainabilitylearning.com.au 3

Local CC Workshop pilots

- 5 North Coast trials
- 2.5 hour workshops
- 10 – 15 people at each
- Locales:
 - Wyong (3)
 - Bellingen
 - Grafton
 - Yamba

Explaining the workshop



Process

- Identify some key topics
- Start mapped conversations from them
- Discover emergent issues
- Short plans for each one
- Assess on 3 Horizons chart
- Handover: who owns the output and will take ownership of future process?
- Next steps?

Workshops

- Participatory, not passive
- Diversity a positive value
- Some introductory science
- But otherwise actions
- Outputs:
 - Draft action plans, over 3 time horizons
 - Engagement and agreement
 - Commitment to continue

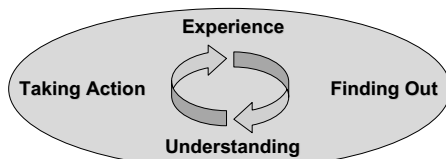
A little bit of the science



Workshop Overview

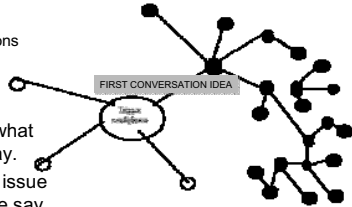
AGENDA :

- Overview on climate change.
- Your local council and climate change.
- Discuss local issues in a "Conversation Map."
- Analyze issues imbedded within the map.
- Start to create a plan for action.

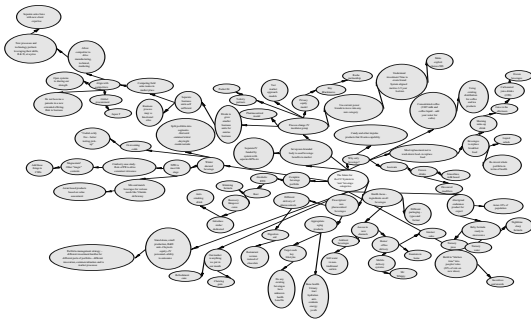


Conversation Mapping

- It's a conversation that you write down.
 - You can ask questions
 - You can disagree
 - You can describe situations
- The key is to write what you normally just say.
- Talk about the core issue or what other people say about it.



Conversation Map Pattern

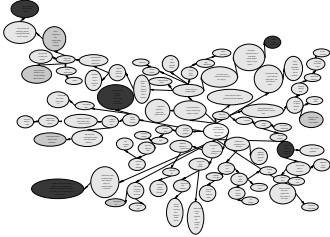


Wyong Conversation Mapping



Emergent Issues

- Search the map for themes or issues that are being expressed, probably with different words, in a few different places.



“WHAT... HOW... WHY”

“What are ways we can use this issue to improve our community’s efforts to address climate change?”

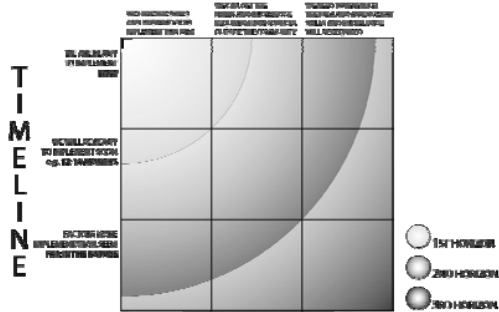
- Each statement answers the following three questions:
WHAT is the improvement activity?
HOW can we do it?
WHY is this improvement of value to our community?

Yamba Conversation Mapping

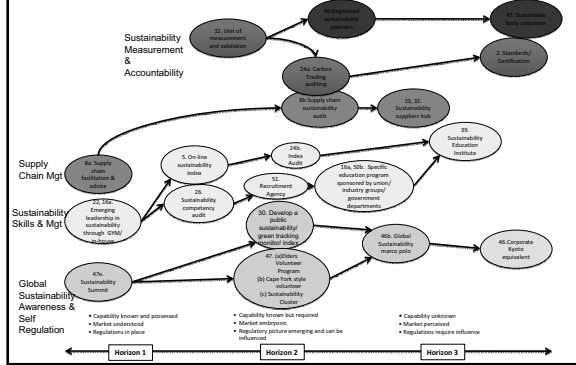


3 Horizons Matrix

CAPABILITIES



Strategic Staircase from 3H



Bellingen Plans x 3 Horizons



Bellingen group with map and 3 H plan.



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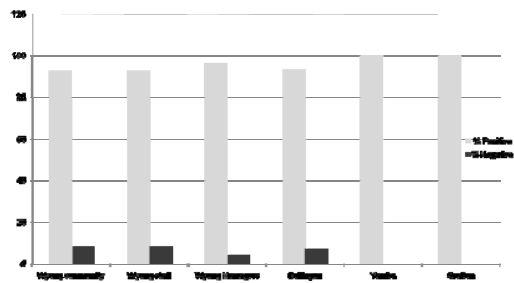
Our Evaluation

- Across 5 workshops
- 68 people
- Two presenter teams
- 2.5 hours each
- Written and verbal feedback
- Not including actions emerging or post-workshop implementation.

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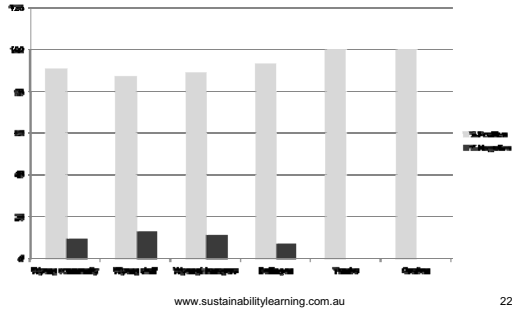
Trial results: overall response is massively positive



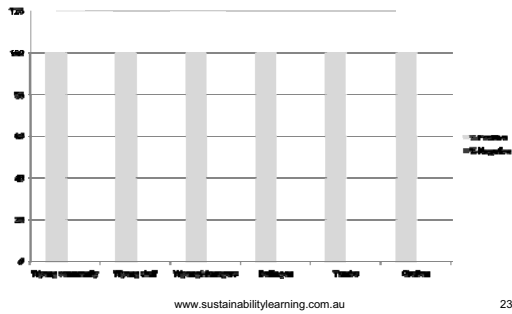
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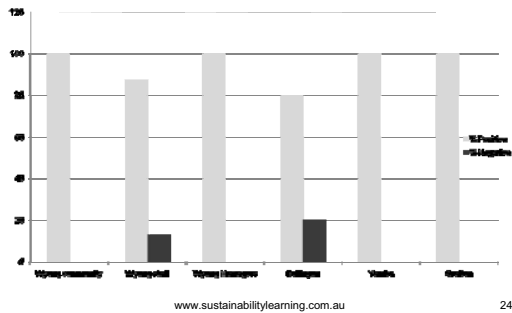
Did the workshop address issues of concern to you?



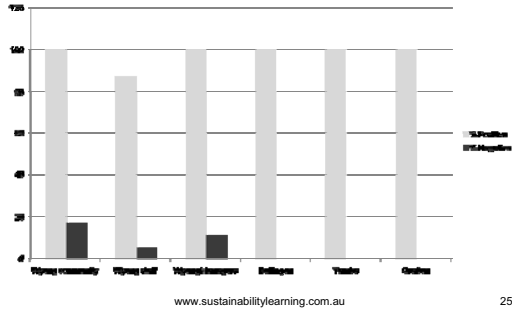
Did you find the workshop activities engaging?



Deliver good results (actions, sorting, timing)?



Favour this sort of workshop again?



Best Aspects ?

- The process – conversation mapping esp.
- New and diverse ideas
- Team interaction
- Potential for future use
- Active involvement
- Maximising input
- Meet like minded people

Improvements?

- More background
- More time to develop actions
- Engage more people
- Mix the group (vs Wyong model)
- Do it over 2 days, the second with community the second as Council
- Think more about audiences

Compared to other workshops?

- Not hijacked by any person or interest
- Very engaging and active
- Great atmosphere and a new technique
- Builds actions quickly
- Achieved a great outcome in a brief time
- Very productive
- Great!

Future workshops?

- More in-Council
- Energy, water, waste management
- More on CC to it an everyday issue
- Current actual physical issues
- Specifics such as coastal erosion
- Social and cultural impacts

Outputs

- Tangibles
 - A draft plan: actions, over time, with some detail of what, how and why
 - Scheduled on capability x timeline
- Intangibles
 - Group connections and shared info
 - Motivation and confidence
 - A method people can use
 - Systemic focus not 'silos'

Emerging initiatives

- Gaining more knowledge at the local level
 - How the science translates locally
 - Local measurements
- Establishing local CC group and/or Committee to carry forward
- Links to all aspects of Council planning
- Both mitigation and adaptation
- Thinking longer term
- Engage community more

Some conclusions

- High level of acceptance
- High utility
- Current format good, some tweaking
- Some more science upfront
- More support to local marketing
- Support to follow up measures
- Both widen and go more specific

Our intentions

- More CC workshops
- Other aspects of Sustainability
- Widen to other locales
- More science... .but it must be localised
“what does it mean for us here?”
- Add a session on “taking your plan forward”
- Link to Councils’ other planning

Systemic approaches...

- Engage stakeholders
- Participatory planning
- Enabling in complexity and uncertainty
- Capitalise on diversity
- Work with constant change
- Transform thinking and practice
- Creativity with collaboration

Thanks to...

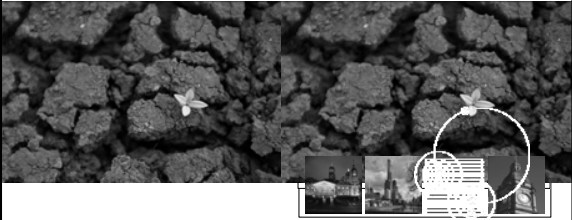
- People, Councillors, Staff and Managers at Wyong, Bellingen, Yamba and Grafton
- Alex Salz, JP Hailer and the GreenMBA
- Amy Lovesey and LGSA

David Morrissey

david@sustainabilitylearning.com.au

0414716450

AECOM



City of Melbourne – Climate Change Adaptation Strategy
 Responding with Resilience
 Sydney Coastal Council Group
 30 August 2009

AECOM

Climate Change: What are local governments liable for?

- Risk of incurring legal liability if local governments “**unreasonably** fail to take into account the likely effects of climate change” (England 2007).
- Current threshold for ‘reasonable’ is high, but changing and potentially expanding rapidly
- Ongoing key question:


Have local governments adequately taken into account our growing vulnerability to the increasingly certain impacts of climate change?

AECOM

Settlement impacts

Settlements can be affected by climate change in 3 major ways:

- The **economic sectors** affected because of resource productivity or changes in market demand for goods and services
- Aspects of **physical infrastructure** and industries may be directly affected
- **Populations** affected by extreme weather, health status or migration.



Source: IPCC 4AR 2007

Settlement vulnerability

Potential key vulnerabilities:

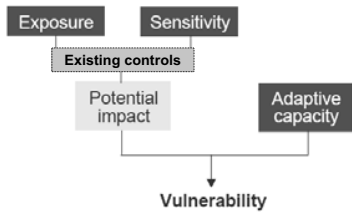
- **Magnitude** of impacts
- **Timing** of impacts
- **Persistence & reversibility** of impacts
- **Likelihood** of impacts & vulnerabilities and **confidence** in those estimates
- Potential for **adaptation**
- **Distributional** aspects of impacts & vulnerabilities
- **Importance** of the system at risk



Source: IPCC 4AR 2007

Vulnerability

VULNERABILITY AND ITS COMPONENTS



Source: Commonwealth, 2005

CoM Risk Management Goals

*"The outcomes of an effective risk treatment plan are **knowledge of the risks CoM can tolerate** and a system that **minimises those risks that it cannot tolerate**"*



Identifying Risks

We asked:

- What can happen?
- When and where?
- How and why?

?





Building Resilience

Adaptation measures are responses taken to actual or expected changes in climate to increase resilience to their impacts

Loss prevention – actions to reduce vulnerability to climate change

Loss sharing – spreading the risk of loss among a wider population (eg insurance)

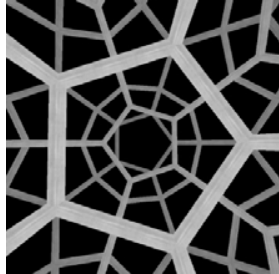
Behaviour modification – eliminating the activity or behaviour that causes climate change

Relocation – moving vulnerable population or systems away from hazards induced by climate change



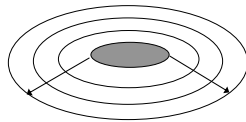
Operational/Service Themes

- Water
- Transport and Mobility
- Buildings and Property
- Social, Health, Community Services & Public Realm
- Business and Industry
- Energy and Communication
- Emergency Services



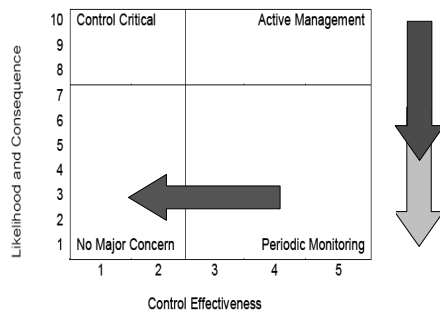
Potential Extreme Events for CoM

- *Intense rainfall and wind storm events*
- *Extreme heatwaves and bushfires*
- *Drought and reduced rainfall*
- *Sea level rise*



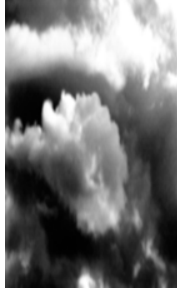
Risk Management

Likelihood x Consequence x Control



Intense Rainfall and Wind Storm – Critical Risks

- **Mass public stranding** due to flooding or storm damage
- **Adverse health impacts** due to hindered emergency response services by storm and flood impacts
- **Public injury or death** due to flash flooding or storm damage
- **Damage to property and infrastructure**
- **Injury and death due to falling trees**



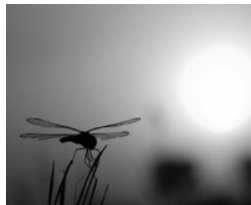
Intense Rainfall and Wind Storm - Adaptation Strategy

- **Better drainage** and stormwater capture
- Early public **warning** system
- **Integrated emergency services** and stakeholder response
- **Better public knowledge** and safe behaviour
- **Minimise debris** potential
- Increased **infrastructure resilience**

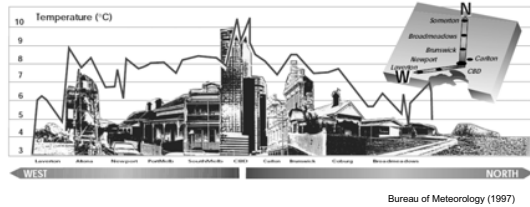


Extreme heatwaves and bushfires – Critical Risks

- **Increased heat stress death/ illness**
- **Stranded PT passengers** as trains and trams are delayed or cancelled in hot weather
- **Power Blackout**
- **Increased violence/ antisocial** behaviour causing increased public nuisance and hospital admissions
- **Increased maintenance costs** of assets and infrastructure
- **Disruption of outdoor events** due to hot weather
- **Reduced use of public realm** during heat waves



Urban Heat Island Effect



Extreme heatwaves and bushfires - Adaptation Strategy

- **Cooler surroundings**, inside and out, through improved infrastructure
- **Better public knowledge** and safe behaviour
- Heatwave **early warning** system
- **Integrated emergency services**



Drought and Reduced Rainfall - Adaptation Strategy

- **Reduce Demand**
- **Increase Supply**
- **Diversify Water Supply**
- **Maximise Water capture**
- **Maximise Usage efficiency**
- **Improve environmental flows**, quality and quantity



Stormwater volumes

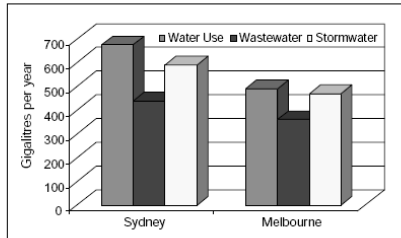


Figure 1: Water supply, stormwater and sewage flows in Melbourne and Sydney

Drought and Reduced Rainfall – Critical Risks

- **Insufficient urban water supply**
- **Biodiversity impacts** in stressed waterways
- **Increased injury** due to hard sporting grounds
- **Loss of social cohesion** due to inability to fully utilise sporting grounds in drought period



Sea Level Rise – Key Risks

- **Property damage** from inundation in low lying areas
- **Costly infrastructure damage** and deterioration due to increased inundation in low lying areas
- **Injury and death** due to increased flooding
- **Stranding of residents** due to increased flooding
- **Decreased waterfront property values** due to increased risk of inundation and flood
- **Mental stress** for affected residents
- **Potential CoM liability** if damages considered reasonably avoidable through planning provisions and authority

Sea Level Rise - Adaptation Strategy

- **Future proof planning**, sensible precautions and contingencies for proposed future developments, potentially restricting development in high risk areas
- **Better protection** for existing, low-lying developments
- **Better flood control** through revised drainage planning
- **Improve resilience** to exposed infrastructure



Key Findings

High value adaptation responses include:

- Cooling the CoM microclimate in the face of rising temperatures
- Increasing diversity of water supply and exploiting opportunities for water efficiency
- Long term development planning that accounts for future climatic changes, particularly sea level rise
- Reduce the extent and incidence of urban flash flooding
- Public awareness of living safely within a changing climate
- Improving emergency response capabilities

Key Priorities

- Maximise stormwater capture and re-use
- Develop and implement a Heatwave Response Action Plan
- Tackle the urban heat island effect
- Actively plan to minimise the consequences of sea level rise
- Develop more sophisticated communication and warning systems to improve public awareness and safety
- Engage with emergency services to develop integrated response scenarios
- Integrate CoM climate change risks into corporate framework



Thank You
Donna Lorenz
Associate Director – Climate Change
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The NSW Climate Consensus Project



Context and rationale

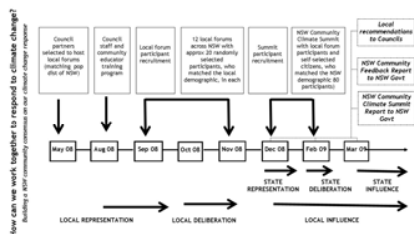
As the need to reduce our greenhouse gas emissions becomes increasingly urgent it is imperative that opportunities are created for informed, active community participation in decision making around our response to climate change.

The NCC had a dream...



- An innovative community engagement approach which:
- Overcomes the weaknesses of traditional forms of community consultation
 - Contributes to open government and robust policy development
 - Builds resilient and adaptive communities through dialogue and collaborative action

A shared decision making approach








Local forums







NSW Community Climate Summit




Project outcomes

- Building the capacity of government and the NCC to engage with our community on the critical issue of climate change
- Giving the wider NSW community a stronger voice in climate change decision making
- Influencing policy and program development on climate change at a local level
- Increasing understanding and changing attitudes
- Connecting and transforming communities through dialogue and deliberation
- Collaborative action on climate change
- Promoting the deliberative democracy approach as an effective community engagement model for environmental decision making



Lessons & reflections for Local Government

- Council partners valued gaining insight from the broader community
- All Council partners felt that community input received has or will improve climate change policies or activities within Council
- Council partners stated unequivocally that they viewed the deliberative democracy approach as an effective community engagement model and would use it again in the future
- A guarantee by decision makers of some level of influence is essential
- Community expectations should be carefully understood and managed
- A big challenge is achieving representation – an adequate lead in time during the recruitment phase is essential
- Deliberative processes can be time and resource intensive; however they can be planned to suit any budget

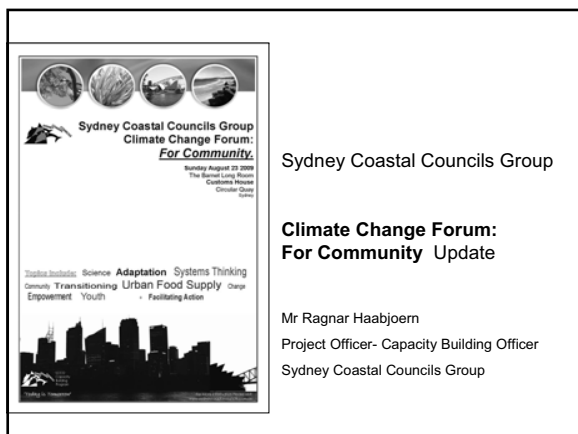


Project roll out

- NCC / DECC handbook on convening deliberative processes (due for release in October 2009)
- Four NCC / DECC training workshops across NSW (October to December 2009) – including two in Sydney
- NCC fee-for-service (2010)

Contact Marnie Kikken on (02) 9279 2466 or at mkikken@nccnsw.org.au for further details



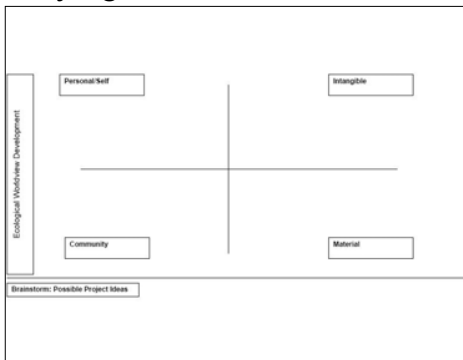




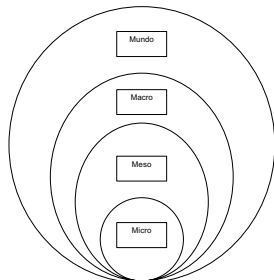
Concerns from the Community



Classifying Concerns



Worldview Synthesising



Integral Vision Analysis
Climate Change Inspired Concerns
I-You

Micro	Meso
•Custodian Training	•Community Action Responses
•Living more simply	•Community awareness of Climate Change
•People not caring enough	•My Children
•Wanting to be empowered	•Pollution of environment
•Stewardship Responsibilities	•Impacts of climate change on community
•Ignorance	
•Apathy	

Integral Vision Analysis
Climate Change Inspired Concerns
I-You

Macro	Mundo
• Current unsustainable Agricultural practices	• Loss of ecosystem services
• Inhumane treatment of animals	• Sea level rise and impacts
• Lack of progress in attitude change across Australia	• Environmental Refugees
• Industry to change current practices/behaviours	• Impact of climate change on future generations
• Wasting of Resources	• Inaction of Community
• Impact of climate change on vulnerable communities (i.e.) lower socio-economic demograph	• Population Growth
• Peoples capacity to implement change	• Impacts on Developing Nations

Integral Vision Analysis
Climate Change Inspired Concerns
I-ITS

Micro	Meso
•Changing diet to vegan/vegetarian	•Extent of general populations lack of knowledge and capacity to act in response to climate change
•How to find more information	•Being better informed
•Discover what is effective action	•Loss of property
•Meat industry producing greenhouse gases	•Inundation
	•Erosion
	•Storm Damage

Integral Vision Analysis	
Climate Change Inspired Concerns	
I-ITS	
Macro	Mundo
•What is actually being done by Business and government to address climate change?	•Future water supply
•Impact of Industrial Farming Practices	•Ocean Health
•Inaction of general population	•Over consumption in Society
•Increased development around the Pittwater region	•Population capacity of the Planet
•Lack of public transport for Northern Beaches area	•Lack of coordinated action across the sectors
•Sea level rise	•Irreversible climate change impacts
•Eco-friendly design for housing	•Resistance to policy changes that address climate change
•Becoming self-sufficient	•Loss of Marine life due to ocean warming and acidification
	•Renewable energy development
	•Waste Reduction
	•Increased recycling initiatives
	•Reducing of meat intake policies
	•No private cars in the CBD (Car tax i.e. London)
	•Preserve the environment
	•Quality of Drinking water
	•Burning of Fossil fuels for energy production
	•Apathy
	•Reducing greenhouse gas emissions

Opportunities and Partnerships for Local Government

The responses were able to be placed in the four groups of:

Learning | Resources | Collaboration | Guidance

Learning

- Sea level rise education for community programs
- Community Consultation – Visioning
- Community Education and Information to create awareness of need to take action Community Leadership Training
- Greater use of Community based media outlets to help transfer of information

Resources

- **Obtain recurrent funding from State and Australian Governments to implement local programs**
- **Investment in Scientific research**
- **Development of a Safer bike networks across the region into the CBD**

Collaboration

- Enhance links to the Community Climate Action Groups across the region
- Strengthening of partnership values between business, community and Local Government
- Stronger Alliance amongst local government areas utilising a mechanism such as the Mayor's Agreement on Climate Change.
- Project Meetings for community by Local Government
- Development of Co-operatives and community Based projects such as Banks to fund local initiatives
- Development of support for Peri urban agriculture

Guidance

- Increased Efficiency Star ratings on New Development

Questions 4 You!

- What are you concerned about?

- How would you like things to be?

Questions ?



Thank you.



The SCCG Capacity Building Program aims to discover, integrate and develop best practice thinking, learning and action for its Member Councils and relevant Stakeholders to be more effective and efficient with Coastal and Estuary NRM, Climate Change Responses and emerging Sustainable Development issues and needs by;

- Raising Awareness**
- Transferring Information and knowledge**
- Increasing Skills and Training**
- Facilitating Coordination and Supporting Member Councils**

For more information please contact:

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