Climate Change Governance by Local Councils: Carbon Mitigation by Greater Adelaide Councils

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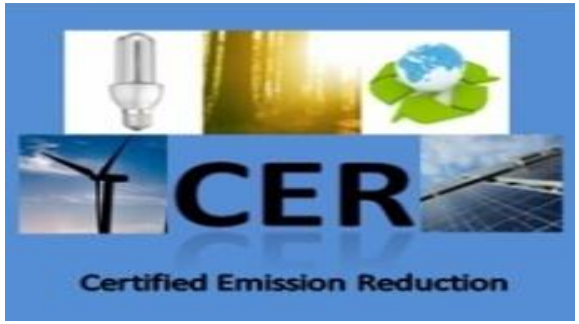
Climate Change Mitigation

- **Mitigation** involves taking actions to reduce greenhouse gas emissions being emitted to minimise the impact from climate change (QLGA, 2009, 58)

- **Mitigation** – actions to reduce greenhouse gas emissions and to enhance carbon sinks i.e. *reduce the extent of global warming* (Intergovernmental Panel on Climate Change-IPCC)



Carbon Mitigation & Local Councils

- ***Cities for Climate Protection*** (CCP) program, 238 councils: corporate & community emissions (Hoff, 2010 – Review of CCP in Australia & NZ)
- ***National Greenhouse and Energy Reporting Act 2007*** – NGERS reports by larger councils (n=10)
- ***Clean Energy Future Act 2011*** & carbon tax of \$23tCO_2-e from 1 July 2012 - higher costs for energy (electricity, gas), fuel, materials etc
- **Local councils** need to assess GHG emissions, meet state govt. GHG targets & address their **carbon liability** in the *Clean Energy Future Act*

Council Responses to Mitigation

*Carbon Neutrality Framework for LG (ICLEI, 2008)
**Mitigating Climate Change: An introductory Guide for Queensland Local Government* (QLGA, 2009)

**Climate Change: ALGA Position Paper and Discussion Document* (ALGA, 2010); *Climate Change Implementation Plan 2010-2014* (ALGA, 2010)
**Towards a National Planning Framework for Climate Change Mitigation and Adaptation* (ALGA, 2011)

*LG Climate Change Roundtable (ACELG, 2011)
**Australian LG and Climate Change* (Pillora, 2011)
* Victoria (Atkinson et al, 2007), *Qld (Burton, 2007)

Council Climate Change Surveys

State-wide Climate Change Surveys of Local Councils

❖**South Australia** (2007, 2008, 2010, 2011) **LGASA, DTEI**
*climate change survey of SA councils (2007)
*energy and carbon footprint audit survey (2008/09)
*State govt. energy, climate change & sustainability survey (2010)
*carbon tax modelling-26 councils measuring emissions (2011)

❖**New South Wales** (2006, 2009, 2010) **LGSA NSW, DECCW**
LGSA. (2006). *Responses to needs analysis survey to identify the climate change adaptation and mitigation needs for local government in New South Wales.* (n=113 NSW councils, 74% response rate)

LGSA. (2010). *Local government needs in responding to climate change in New South Wales, Australia.* (n=82 councils, 54% response)

Urbis. (2010). *Preparing for climate change in NSW: Local government responses to a global problem.* (n=103 councils, 70% response rate)
www.lgsa-plus.net.au/www.html/3637-needs-of-local-government

❖**Queensland** (2012) **USQ & LGIS/LGAQ**

Carbon Mitigation by Councils Project

- Review and benchmark the greenhouse gas mitigation measures implemented by local councils
- Evaluate motives for carbon emissions measures adopted by different local councils
- Identify key council staff and divisions responsible for climate change mitigation
- Assess opportunities for local councils in sustainable technologies and renewable energy

Adelaide Councils Carbon Survey

- Evaluate what **greenhouse gas mitigation** (i.e. energy, water & waste efficiency) **measures** have been adopted by Adelaide local councils & why (i.e. **environmental or business motives**)
- Assess the role of **LG associations,** government **sustainability programs**, & CCP (Cities for Climate Protection) in promoting carbon mitigation
- Identify **opportunities for local councils** in carbon mitigation e.g. sustainable technologies, renewable energy etc
- Review local council support for **carbon offsetting**

Local Government Association SA

LGASA Carbon Mitigation Programs for SA Councils

- Climate change survey of SA councils (2007)
- Beyond Carbon LG climate change summit (2008)
- *LGASA climate change strategy 2008-2012* (2008)
- *SA LG sector agreement – climate change* (2008)
- Renewable energy forum (2009)
- Update on NGERS reporting (2009)
- Briefing papers on carbon offsets for LG (2009/10)
- Emissions measurement & management course (2009/10)
- Discussion paper on sustainable public lighting (2010)
- *A guide for councils developing a CC action plan* (2011)
- Solar councils innovation fund (2011)
- Carbon tax modelling project (2011)

Greenhouse Gas (GHG) Reduction Targets for State of SA

GHG Emissions Reduction:

- Limiting State's GHG emissions to 108% of 1990 levels during 2008-12
- 60% reduction in State GHG emissions to 40% of 1990 levels by 2050
- Reduce GHG emissions from State Govt. operations by 60% by 2020

Renewable Energy:

- Comprises 20% of the State's electricity production and consumption by 2014, 33% by 2020

Green Power:

- Purchase renewable energy for 50% of Govt. electricity needs by 2014
- Purchase minimum of 20% Green Power for State Govt. operations by 1 January 2008 (**LGASA endorsed 20%GreenPower since 2007**)

Energy Efficiency:

- Improve efficiency of Govt. buildings by 30% & dwellings by 15% by 2020
- ***Zero Waste:*** Reduce waste to landfill by 35% by 2020

Pilot Survey Adelaide Councils

- Carbon mitigation pilot survey was sent to 20 Greater Adelaide councils (June-Oct. 2011)
- Environmental officers asked to outline council mitigation actions, emissions auditing, and motives for emissions reduction by councils
- Survey instrument developed based on website review of carbon mitigation and sustainability practices by local councils, LG associations, and government agencies (Zeppel, 2011) and by assessment of carbon mitigation actions in the Cities for Climate Protection (CCP) program

Survey Instrument

Target = Environmental/Sustainability Officers of the 20 Greater Adelaide Councils

Climate Change Mitigation Survey for Councils with 28 questions in 4 sections:
A: Your Local Council
B: Climate Change & Your Local Council
C: Climate Change Mitigation & Your Local Council
D: Carbon Offsetting & Your Local Council

- check lists of climate change actions
- open-ended questions on issues or reasons for carbon mitigation actions
- rating of council motives for carbon actions

Respondents – Adelaide Councils

- **14 Adelaide councils** /20 - **70%** response rate
- Survey completed via email, post or telephone interview

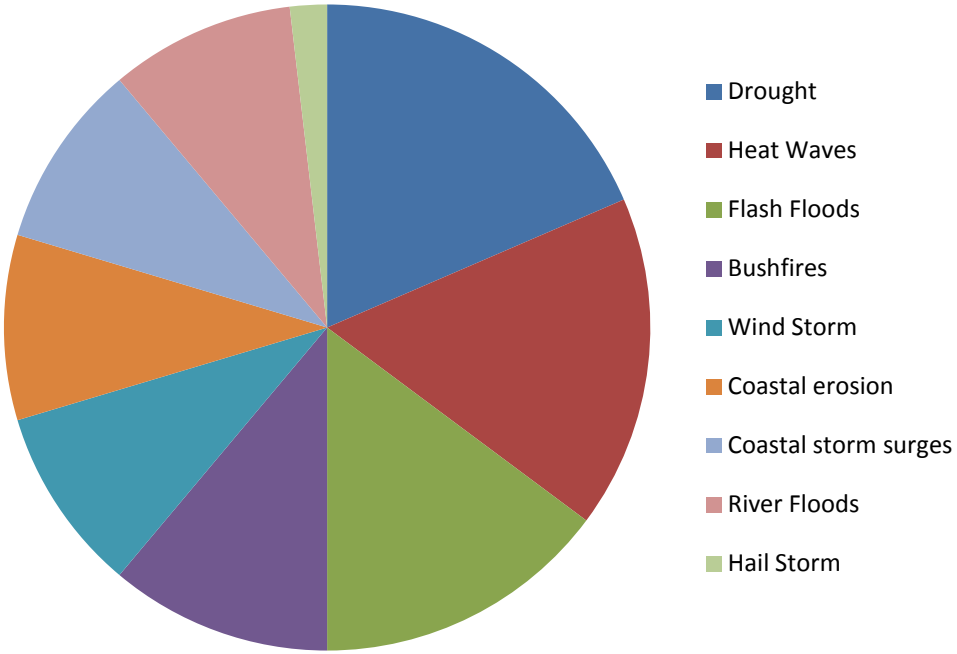
Range of Greater Adelaide Councils:

- Coastal & inner city councils, north & south, Adelaide Hills
- Staff completing survey were: sustainability officers (n=8); environmental officers (n=4);& sustainability planners (n=2)
- Council Size: staff levels 89 – 300+ (6 councils) & 1 council 600+ *(mean c.300).* Regional population from 20,000 - 160,000 (1 council) *(mean c.69,000)*
- Main Revenue Sources: council rates (84%), state or federal government grants (8%) Other council fees (5%) Other (3%)
- Annual operating budgets: ranged $15-$106 million, though most had budgets over $38 m *(mean c.$60m)*.
- Climate actions were primarily funded by: council budget (n=11), and government grants (n=7).

Impacts of Climate Change

- All 14 of the surveyed Adelaide councils agreed that climate change was an important issue for local councils
- Climate impacts stated: natural hazards, risk management, legal liability, service delivery, community safety, damage to infrastructure, cost, and council leadership on climate change

extreme weather events causing damage 2000-2011



Council Climate Change Strategies

The strategies or policies that included climate change were:

Environmental policy (n=9), Water cycle management plan (n=7), or Waste management plan (n=7)

Other specific climate change documents were:

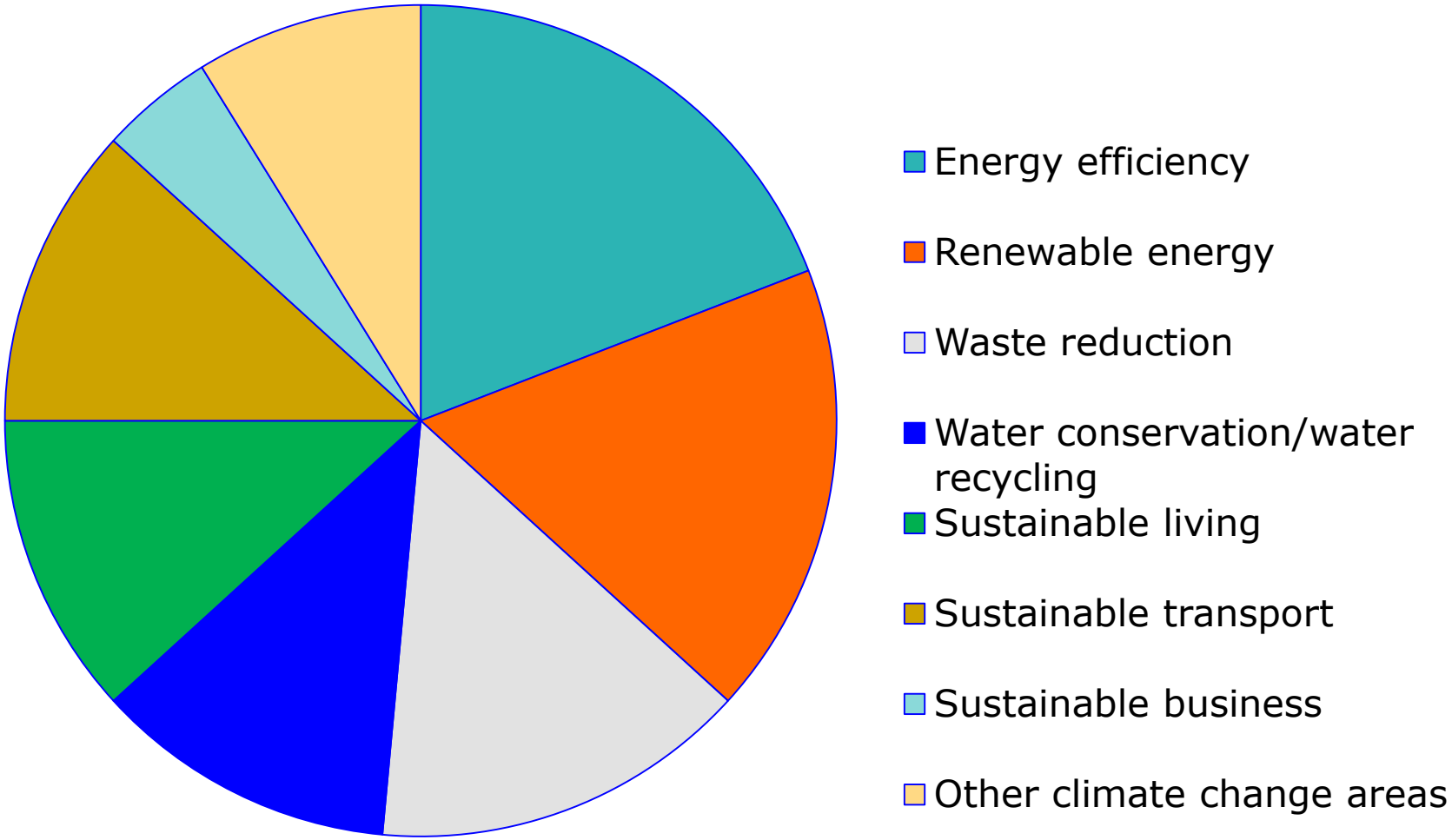
Climate change risk assessment (n=6); **Climate change strategy (n=6); Greenhouse gas or carbon neutral action plan (n=5)**; Climate change adaptation plan (n=4); Climate change policy (n=3); & Carbon emissions policy (n=3)

Energy documents were:

Sustainable energy action plan (n=3); Renewable energy policy (n=2); and Peak oil/energy transition plan or strategy (n=1).

Other environment plans (n=4), included a *Healthy Environment Plan,* and an *Energy and Water Efficiency Management Plan*

Climate Change Strategies – areas addressed



Other climate change areas (n=6) were community engagement, public lighting, adaptation planning, and carbon reduction targets.

Staff Responsible for Climate Change

Council staff responsible for CC issues included:

- Environmental/Sustainability Officer (n=11)
- Environmental Manager (n=6)
- Water and Waste Manager (n=1)
- Energy Manager (n=1)
- Sustainability Planner (n=1)
- Infrastructure (n=1)

2 surveyed Greater Adelaide councils had a specific Sustainability Unit or Sustainable Futures Department

Council Carbon Emissions

All strongly agreed (n=10, 71%) or agreed (n=4, 29%) that it is important to reduce council carbon emissions

8 councils employed a consultant and 6 used their own staff to assess council emissions

The main sources of council carbon emissions:

- energy consumption from electricity used for office buildings, council facilities, and wastewater plants (32% to 54%)
- street lighting (19% to 60%)
- water storage and pumping (24%)
- the council vehicle fleet (14% to 24%)
- other emissions from business travel, corporate waste, and paper consumption (8.5%)

Carbon Mitigation Actions

Wide range - 272 carbon actions by the 14 councils

Most widespread carbon actions adopted (av. 19.4 of 45):

- Install solar photovoltaic (PV) power on council buildings (n=14)
- Purchase Green Power electricity for council facilities (n=13)
- Practise rainwater harvesting (n=13)
- Install energy saving CFL bulbs/LED lights (n=12)
- Provide information to residents re. reducing emissions (n=12)
- Include emissions reduction targets in council corp. plans (n=11)
- Install energy efficient computers in council offices/ libraries (n=11)
- Install energy & water efficient technology in council amenities blocks (n=10)
- Solar powered public lighting e.g. walkways (n = 10)
- Practise storm water harvesting (n=10)
- Install timers, daylight sensors or motion detectors on council lights (n=9)
- Purchase energy efficient appliances (e.g. fridges) (n=9)

Carbon Mitigation Actions

- Produce or use recycled water – Class A+, **A**, B or C (n=9)
- Install council-owned renewable energy generation systems (n=9)
- Practise recycling and minimise amount of solid waste (n=8)
- Share information with neighbouring councils on emissions reduction (n=8)
- Provide information to businesses on reducing their emissions (n=8)
- Choose suppliers taking actions to reduce their emissions (n=8)
- Practise aquifer storage and recovery (ASR) of reclaimed water (n=7)
- Install solar or heat pump hot water heaters in council buildings (n=7)
- Install roofing insulation in council buildings & facilities (n=7)
- Operate new fuel efficient council vehicles or vessels (n=7)
- Large number of other actions centred on energy & water saving and waste reduction e.g. methane gas from landfills for power (n=5); fuel efficient/LPG/hybrid electric vehicles (n=7/6/5)

Carbon Mitigation Motivations

TOP FIVE REASONS TO REDUCE CARBON EMISSIONS:

1. council climate change strategy (1.8)
2. demonstrate climate leadership (2.4)
3. cost savings (2.5)
4. differentiate council as a 'climate friendly' region (3)
5. council resolutions on climate change/energy efficiency (3.2)

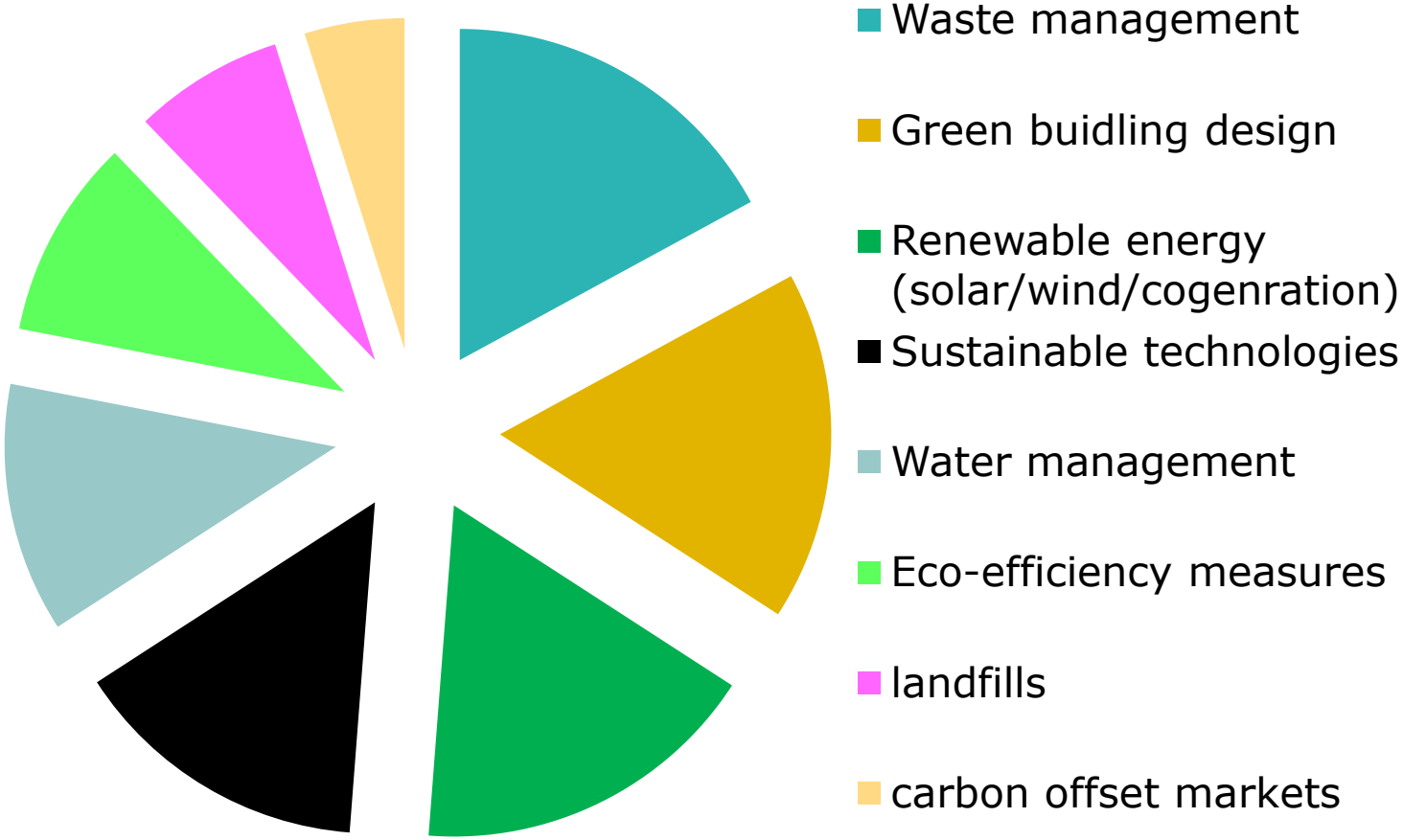
Other lower-ranked reasons were certification (e.g. CCP) (4.3), attracting low carbon industry investment (4.5), *SA's Greenhouse Strategy* or *Act*, and *LGASA Climate Change Strategy* (5)

MAIN REASONS FOR NOT ADOPTING CARBON ACTIONS

- cost
- staff resources
- funding
- asset ownership
- measurement tools
- *'when payback periods are excessive (e.g. more than 15 years)'. COMMON MISCONCEPTION RE INVESTMENT RISK!*

Carbon Mitigation Opportunities

Perceived council opportunities for Carbon Mitigation



Climate Change Mitigation Survey City of Onkaparinga (SA)

Budget $106 million; 160,000 residents; 600 council staff
Industries: Agriculture, Viticulture, Manufacturing & Tourism
'climate change impacts compound existing hazards that require management at local level'
CC plans:
Climate Change Strategy 2008-2013; Energy Futures 2010-2014*;*
Water futures 2008-2013; Community plan 2028;
Green Buildings, Solar Power
Areas in CC plan: Energy efficiency, renewable energy, sustainable living
Responsibility for CC issues: **Sustainability Unit** & council business units
Council information on CC issues: ALGA, LGASA, SA govt, Green Building Council, Renewable energy companies, CSIRO, Federal govt (DCCEE)
CC initiatives: **CCP**, Earth Hour, CC workshop, NGERS, Water Week
Sectors for Council CC actions: Households, Businesses, Developers, Landholders, Community organisations, Youth groups, Schools
Funding for CC initiatives: Council budget, Govt. grants,
CC response fund est. 2008
Revolving fund est. 2005 (Savings from carbon reductions)

Climate Change Mitigation Survey City of Onkaparinga (SA)

Climate Change Mitigation & City of Onkaparinga

Important to reduce the carbon emissions of council: AGREE

Council assessment of carbon emissions: YES by council staff

Types of emissions reduction initiatives by council [56 actions]:

Energy Efficiency=13 items
Organisational=7 (green purchasing, sustainable practices, carbon targets)
Renewable Energy=4 items
Water=4 items
Waste=1 item

Main reasons for emissions reductions: **Council CC Strategy**

Council opportunities in reducing carbon emissions:
Sustainable technologies, green building, renewable energy, landfills, waste management/recycling, water management, carbon offset markets

Carbon Mitigation and Councils

❖*Local Government is a leader in this space. More* ***support from Commonwealth and State governments through partnerships*** *are needed.*

❖***Council should be focusing on avoiding or reducing their emissions*** *as the offset side of things does not sit well with me.*

❖ *Our Environmental Advisory Committee has decided to* ***prioritise our funds into emission reduction and alternative energy generation*** *for the current year.*

Conclusions - Adelaide Councils

- Highlights organisational behaviour and motives of councils for carbon mitigation actions:

- climate change plans; demonstrating climate leadership; cost savings; being a 'climate friendly' region, and carbon resolutions by council

- Similar to businesses, key motivations for councils are competitiveness (i.e. cost savings, leadership), legitimacy (i.e. GHG rules, targets), and social responsibility (i.e. community drivers) (Bansal and Roth, 2000)

- Environmental/sustainability officers in this survey noted the legal liability of councils for climate change actions, but some felt it wasn't a priority for funding or that staff missed opportunities in this area

- Climate governance issues are policies, funding and staff resources

- More research is needed on how climate change practices impact organisational behaviour in councils, along with environmental, social, and business benefits from greening councils.

Carbon Survey of QLD Councils

- Analysis of results for pilot study has meant some minor revisions to the survey instrument & new Section E: *Preparing for the Carbon Price*

- QLD is one of the most vulnerable States for climate change impacts (i.e. floods, cyclones)

- Next step is to review carbon mitigation actions and motives by 73 QLD local councils

- Conduct state-wide QLD carbon survey of 73 Qld local councils – 7 City, 30 Regional, 24 Shire, & 12 Aboriginal Shire Councils (+ Weipa Town Authority)

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Questions or Comments

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