
Carbon Mitigation Responses by Local Councils in Adelaide

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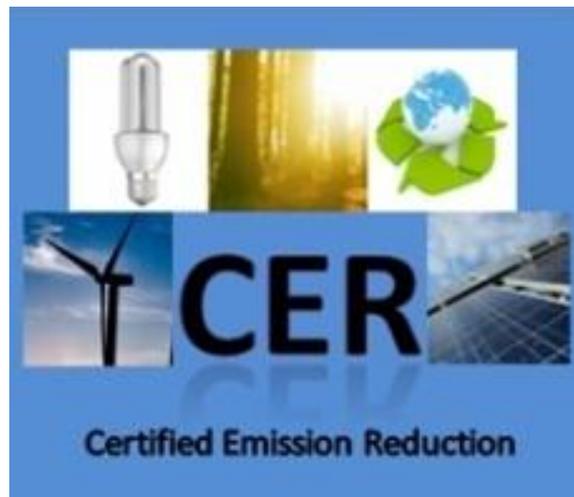
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Climate change mitigation

- **Mitigation** – actions to reduce greenhouse gas emissions and to enhance carbon sinks (any process, activity or mechanism that removes a greenhouse gas or aerosol...from the atmosphere), i.e. *reduce the extent of global warming* (Intergovernmental Panel on Climate Change)



Carbon Mitigation by Councils

AIM

- Benchmark the greenhouse gas mitigation measures that have been implemented by Adelaide local councils in response to climate change and environmental sustainability



Objectives of Council Project

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



Pilot Survey Adelaide Councils

- Carbon mitigation pilot survey was sent to 20 Greater Adelaide councils
- 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 at SA councils, the LGASA and government agencies (Zeppel, 2011) and by assessment of carbon mitigation actions in the Cities for Climate Protection program (CCP)

Survey Instrument



Target = environmental/sustainability officers of the 20 Adelaide councils

Climate change mitigation survey 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

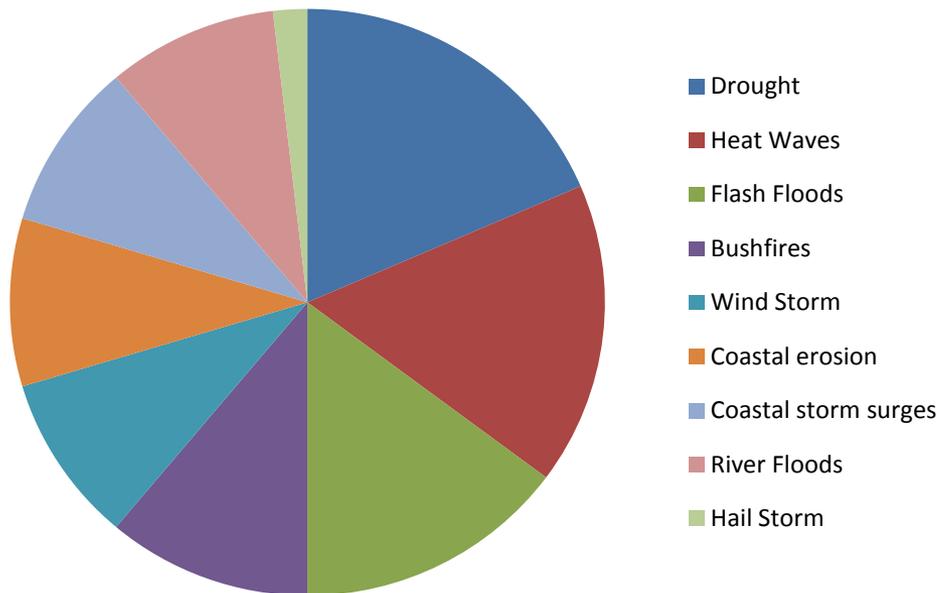
Range of Adelaide councils:

- 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
- impacts referred to: natural hazards, risk management, legal liability, service delivery, community safety, 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)

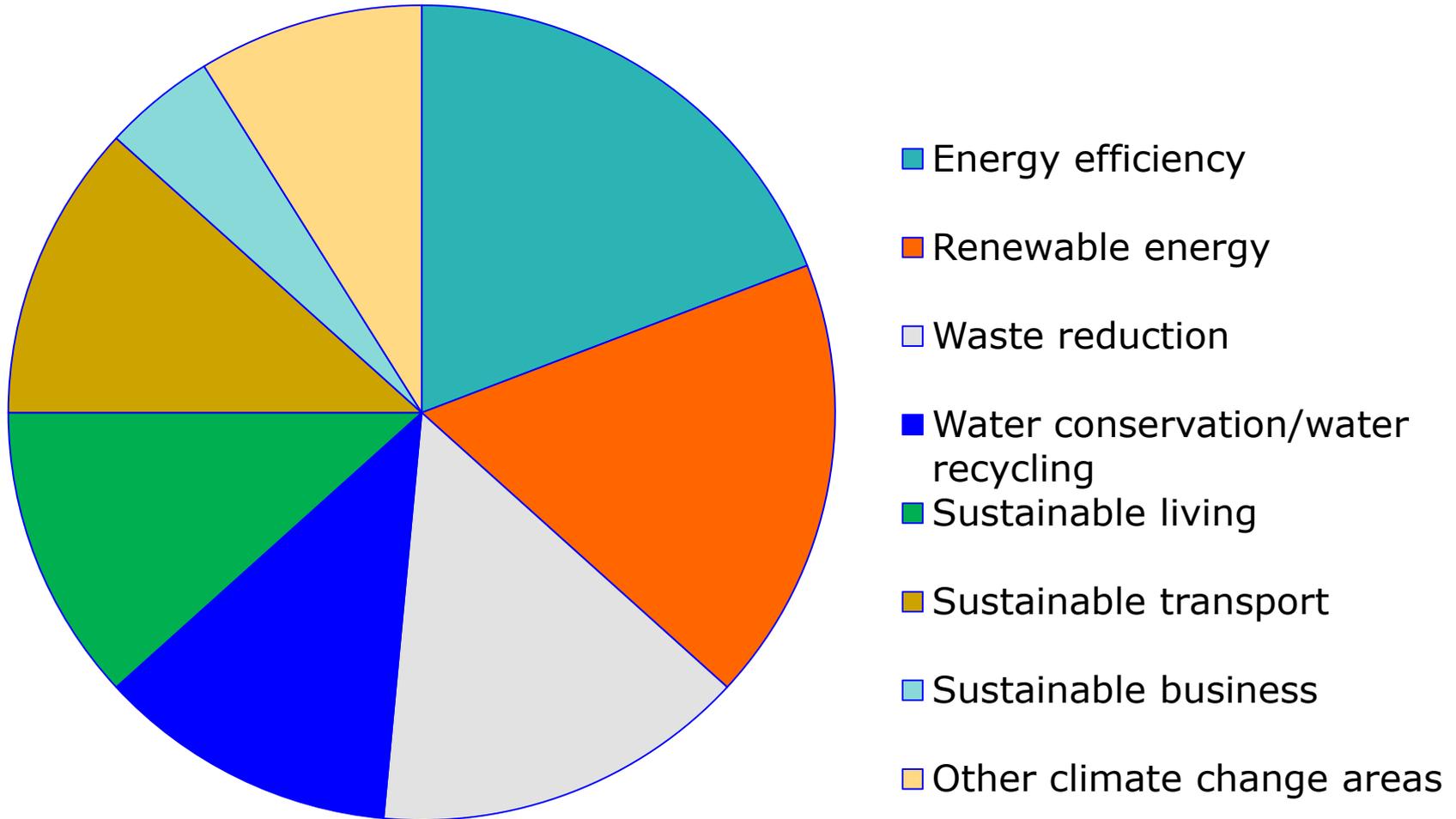
Other specific climate change documents were:

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); and 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 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:

- Install solar (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 (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
2. demonstrate climate leadership
3. cost savings
4. differentiate council as a 'climate friendly' region
5. council carbon resolutions

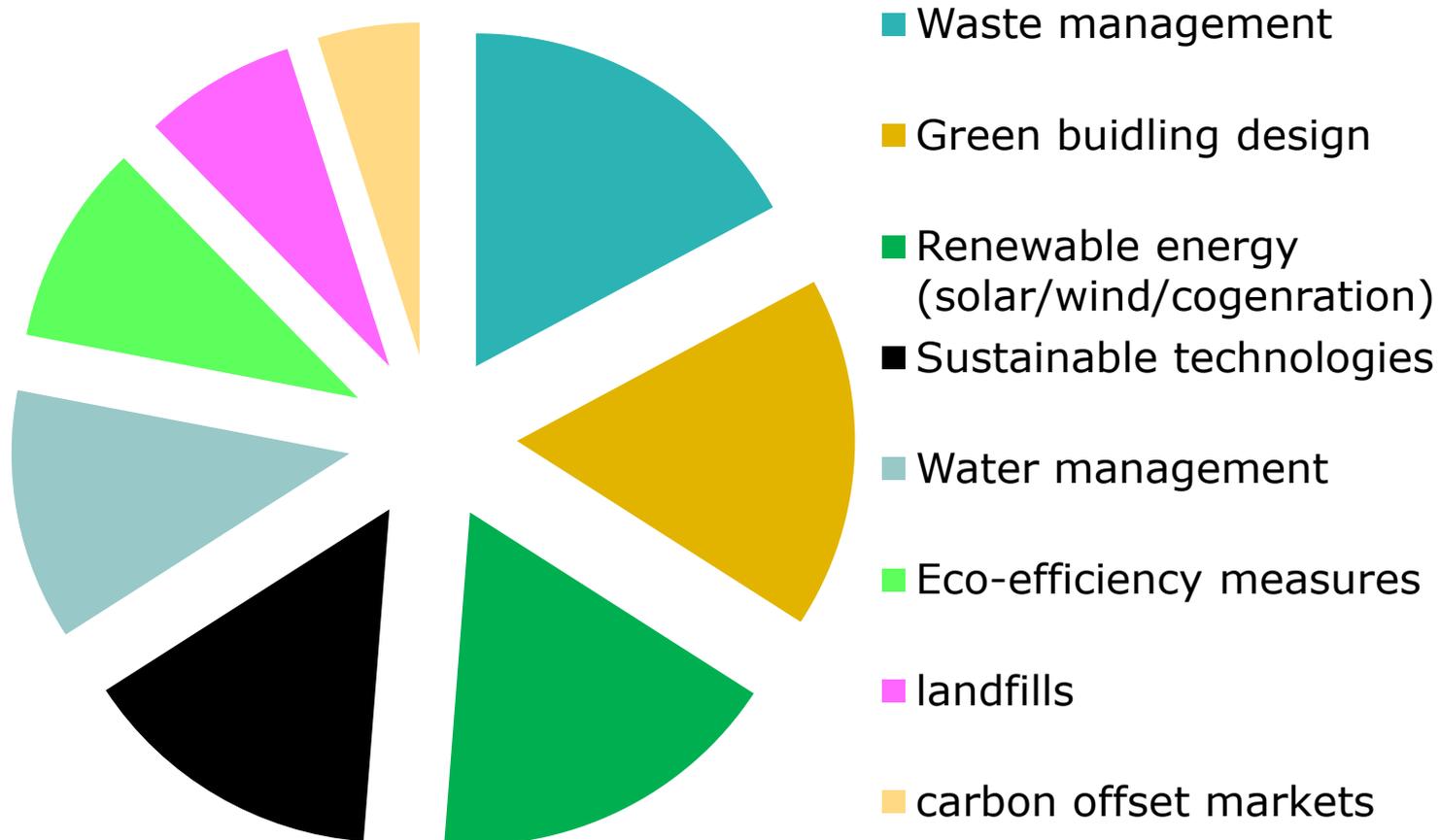
Other lower-ranked reasons were certification (e.g. CCP), attracting low carbon industry investment , *SA's Greenhouse Strategy or Act*, and *LGASA climate change strategy*

MAIN REASONS FOR NOT ADOPTING CARBON ACTIONS

- cost
- staff resources
- funding
- asset ownership
- 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



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
- Similar to businesses, key motivations are **competitiveness, legitimacy, and social responsibility** (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
- More research is needed on how sustainable practices impact organisational behaviour in councils, along with environmental, social, and business benefits from greening councils.

Next Step – QLD Local Councils

Analysis of results for pilot study has meant some minor revisions to the survey instrument
QLD one of the most vulnerable States regarding climate change impacts

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

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