

Current Water Challenges, Drivers for Reform and Up and Coming Infrastructure Projects

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Current Storage Levels

Adelaide	54.0%
Canberra	43.2%
Darwin	95.0%
Hobart	81.5%
Melbourne	25.9%
Perth	28.1%
South East Queensland	74.6%
Sydney	61.1%

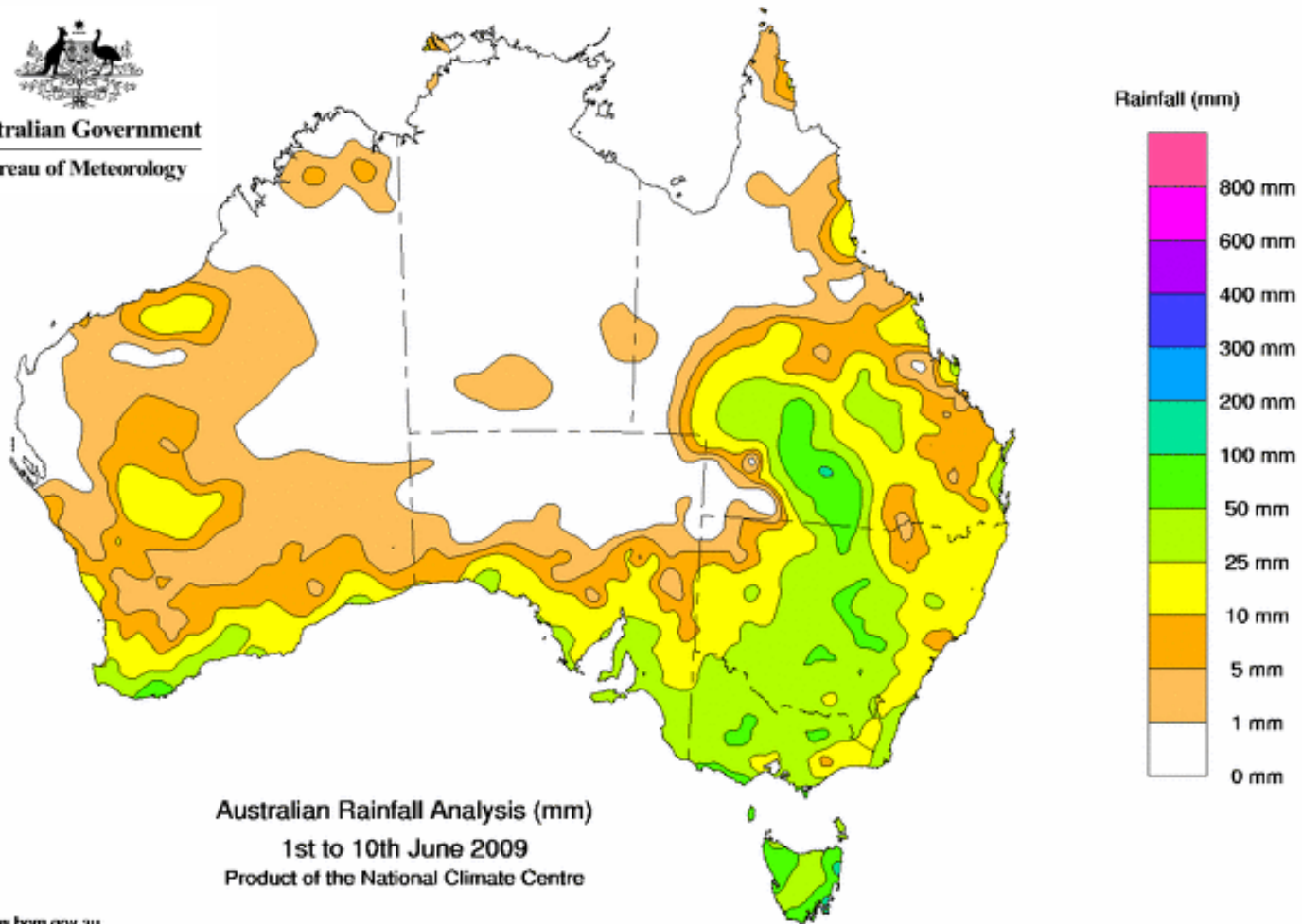


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As at 12 June 2009



Australian Government
Bureau of Meteorology



Australian Rainfall Analysis (mm)
1st to 10th June 2009
Product of the National Climate Centre

<http://www.bom.gov.au>

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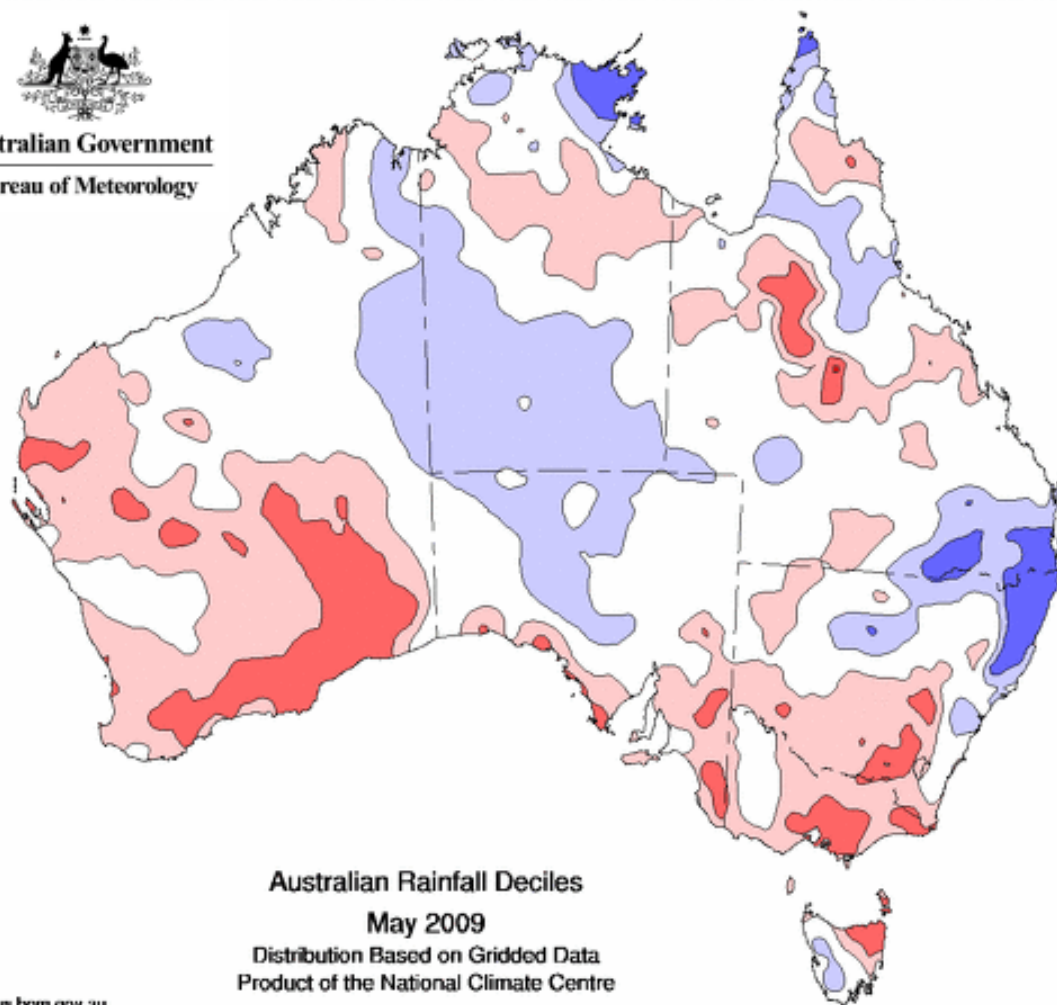
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Australian Government
Bureau of Meteorology



Rainfall Decile Ranges

10	Highest on Record
9	Very Much Above Average
8-9	Above Average
4-7	Average
2-3	Below Average
1	Very Much Below Average
	Lowest on Record

Australian Rainfall Deciles
May 2009
Distribution Based on Gridded Data
Product of the National Climate Centre

<http://www.bom.gov.au>

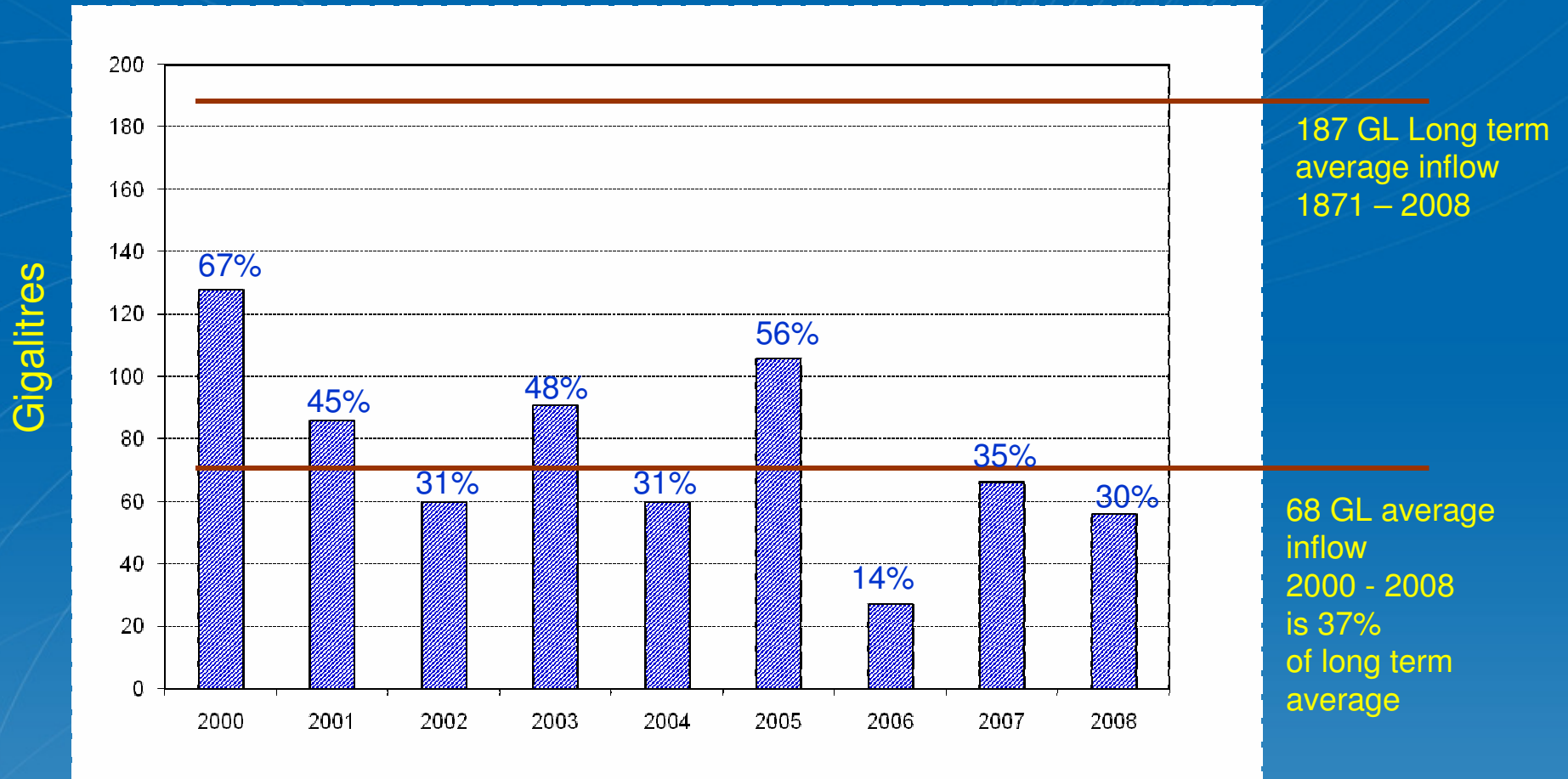
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Annual inflows to Canberra's storages



Context for what is happening in the water industry

- Climate shift – yields are collapsing dramatically, 30% to 70%.
- Rapidly growing populations and changing demographics.
- Additional environmental flows for stressed rivers.
- Expectations of increased levels of service i.e. growing affluence.
- Meeting these challenges in a sustainable manner e.g. water/energy inter-relationships and operating in a carbon constrained world.



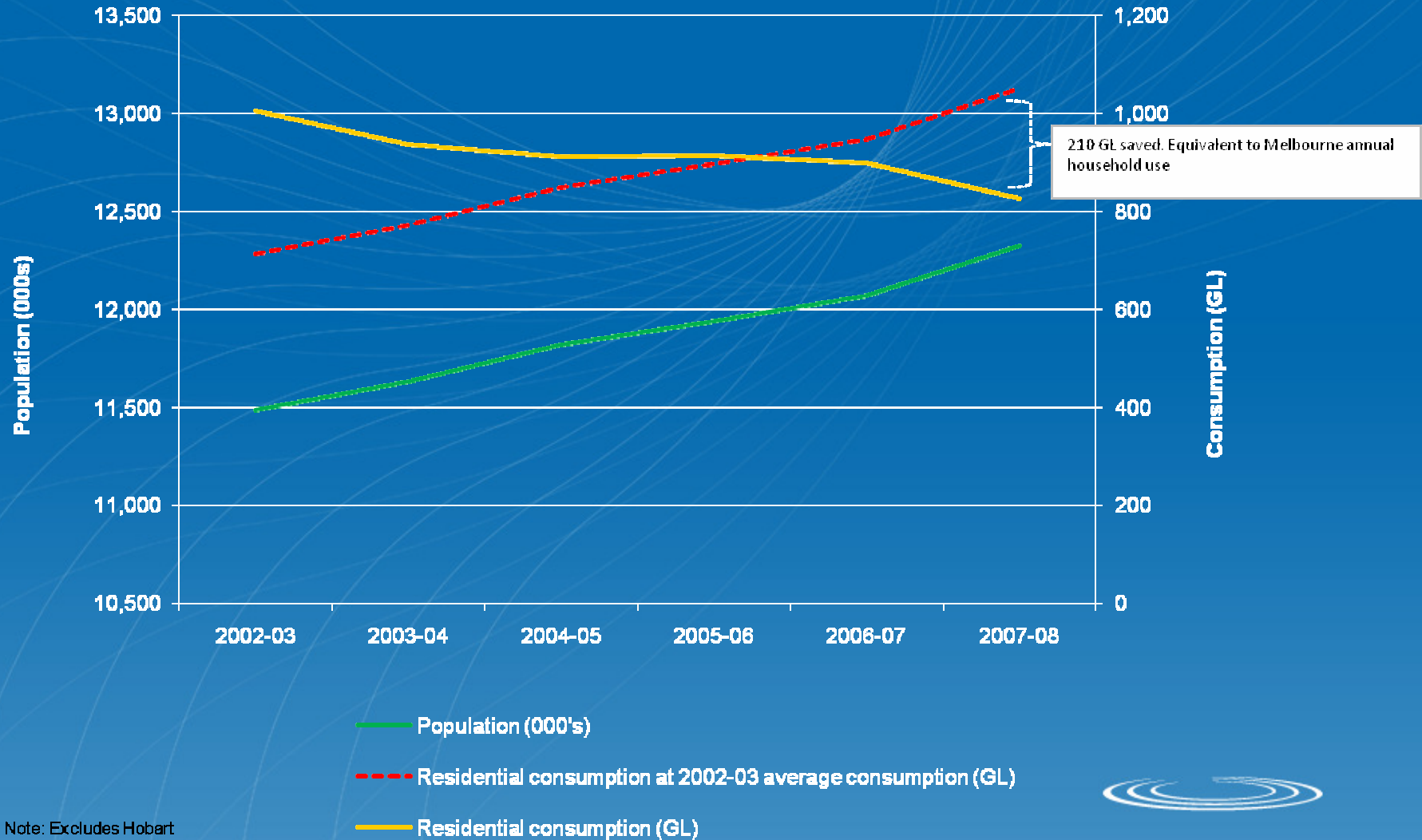
Responses

Both on the demand and supply side

- Ongoing water conservation programs.
- Diversifying sources of water to remove the urban water industry's almost total reliance on surface water run-off i.e. security through diversity.
- Major projects will include:
 - Desalination plants
 - Building new dams
 - Pipelines to connect water supply systems
 - Large scale water recycling plants
 - Pipe networks to transfer recycled water
 - Third pipe systems in new developments and redevelopments
 - Pipelines connecting rural water to urban areas
 - Water sensitive urban development in new developments
- No water supply option should be ruled out in an era of climatic uncertainty.



Capital City Residential Water Consumption and Population (2002-03 - 2007-08)



Note: Excludes Hobart



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Desalination in Australia

City	Location	Capacity (ML/annum)	Ability to increase capacity (ML/annum)	% of annual total consumption 2007/08	Completion date
Sydney	Kurnell	90,000	180,000	19% <i>(potential 37%)</i>	2009/10
Melbourne	Wonthaggi	150,000	Up to 200,000	41% <i>(potential 54%)</i>	2011
South East QLD	Tugun	45,000		24%	2008/09
Perth	Kwinana	45,000		19%	Completed
	Binninyup	50,000	100,000	21% <i>(potential 42%)</i>	2011
	Kwinana & Binninyup combined	95,000		40%	
Adelaide	Port Stanvac	50,000 Dec (2010)	100,000	35% <i>(potential 71%)</i>	Dec 2012
Total		430,000	670,000		
			This represents 47% of capital city water consumption in 2007/08		

Source: WSAA Report Card 2006-07 and 2007-08

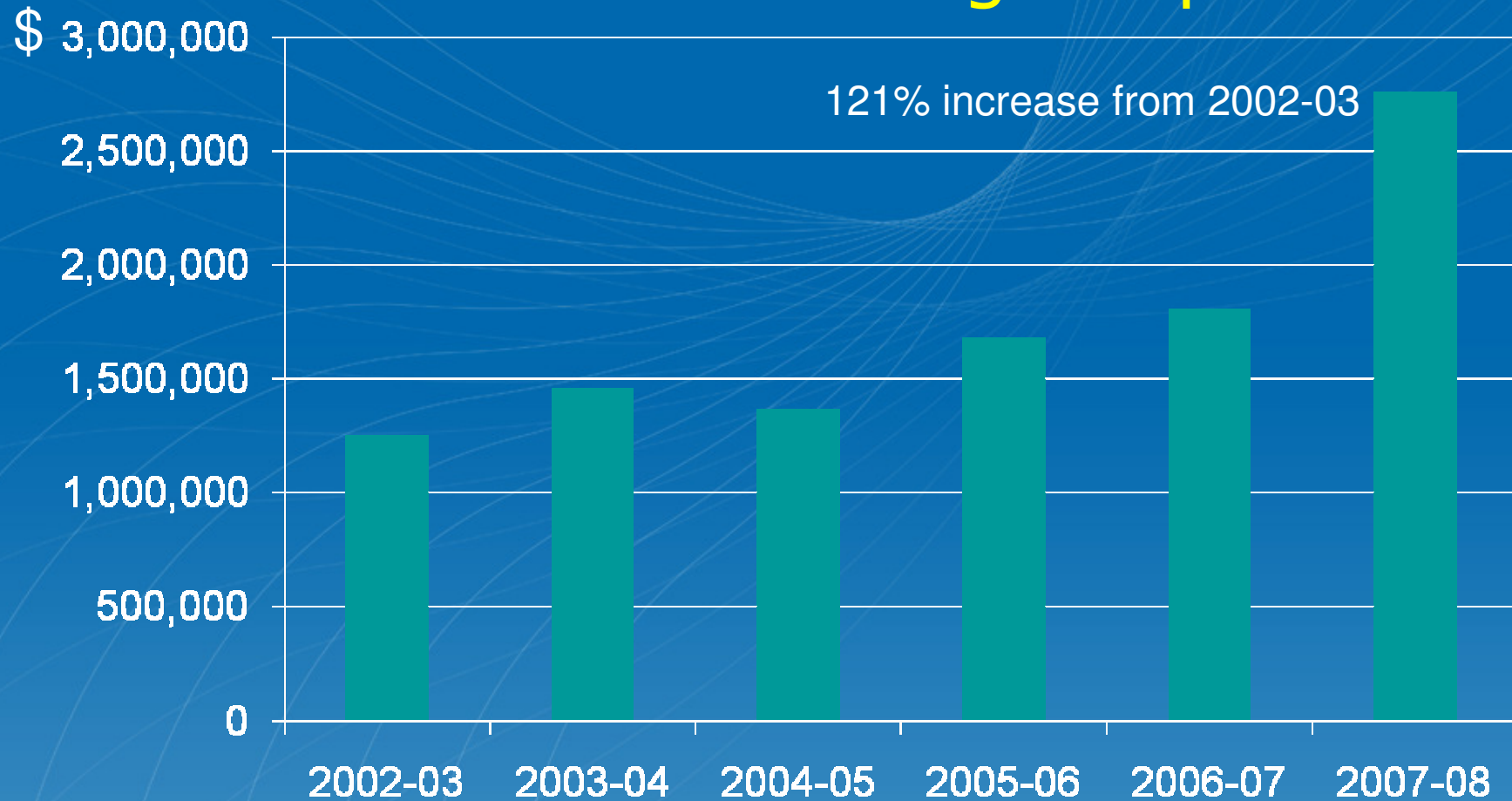
Desalination

Up to 15% of water supply by 2015



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Combined Australian Capital City Water & Sewerage Capex

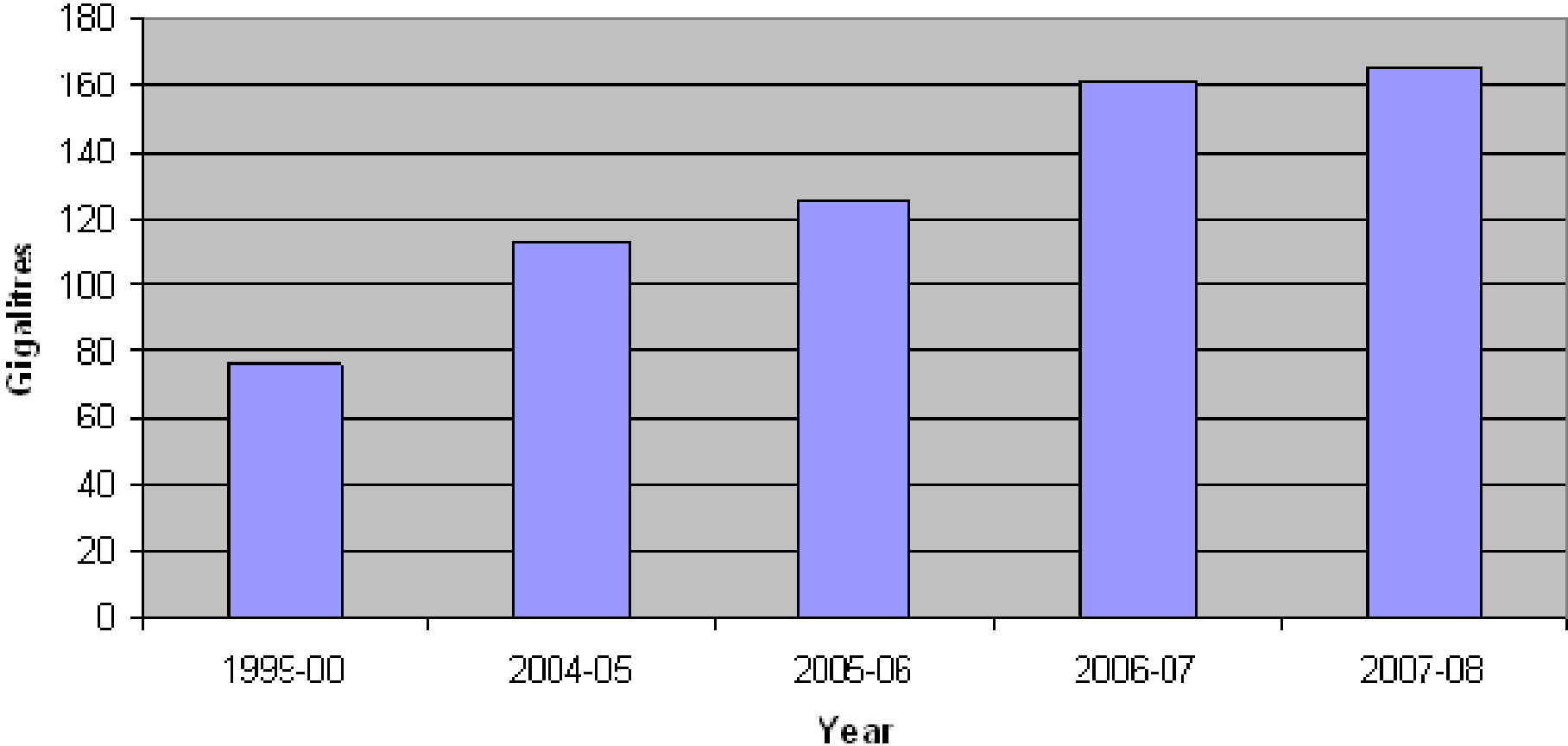


Source: National Performance Report 2007-2008
Melbourne data 2002-03 to 2004-05 *WSAAfacts*



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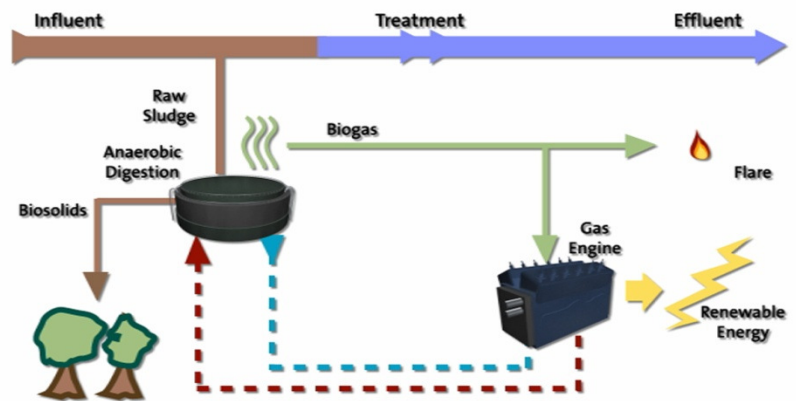
Growth in the use of recycled water in major urban water utilities



Renewable energy generation



Simplified Treatment Process



Likely Reform Agenda

- Urban water planning
- Market based approaches
- Local government management of water
- Establishment of water grids
- Obtaining sustainability in the use of rural water
- Enhancing the skills base of the industry
- Sustainable cities of the future
- Achieving sustainability



Capital projects in Australia

Adelaide

- 100GL desalination plant
- Christies Beach wastewater treatment plant upgrade
- Glenelg to Adelaide Parklands
- Southern urban reuse project



South East Queensland

- Western Corridor Recycled Water Project
- Northern Pipeline interconnector Stage 2
- Toowoomba pipeline



Melbourne

- 150GL desalination plant
-
- Northern Sewerage project
- Sugarloaf pipeline
- Salt reduction plant at Altona



Perth

- 50 GL South Seawater Desalination Plant
- Beenyup Wastewater Plant Upgrade
- Alkimos Treatment Plant Upgrade
- Groundwater Replenishment Trial
- Woodman Point Treatment Plant Upgrade



Canberra

- Enlarged Cotter Dam
- Murrumbidgee to Googong Transfer
- Googong Dam Spillway
- Murrumbidgee River Pump Station
- Lower Molonglo Water Treatment Plant Upgrade



Sydney

- 90 GL Kurnell Desalination Plant – ongoing
- Replacement Flow project
- North West Growth Centre First Release Precinct
- Freemans Reach Sewerage scheme
- Hawkesbury Heights Sewerage scheme



Challenges for the Future

- Operating in a carbon constrained world
- Managing ageing infrastructure
- Moving beyond water restrictions
- Declining wastewater flows
- Understanding the sustainability of urban water systems
- Managing water quality in an era of multiple supplies
- Addressing the skills shortage
- Acceptance of indirect potable reuse
- Assisting in the development of water sensitive cities



Conclusions

- The impacts of climate change are driving unprecedented capital expenditure programs
- Water reform will be ongoing in the Australian urban water industry
- Despite the challenges the Australian urban water industry is in good shape to address them
- Water will continue to be a high profile political and social issue in Australia

