

Water – its role in supporting WA's economic growth



WA's water reforms and the 4 C's: climate change, competition, capital investment, co-ordination

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Water Reform & the 4C's

Presentation Outline

- Water reform
- Climate change / variability
- Competition
- Capital investment
- Co-ordination

Water reforms

Western Australia

WA National Water Initiative (NWI) Implementation Plan

Government response to a Blueprint for Water Reform

State Water Plan 2007

State Legislative Reform

Water Services Bill Water Resources Management Bill

Commonwealth

NWI

Water Act 2007

COAG – Climate Change and Water





Population/economic growth

Projected Population Change by Region, 2005 – 2050

(Haub, C. 2005. World Population Data Sheet (2005))





Climate change

Professor Ross Garnaut



"... diabolical policy problem"

"If we fail, on a balance of probabilities, the failure of our generation will haunt humanity until the end of time"



"Water is not a renewable resource. People have been mining it without restraints because it has not been priced properly."

Lord Stern of Brentford





Climate change

Anthropogenic induced change

The Monster within?



Global fossil fuel emissions



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Climate change



Australian rainfall and population

% Population

89.6

7.2

3.2

2006

(Hugo, G. 2008)



Climate change

Evidence of rapid rate of change

- Another 0.6 °C already locked in
- Melting ice sheets & caps
- Melting glaciers
- Melting permafrost
- Freshening of North Atlantic
 Ocean & Australian Antarctic Basin
- Ocean acidification
- Atmospheric circulation changes
- Ecosystem changes
- UK soils & vegetation carbon sources



Greenland moulin

(Bates, B. CSIRO)



Climate change

Southerly shift in climate zones





(Sadler, B. Water Policy Services)



Declining rainfall

Perth Annual Rainfall



Major change in loss of flood years.

Declining groundwater storage

Gnangara Mound storage depletion (GL)

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Wet mid-1900's

CC

PERTH DRY AND WET CLIMATIC PERIODS





Competition

- Water for the environment
- Water trading
- Water supply and wastewater industry



Competition

Water for the environment

- Environment explicitly included in management goals
- Provide water regimes to support environmental water requirements (EWR/EWP)
- Water accounting

accurately monitor, assess and forecast the availability, condition and use (metering) of water resources



Dave Paton - The drying Coorong - "I don't think the warnings were ignored, but that our responses were far too slow and far too modest. In the sphere of water resources, <u>the capacity of</u> <u>our institutions to respond quickly to changing</u> <u>circumstances is very limited"</u>



Competition – Water trading



Water trading Water entitlement – share of available resource Consumptive pool - "periodic announced allocation" Statutory management plans Legislative reform





Competition – Water industry



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> ERA Inquiry on Competition in the Water and Wastewater Services Sector

- Clarifying roles and responsibilities
- Promoting innovation

Independent Procurement Entity

- Receive a supply security requirement from Government
- Identify future supply shortfalls and seek ways to meet these shortfalls via supply arrangements and demand management options developed by service providers



Capital investment

Australian Sea Water Desalination Plants

| Plant | Location | Capacity (ML/d) | Completion |
|---------------|-------------|--------------------|------------|
| Perth 1 | Kwinana | 145 | 2006 |
| Gold Coast | Tungun | 133 | 2008 |
| Sydney | Kurnell | 250 | 2009 |
| Perth 2 | Binninup | 150 | 2011 |
| CITIC PS Iron | Karratha | 175 | 2011 |
| Melbourne | Wonthaggi | 450 | 2011 |
| Adelaide | Pt Stanvac | 150 | 2011 |
| Whyalla | Pt Bonython | 180 | 2013 |
| Total | | 1633 | |

Source: Palmer, N, OSMOFLOW, AWA Desalting 08 Conference

Capital investment

State investment – examples

- SEQ Water Grid and Regional Strategy ~ \$9.0 b
- Victoria's Our Water Future plan ~ \$4.9 b
- Sydney Water ~ \$4.6 b
- Adelaide desalination plant ~\$ 1.2 b
- Binningup desalination plant ~\$ 1.0 b

Commonwealth investment - examples

- Water for the Future plan \$12.9 billion
 - including over \$1 b for environmental outcomes Snowy and Murray Rivers
- Infrastructure Australia fund (\$40 billion)





Co-operation

- Establishing a shared understanding, and
- Generating a shared vision of a desirable future
- "Is critical for effective water management"





Gnangara Sustainability Strategy

Principles of good water governance

Participatory

Consensus oriented

Accountable

Transparent

Responsive

Effective and efficient

Equitable and inclusive

Follow the rule of law

UN Economic and Social Commission for Asia and the Pacific, 2003



Department of Water Department of Agriculture and Food WA Department for Planning and Infrastructure Department of Environment and Conservation











Summary

• Climate change and unprecedented growth will continue to increase pressure on fresh water resources

Water Reform & the 4C's

- Actions to mitigate and adapt to climate change are critical
- Competition for water has intensified but market mechanisms and institutional reforms will take time to mature
- Successful implementation of reforms requires continued investment in science, management, planning and regulation
- The water industry is growing and evolving rapidly
- Water for future economic growth will increasingly rely on innovation, co-operation, and 'solid' governance



Thank you

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Declining inflow to dams

Yearly streamflows into Water Corporation dams 1911-2006

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