Case Studies of Climate Resilience in Urban Areas and their Funding – Adelaide Desalination Plant

UNFCCC Standing Committee on Finance Annual Forum – Montego Bay, Jamaica, 22 June 2014

Email: info@climatemundial.com

Website: www.climatemundial.com

Acknowledgements

Government of South Australia and the University of Adelaide

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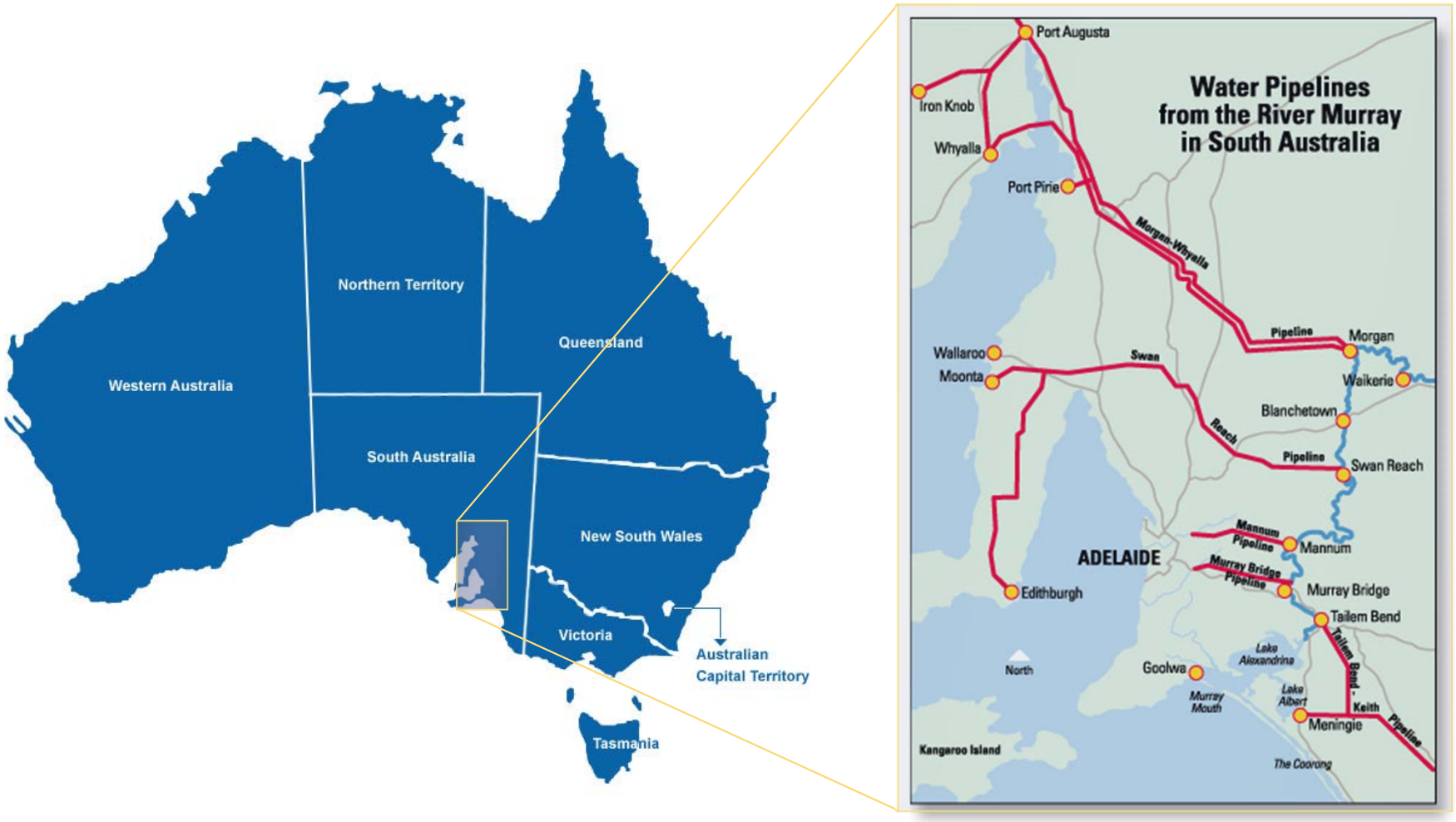
Case Study - Adelaide



Adelaide Water System

Element	Details
Population	South Australia population 1.67 million (7% of national) of which Adelaide is the capital city with a population of 1.29 million (77% of state total)
Water demand	Over1998-2008 Adelaide metro area consumed 190GL per year in domestic, commercial, industrial and agricultural sectors. 156GL in drought year 2007-2008 with restrictions
Water Supply	Based on network of reservoirs & aquifers around metro area and augmented via connected pipeline network from Murray River providing some resilience in periods of low rainfall
Risks	Entire water supply system is vulnerable to long periods of drought affecting simultaneously the Murray Darling basin AND reservoirs in Adelaide metro area (exacerbated by the possible future impacts of climate change)

Sources: SA Water Corporation, Murray-Darling Basin Commission, Commonwealth Auditor General

Affected Industries

Source: Adelaide Now (www.adelaidenow.com.au)

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Water For Good

Element	Details
Objective	Develop a water system for Adelaide not totally reliant on rainfall with inherent resilience in periods of sustained drought
Storm Water and Waste Water	Infrastructure for domestic, commercial and industrial and agricultural sectors to allow greater levels of storm water and waste water capture, retention, purification and re-use to offset mains water usage, rather than disposal
Water Usage	Technology and behaviour change measures in the domestic, commercial, industrial and agricultural sectors to encourage highest levels of efficiency in water usage to minimise waste
Desalination	Develop alternative sources of water supply, including desalination, to provide water to domestic, commercial and industrial and agricultural sector users in Adelaide metro area
Targets	Reduce requirement for water from rivers, reservoirs and aquifers to below half of total annual water demand

Sources: South Australian Government

Storm Water

Source: Adelaide Now (www.adelaidenow.com.au)

Desalination

Source: Acciona (www.accional.com)

Key Details

Capital cost

- New facility on brownfield site with 100GL per annum capacity costing AU$1.83 billion under build, own and operate model for 20 years

Operating costs

- Operating cost of approximately A$130 million per annum, variable according to production, including source all electricity from zero emission renewable energy sources

Climate finance

- Australian federal government provided two separate grants of A$100 million and $228 million to offset capital costs

Sources: SA Water Corporation, Murray-Darling Basin Commission, Commonwealth Auditor General

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Benefit Cost Analysis

Scenario	B-C Ratio
Level 5 water restriction event occurs once in 45 years	0.66
Level 5 water restriction event occurs once in 230 years	0.69
Level 5 water restriction event occurs once in 22.5 years	1.54

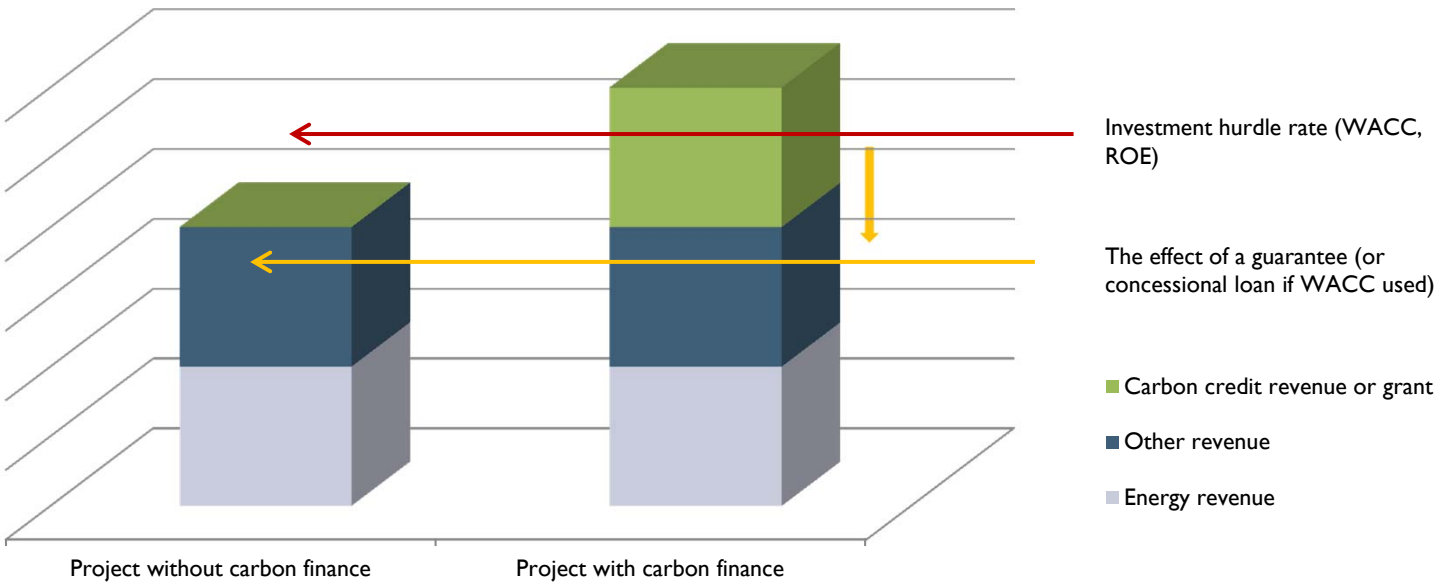
Options including the desalination project considered:

- Purchasing 105GL River Murray entitlements (approx. A$0.20-0.30/kL)
- Desalination plant (approx. A$1.30/kL) – see video here.
- Apply more Level 5 water restrictions

Sources: SA Water Corporation, Murray-Darling Basin Commission, Commonwealth Auditor General

Climate Finance

Comparing climate finance and carbon finance in the adaptation context



The specific aim of climate finance is to use various instruments – namely concessional loans, carbon finance, grants, guarantees and tariff support - to influence project design and investment decisions.

Note: the above is for illustrative purposes only

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Discussion Questions

No.	Question
1	What is the nature of adaptation finance in the relevant sectors and/or municipalities?
2	How is adaptation finance in the sectors and / or municipalities linked to development finance?
3	How should resilience be included in sectoral and / or municipality-level development planning?
4	What opportunities and barriers exist in mobilization, delivery & access to adaptation finance (from perspective of both providers and recipients) for sectoral and / or municipality activities?

Discussion Questions

No.	Question
5	What enabling environments are envisioned to increase funding, and private sector engagement in the future?
6	How can adaptation finance be scaled up for action at the sectoral and/or municipality-level?
7	What are the co-benefits between adaptation and mitigation and their contribution to sustainable development in the respective sectors and/or municipalities?
8	What are examples of successes and failures in ensuring that community adaptation needs are addressed?

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