Bioenergy:
Powering our Energy Master Plan

Renewable Gas Symposium

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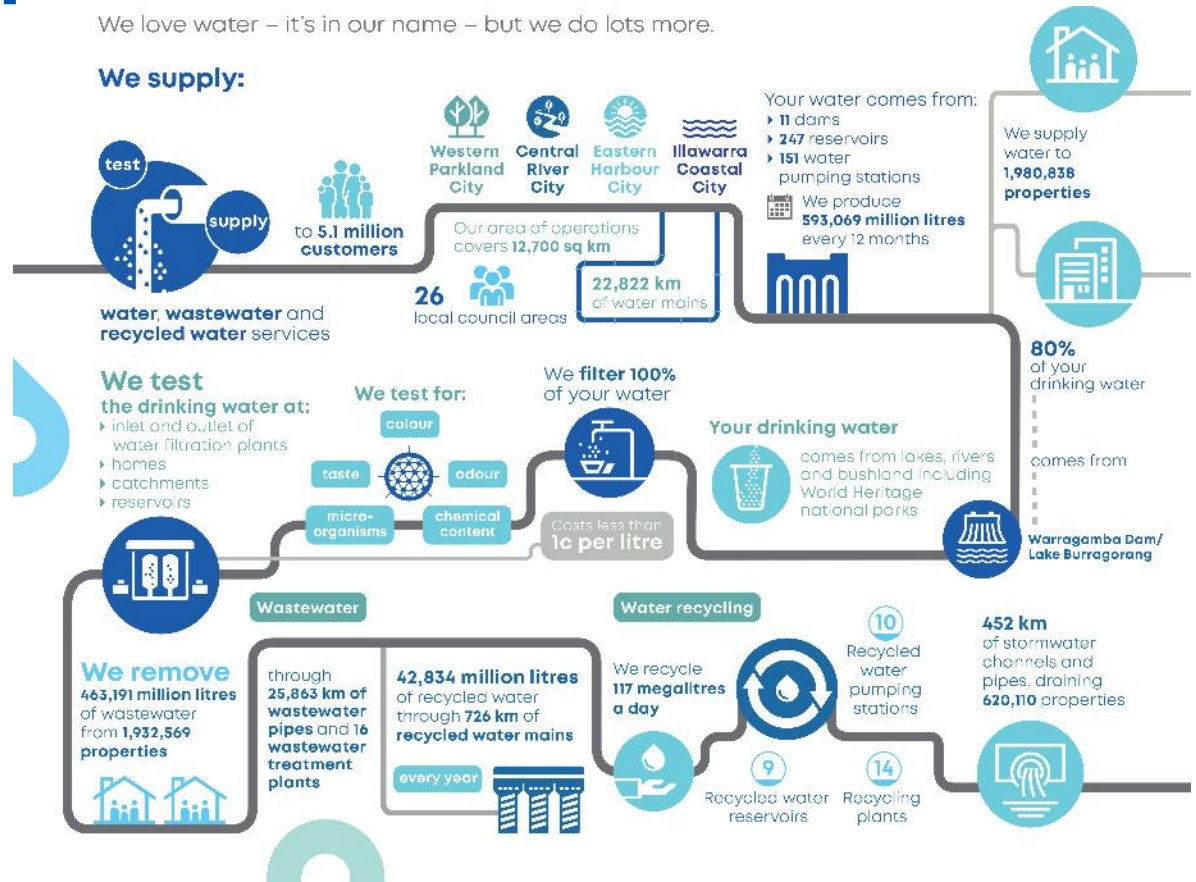
6 June 2019

Sydney WATER

We're Australia's largest water and wastewater provider

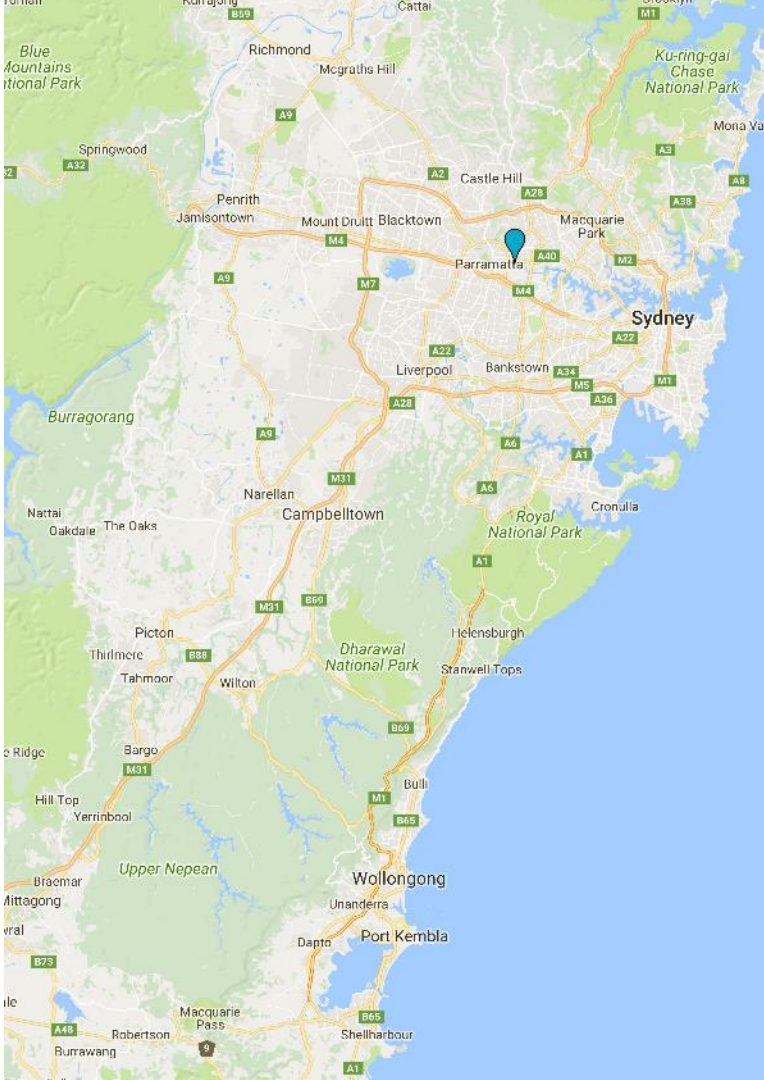


Sydney WATER

Pop quiz!

How many commercial anaerobic digestion facilities exist in Sydney?

A: 1 (Earthpower)



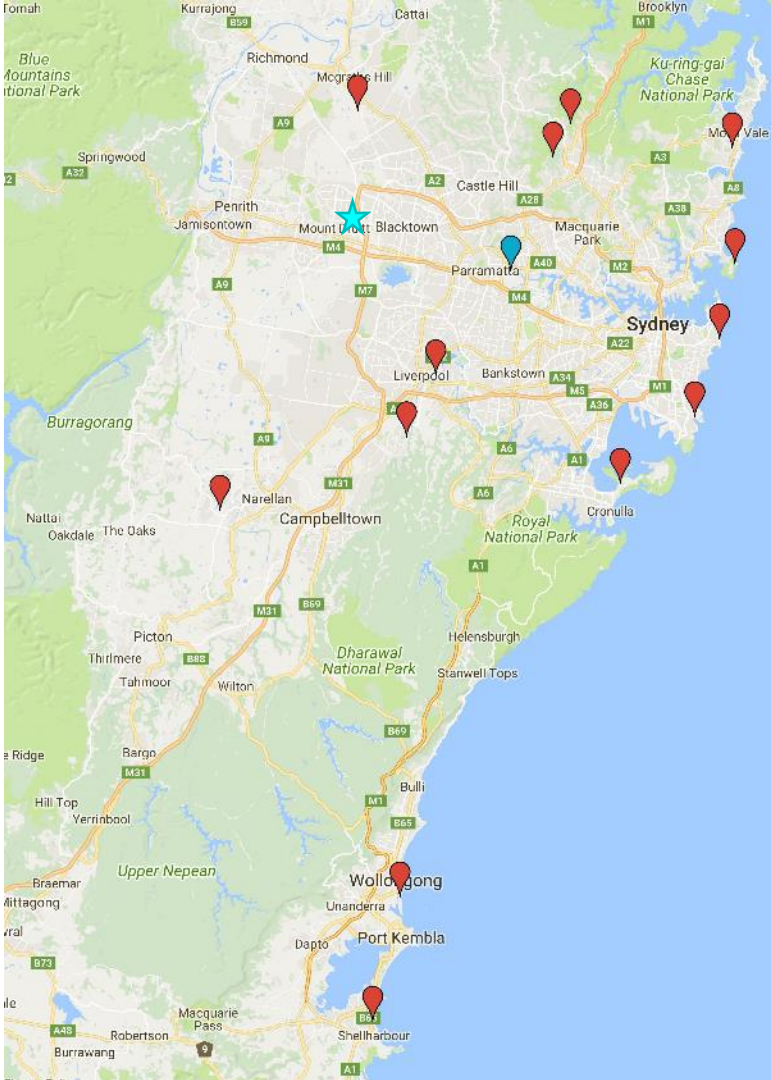
Pop quiz!

How many commercial anaerobic digestion facilities exist in Sydney?

A: 1 (Earthpower)

OR

B: 14 (Soon to be 15)



Renewable generation

Hydro

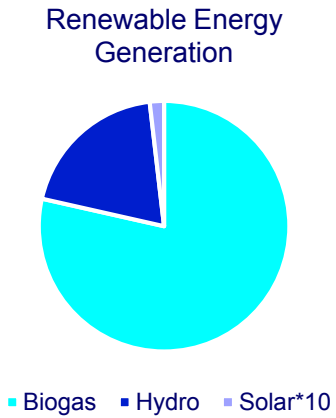
- Pressure reductions and gravity flows
- 3 generators in the water and wastewater system
- 6 MW Installed capacity – 16 GWh in 2017-18

Solar

- Solar PV at multiple sites
- 160 kW produced 145 MWh in 2017-18

Biogas

- Generation using biogas from wastewater treatment
- 8 wastewater treatment plants
- 10MW installed capacity – 64 GWh in 2017-18



Energy value $12-$15m per year

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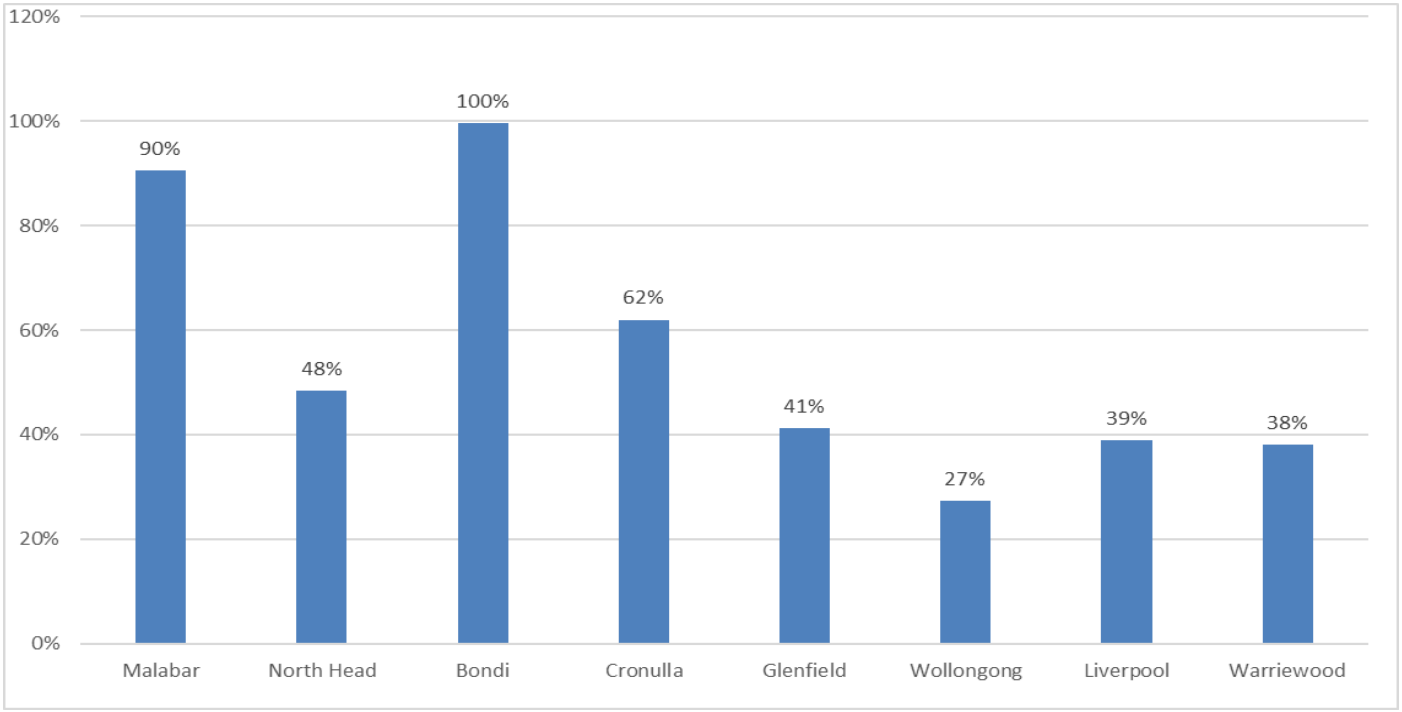
Wastewater treatment plants are local energy generators

Energy generated as a % of total site demand (2017-18)



Enough power for 10,000 homes

Sydney WATER

Water will play a pivotal role in Sydney's sustainable future

By 2030, we aim to generate an extra 4MW of our energy from food waste

Double energy self generation

4.5MW generation from sewage sludge

4.0MW from food waste

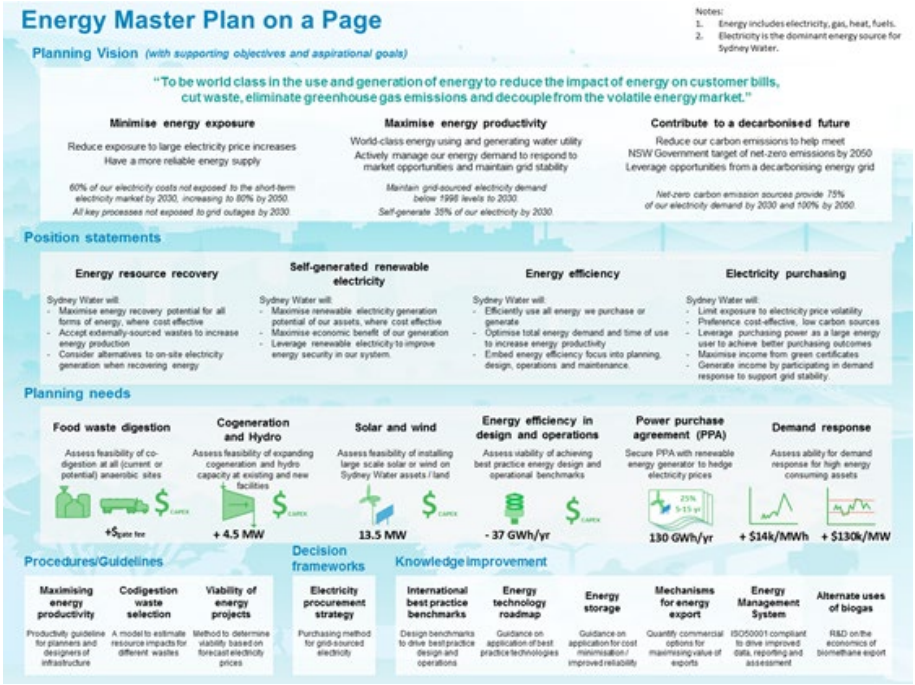
13.5MW solar

Drivers:

Reduce the impact energy on customer bills

Be a high productivity business

Contribute to the state targets for carbon emissions and waste reduction



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Food waste co-digestion at Cronulla

- Receives up to 20 tonnes of pulped fruit and vegetable waste and beverage waste per day since 2016
- Over 4500 tonnes processed to date
- Increase in biogas and electricity generation
- OEH funding
- NSW Green Globe Highly Commended
- Next steps
  - Broader business plan in development
  - More sites and greater volumes

Fruit shop manager Tony Manno liquefies waste onsite to be collected by Sydney Water.
Image: ABC News: Nick Dole

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Turning beer into power at Shellharbour

Shellharbour mini-digester research facility

- Collaboration with University of Wollongong, funded by the Australian Research Council
- 2 x 1000 litre digesters
- Test various organic materials in a controlled environment
- Tested beer, soft drinks, wine, fruit juice, food waste and FOG
- Developed a model to estimate outcomes from new waste streams

Former Minister for Energy and Utilities Don Harwin
Image: Georgia Matts, Illawarra Mercury

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Biogas export

- Proposal to trial the production of biomethane from biogas
- How do the economics of biogas to grid compare to biogas to cogeneration? Now? Future?
- Diversifying options for turning biogas into value
- Many commercial examples overseas but none in Australia
- Engaging with potential partners
- Pending application to ARENA

Biogas storage at Wollongong Water Recycling Plant

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Sydney Water is already taking a lead in valuing waste as a resource.

We are looking for partners to work with us to build a resilient future for Sydney.

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Questions?

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