

WATER AND THE RACE TO ZERO:

A WSAA and Water UK partnership

COP26 - November 2021



RACE TO ZERO

GLOBAL WATER INDUSTRY NET ZERO COMMITMENTS

26

The number of water utilities from UK, Australia and New Zealand that have joined the Race to Zero

72M

The number of customers served by Race to Zero water utilities

2025-2050

The timeframe Race to Zero water utilities have pledged to reach net zero

RACE TO ZERO

Australian and New Zealand water utilities are leading on climate

WSAA has partnered with Water UK in the Race To Zero, a United Nations-backed global campaign rallying a diverse range of actors to deliver a healthier, fairer zero carbon world.

14 Australian and New Zealand water utilities with commitments to reach net zero by 2050 or earlier, have added their voice to the global message that the water industry is tackling climate change, at the United Nations COP26 Climate Change Conference in Glasgow.

Race To Zero is an umbrella campaign – driven by science – that aggregates net zero commitments from across the climate action community. The initiatives represent 733 cities, 3,067 businesses and 120 countries in the largest ever alliance of its kind, covering nearly 25% of global CO2 emissions. Members commit to transparent action plans and robust near-term targets.



AUSTRALIA AND NEW ZEALAND WATER UTILITIES UNITE IN RACE TO ZERO

Together in 2019-20, the 14 Australian and New Zealand water utilities:

- Serve over 18 million customers
- Total of 160,000 km of water + wastewater pipelines
- Total of 354 treatment plants
- Pledges to reach net zero by 2025 to 2050
- Total net emissions 847, 637 tCO₂e*
- Total electricity use 1,199,192 MWh*
- 175MW of existing solar assets
- 220MW of planned solar assets

*Some 2019/20 and some 2020/21 data

RACE TO ZERO

Barwon Water
Coliban Water
Gippsland Water
Goulburn Valley Water
Icon Water
Melbourne Water
SA Water
South East Water
Southern Rural Water
Unitywater
Urban Utilities
Sydney Water
Watercare
Yarra Valley Water

This pledge matters, and we are proud to make it.....



Louise Dudley, Urban Utilities

'Now is the time to commit to effecting positive change and prove ourselves as responsible and conscientious members of the global community. The impact of our business on people and the planet matters'.



David Ryan, SA Water

'We're committed to a sustainable and healthy South Australia, and understand how our leadership in driving down emissions can help demonstrate the transition to a low carbon economy is within reach'.



Roch Cheroux, Sydney Water

'Through using energy efficiently and flexibly, seizing opportunities in the circular economy industry and working with our customers to integrate carbon into decision making, we're creating a better life for our customers with world class water services.'



Jon Lamonte, Watercare

'This is the biggest challenge we face, it won't be easy or simple, but it is our responsibility. Our people and more broadly, our partners are ready to tackle this head on'.



Lara Olsen, South East Water

'South East Water is focused on creating a better world for our customers now, and for future generations. Net zero emissions are a key part of this. We're proud to join with others across the globe to help deliver this'.



Pat McCafferty, Yarra Valley Water

'Climate change is the defining issue of our time and we're proud to be leading the way in reducing our greenhouse gas emissions with ambitious targets'.



Ray Hezikal, Icon Water

'As a collective, we have an obligation to future generations and ourselves as custodians of one of our planet's natural resources, and I believe our legacy as an industry will ultimately be measured by our sense of urgency in protecting it'.



Cameron Fitzgerald, Southern Rural Water

'The only solution to climate change is collective action. I'm proud that we at Southern Rural Water are doing our bit by targeting net zero emissions by 2025'.

This pledge matters, and we are proud to make it.....



Sarah Cumming, Gippsland Water

'We're taking strong action now, to help preserve our precious environment for current and future generations. We'll achieve this by moving to 100% renewable energy by 2025 and driving net greenhouse emissions down to zero by 2030.'



Michael Wandmaker, Melbourne Water

'We have already implemented exciting technology and actions to help meet our targets - with future innovative projects slated and underway to bring us closer to net zero by 2030.'



Tracey Slatter, Barwon Water

'We will continue to lead, in partnership with our customers and others, on innovative solutions for a prosperous future.'



George Theo, Unitywater

'Unitywater is committed to Net Zero by 2050 by implementing innovative solutions that creates new jobs and prosperity.'



Damian Wells, Coliban Water

'We want to be the best stewards of our environment that we can be. Not only do we want to leave this region in a better position than when we found it, but leave a strong and robust water sector for our children and grandchildren.'



Adam Lovell, Water Services Association of Australia

'Climate change is the defining issue of our time and we're proud to be leading the way in reducing our greenhouse gas emissions with ambitious targets.'



Steve Capewell, Goulburn Valley Water

'This commitment is vital for the future growth and prosperity of the Goulburn Valley. We will achieve our objectives by embracing technology, partnerships and entrepreneurial spirit.'

RACE TO ZERO

Race to Zero utilities in Australia and New Zealand



Queensland
Urban Utilities: Net Zero by 2050
Unitywater: Net Zero by 2050

South Australia
SA Water: Net Zero by 2050

New South Wales
Sydney Water: Net Zero by 2030

Victoria
Barwon Water: Net Zero by 2030
Coliban Water: Net Zero by 2030
Gippsland Water: Net Zero by 2030
Goulburn Valley Water: Net Zero by 2050
Melbourne Water: Net Zero by 2030
South East Water: Net Zero by 2030
Southern Rural Water: Net Zero by 2030
Yarra Valley Water: Net Zero by 2025

ACT
Icon Water : Net Zero by 2045

New Zealand
Watercare: Net Zero by 2050



RACE TO ZERO



BARWON WATER, VICTORIA AUSTRALIA

NET ZERO BY 2030, Interim target: 100% renewable by 2025

- Serves >341,000 people
- 6,866 km of water + wastewater pipes
- 8 water treatment plants, 11 wastewater treatment plants
- 2020-21 results:
 - Total net emissions: 30,082 tCO₂-e, ÷ 32% from 2019-20
 - Total electricity use: 31,976 MWh
 - Renewable generation: 9,188 MWh, 28% of total
 - 8MW of existing renewable generation
 - 14MW of planned renewable generation

We will reach net zero by:

- Black Rock solar farm 3MW
- Barwon Region Renewable Energy wind PPA
- Renewable Organics Networks: Regional RON biogas and biochar production, Colac RON biogas cogeneration 360kWe/360kWt
- Wurdee Boluc solar 300kW + battery 200kWh
- Zero Emissions Water solar PPA
- Montpellier mini hydro 135kW



Tracey Slatter, Barwon Water

'We will continue to lead, in partnership with our customers and others, on innovative solutions for a prosperous future.'

Above left: Regional Renewable Organics Network
Below left: Colac RON high-rate anaerobic treatment, biogas cogeneration and heat transfer system.

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COLIBAN WATER, VICTORIA AUSTRALIA

NET ZERO BY 2030, Interim target: 13% reduction by 2025

- 71,000 wastewater connections, 78,000 water connections
- 2378 km of water + 2014 km wastewater pipes
- 16 water treatment plants + 14 water reclamation plants
- Total net emissions [2020-21]: 26,491 tCO₂-e
- Total electricity use [2020-21]: 24,906 MWh
- 80 kW of existing solar assets
- 1.6 MW of planned solar assets

We will reach net zero by:

- Partnering with regional organisations to deliver carbon sequestration projects
- Hydroelectric generators
- Larger scale solar PV projects
- Energy efficiency projects with strategic partners
- Replacing fleet vehicles with electric vehicles



Damian Wells, Coliban Water

'We want to be the best stewards of our environment that we can be. Not only do we want to leave this region in a better position than when we found it, but leave a strong and robust water sector for our children and grandchildren.'

Above left: Committed to acting on climate change to protect the environment.

Below left: Solar Installation at a rural water treatment plant.

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GIPPSLAND WATER, VICTORIA AUSTRALIA

NET ZERO BY 2030, Interim target: 32,080 tCO₂-e (-24%) by 2025

- Serves 73,641 households & businesses with water services and provides wastewater services to 66,195 households & businesses
- More than 2000km of water mains + 1700km wastewater mains
- 29 treatment plants (15 water + 14 wastewater)
- Total net emissions [2019-20]: 34,750 tCO₂-e
- Total electricity use [2019-20]: 27,030 MWh
- Renewable electricity use currently 34%
- >1 MW of existing solar assets
- >3 MW of planned solar assets

We will reach net zero by:

- Increasing our renewable energy generation
- Using 100% renewable energy by 2025
- Building on our carbon offsetting programme
- Removing fossil fuels from our fleet and operations



Sarah Cumming, Gippsland Water

'We're taking strong action now, to help preserve our precious environment for current and future generations. We'll achieve this by moving to 100% renewable energy by 2025 and driving net greenhouse emissions down to zero by 2030.'

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Above right: Solar arrays at our Traralgon office and major treatment plants.
Below right: Environmental plantings sequestering over 60,000 tCO₂-e to offset unavoidable Scope 1 emissions.



GOULBURN VALLEY WATER, VICTORIA AUSTRALIA

NET ZERO BY 2050, Interim target: 37,416t by 2025

- Serves 132,752 customers (54,823 households)
- 3,253 km of water + wastewater pipes (mains)
- 58 treatment plants (32 water, 26 wastewater)
- Total net emissions [2019-20]: 77,754 tCO₂-e
- Total electricity use [2019-20]: 22,567 MWh
- 1.9 MW of existing solar assets
- 0.25 MW of planned solar assets

We will reach net zero by:

- Behind the meter solar
- High efficiency anaerobic lagoon gas capture (Shepparton & Tatura)
- Electricity sourced from 100% renewables by 2025
- Further initiatives to be identified over the next 12 months



Steve Capewell, Goulburn Valley Water

'This commitment is vital for the future growth and prosperity of the Goulburn Valley. We will achieve our objectives by embracing technology, partnerships and entrepreneurial spirit.'

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Above right: High rate anaerobic lagoon cover replacements to improve biogas capture & electricity generation.
Below right: Behind the meter solar at high energy consuming sites.



ICON WATER, CANBERRA AUSTRALIA

NET ZERO BY 2045, Interim target: 50-60% by 2025

- Serves 191,584 properties and 431,000 residential population
- 6,800 km of water + wastewater pipes
- 6 treatment plants
- Total net emissions [2019-20]: 23,020 tCO₂-e
- Total electricity use [2019-20]: 56,230 MWh
- ACT electricity 100% renewable
- Onsite renewable electricity producing:
 - 1.42MW of existing solar assets
 - 2.45MW of existing hydro assets

We will reach net zero by:

- Addressing fugitive nitrous oxide emissions from wastewater treatment (WaterRA project)
- Greening NSW electricity use
- Transitioning to zero emission vehicles
- Maintaining carbon carbon offsets for residual emissions.



Ray Hezikal, Icon Water

'As a collective, we have an obligation to future generations and ourselves as custodians of one of our planet's natural resources, and I believe our legacy as an industry will ultimately be measured by our sense of urgency in protecting it'.

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Above right: Solar panels contributing to electricity generation in the ACT
Below right: Mini hydro generator





MELBOURNE WATER, VICTORIA AUSTRALIA

NET ZERO BY 2030, Interim target: A reduction to 204,380 tonnes CO2-e by 2025

- Water wholesaler serving 5 million customers/1.8 million households in partnership with Greater Western Water, South East Water and Yarra Valley Water
- 1,467 km of water + wastewater pipes
- 2 sewage treatment plants
- Total net emissions [2020-21]: 468,666 tCO2-e
- Total electricity use [2020-21]: 330, 014 MWh
- 42 MW of existing assets including solar, mini hydros and biogas
- 37 MW of planned assets including solar, mini hydros and biogas

We will reach net zero by:

- Understanding and exploring emission reduction opportunities
- Increasing our portfolio of renewable energy generation
- Energy efficiency projects
- Procurement of renewable energy and offsets



Michael Wandmaker, Melbourne Water

'We have already implemented exciting technology and actions to help meet our targets - with future innovative projects slated and underway to bring us closer to net zero by 2030.'

Above left: Mini hydroelectric plant
Below left: Electric vehicles as part of fleet

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SA WATER, SOUTH AUSTRALIA, AUSTRALIA

NET ZERO BY 2050, Interim target: 50% by 2030

- Serves 1.7 million customers (721,000 water 542,000 sewer)
- 36,800 km of water + wastewater pipes
- 83 treatment plants
- Total net emissions [2019-20]: 299,772 tCO₂-e
- Total electricity use [2019-20]: 580 GWh
- 39 MWp of existing solar assets
- 100MWp of planned solar assets

We will reach net zero by:

- Zero Cost Energy Future
- Quantifying and reducing Scope 1 emissions
- Transition to electric vehicles



David Ryan, SA Water

'We're committed to a sustainable and healthy South Australia, and understand how our leadership in driving down emissions can help demonstrate the transition to a low carbon economy is within reach'.

Above left: 6MW/12MWh BESS at Adelaide Desalination Plant Phase 1

Below left: 14,705 MWh ground mounted single axis tracking array at Morgan to Whyalla Pipeline Pump Station #3

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SOUTH EAST WATER, VICTORIA AUSTRALIA

NET ZERO BY 2030 , Interim target: 45% reduction from baseline by 2025

- Serves 792,364 customers (92% residential) and 1.87 million people
- 26,374+ km of water + wastewater pipes (2019/20 Annual Report)
- 8 treatment plants
- Total net emissions [2019-20]: 33,149 tCO₂-e
- Total electricity use [2019-20]: 30,564 MWh
- 869 kW of existing solar assets
- 1,190 kW of planned solar assets

We will reach net zero by:

- ZEW – Kiamal Solar Farm (LGCs)
- Cherry Tree Wind Farm (LGCs)
- Combined heat and power (CHP) units at Mt Martha and Boneo WRP
- Solar arrays at Pakenham and Somers WRP
- Energy efficiency and optimisation



Lara Olsen, South East Water

'South East Water is focused on creating a better world for our customers now, and for future generations. Net zero emissions are a key part of this. We're proud to join with others across the globe to help deliver this'.

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Above right: Kiamal Solar Farm
Below right: Combined heat and power units at Mt Martha to meet electricity demand at the Plant.





SOUTHERN RURAL WATER, VICTORIA AUSTRALIA

NET ZERO BY 2025

- Services customers across 88,000 km², regulating access to surface water, groundwater and managing irrigation districts and storages
- 1,042 km channels, pipes, drains in the Macalister Irrigation District and 170km channels, pipes, drains in the Werribee and Bacchus Marsh Irrigation Districts
- Total net emissions [2019-20]: 1,102 tCO₂-e
- Total electricity use [2019-20]: 728 MWh
- 101 MW of existing solar assets
- 20 MW of planned solar assets

We will reach net zero by:

- Ongoing use and expansion of behind-the meter renewables
- Participating in an industry-wide large-scale solar PV project
- Minimising vehicle travel and trialling low or zero-emissions vehicles



Cameron Fitzgerald, Southern Rural Water

'The only solution to climate change is collective action. I'm proud that we at Southern Rural Water are doing our bit by targeting net zero emissions by 2025'.

Below left: Solar PV system services at Werribee Office (27.6 kW)

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SYDNEY WATER, NEW SOUTH WALES AUSTRALIA

NET ZERO BY 2030 (Scope 1 and 2), NET ZERO BY 2040 (Scope 3)

- Serves 5.1 million customers, 2 million connections
- 26,000 km of water + wastewater pipes
- 30 wastewater treatment + water recycling plants
- Total net emissions [2019-20]: 44,259 tCO₂-e
- Total electricity use [2019-20]: 35,161 MWh
- 160 kW of existing solar assets
- 10.2 MW of existing cogeneration assets
- 5.8 MW of existing hydro generation assets

We will reach net zero by additional:

- Energy efficiency 8GWh/y
- Solar generation 16.5 MW
- Biogas generation (wastewater) 8.2 MW
- Biogas generation (food waste) 6.5 MW
- Energy management and climate change
- Biomethane Project



Roch Cheroux, Sydney Water

'Through using energy efficiently and flexibly, seizing opportunities in the circular economy industry and working with our customers to integrate carbon into decision making, we're creating a better life for our customers with world class water services.'

Above left: Aerial photo of the Malabar Wastewater Treatment Plant

Below left: Cogeneration engine at Malabar Wastewater Treatment Plant

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UNITYWATER, QUEENSLAND AUSTRALIA

NET ZERO BY 2050, Interim target: 70% by 2030

- Serves 300,000 residential properties and 18,000 commercial and industrial enterprises
- 12,000 km of water + wastewater pipes
- 17 treatment plants
- Total net emissions [2019-20]: 77, 216 tCO₂-e
- Total electricity use [2019-20]: 68, 423 MWh
- 252 MWh of existing solar assets
- 200 MWh of planned solar assets

We will reach net zero by:

- Cogen plant at Kawana Sewage Treatment Plant (STP)
- Solar panel installation at Kenilworth STP
- Purchase of renewable energy within energy contracts
- Diffuser Asset Strategy to reduce energy consumption at STPs
- Gasification of Biosolids
- Composting Biosolids



George Theo, Unitywater

'Unitywater is committed to Net Zero by 2050 by implementing innovative solutions that creates new jobs and prosperity.'

Above left: Solar panel at Northern Services Centre
Below left: Biosolids facility at Maroochydore STP

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URBAN UTILITIES, QUEENSLAND AUSTRALIA

NET ZERO BY 2050, Interim target: 30% by 2030

- Serves 1.5 million customers: 621,000 residential properties and 37,000 commercial properties
- 9,665 km of water pipes + 9,889 km wastewater pipes
- 30 treatment plants
- Total net emissions [2019-20]: 135,596 tCO₂-e
- Total electricity use [2019-20]: 93,966 MWh
- Currently ~20% renewable electricity

We will reach net zero by:

- Managing fugitive methane emissions
- 100% renewable electricity
- Zero emissions fleet
- Carbon offset opportunities that leverage multiple community benefits
- Working with our supply chain to manage our Scope 3 GHG emissions



Louise Dudley, Urban Utilities

'Now is the time to commit to effecting positive change and prove ourselves as responsible and conscientious members of the global community. The impact of our business on people and the planet matters'.

Above left: Australia's first Annamox treatment process to reduce energy consumption
Below left: Piloting electric vehicles

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WATERCARE, AUCKLAND NEW ZEALAND

NET ZERO BY 2050 , Interim target: 50% operational by 2030

- Serves 1.7m customers with over 450,000 connections
- 17,755 km of water + wastewater pipes
- 34 water and wastewater treatment plants
- Total net emissions [2019-20]: 42,220 tCO₂-e
- Total electricity use [2019-20]: 198,863.5 MWh
- 1.37 MW of existing solar assets
- 45 MW of proposed solar assets

We will reach net zero by:

- Green energy strategy
- Wastewater Treatment Plant upgrades (Annamox, THP, N-Shunt)
- Co-gen engine upgrades
- Fleet transition to BEV, PHEV
- Beneficial use of biosolids
- Carbon removals on own land



Jon Lamonte, Watercare

'This is the biggest challenge we face, it won't be easy or simple, but it is our responsibility. Our people and more broadly, our partners are ready to tackle this head on.'

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Above right: Rosedale floating solar array
Below right: Transitioning vehicle fleet to BEV and PHEV removing 1400 tCO₂e /pa by 2030



YARRA VALLEY WATER, VICTORIA AUSTRALIA

NET ZERO BY 2025

- Serves 796,833 households, 59,209 businesses
- Approx. 10,060 km of water + 9,800 km wastewater pipelines
- 10 treatment plants
- Total net emissions 22,226 tCO₂e (FY20-21)
- Total electricity use 28,778 MWh (FY20-21)
- Total renewable electricity produced & consumed 9,741 MWh (FY20-21)
- 0.63 MW of existing solar assets, 2.6 MW of planned solar assets
- 0.9 MW waste to energy facility biogas (ReWaste), 2.1 kW of planned waste to energy biogas

We will reach net zero by:

- Energy productivity to reduce emissions
- Second food waste to energy facility to produce biogas and expansion of Rewaste generator
- Green hydrogen hub
- Floating solar system and further solar assets
- Growing Carbon Pilot - abatement to offset fugitive emissions and redress legacy emissions



Pat McCafferty, Yarra Valley Water

'Climate change is the defining issue of our time and we're proud to be leading the way in reducing our greenhouse gas emissions with ambitious targets.'

RACE TO ZERO

Above right: Rewaste, food waste to energy facility
Below right: Solar car park, head office

