

What Goes Up — Victorian Water Corporations Greenhouse Gas Emissions Report 2019

Introduction

In 2018 the Victorian Minister for Water made a *Statement of Obligations (Emission Reduction)* that commits the State's nineteen water corporations to reducing their greenhouse gas emissions to nominated target amounts by 2025.

In this report Proud Mary sets out progress to date in reducing emissions and identifies some of the issues, challenges and opportunities that the water corporations face.

Reducing emissions in the Water Sector

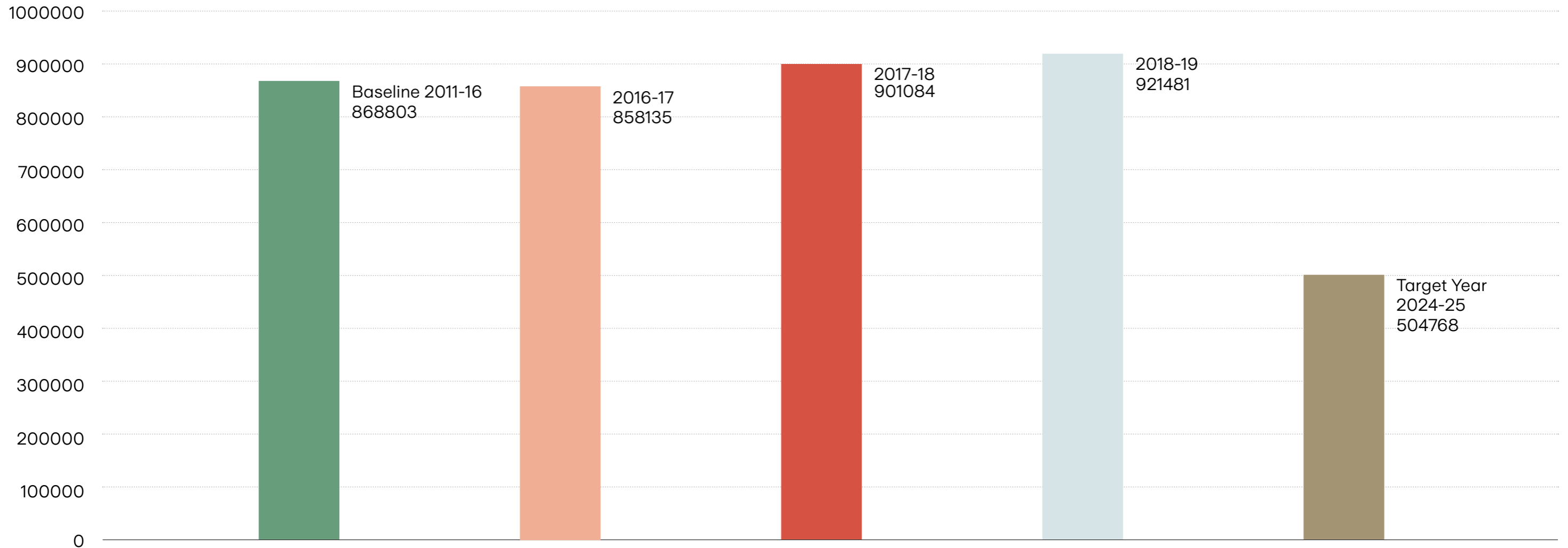
In 2016, the Government committed in *Water for Victoria* that 'Our water sector will be a leader in the state's climate change mitigation and adaptation actions'. The Victorian water sector has the most advanced approach to emissions reduction of any sector within the Victorian Government and as such its progress in reducing emissions is of broad interest.

Water for Victoria established a process whereby each water corporation 'pledged' an emission reduction for 2025 which was returned to the water corporations as a regulatory obligation in the *Statement of Obligations (Emission Reduction) 2018 (SoO(ER))*.

Proud Mary has compiled this report from emissions data reported in the water corporations' 2019 annual reports and responses to a survey sent to the Managing Directors of the water corporations.

Results: 2018-2019 Victorian Water Sector Emissions

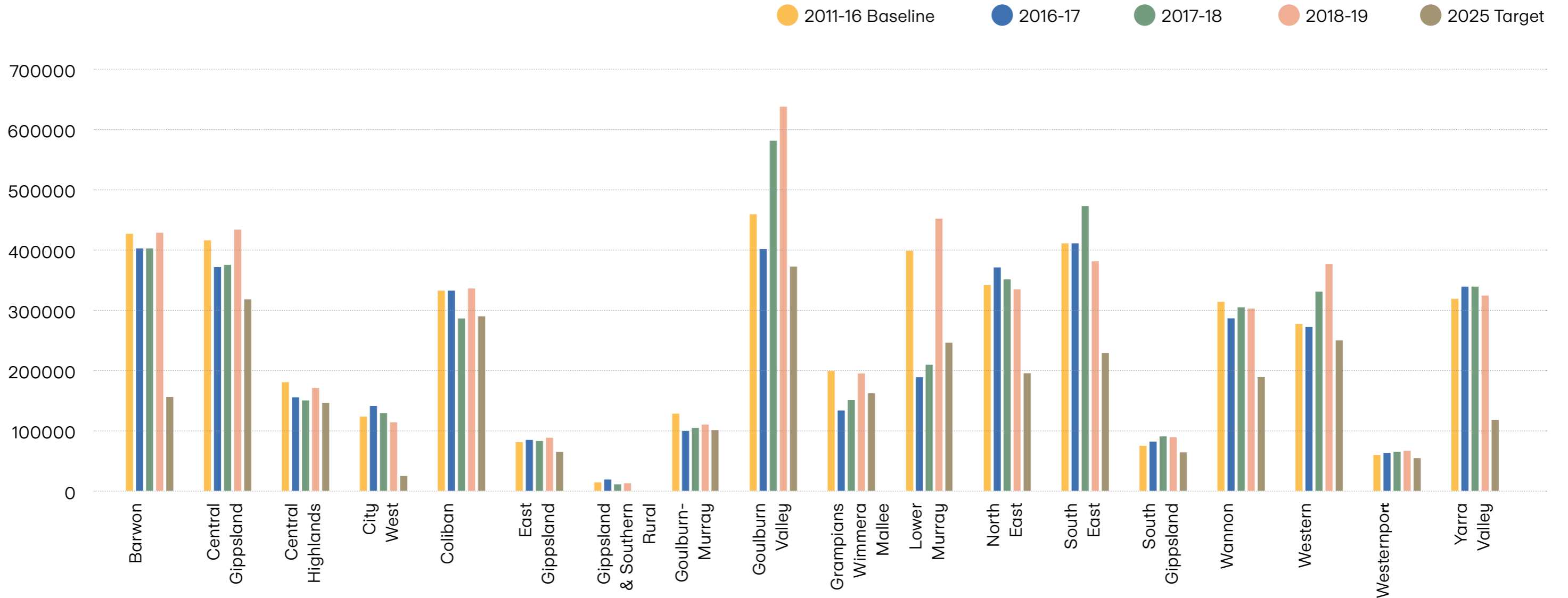
Total for all nineteen water corporations, tonnes CO₂-e (carbon dioxide equivalent)



Water Sector Emissions

(excluding Melbourne Water)

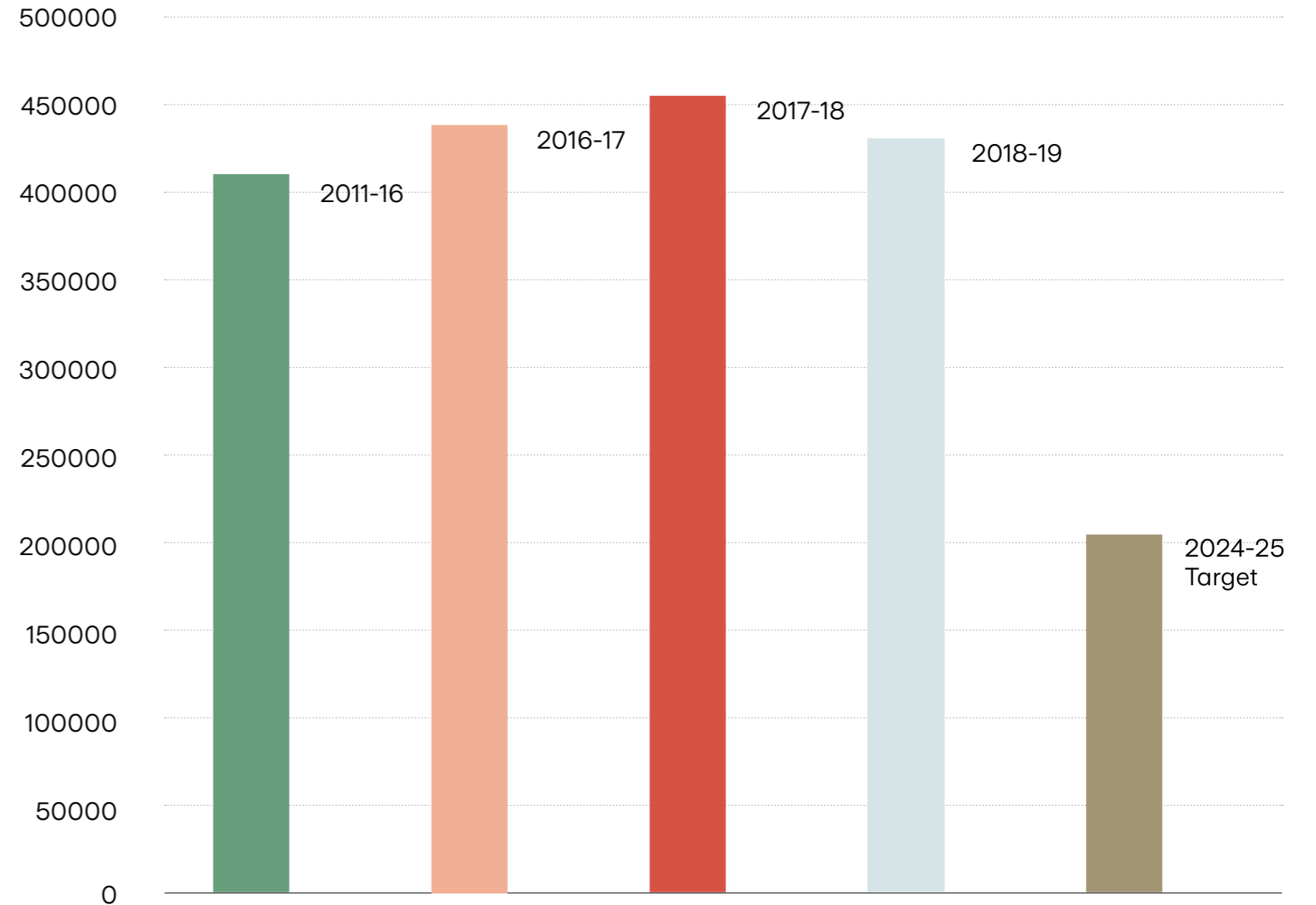
Tonnes CO₂-e



Melbourne Water emissions'

Melbourne Water is responsible for around half of the water sector's emissions.

Around half of Melbourne Water's emissions are scope 1 emissions from wastewater treatment.



Analysis

The baseline period set in the SoO(ER) is 2011-2016 when sector emissions averaged 868,803 tonnes of CO₂-e. The sector's emissions dropped below the baseline in 2016-17 to 858,135 tonnes and have climbed in the two years since to reach 921,481 tonnes CO₂-e in 2018-19. On the current trend, the sector's emissions are diverging from the target of 504,768 tonnes CO₂-e. Nevertheless, the water corporations expect this trend to reverse in 2020-21, as discussed below.

In 2018-19 twelve of the nineteen water corporations reported higher emissions than the previous year. The highest percentage increase in emissions compared to the baseline came from Goulburn Valley Water while the highest percentage increase from the previous year came from Lower Murray Water.

Eight water corporations reported higher emissions from increased pumping due to dry conditions (Barwon, Central Highlands, Coliban, East Gippsland, Grampians Wimmera Mallee, Lower Murray, Westernport, Yarra Valley).

Other explanations provided for emissions changes from the previous year are:

- * Gippsland Water reported higher emissions due to desludging activities
- * City West Water's emissions increased due to population growth
- * East Gippsland Water's emissions increased due to more wastewater aeration to meet EPA licence requirements

- * Goulburn Valley Water received more trade waste from industrial customers increasing processing capacity and experienced an anaerobic lagoon cover failure
- * Melbourne Water achieved lower emissions due to increased electricity generation from biogas
- * North East Water achieved lower emissions due to improving energy efficiency of aeration, reduced organic loads at the West Wodonga facility, optimisation of surface aeration at waste water treatment plants and improved measurement of carbon emissions, and
- * Wannon Water experienced a higher waste load from major customers.

Analysis (cont.)

Two water corporations made notable comments on the broader context for their emissions reduction pledges:

- * Wannon Water recognised ‘the importance of playing our part to reduce greenhouse gas emissions and keep the global temperature rise to no less than two degrees’ and also noted the inclusion of climate-related risks in its risk register, and
- * North East Water was the only water corporation to acknowledge the *Taskforce on Climate-related Financial Disclosures* (TCFD) and aligned its reporting at a high level to the TCFD’s recommendations.

Three water corporations, Barwon Water, Westernport Water and Yarra Valley Water, noted their efforts to work with other organisations in their areas on options to reduce emissions collaboratively.

Many of the water corporations that are participating in the Power Purchase Agreement managed through Zero Emissions Water Limited (thirteen in all) reported that they will be able to reduce their emissions once the project starts operation.



Survey responses

Expectations for 2020-21

No water corporations expect their emissions in 2020-21 to be higher than 2019-20. Three quarters expect their emissions to be lower and one quarter similar.

Reasons for these expectations include that water corporations:

- * have new generation projects coming online in 2019-20

- * are implementing efficiency projects
- * are avoiding emissions from a range of sources, including vehicles and air travel
- * will have access to Large-scale Generation Certificates (LGCs) through Zero Emissions Water that they may retire to reduce their emissions, and
- * will not experience some of the one-off causes of increased emissions in 2018-19, for example desludging.

Emissions Reduction Methods

All water corporations reported that they would likely use behind the meter renewables, efficiency and energy use optimisation to reduce emissions in the future. Half of the respondents indicated they would likely buy more renewable energy through power purchase agreements (PPAs) and one reported it would likely use pumped hydro energy storage.

A range of other emissions reduction approaches were also reported including:

- * developing waste to energy facilities
- * using offsets
- * obtaining LGCs but not through PPAs
- * purchasing green power
- * purchasing fuel efficient vehicles
- * installing mini-hydro on the water distribution network, and
- * storage options.

Survey responses (cont.)

Electricity Demand Management

Just over half of the respondents intend to participate in the 2019-20 Reliability and Emergency Reserve Trader (RERT) market with one respondent also participating in the Frequency Control and Ancillary Services (FCAS) market.

Use of offsets

All respondents intend to use offsets to meet the 2025 target under the SoO(ER), with one respondent already using them and one respondent interested in accessing a broader range of offsets as Melbourne Water can do under the SoO(ER).

LGCs

Most respondents reported their intention to progressively retire their LGCs from Zero Emissions Water for a range of reasons including maximising value (selling LGCs early to fund other initiatives and retiring LGCs later) and retiring as required to meet targets.

Compliance costs

No respondents reported considering passing on costs of compliance with their emissions reduction obligations to trade waste customers.

Community and Customer engagement

All but one of the respondents is showing its customers and community how it is reducing emissions through social and other media and communications.

Survey responses (cont.)

Major Challenges

Water corporations reported a wide range of challenges to meeting their emissions reduction targets, including:

- * carbon offsets policy
- * achieving economies of scale through collaboration
- * growth in emissions from increased customer base, increased demand for recycled water and use of pumping in dry years
- * funding for renewable energy and energy efficiency projects, and
- * moving beyond the 2025 targets to net zero emissions as future emissions reduction opportunities will likely be more costly.

Collaboration

Most water corporations are collaborating in some way with other organisations, including with:

- * Catchment Management Authorities to develop offset projects
- * other water corporations
- * local governments, and
- * large customers



Findings

Given the increase in emissions in 2018-19 compared to 2017-18 the expectation from all survey respondents that their emissions in 2019-20 will be equal to or lower than 2018-19 may prove hard to fulfil. The 2018-19 Annual Reports included a wide range of reasons for higher emissions, not all of which were anticipated. On the other hand, many water corporations will have access to LGCs from Zero Emissions Water in 2019-20 that they may retire to reduce their emissions.

Most effort so far has gone into reducing scope 2 (electricity related) emissions through avoiding electricity use where possible, improved efficiency and using renewable energy. These emission reductions are relatively low-cost and indeed many of these projects are net present value positive.

All survey respondents propose to use offsets to meet their 2025 emission reduction targets. This will likely prove challenging due to the limited range of offsets available to water corporations (except Melbourne Water) under the SoO(ER) and their potential high cost.

Given that the development and use of offsets is a common goal there is scope for the sector to work together to identify cost effective options with the potential to contribute other benefits such as catchment health and water quality. Soil carbon and vegetation on private land in water catchments may provide these benefits.

In addition, water corporations could consider engaging with trade waste customers on issues concerning the reduction of emissions that are attributable to trade waste.

To assist in developing these opportunities it would be helpful for the emission reporting requirements to require reporting on scope 1 and 2 emissions.

The Victorian Auditor-General's Office (VAGO) *Annual Plan 2019-20* shows that VAGO intends to carry out a performance audit of 'water authorities' contributions to reducing greenhouse gas emissions in 2020-21. As the most advanced emissions reduction program within the Victorian government the results of the audit will be of broad interest.

The water sector has the opportunity to collaborate in preparing consistent quality information on its efforts ahead of the performance audit.

Several water corporations have identified working with other organisations on joint projects. As more Victorian Government agencies turn their attention to reducing their emissions, the water sector could share its expertise and join other government agencies in projects such as Power Purchase Agreements.

About Proud Mary Consulting

Proud Mary Consulting creates public value with clients through advising on policy, strategy and governance in relation to water, climate change, environment and sustainability, energy and public administration.

Michael Wheelahan
Principal Consultant —

Michael brings extensive experience in developing policy, strategy and effective governance. He is renowned for his ability to shape and work within policy, institutional and regulatory frameworks and to navigate government. Michael is sought out for his ability to contextualise complex policy issues and articulate strategies to a wide range of audiences.

Jon Anstey
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Jon consults to boards and teams on strategy, law, finance and governance, across energy, climate, resources and health. Jon has more than twenty years of experience as an executive, leader and lawyer in over twenty countries, including ten years with Shell and the United Nations (UN) in Europe and Asia. As a lawyer, he has over ten years in energy, climate, water, resources, finance, infrastructure and health law. His legal roles have included at the Australian Energy Market Operator (AEMO), Coliban Water, Clayton Utz, Westpac and the UN.