Proud Mary Consulting

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# What Goes Up

—

# Victorian Water Corporations Greenhouse Gas Emissions 2019-20

# Findings

In 2019–20, Victorian water corporation emissions continued to rise, approaching double the 2024–25 compliance obligation.

Given this continued rise, meeting the 2024–25 targets will be challenging for some corporations. While almost all survey respondents expect to achieve their targets, several reported that they now expect to exceed their 2024–25 targets.

When Melbourne Water's emissions are excluded, the remaining water corporations reported lower emissions overall than 2018–19. This overall decrease in emissions was anticipated by the corporations in last year's survey. The emission decline was due to new emission reduction projects coming online, and fewer emission increases from one-off causes such as desludging.

## 2030 Targets

As most water corporations are preparing their next Price Submissions that will take them to 2028, attention is focusing on targets for 2030, since initiatives to meet these targets will need to be implemented during the next price period.

VicWater has identified in its Policy Platform the need for the Statement of Obligations (Emission Reduction) to provide a 'clear net zero emissions target to allow sufficient time for water corporations to achieve this goal efficiently' — see https://vicwater.org.au/vicwater-policy-platform/.

## Large-Scale Generation Certificates

The decline in emissions from the corporations other than Melbourne Water was despite the delay to the Zero Emissions Water (ZEW) solar project that came online in October 2020. With Large-Scale Generation Certificates (LGCs) now flowing from ZEW, water corporations have more scope to reduce their emissions in 2020–21.

In 2019–20 one water corporation, South East Water, reported retiring LGCs, demonstrating their utility to flexibly reduce emissions.

# Findings (cont.)

## Carbon Offsets

Two water corporations reported retiring carbon offsets, although neither retired offsets eligible to reduce reportable emissions under the Statement of Obligations (Emissions Reduction).

There is significant demand for increased access to offsets: over half of the survey respondents would like to use offsets but would prefer to access a broader range, beyond the limited range of offsets currently available under the Statement of Obligations (Emissions Reduction) (that is, offsets created by or on behalf of a water corporation or catchment management authority in Victoria).

VicWater has also identified this need, advocating for 'access to all Victorian carbon offsets that are available under the Climate Active Carbon Neutral Standard' — see https://vicwater.org.au/vicwater-policy-platform/. To support industry decision making on offsets, VicWater has also published a guide prepared by Proud Mary — see https://vicwater.org.au/industry-guides/.

## Electricity Market Services

This year's survey responses show a marked increase in water corporations' interest in providing electricity market services, where there are emerging opportunities including the new Wholesale Demand Response Mechanism (WDRM) and ancillary services.

# Introduction

In 2018 the Victorian Minister for Water made a Statement of Obligations (Emission Reduction) (SoO(ER)) that commits the State's 19 water corporations to reducing their greenhouse gas emissions to nominated target amounts by 2025.

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

## Reducing emissions in the Water Sector

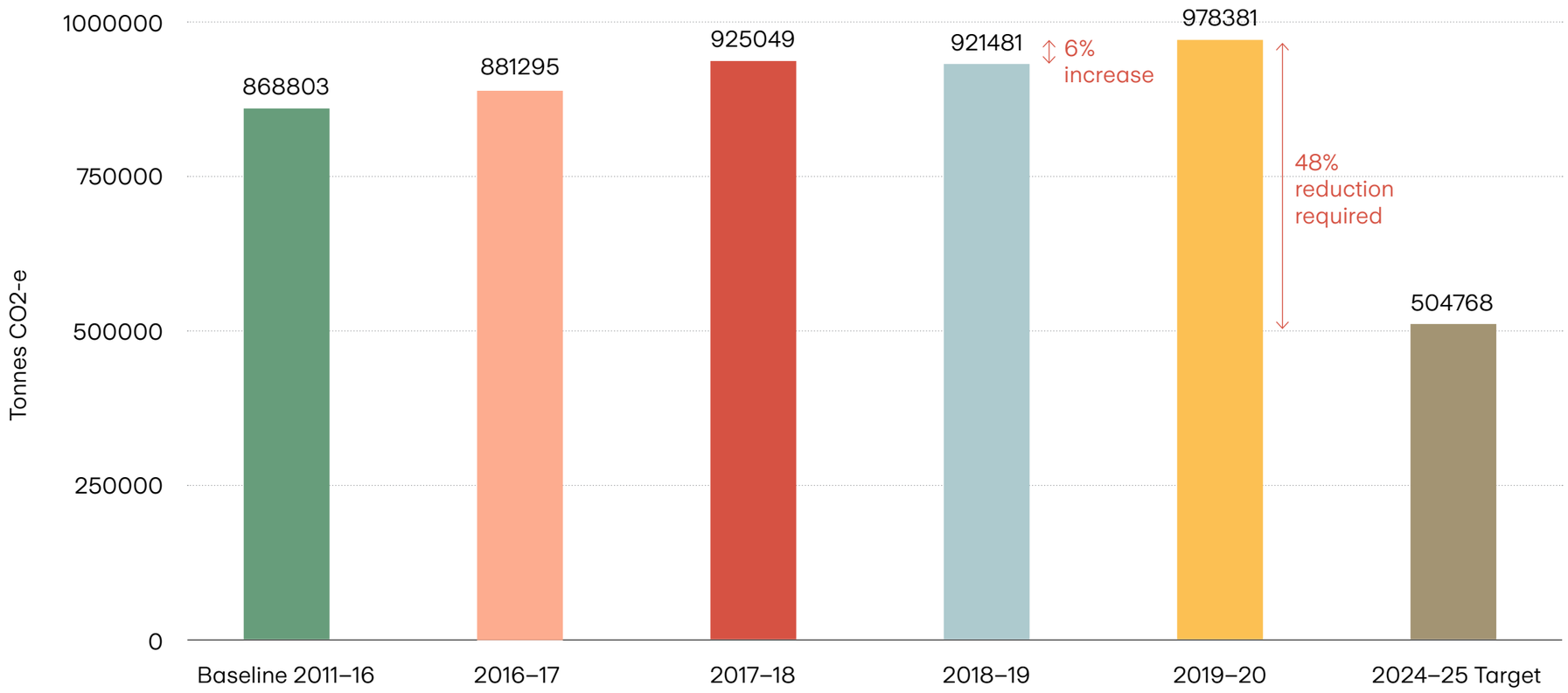
In 2016, the Government committed in Water for Victoria that 'Our water sector will be a leader in the state's climate change mitigation and adaptation actions'. The Victorian water sector has the most advanced approach to emissions reduction of any sector within the Victorian Government and as such its performance in reducing emissions is of broad interest. Over time, other sectors are likely to follow, including health, transport and education.

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 SoO(ER).

Proud Mary has compiled this report from emissions data reported in the water corporations' 2019–20 annual reports and responses to a survey sent to all water corporations. Fifteen of the water corporations completed the survey.

# Results: 2019–20
# Victorian Water Sector Emissions

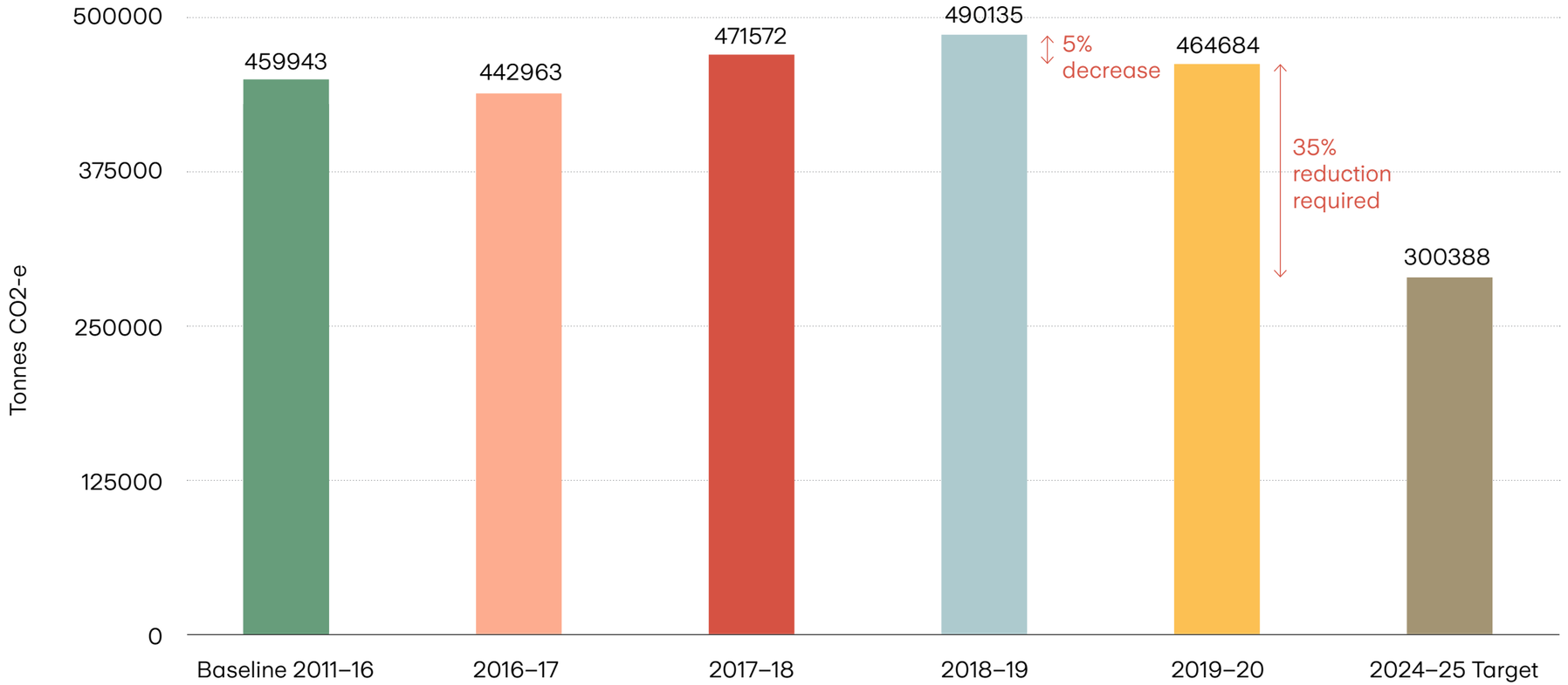
## Emissions: All 19 Water Corporations




The Victorian water corporations' emissions have increased by 56,900 tonnes CO2-e in 2019–20 compared to 2018–19. This means that collectively, the corporations need to reduce their emissions by 473,613 tonnes CO2-e or 48% by 2025.

# Results: 2019–20
# Victorian Water Sector Emissions (cont.)

## Emissions: 18 Water Corporations
(excluding Melbourne Water)

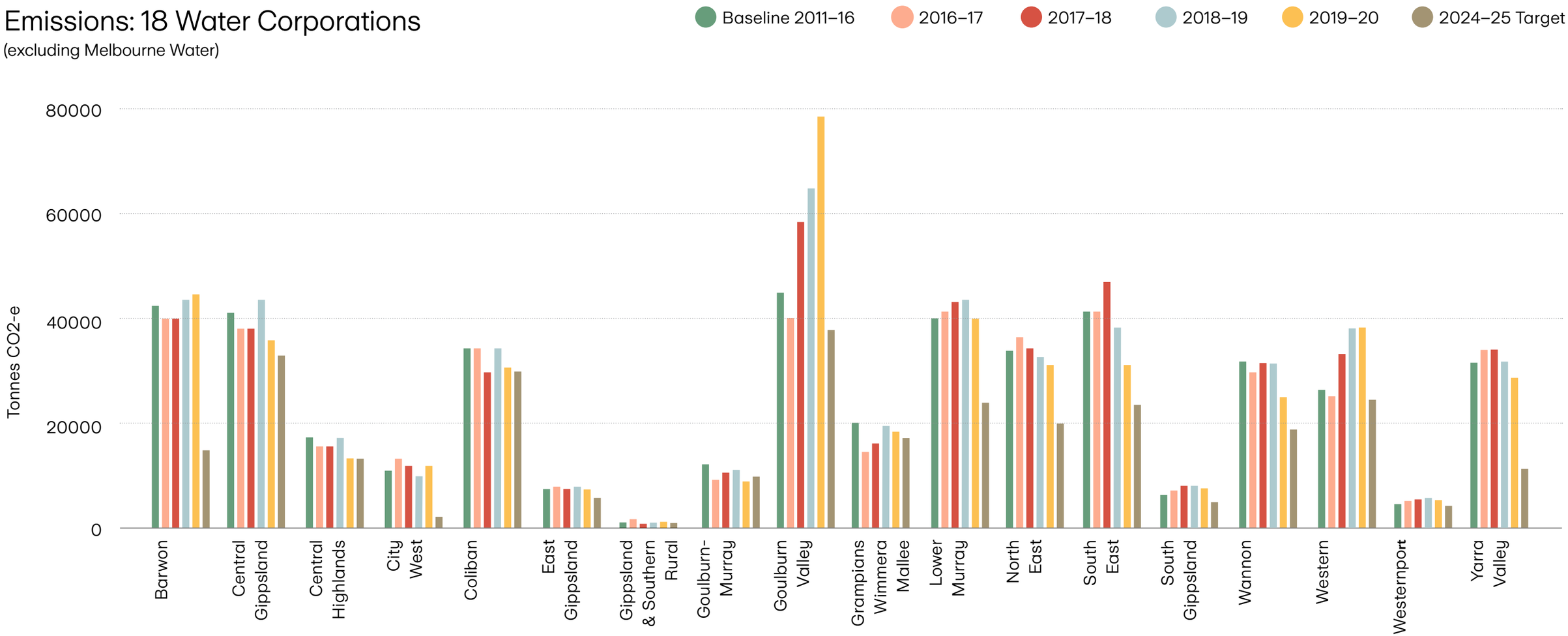



Melbourne Water is the largest emitter of all the water corporations, contributing more emissions in 2019–20 than all the other corporations combined.

When the emissions generated by Melbourne Water are removed, the emissions from the rest of the industry are lower in 2019–20 than 2018–19, decreasing from 490,135 tonnes CO2-e in 2018–19 to 464,684 tonnes CO2-e in 2019–20. This shows that when removing Melbourne Water, the water corporations require a collective emissions reduction of 35% to reach the 2025 target.

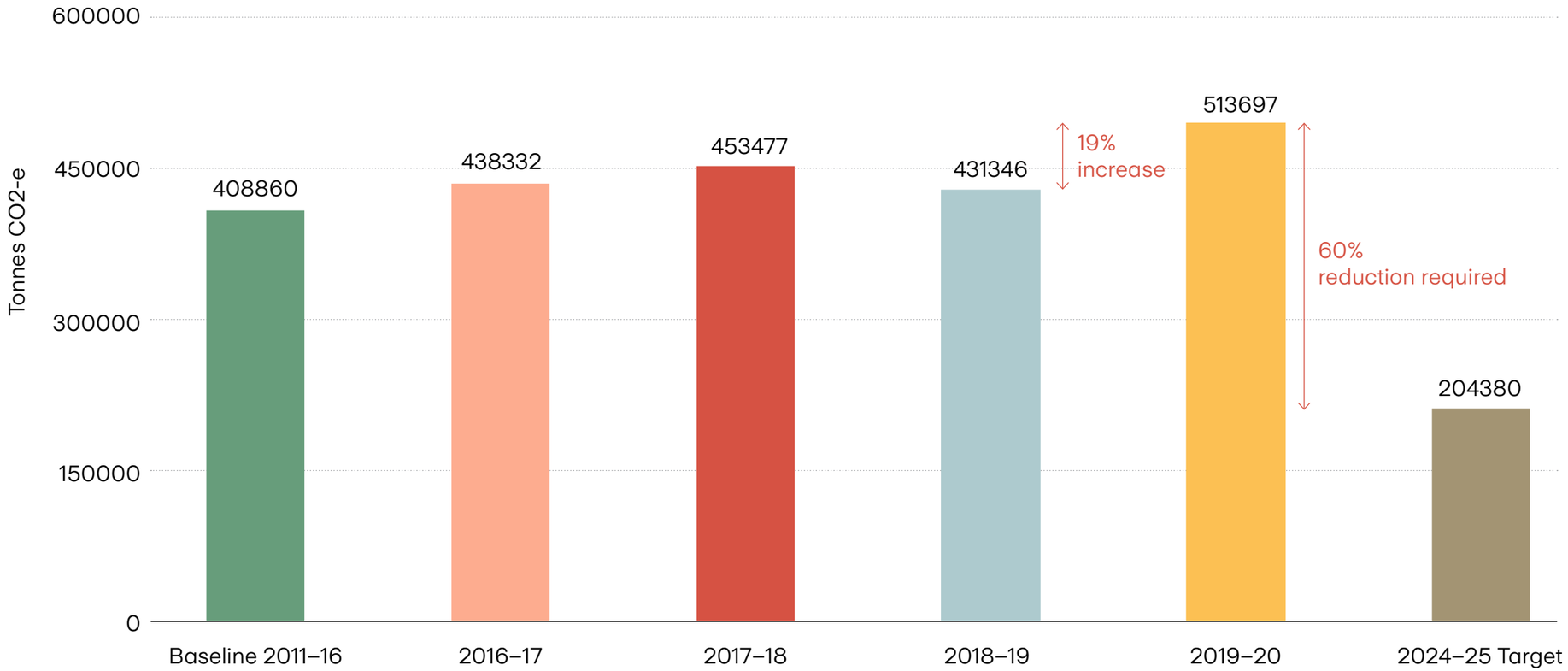
# Results: 2019–20
# Victorian Water Sector Emissions (cont.)

## Emissions: 18 Water Corporations
(excluding Melbourne Water)



# Results: 2019–20
# Victorian Water Sector Emissions (cont.)

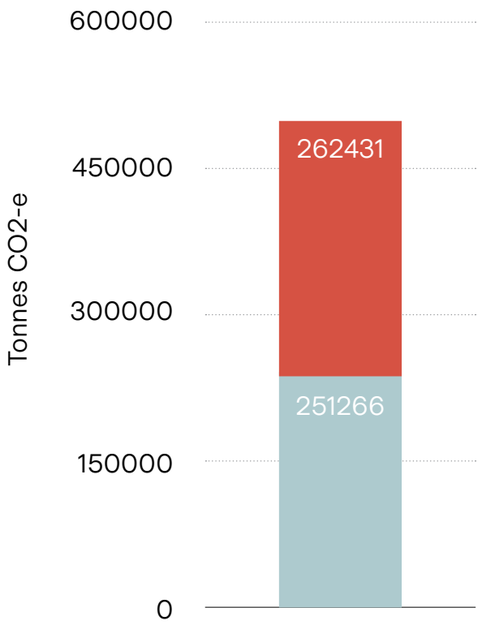
## Emissions: Melbourne Water



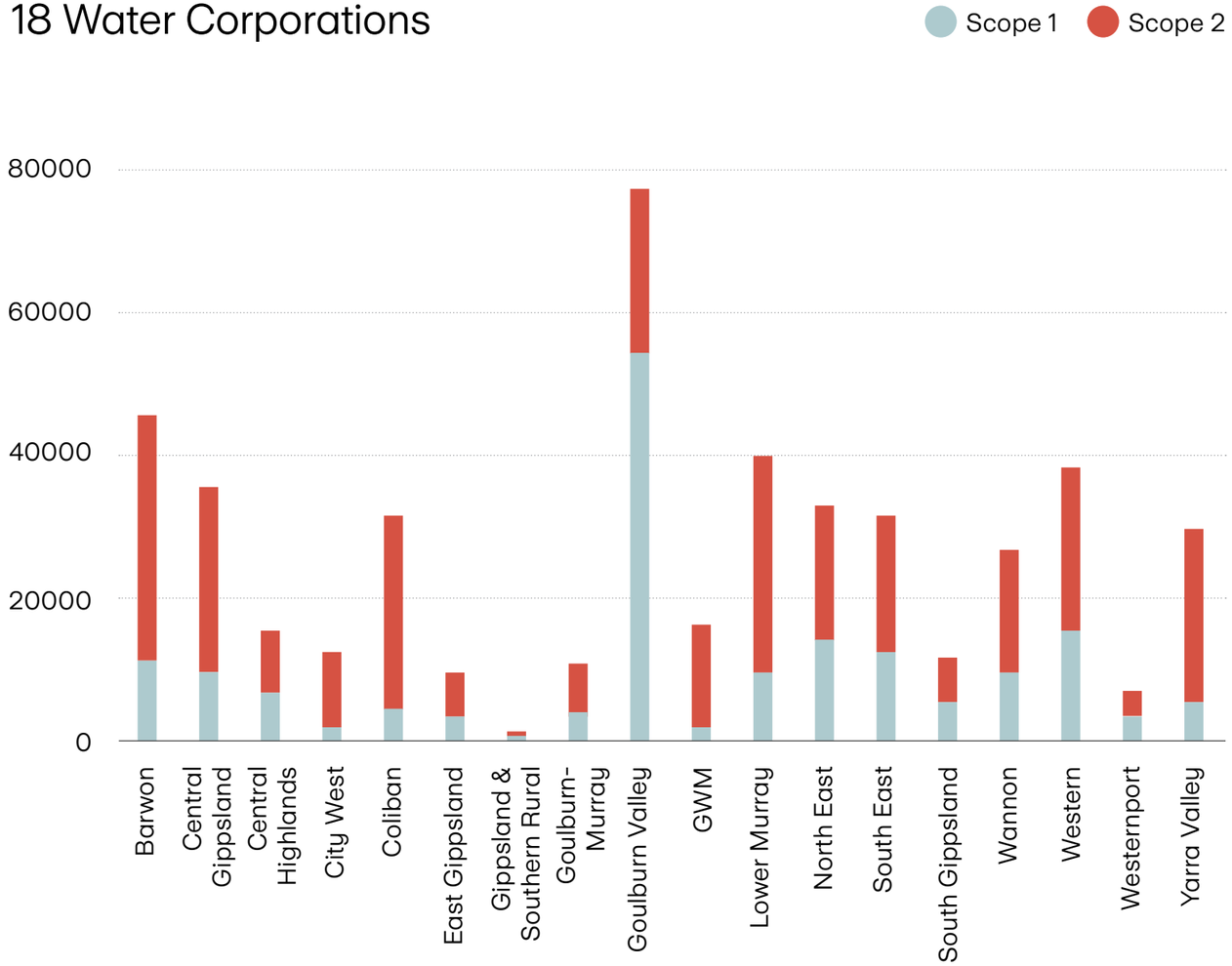

Between 2018–19 and 2019–20, Melbourne Water reported a 19% increase in emissions. A 60% reduction in emissions is now required by 2025 to reach the target emissions. Melbourne Water reported increased electricity usage for water treatment and pumping due to higher rainfall and increased throughput at the Eastern and Western Treatment plants as reasons for higher emissions.

# 2019–20 Scope 1 and 2 Emissions

## Melbourne Water




## 18 Water Corporations




2019–20 is the first year of Scope 1 and 2 reporting. As such, there is no trend data yet. The 2019–20 total Scope 1 emissions from the water corporations was 415,893 tonnes CO2-e and Scope 2 emissions was 562,185 tonnes CO2-e. Goulburn Valley Water has the highest proportion of Scope 1 emissions at 54,736 tonnes CO2-e out of a total of 77,754 tonnes CO2-e. Seven water corporations reported 60–69% Scope 2 emission to 31–40% Scope 1 emissions (Gippsland Water, Central Highlands Water, East Gippsland Water, Goulburn-Murray Water, North East Water, South East Water and Western Water). This is the most common split between Scope 1 and 2 emissions.

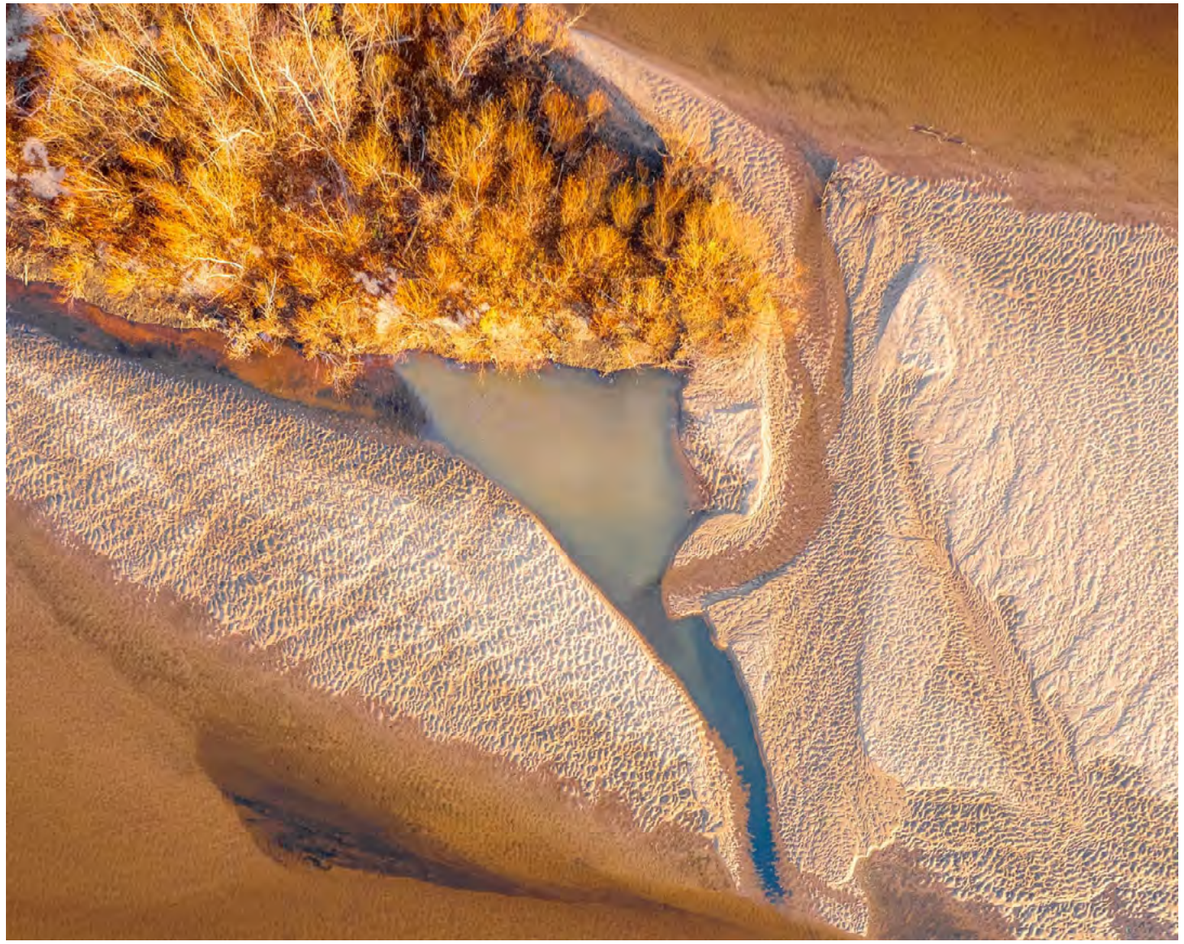
# Analysis

The water corporation emissions have increased from 868,803 tonnes CO2-e in the SoO(ER) determined 2011–16 baseline, to 921,481 tonnes CO2-e in 2018–19 and again to 978,381 tonnes CO2-e in 2019–20. Compared to the twelve water corporations that experienced an increase in emissions in 2018–19, the five in 2019–20 represents an improvement.

Water corporations that experienced an increase in emissions between 2018–19 and 2019–20 were Barwon Water, City West Water, Goulburn Valley Water, Melbourne Water and Western Water. Goulburn Valley Water had the greatest increase of emissions in 2019–20 of 13,525 tonnes CO2-e. Gippsland Water had the greatest decline in emissions of 8,975 tonnes CO2-e, or 21%.

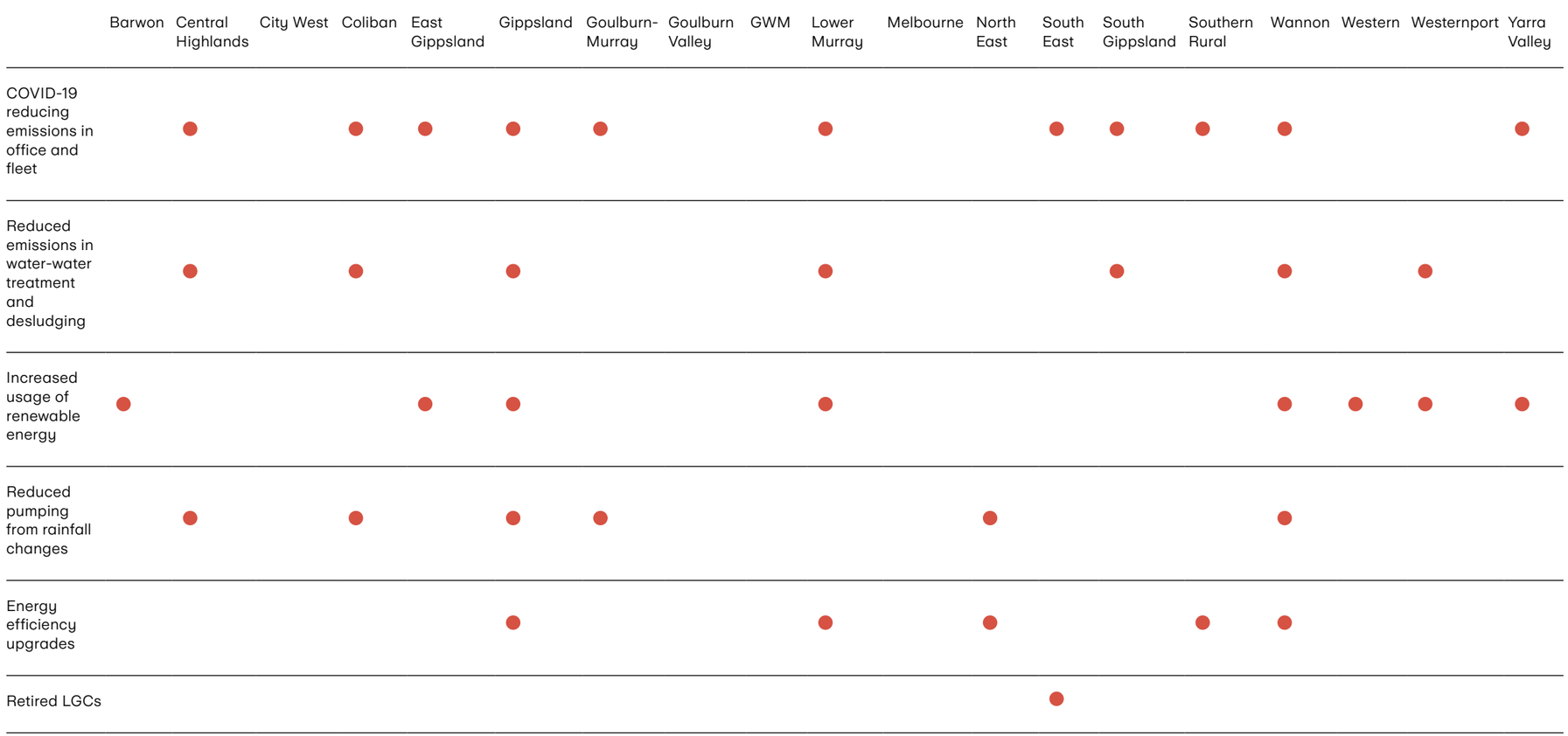
Goulburn Valley Water's increase in emissions was due to increased volumes of wastewater to treat. Barwon Water, City West Water, Melbourne Water and Westernport Water also reported increased emissions from wastewater and sewerage treatment. For City West Water and Western Water this was due to increased population and demand for their treatment services.

Melbourne Water also had increased emissions due to increased water pumping and desludging.



# Emission Decrease

Emission reduction methods data was extracted from the water corporations' Annual Reports. Water corporations may use these methods and may not have referred to them in their reports.



# Plans for emission reduction

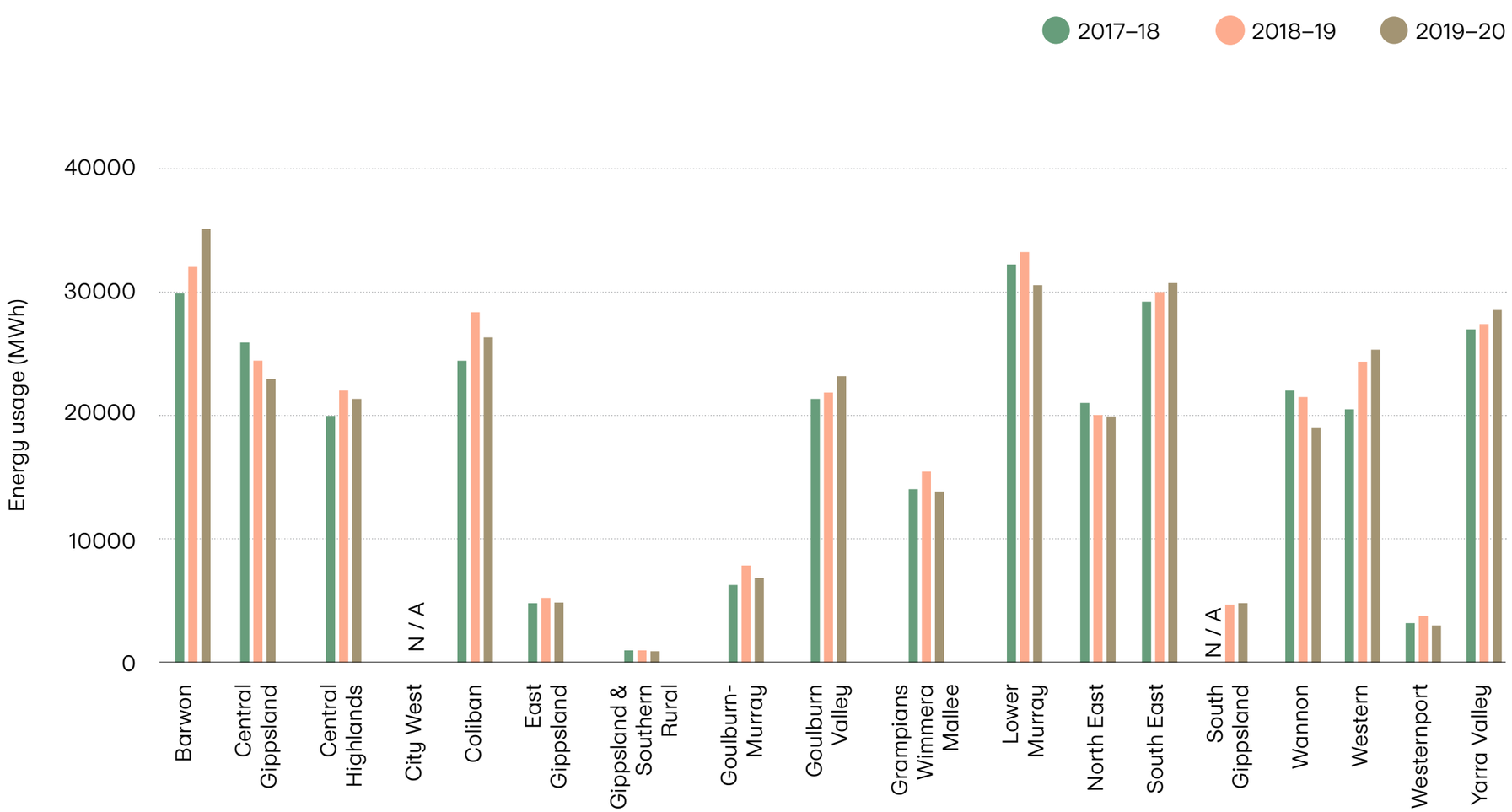
The plans for emission reduction were extracted from the water corporations' Annual Reports. Water corporations may use these methods and may not have referred to them in their reports.

| | Barwon | Central Highlands | City West | Coliban | East Gippsland | Gippsland | Goulburn-Murray | Goulburn Valley | GWM | Lower Murray | Melbourne | North East | South East | South Gippsland | Southern Rural | Wannon | Western | Westernport | Yarra Valley |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Behind the meter renewables | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Power Purchase Agreements | ● | ● | ● | ● | ● | | | | | ● | | | ● | ● | ● | ● | ● | ● | ● |
| Efficiency and energy use optimisation | ● | ● | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | ● |
| Water reclamation plant process (e.g. biogas capture) | ● | | | | ● | | | ● | | | | ● | ● | | | ● | ● | | ● |
| Carbon offsets | | | | | | ● | | ● | | | | | | ● | ● | | | ● | |
| Fuel efficient fleet | ● | | ● | | | | ● | | | | | | ● | | ● | | | | |

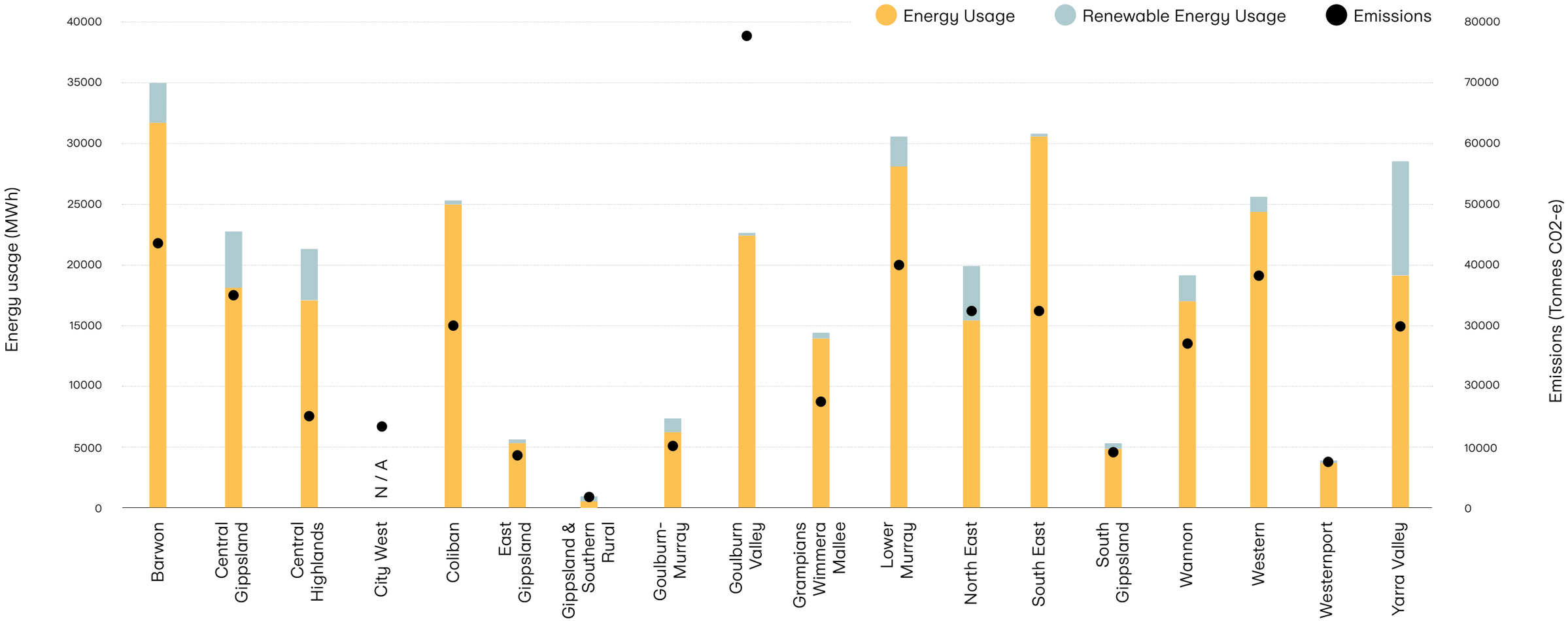
# 2017–18 to 2019–20 Energy Usage Trends: 18 Water Corporations

Analysing the energy usage of the water corporations provides an insight into the sector's Scope 2 emissions of the water sector, noting though the impacts of grid decarbonisation over time.

Fifteen water corporations have increased usage of renewable energy between 2018–19 and 2019–20.

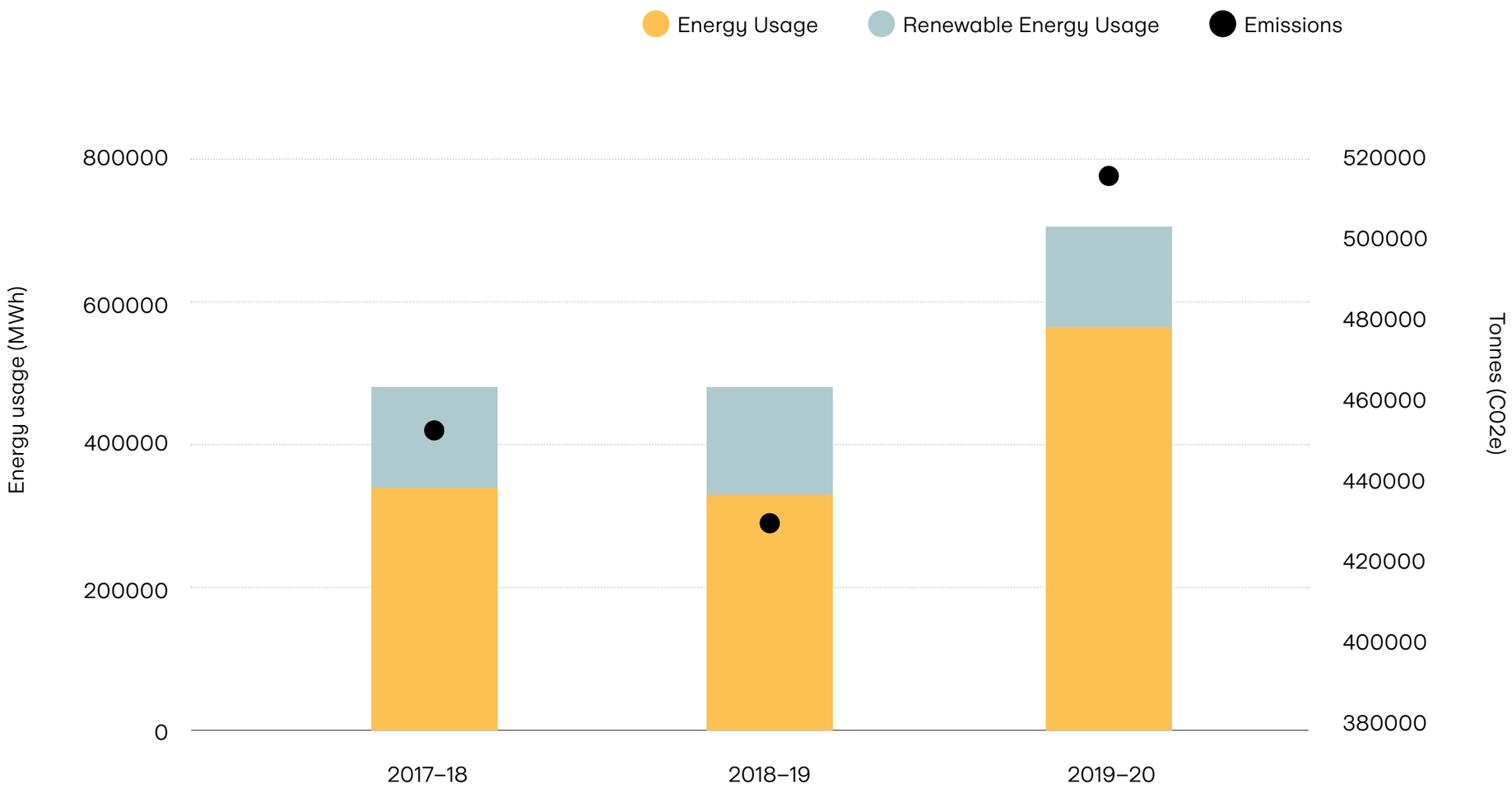


# 2019–20 Energy Usage v. Emissions: 18 Water Corporations



# 2019–20 Energy Usage v. Emissions: Melbourne Water

Melbourne Water contributes more than half of the water corporations' energy usage. Energy usage increased each year for Melbourne Water, totalling 480,741 MWh in 2017–18, 482,280 MWh in 2018–19 and 710,431 MWh. in 2019–20. In 2019–20 renewable energy usage contributed 25.9% of Melbourne Water's energy usage.



# Survey Responses

Fifteen water corporations responded to the survey for this report. Water corporations are only named in this report when the information is from their public documents and that we maintain survey respondent anonymity.

## Expectations for 2024–25 SoO(ER) Compliance Year

Of the fifteen water corporations, nine water corporations expect their greenhouse gas emissions to be similar to their 2024–25 SoO(ER) compliance level, and four water corporations expect theirs to be lower than that level.

Reasons for expected lower emissions include further internal strategies for emission reduction, and the success of current emission reduction projects.

Two water corporations expect their emissions to be higher than their 2024–25 SoO(ER) compliance level. This is attributed to inaccurate emissions forecasting for one, and not being able to offset emissions under the current offset policy for the other.

## Expectations for 2020–21

Four water corporations expect their 2020–21 emissions to be similar to 2019–20 levels, and seven water corporations expect lower emissions in the 2020–21 reporting period. The expected lower emissions are due to continued emission reduction projects and no planned emission intensive activities for 2020–21. Two water corporations predict higher emissions in 2020–21 than 2019–20 due to a delay in emission reduction projects and increased wastewater treatment from wetter weather producing more emissions.

## Major Challenges

The water corporations are experiencing a variety of challenges in meeting their emission reduction obligations. Challenges were similar to those identified in the 2019 report, including:

- Increased population growth intensifying service demand (despite the pause in international migration due to Covid-19 border closures).
- A lack of capital for mitigation projects.
- The current offset policy.
- Completion of ‘low hanging’ emission reduction projects.

# Survey Responses (cont.)

Other challenges that were raised in the 2020 survey responses were:

- Delivering emission reduction projects in line with the SoO(ER) compliance timeline.
- Difficulty identifying Scope 1 emission reduction projects, such as offsetting fugitive emissions.
- Meeting water security needs using energy intensive water sources and distribution.
- Cost and impact of emission reduction on customers.

## Key Opportunities

The survey highlights are:

- Nine respondents highlighted the opportunities to collaborate with other water corporations, CMAs, councils and community groups.
- Three respondents specifically noted partnering with other water corporations in PPAs.
- Four respondents stated that food waste-to-energy is a key opportunity.
- Four respondents are planning to produce self-generated offsets through planting vegetation.

The respondents also noted:

- Biogas capture
- Soil carbon
- Solar
- Hydrogen
- Customer water use practices
- Battery technology
- Energy efficiency upgrades

## Emission Reduction Methods

All fifteen survey respondents will use renewable energy and energy efficiency strategies to reduce emissions, including behind the meter renewables. Ten respondents will use battery storage with renewables.

We think that a number of opportunities are emerging for water corporations, including the new wholesale demand response mechanism (WDRM). The WDRM:

- Commences on 24 October 2021, in time for summer when demand is highest and when the opportunities are greatest for demand response.
- Opens on 24 June 2021 for registration, classification and aggregation with the Australian Energy Market Operator (AEMO).
- Will be explained in detail in the final determination and guidelines, which AEMO will publish on 25 March 2021.

More generally, we strongly support water corporations' increasing interest in National Electricity Market design, in the form of policy development and formal submissions through both VicWater and WSAA.

Finally, in the survey:

- Twelve respondents will buy more renewable energy through Power Purchase Agreements. We see a number of water corporations that are active in useful industry forums, including

# Survey Responses (cont.)

the Business Renewables Centre of Australia (BRC-A), on the buyer side.

- Eight respondents will use water reclamation plant process optimisation strategies, such as biogas capture.
- Two respondents will use offsets generated through waste to energy projects.

## Electricity Demand Management

Three smaller corporations will participate in the WDRM. We see a significant opportunity for larger corporations, too, especially with their opportunities to aggregate loads. Ten respondents intend to participate in the Reliability and Emergency Reserve Trader (RERT). We understand that the ESC has a positive interest in the corporations' participation across the various types of demand response.

## Ancillary Services

Six respondents will participate in ancillary services markets. The WDRM will combine the existing category of Market Ancillary Services Provider into the new category of Demand Response Service Provider (DRSP), allowing DRSPs to offer ancillary services and demand response services.

## Use of Offsets

Most water corporations would like to use offsets. Five water corporations intend to use offsets to meet their 2024–25 SoO(ER) compliance emissions level, and four water corporations are planning to self-generate offsets, but these may not be needed to reach their 2024–25 emissions target. Over half of the respondents would like to use offsets but would prefer to access a broader range of offsets.

We believe that broadening access to offsets to all Victorian carbon offsets available under the Commonwealth Government's Climate Active Carbon Neutral Standard (CACNS) will support emission reduction without risking exposure to low quality offsets.

## LGCs

Six water corporations plan to progressively retire their LGCs between the date of receipt and the 2024–25 compliance year. Five corporations will retire LGCs in the 2024–25 SoO(ER) compliance year. These plans are subject to change based on strategic assessments of the financial implications and emission reduction progress.

## Compliance Costs

The 2019 survey found no respondents considered passing on the costs of compliance with emission reduction obligation to trade waste customers, whereas this year five water corporations are considering passing on this cost to their trade waste customers. We believe that this has come into focus as most water corporations are now preparing their next price submissions.

# Survey Responses (cont.)

## Internal ‘Shadow’ Carbon Valuation

Six respondents use carbon valuation to optimise investment decision-making. Five respondents do not use carbon valuation currently, but intend to do so, or have considered it. VicWater’s Policy Platform advocates for Victorian Government support for a shadow carbon price — see https://vicwater.org.au/vicwater-policy-platform/.

The survey respondents indicate that their carbon valuation approaches equate to:

- The project-level costs of achieving ‘net zero’, for example, by installing or buying renewable energy.
- The Australian Carbon Credit Unit (ACCU) price.

We note the great potential to use carbon values to engage executive teams and boards in high-level decision-making.

## Community and Customer Engagement

Twelve water corporations are communicating with their customers and community about their emission reduction activities. The most common forms of communication are through social media and customer forums. Communication on water corporation websites and within Annual Reports were also popular.

# About

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

# Team

## 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
## Principal Consultant —

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.

## Alice Bleby
## Associate Consultant —

Alice focuses on climate change and sustainability policy and strategy projects. Alice formerly led the Climate Change Adaptation Policy team in the Victorian Government Department of Environment, Land, Water and Planning (DELWP). She was the lead author of Victoria's Climate Change Adaptation Plan 2017–2020, a whole-of-government blueprint for adaptation action.

## Naomi Kelsey
## Analyst —

Naomi uses a strategic and analytical approach to complex climate and social issues. Naomi has a well-rounded knowledge of climate change adaptation and mitigation, policy, planning, natural resource management and sociology. Naomi has delivered research projects for a variety of climate change organisations, including the Climate Change Exchange, Friends of the Earth and Climate for Change.