



GWM

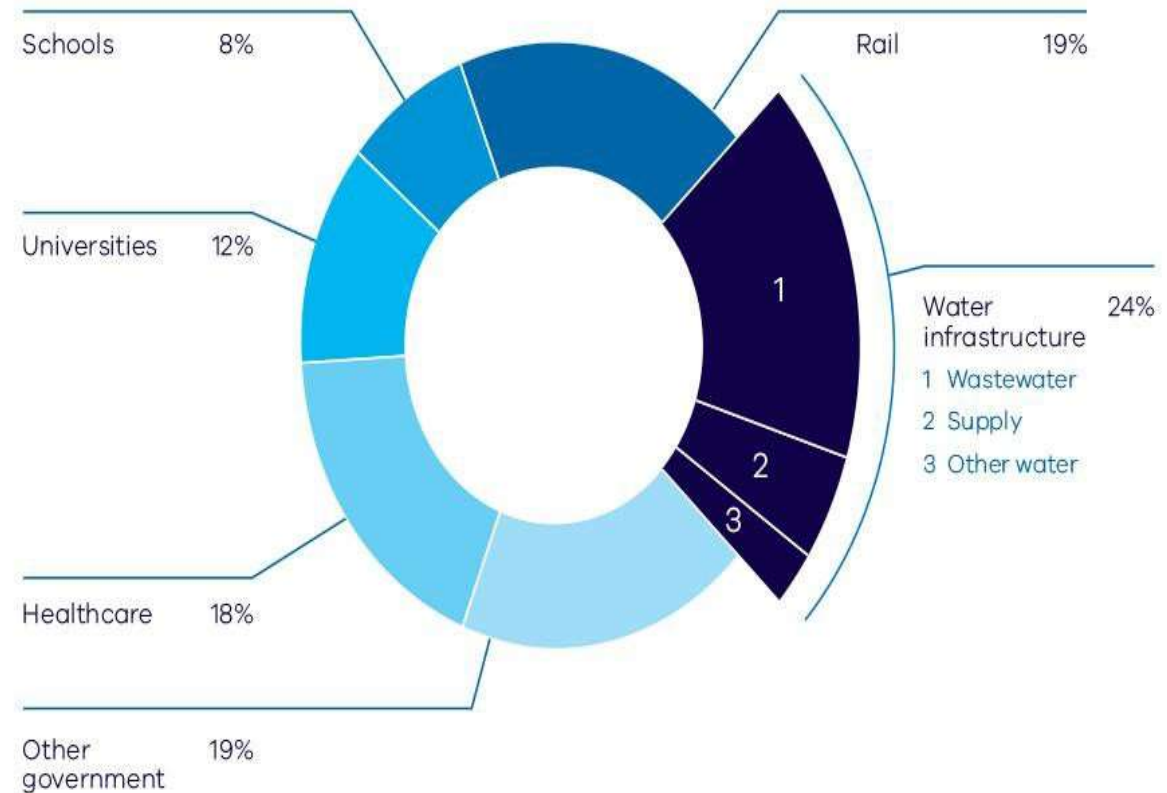
Clean Energy Strategy

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Context

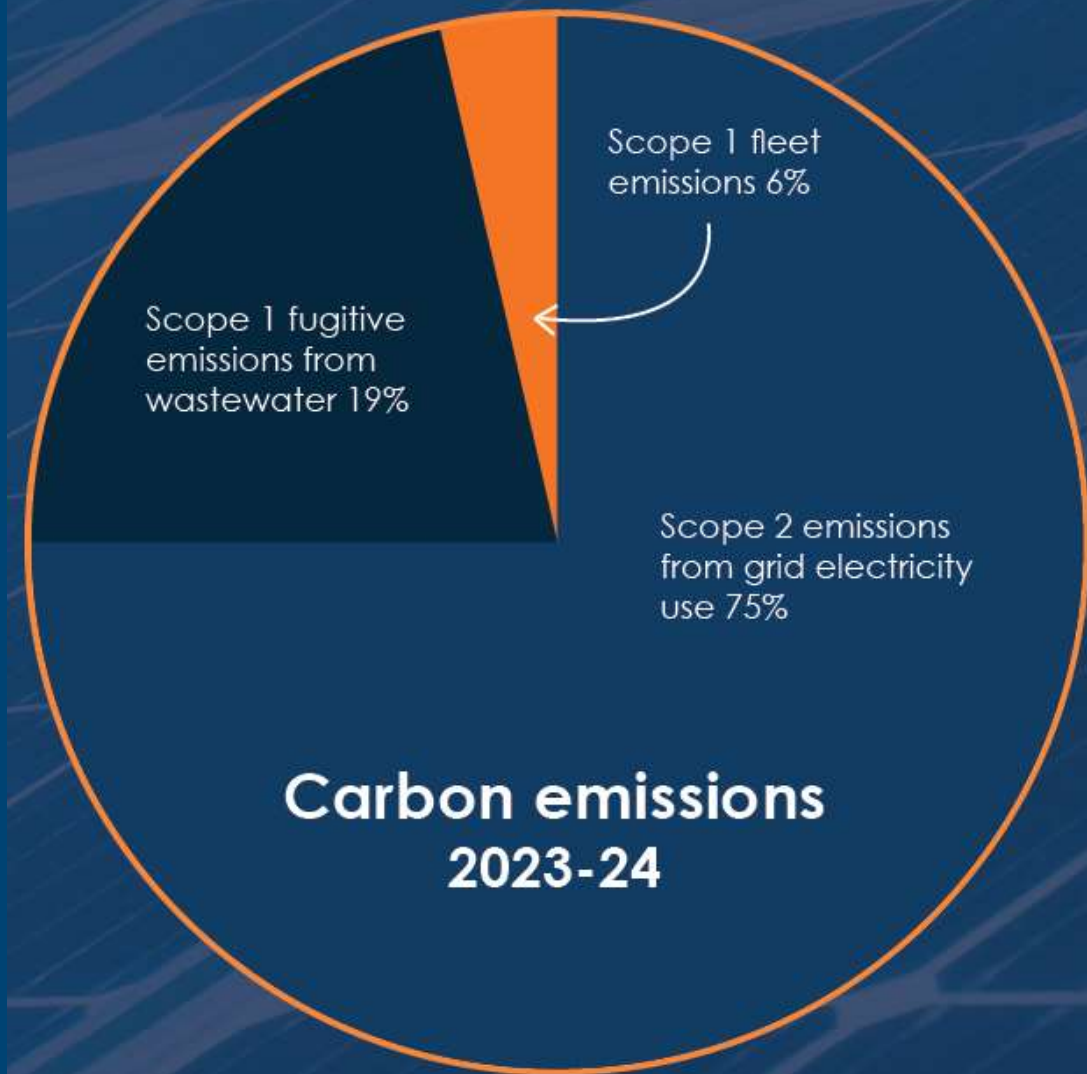
- Victorian Government has committed to net zero carbon emissions by 2045
- Electricity used in government operations (including GWMWater) will be 100% renewable by July 2025
- GWMWater has committed to:
 - 90% carbon emissions reduction by 2030; and
 - net zero carbon emissions by 2035
- GWMWater has some specific advantages and challenges



Victorian government carbon emissions by sector

GWMWater carbon emissions

- Most carbon emissions are from electricity consumption (Scope 2 emissions)
- Wastewater treatment and fleet comprise remainder (Scope 1 emissions)
- Scope 1 and 2 emissions have different reduction pathways



What's been implemented?

- 2.3 MW of solar installed “behind-the-meter” at 59 operational sites
- This displaces grid electricity usage by 20%
- A pilot behind-the-meter battery is operational
- Shift to operating during day-time as much as possible



Solar installation at Dimboola pump station

Nhill Renewable Energy Facility

- GWMWater is proceeding with a 5 MW solar farm with 3 MW battery.
- This will be connected in front-of-meter.
- Offset 70% of GWMWater Scope 2 carbon emissions.
- Step-change in GWMWater's energy management.
- Exposure to wholesale electricity market on supply and demand sides.
- To be completed in mid-2025.



Other short-term energy initiatives

- Completion of a feasibility study into community energy / battery potential.
- Energy efficiency initiatives.
- Ancillary services market participation.
- More batteries behind-the-meter.
- Build electricity market knowledge and capability.



5.8 MW solar with 3 MW battery at Berri

Carbon emissions from wastewater treatment

- Fugitive emissions are the largest source of Scope 1 emissions.
- Greenhouse gases are generated by biological processes involved in wastewater treatment.
- Gas capture opportunity – but at a high cost.
- The most appropriate pathway to reach net-zero is likely to involve:
 1. Targeted reduction of wastewater treatment gas emissions
 2. Offsetting remainder with carbon market mechanisms (carbon credits).



Lagoon-based wastewater treatment facility

Fleet decarbonisation

- 6% of GWMWater's CO₂ emissions are from liquid fuels (vehicles and diesel generators).
- Diesel generators can be replaced with batteries, but at a cost.
- Fleet transition to non-fossil fuel vehicles will be staged.
- Challenged by long distances and sparse charging infrastructure.
- Fleet transition strategy is under development.



Electric vehicle charging station (example only)

In 10 years.....

- GWMWater will be a net-generator of renewable electricity.
- Energy management will be an integral part of daily GWMWater business.
- There will be opportunities to share benefits with communities within service region.
- GWMWater will have net-zero carbon emissions.
- Scope 1 emissions will be reduced and offset.
- Staged transition of fleet and wastewater treatment operations.

