

Environmental Sustainability

Greenhouse Gas Emissions and Net Energy Consumption

East Gippsland Water continues to actively seek to minimise energy use and greenhouse gas emissions, with a commitment to reduce the environmental impact of operations.

During the reporting period the corporation maintained concerted efforts to reduce annual greenhouse emissions to a maximum 4,650 tonnes of CO₂-e equivalent (t CO₂-e) by 2025 (this is a revised target set in 2018/19 to replace the previous target of 6,496 t CO₂-e). It represents a reduction of approximately 3,600 t CO₂-e from the corporation's 2011-2016 baseline of 8,272 t CO₂-e.

In October 2021 the East Gippsland Water Board brought forward the target for us to achieve net-zero emissions from 2050 to 2035 at the latest, with the corporation powered by 100 per cent renewable electricity by 2025

We continue to participate in an energy partnership with 12 other Victorian water corporations - established to collectively purchase solar power from the new Kiamal Solar Farm in north-west Victoria, under an umbrella organisation called Zero Emissions Water (ZEW). This forms part of a forward plan to reduce greenhouse gas emissions, while also maintaining affordable water bills for customers.

This project was officially commissioned in January 2021 and by the end of June 2022 it had provided East Gippsland Water with over 1,000 Large Generation Certificates (LGCs) to assist in meeting our annual emissions targets. Ongoing, it will enable us to purchase 1.24 GWh of renewable energy – equivalent to a reduction of approximately 22 per cent in the corporation's annual energy needs.

Other initiatives implemented, or furthered, during 2021/22 included:

- the installation of a 22kW ground mounted solar array at our Mallacoota Water Treatment Plant. This was progressed under a community-driven initiative involving the Mallacoota Sustainable Energy Group and the Energy Innovation Cooperative, with funding from Sustainability Victoria through the Gippsland Community Power Hub. It is already proving itself as a win-win-win project – benefiting the local community and environment, while also reducing our electricity costs to operate the Mallacoota plant. It also means we have commissioned a total of 265kW of solar systems across 18 sites in recent years
- planning and tendering for a large-scale solar installation at our Paynesville wastewater treatment facility - due to be commissioned later in 2022
- active engaging and collaborating with other water corporations, industry bodies, community networks and external agencies to pursue best practice in energy management and greenhouse gas reduction.

Importantly, we recorded net greenhouse gas emissions of 7,825 t CO₂-e for 2021/22 specifically, which was 1 per cent below the targeted maximum of 7,900 t CO₂-e for the 12 months, but higher than the 7,636 t CO₂-e recorded in 2020/21.

This increase on last year was primarily due to the necessity to treat higher volumes of wastewater as a result of exceptional wet weather events. A reduction in water consumption balanced out some of the increase seen on the wastewater side.

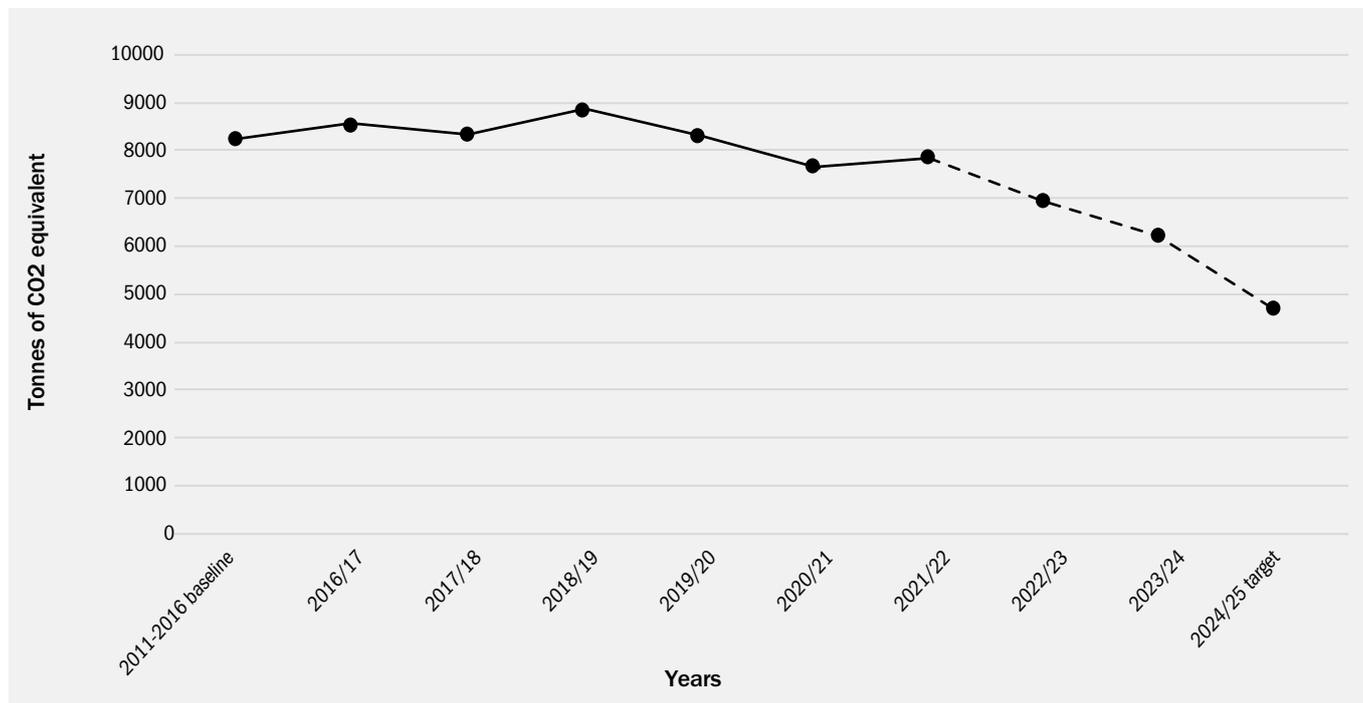
Our involvement with the Kiamal Solar farm (above) continued to provide us with access to LGCs. In June 2022 we voluntarily surrendered 560 LGCs, which in turn enabled us to report an extra 560MWh of renewable electricity consumption and reduce our emissions accordingly.

We are continuing to progress a more concerted business-wide approach to emissions reduction going forward, looking at data analytics and monitoring the performance of systems.

Greenhouse Gas Emissions

Performance Indicator	Greenhouse gas emissions in tonnes of CO2-e				Variance (%)	Commentary
	2021/22 Projected Emissions	2021/22 Result				
		Scope 1 emissions	Scope 2 emissions	Total emissions		
Water treatment and supply	3,263	28	2,283	2,310	-29.2%	Electricity usage was slightly lower than previous years due to a ~10% decrease in water demand from customers. We voluntarily surrendered 560 Large Generation Certificates received from the IWN Large Scale Renewable Project on 27 June 2022. This in turn resulted in a decrease of approximately 538 tonnes CO2-e
Sewage collection, treatment and recycling	4,211	2,244	2,826	5,070	+20.4%	There was a 16% increase in the volume of wastewater treated in 2021/22 due to significant wet weather. This resulted in an increase in Scope 1 and Scope 2 emissions. Electricity consumption per ML of wastewater treated was similar to previous years. Temporary diesel pumping requirements from emergency discharges resulted in an increase in fuel consumption.
Transport	316	347	0	347	+9.9%	We saw a slight increase in vehicle usage due to the relaxation of COVID restrictions. We also increased the accuracy of reporting business usage compared to private usage of some vehicles, which resulted in a minor increase in the emissions reported.
Other	111	0	98	98	-11.6%	We consumed an additional 8MWh of self-generated solar with the installation of a larger system at our head office.
Total emissions	7,900	2,619	5,207	7,825	-1.0%	The increase in emissions from the previous year was mainly due to an increase wastewater flows and treatment as a result of exceptionally wet weather.

Progress Towards the Greenhouse Gas Emissions Target for 1 July 2025



Environmental Sustainability

Total Electricity Consumption

Total electricity use	2020/21 Result (MWh)	2021/22 Result (MWh)	Commentary
Water treatment and supply	3,396	3,107	There was a reduced volume of water supplied to customers due to wet weather.
Sewage collection, treatment and recycling	2,553	2,980	There was an increase in the volume of sewage treated due to infiltration and ingress during periods of significant rainfall.
Other (office, workshops, depots, etc)	147	148	No comment
Total	6,095	6,235	A minor increase from last year, primarily due to the increase in wastewater treatment due to exceptionally wet weather.

Note: Values in this table include both grid consumption and any renewable energy consumption from East Gippsland Water facilities

Renewable Electricity

Performance indicator	2020/21 Renewable electricity used (MWh)	2021/22 Renewable electricity used (MWh)	2021/22 Renewable electricity consumption (% of total consumption)	Commentary
<i>Renewable electricity consumption from the electricity East Gippsland Water receives from the electricity grid as a result of the Commonwealth Government's LRET</i>				
Total Grid-sourced: Mandatory	1,110	1,124	18%	
<i>Renewable electricity consumption as a result of corporation led/self-sourced activities and initiatives</i>				
Biogas	60.4	0	0%	Mechanical issues with the combined heat and power unit at Bairnsdale Wastewater Treatment Plant continued into 2021/22, which meant that no electricity was produced from biogas. This unit is scheduled for replacement in 2022/23
Hydroelectric	0	0	0%	Not applicable
Solar	225.7	252.5	4%	There was a slight increase in solar output due to several new projects. With additional projects completed midway through the reporting period this number is expected to be higher again for 2022/23
Wind	0	0	0%	Not applicable
Other	479	560	9%	560 Large Generation Certificates (LGC's) from the Zero Emissions Water Solar project were voluntarily surrendered by East Gippsland Water during the reporting period
Total Corporation led/self-sourced	765.1	812.4	13%	
Total renewable electricity consumption	1,874.95	1,936.83	31%	See comments above

Climate Change Adaptation

In addition to reducing greenhouse gas emissions to help mitigate climate change, East Gippsland Water continues to plan for a warmer and drier climate by:

- water resource planning, including development of the Urban Water Strategy, using the latest DELWP Guidelines for Assessing the Impact of Climate Change on Water Supplies in Victoria
- utilising latest predictions in relation to storm intensity for planning sewer networks - ensuring compliance with EPA requirements
- undertaking an assessment of the vulnerability of assets and business processes to climate change, and developing a prioritised action plan
- continuing investigation into Integrated Water Management to provide more climate-resilient pathways for water resources

East Gippsland Water continues to monitor actual and predicted impacts of climate change, and to adapt its asset management and business processes as required.

Environmental Management System (EMS)

East Gippsland Water's Environmental Management System (ISO 14001:2015) continues to drive conscientious environmental stewardship and performance management. It again performed consistently well in all areas during an external audit conducted by MSC Global in April 2022.

Our focus on managing incidents from the sewer network, such as spills, and odour management at treatment plants remain a high priority within the EMS.