

8 Environment

8.1 E12—Total net greenhouse gas emissions (net tonnes CO₂ equivalent per 1,000 properties)

8.1.1 Introduction

This indicator reports the contribution of the utility's operations to greenhouse gas (GHG) emissions. Utilities' calculations are required to refer to the National Greenhouse Accounts Factors issued by the Department of the Environment and Energy and updated annually. GHG emissions are reported in net terms; that is, any quantity of carbon sequestered through activities such as the purchase of carbon offsets is deducted.

The National Greenhouse Accounts outline three distinct types of emissions factors that may need to be calculated to estimate the full greenhouse impact of an organisation's activities:

- direct emission factors (Scope 1), which calculate the quantity of carbon dioxide equivalent (CO₂ equivalent) emitted per unit of activity, at the point of emission release
- indirect emission factors (Scope 2), which calculate the greenhouse impact of purchasing and consuming electricity (i.e. the impact of burning fuels such as coal or gas at the power station), and
- various emission factors (Scope 3), which include the impact of various activities, such as the disposal of waste, employee business travel, and the transportation of products.

Comparing different utilities' net GHG emissions is a difficult exercise. It should be undertaken with caution because of the number of variables affecting emissions. Those variables include: the source of water; gravity versus pumped networks; geographical conditions (which influence the need for pumping); the number of large-volume customers and the extent of industry within the customer base; the prevailing greenhouse policy in the jurisdiction; and the method of calculation.

Total net GHG emissions by all utilities reporting Indicator E12 in 2015–16 can be found in Table A15 in Appendix A.

8.1.2 Key findings

A summary of the total net GHG emissions, by utility size group, is presented in Table 7.1.

Nationwide, across all utility size groups, there was no change in the median emissions in 2015–16 since 2014–15 (Table 7.1).

Table 8.1 E12—Overview of results: Total net greenhouse gas emissions (net tonnes CO₂ equivalent per 1,000 properties), 2014–15 to 2015–16

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2014–15		Median		Change in the median from 2014–15 %
	High	Low	Increase	Decrease	2014–15	2015–16	
100,000+	817	32	6	4	210	186	-11
	WC (Perth)	City West Water					
50,000–100,000	897	154	4	2	565	650	15
	Gippsland Water	P&W (Darwin)					
20,000–50,000	885	177	9	6	416	453	9
	North East Water	Clarence Valley					
10,000–20,000	1,629	138	10	11	390	389	0
	WC (Kal-Boulder) (W)	Aqwest-Bunbury (W)					
All size groups (national)	1,629	32	29	23	390	389	0
	WC (Kal-Boulder) (W)	City West Water					

Table note

The median total net GHG emissions is calculated using data from all utilities supplying both water and sewerage services that reported data for E12 for both 2014–15 and 2015–16.

8.1.3 Results and analysis—100,000+ size group

In 2015–16, the major utilities (100,000+ size group) reported an 11 per cent decrease in median net GHG emissions (as tonnes of CO₂ equivalent) per 1,000 properties from 2014–15 (Table 7.1). This follows a 15 per cent decrease reported between 2013–14 and 2014–15 (2015 Urban NPR).

The notable changes from 2014–15 included an 18 per cent reduction in emissions by Hunter Water Corporation and significant increases by Sydney Water Corporation, SA Water Corporation and City West Water with 71 per cent, 26 per cent and 19 per cent increases respectively (Table A15 in Appendix A).

The increase at Sydney Water Corporation may be attributed, in part, to increases in construction and demolition waste sent to landfill by their contractors (Sydney Water 2016).

The increase at SA Water Corporation was mainly due to major pumping of water across long distances, the main contributor of emissions for the utility (SA Water Corporation 2016).

It should be noted that while the majority of GHG emissions generated by Hunter Water are due to wastewater assets, Veolia Water Australia have operational control because they are responsible for reporting fugitive emissions from wastewater treatment plants and power consumption of water and wastewater treatment plants (Hunter Water 2016). The 18 per cent reduction reported by Hunter Water Corporation reflects a full year with this arrangement in place, compared with 9 months in 2014–15.

City West Water's increase in emissions in 2015–16 compared with 2014–15 was due to the operation of the energy-intensive Altona Salt Reduction Plant from July 2015 (City West Water 2016).