

8 Environment

8.1 Total net greenhouse gas emissions—E12

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 Factors 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 and should be undertaken with caution due to the number of variables affecting emissions, including:

- sources of water
- gravity versus pumped networks
- geographical conditions (i.e. influencing the need for pumping)
- number of large-volume customers
- extent of industry within the customer base
- the prevailing greenhouse policy in the jurisdiction
- the method of calculation.

Total net GHG emissions data for 2016–17 is in Table A17, Appendix A.

8.1.1 Key findings

A summary of the total net GHG emissions, by utility group, is shown in Table 8.1.

Table 8.1 Overview of results: Total net greenhouse gas emissions, net tonnes CO₂ equivalent per 1,000 properties

Utility group	Range		No. utilities with increase/ decrease from 2015–16		Median		Change from 2015–16 %
	High	Low	Increase	Decrease	2015–16	2016–17	
Major	828	25	2	7	181	176	-3
	WC (Perth)	City West Water					
Large	750	179	1	6	770	454	-41
	North East Water	P&W (Darwin)					
Medium	675	200	9	6	423	422	0
	Wannon Water	Clarence Valley					
Small	761	138	5	10	416	381	-8
	Goulburn Mulwaree	Byron					
All utility groups (national)	828	25	17	29	409	388	-5
	WC (Perth)	City West Water					

Table note

The median total net GHG emissions is calculated using data from all utilities supplying both water and sewerage services reporting data for E12 for both 2015–16 and 2016–17.

Nationally, across all utility groups, the median total net GHG emissions decreased by 5 per cent in 2016–17. This represents a 21 net tonnes of CO₂ equivalents per 1,000 properties reduction from 2015–16.

8.1.2 Results and analysis—Major utility group

The Major utility group reported a 3 per cent decrease in median net GHG emissions from 2015–16. The notable changes from 2015–16 include reductions in emissions by SA Water Corporation (32 per cent) and City West Water (21 per cent) and significant increases by Sydney Water Corporation (22 per cent).

The increase of net GHG emissions by Sydney Water Corporation resulted from the expiry of NSW Greenhouse Gas Abatement Certificates (NGACs) used to offset emissions.²³ In previous year's Sydney Water Corporation was able to surrender NGACs to offset its emissions.

SA Water Corporation's decrease in net greenhouse gas emissions is attributed to a combination of decreased electricity usage and emissions reduction initiatives. The decreased electricity usage was the result of decreased pumping requirements in the utility's network, driven by above-average rainfall. The above-average rainfall both decreased water usage in the system and increased the availability of surface water in the regions surface water storages. SA Water Corporation's initiatives to reduce greenhouse gas emissions include investment in energy efficiency, increased use of renewable energy (hydro and biogas), and carbon sequestration through bio-sequestration plantings.²⁴

City West Water's decrease in emissions is attributed to their investment in renewable energy generation and energy efficiency to reduce greenhouse gas emissions²⁵ with a target to reduce the GHG emissions by 80 per cent by the year 2025.

Water Corporation—Perth reported the highest net GHG emissions with 828 tonnes of CO₂ equivalents, which is an increase of 1 per cent from 2015–16, due to increased electricity consumption at their desalination plants resulting from higher production.

²³ Environment Compliance and Performance Report at sydneywater.com.au/reports, 2017

²⁴ South Australian Water Corporation Annual Report 2016–17.

²⁵ City West Water Annual Report 2017