

# 8 Environment

## 8.1 Total net greenhouse gas emissions—E12

The total net greenhouse gas emissions (net tonnes CO<sub>2</sub> equivalent per 1,000 properties) indicator (E12) reports the contribution of a utility's operations to greenhouse gas (GHG) emissions. Utilities' calculations are required to refer to the National Greenhouse Accounts (NGA) Factors issued by the Department of the Environment and Energy and must also be updated annually. Greenhouse gas emissions are reported in net terms—any quantity of carbon sequestered through activities, such as the purchase of carbon offsets, is deducted.

The NGA 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 (CO<sub>2</sub> 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 (that is, the impact of burning fuels—coal or gas—at the power station); and
- various emission factors (Scope 3), including the impact of various activities—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 (influencing the need for pumping);
- the number of large-volume customers;
- the extent of industry within the customer base;
- the prevailing greenhouse policy in the jurisdiction; and
- the method of calculation.

Total net GHG emissions data for 2018–19 are presented 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 CO<sub>2</sub> equivalent per 1,000 properties).

Utility group	Range		No. utilities with increase/decrease from 2017–18		Median		Change in median from 2017–18 (%)
	High	Low	Increase	Decrease	2017–18	2018–19	
Major	510	28	8	6	185	204	10
	WC (Perth)	City West Water					
Large	1,080	190	8	2	339	405	19
	Goulburn Valley Water	Redland City					
Medium	754	169	7	9	472	449	-5
	Shoalhaven	Queanbeyan					
Small	859	223	9	11	392	428	9
	P&W (Alice Springs)	Lismore					
<b>All size groups (national)</b>	<b>1,080</b>	<b>28</b>	<b>32</b>	<b>28</b>	<b>381</b>	<b>414</b>	<b>9</b>
	Goulburn Valley Water	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 2016–17 and 2017–18.

The median total net GHG emissions increased for the first time since 2014–15 (by 9 per cent).

### 8.1.2 Results and analysis—Major utility group

The Major utility group reported a 10 per cent increase in median net GHG emissions from 2017–18 to 2018–19. The notable changes from 2017–18 include a very high increase in emissions by Hunter Water Corporation— from 163 net tonnes CO<sub>2</sub> equivalent per 1,000 properties to 357 (120 per cent)—and a large decrease by Water Corporation – Perth (32 per cent).

The increase of net GHG emissions by Hunter Water Corporation is due to the inclusion of the Veolia Treatment Operation contract for the first time.

Water Corporation – Perth is still the highest net GHG emitter in the Major utility group with 510 tonnes of CO<sub>2</sub> equivalents in 2018–19, but its emissions did decrease by 318 tonnes of CO<sub>2</sub> equivalents per 1,000 properties due to its reduced supply of desalinated water in 2018–19.

Ongoing drought in the Icon Water Limited area of responsibility (ACT) has led to a large increase in emissions (36 per cent) due to pumping raw water.

SA Water Corporation's increase in emissions (41 per cent) is mostly due to a 65 per cent increase in greenhouse gas emissions generated in the water supply system due to more pumping and associated electricity emissions in a drier summer and winter.