

## 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 the 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 be updated annually. GHG 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 2017–18 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 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	754 WC (Perth)	30 City West Water	4	6	172	178	3
Large	543 Gippsland Water	208 Central Highlands Water	2	4	447	327	-27
Medium	702 Tweed	200 Queanbeyan	10	6	424	443	4
Small	822 P&W (Alice Springs)	64 Lismore	9	7	382	391	2
<b>All utility groups (national)</b>	822 P&W (Alice Springs)	30 City West Water	25	23	382	380	-1

**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.

Nationally, across all utility groups, the median total net GHG emissions decreased by 1 per cent in 2017–18. This represents a reduction by 3 net tonnes of CO<sub>2</sub> equivalents per 1,000 properties from 2016–17.

### 8.1.2 Results and analysis—Major utility group

The Major utility group reported a 3 per cent increase in median net GHG emissions from 2016–17 to 2017–18. The notable changes from 2016–17 include moderate reductions in emissions by WC (Perth) (9 per cent) and City West Water (5 per cent) and moderate increases by South East Water (12.6 per cent) and SA Water (11.8 per cent).

The increase of net GHG emissions by South East Water resulted from year-to-year fluctuations in sludge management.<sup>9</sup> This is seasonal in nature and overall only a moderate increase.

While Water Corporation—Perth reported the largest proportional decrease in net GHG emissions from 2016–17, they recorded the highest net GHG emissions with 754 tonnes of CO<sub>2</sub> equivalents, due to electricity consumption at their desalination plants.

City West Water's decrease in emissions is attributed to their investment in renewable energy generation and energy efficiency to reduce greenhouse gas emissions<sup>10</sup> towards their target of reducing their GHG emissions by 80 per cent from 2018 to 2025.

SA Water's increase in emissions is related to a 14 per cent increase in water supplied. Below-average rainfall resulted in increased pumping due to increased usage. This also decreased the availability of surface water in the region's surface water stores, requiring additional pumping from the River Murray pipelines.

<sup>9</sup> South East Water 2017–18 Annual Report, Greenhouse gas emissions and energy consumption, page 30

<sup>10</sup> City West Water 2017–18 Annual Report