

Indicator name			Version
BW9 Non-domestic water usage			23/05/18
Indicator type:	Risk/opportunity	Impact	Action
			X
SCCAP Theme	SCCAP Objective	CCRA risk/opportunity	
Buildings and infrastructure networks	<p>B2: Provide the knowledge, skills and tools to manage climate change impacts on buildings and infrastructure</p> <p>N2: Support a healthy and diverse natural environment with the capacity to adapt</p>	<p>BD15 Increased societal water demand</p> <p>WA5 Public water supply-demand deficits</p>	

At a glance

- The combined effect of climate change and population growth may increase pressure on available water resources.
- Patterns in non-household water usage can help gauge the effectiveness of strategies used to increase efficiency in water use.
- Scottish Water is working to understand water efficient behaviour and practices in the non-household sector.
- At present, business demand for water is decreasing, and it is predicted that this will continue as a result of improved water efficiency.

Latest Figure	Trend
<u>2016-2017</u> : 394.49 megalitres (MI) of water delivered per day	A sustained decrease in the annual average volume of non-domestic water delivered per day between 2008-09 (466.1 MI/d) and 2016-17 (394.49 MI/d).

Why is this indicator important?

Although Scotland is a relatively water rich country, there are not unlimited resources available for treatment and supply. The combined effect of climate change and the growing population may increase the pressure on available water resources (Scottish Water, 2012). Possible climate impacts include changes in the quality and availability of water resources and increased variability in rainfall patterns. Climate change may also increase the need for adaptive measures such as placing restrictions on discharging waste water back to the environment (Scottish Water, 2013).

Ensuring that resources are used in a sustainable way is critical to Scotland's future prosperity (Scottish Water, 2012). Reducing water demand can help reduce the risk of loss of supply to customers and enable future demand requirements to be met. By monitoring both non-household and household (see related indicator BW8) water usage it is possible to assess changes in water demand. This indicator provides a measure of the effectiveness of the strategies employed to increase efficiency in water usage by non-household customers.

Related indicators:

BW6 Water leakage and losses

BW7 Customers and zones vulnerable to supply deficit

BW8 Domestic water usage

NB27 Summer low flow events in Scottish rivers

What is happening now?

Scottish Water is working with licensed water retailers to understand efficient behaviour and practices in the non-household sector. They aim to encourage the whole sector to adopt such practices so that by 2030, non-household customers will have improved water efficiency and will be considering their longer term needs for potable water. There are five licensed water retailers operating in Scotland, and the largest of these, Business Stream, provides water efficiency services to its customers including water audits, leakage detection, and water efficiency tips (Scottish Water, 2012).

During the 2016-2017 reporting period, non-household water consumption averaged 394.49 megalitres (Ml) of water per day.

What has happened in the past?

The water consumption statistics are calculated for a single year between 1st April and 31st March. Table 1 and Figure 1 show figures for non-household water consumption between 2008/09 and 2016/17. Earlier data are available, however prior to 2008 data were sourced via a different method, so for consistency, only data from 2008 onwards are compared (Scottish Water, 2009). The consumption in the column labelled 'Unmeasured Non-household volume of water delivered' relates to Supply Points which are unmetered and reflects assessed consumption derived from the Rateable Value, while the consumption in the column labelled 'Measured Non-household volume of water delivered' reflects the actual consumption recorded at metered Supply Points plus an element for meter under registration. The figures show a yearly decrease in the total non-household volume of water delivered over the six-year period.

Year	Unmeasured Non - household water delivered (including losses) in MI/d	Measured Non-household water delivered (including losses) in MI/d	Total Non-household water delivered (incl losses) in MI/d
2008 - 09	35.27	430.83	466.1
2009 - 10	17.42	427.91	445.33
2010 - 11	17.05	419.79	436.84
2011 - 12	20.28	408.53	428.81
2012 - 13	20.83	398.94	419.77
2013 - 14	20.15	390.12	410.27
2014 -15	17.56	385.47	403.03
2015 - 16	16.87	381.81	398.68
2016 - 17	16.98	377.51	394.49

Table 1 Non-household water consumption (MI/d) between 2008/09 and 2016/17

Source: Scottish Water’s Annual Returns (Water Industry Commission for Scotland, 2018)

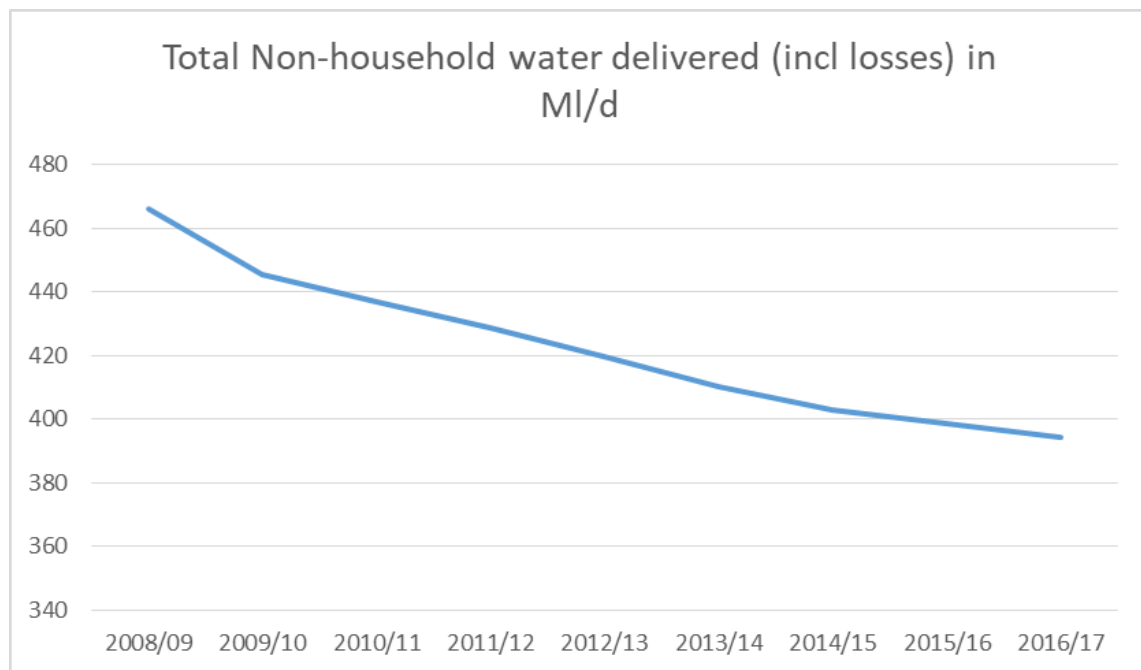


Figure 1 Trend in total non-household water delivered 2008/09 to 2016/17.

Source: Scottish Water’s Annual Returns (Water Industry Commission for Scotland, 2018)

What is projected to happen in the future?

Climate change may alter the availability or quality of water sources (Scottish Water, 2013), which could impact on future water supplies. It is difficult to make reliable predictions about future demand for water and wastewater in the business sector. As climate change may reduce the water supplies available elsewhere, Scotland’s plentiful water supplies may attract relocating businesses, which could increase water demand. However, it is predicted that businesses will continue to improve their water efficiency, thus reducing consumption per unit output (Scottish Water, 2013).

Patterns of change

At present, business demand for water is decreasing, and it is predicted that this will continue due to improved water efficiency. Scottish Water expects that in the longer term there will be little growth in demand for water and wastewater services (Scottish Water, 2013).

Interpretation of indicator trends

The figures show a yearly reduction in non-household water consumption. This reduction in demand for water is linked to businesses striving to reduce their costs and become more efficient in their use of water (Scottish Water, 2013). The financial motivation for businesses to reduce water usage in order to reduce their costs is a key difference between non-household and household water usage, as non-household customer usage is reflected directly in the charges they pay.

Limitations

A number of factors including changes in supply pipe losses and changes in occupancy status (e.g. the reclassification of properties from vacant to occupied status) influence the non-household water consumption figures.

References

Scottish Water (2009). *Scottish Water Annual Return Commentary 2008-2009*. Scottish Water. Available online at: <http://www.watercommission.co.uk/UserFiles/Documents/20091009%20-%20Full%20Commentary%20-%20Final.pdf>

Scottish Water (2012). *Water Efficiency Plan 2011- 2015*. Scottish Water. Available online at: <http://www.scottishwater.co.uk/assets/domestic/files/you%20and%20your%20home/water%20efficiency/swwaterefficiencyplan.pdf>

Scottish Water (2013). *Scottish Water Strategic Projections*. Scottish Water. Available online at: <http://www.scottishwater.co.uk/assets/domestic/files/you%20and%20your%20home/water%20efficiency/swwaterefficiencyplan.pdf>

Scottish Water (2014a). *Scottish Water Annual Return Tables 2013-2014*. Scottish Water. Available online at: <http://www.watercommission.co.uk/UserFiles/Documents/SECTION%20A%20TABLES%202013-14%2013Jun14.pdf>

Scottish Water (2014b). *Scottish Water Annual Return Commentary 2013-2014*. Scottish Water. Available online at: <http://www.watercommission.co.uk/UserFiles/Documents/20140613%20-%20AR14%20Commentary.pdf>

[Water Industry Commission for Scotland \(2018\). *Scottish Water's Annual Return*. Water Industry Commission for Scotland. Available online at: \[https://www.watercommission.co.uk/view_Regulatory_data.aspx\]\(https://www.watercommission.co.uk/view_Regulatory_data.aspx\) \(accessed May 2018\)](#)

Further information

Acknowledgements

Indicator produced by Lynne Jack and Ailsa Strathie of Heriot-Watt University, using data provided by Scottish Water.

Katherine Beckmann of Heriot-Watt University / CXC contributed to the indicator.

Indicator updated in 2018 by Ruth Monfries (RBGE/CXC).

Appendix One: Indicator metadata and methodology

Table 1: Indicator metadata

	Metadata
Title of the indicator	BW9 Non-domestic water usage
Indicator contact: Organisation or individual/s responsible for the indicator	Ruth Monfries (Royal Botanic Garden Edinburgh/ClimateXChange)
Indicator data source	The Water Industry Commission for Scotland Website – Data supplied by Scottish Water
Data link: URL for retrieving the indicator primary indicator data.	https://www.watercommission.co.uk/view_Regulatory_data.aspx

Table 2: Indicator data

	Indicator data
Temporal coverage: Start and end dates, identifying any significant data gaps.	April 2008 – March 2017 (ongoing)
Frequency of updates: Planned or potential updates	Data is updated annually. A year runs from 1 st April to 31 st March.
Spatial coverage: Maximum area for which data is available	Scotland
Uncertainties: Uncertainty issues arising from e.g. data collection, aggregation of data, data gaps	
Spatial resolution: Scale/unit for which data is collected	Megalitres per day (including losses)
Categorical resolution: Potential for disaggregation of data into categories	
Data accessibility: Restrictions on usage, relevant terms & conditions	Publicly Available Data

Table 3 Contributing data sources

Contributing data sources
Data sets used to create the indicator data, the organisation responsible for them and any URLs which provide access to the data.
Scottish Water's Annual Returns, available from the Water Industry Commission for Scotland https://www.watercommission.co.uk/view_Regulatory_data.aspx

Table 4 Indicator methodology

Indicator methodology
The methodology used to create the indicator data
The indicator is derived from data supplied to the Water Industry Commission for Scotland in Scottish Water's Annual Return tables (Scottish Water, 2014a). Consumption data are calculated by the Central Market Agency (CMA). For each settlement run, the CMA provides an aggregated settlement report, which is used by Scottish Water for billing purposes, and a disaggregated settlement report to enable reconciliation of wholesale charges by market participants (Scottish Water, 2014b). The data reported in the first two data columns of Table 1 were derived from these disaggregated settlement reports. These figures were summed to produce the total yearly figure reported in the final column. Customers who receive non-potable water supplies are excluded from this calculation.