

# Reducing water use: showers

ENVIROWISE WATER  
MANAGEMENT LEAFLET



## Why think about showers?

**It is a common perception that showers use less water than baths. However, power showers are increasingly more popular and even a quick five-minute shower using a poorly designed power shower can use as much as a bath (60 - 70 litres).**

There are several water saving devices available to businesses to reduce water use substantially. This leaflet provides guidance on what you need to consider and how to evaluate the best solution to meet your needs.

### Don't wash savings down the drain

On a shower used twice a day for five minutes, the fitting of a shower aerator to the showerhead, at a cost of around £5, could save around £30/year in water and sewerage costs.

## Ways to reduce water use

In many cases, a reduction in water use can be achieved by installing cheap and easy-to-fit retrofit shower devices, resulting in short paybacks. Bear in mind that when refurbishing shower rooms, many water efficient showers are the same price as less efficient models.

Key considerations:

- Correct installation is important - a poorly fitted device or control system may not reduce water use - in fact, it may increase it!
- Any fittings to the mains need to comply with the Water Supply (Water Fittings) Regulations 1999.
- Is the mechanism robust enough to provide a long-term solution?
- Is maintenance required to ensure continued success? For example, soap deposits or scale build-up can cause blockages and reduce performance.
- Perception is often a barrier - low flow showers can be just as effective and aesthetically pleasing as a power shower, if installed correctly.

- Mains pressure systems supply water should be at least 1 bar. This may not be the case for gravity-fed hot water systems unless fitted with a pump.
- Are the products you are considering buying included on the Water Technology List (WTL)? The Enhanced Capital Allowance (ECA) Scheme<sup>1</sup> enables businesses to claim 100% first-year capital allowances on investments in aerated and low flow showerheads, thermostatic controlled shower sets, auto shut-off showers and flow regulators for showers. These can be found at [www.eca-water.gov.uk/](http://www.eca-water.gov.uk/)

The table overleaf summarises the common types of device and approach that are available to reduce water use through a shower. A flow rate of 8 - 10 litres/min usually provides user satisfaction.

<sup>1</sup> Developed by Defra and HM Revenue & Customs in association with Envirowise

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Item	Water savings	Advantages	Disadvantages
<b>Isolating ball valve</b> (screwdriver/lever actuated) <i>Primary function is that of an isolating valve. However, the flow through the valve can be adjusted.</i>	Up to 6 litres/min	<ul style="list-style-type: none"> <li>■ Retrofit available</li> <li>■ Cheap and easy to install</li> </ul>	<ul style="list-style-type: none"> <li>■ Orifice may block with scale build-up</li> <li>■ Does not regulate pressure</li> </ul>
<b>Shower aerator</b> (in-line flow restrictor) <i>The aerator is fitted between the hose and the showerhead. The design of the aerator nozzle allows air to mix with the water under pressure. When the water exits the nozzle the air expands, increasing the apparent water flow.</i>	Up to 6 litres/min	<ul style="list-style-type: none"> <li>■ Retrofit available</li> <li>■ Flow rate reduced to 6 - 10 litres/min</li> <li>■ Pressure compensating aerator (PCA) regulates flow regardless of pressure</li> </ul>	<ul style="list-style-type: none"> <li>■ Not effective at pressure &lt; 1 bar</li> <li>■ Low flow may not provide user satisfaction - 'cold feet' effect</li> <li>■ Generally not suitable for use with electrically heated showers</li> <li>■ Standard aerators do not regulate pressure</li> </ul>
<b>Aerating showerhead</b> <i>The design of the showerhead mixes air with the water under pressure. When the water exits the showerhead the air expands, increasing the apparent water flow.</i>	Up to 6 litres/min	<ul style="list-style-type: none"> <li>■ Retrofit available</li> <li>■ Flow rate reduced to 6 - 10 litres/min</li> </ul>	<ul style="list-style-type: none"> <li>■ Not effective at pressure &lt; 1 bar</li> <li>■ Low flow may not provide user satisfaction - 'cold feet' effect</li> <li>■ Generally not suitable for use with electrically heated showers</li> </ul>
<b>Thermostatic mixer valve (TMV)</b> <i>Changes in water pressure or temperature cause the thermostat element to expand or contract. This in turn moves the slide valve which alters the proportion of hot and cold water entering the TMV, thus maintaining the mixed water temperature.</i>	Variable	<ul style="list-style-type: none"> <li>■ Water temperature is set - uses less water at initial draw-off</li> </ul>	<ul style="list-style-type: none"> <li>■ Retrofit not available</li> </ul>
<b>Push button shower</b> <i>Mechanical timed flow control. Usually works through controlled bleed from one side of a diaphragm to the other via a pinhole and it is the length of this bleed that determines the length of time that water is delivered through the showerhead.</i>	Variable	<ul style="list-style-type: none"> <li>■ Automatically closes after use</li> <li>■ Cartridge mechanism uses a groove (rather than a pinhole) to pass the water from one side of the diaphragm to the other. The action of actuating the valve pushes a rubber washer down the length of the groove, cleaning away any scale deposits or other build-up as it moves.</li> </ul>	<ul style="list-style-type: none"> <li>■ The delay cycle ('bleed') needs to be correctly set</li> <li>■ If the mechanism operates through use of a pinhole in a diaphragm, the hole can become blocked by scale build-up</li> </ul>
<b>Point of source heater</b> <i>Avoids long periods of running water to get the desired temperature.</i>	Variable	<ul style="list-style-type: none"> <li>■ Uses less water at initial draw-off</li> </ul>	<ul style="list-style-type: none"> <li>■ Capital costs for installation of heater</li> </ul>

## Further information

- Envirowise water pages [www.envirowise.gov.uk/water](http://www.envirowise.gov.uk/water). Use WaterNet ([www.envirowise.gov.uk/waternet](http://www.envirowise.gov.uk/waternet)) to identify the most relevant publications for your requirements.
- Water Supply (Water Fittings) Regulations 1999. SI 1999 No. 1148 (England and Wales) [www.opsi.gov.uk/si/si1999/19991148.htm](http://www.opsi.gov.uk/si/si1999/19991148.htm)



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Envirowise - Practical Environmental Advice for Business - is a Government programme that offers free, independent and practical advice to UK businesses to reduce waste at source and increase profits. It is managed by Momenta, an operating division of AEA Technology plc, and Serco TTI.

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