

REDUCING PLASTIC, WASTE AND FOSSIL FUEL DEMAND:

Sustainable drinking water with Billi



Billi[™]

Introduction

Despite having some of the best quality tap water in the world, many Australians choose to drink water bottled in plastic. This may be due to personal preference, such as wanting a bottle of chilled or sparkling water that they wouldn't otherwise have access to, or due to situational circumstances such as a water cooler being the main option for hydration in the workplace. The damaging effects of plastic production (both for single use and other plastics) on the environment are impossible to ignore, and impact everything from our air quality to the demand for fossil fuels, as well as the significant waste that is generated in landfill, waterways and oceans.

This is where smart specification of instant filtered water systems can make a difference. By offering a complete water system with a range of water types including boiling, chilled, sparkling or still, a filtered water system addresses many of the reasons people choose to drink from plastic. By doing this it can have a positive environmental impact by reducing not only the demand for plastic bottles and the vast amounts of waste that are generated through their use, but the requirements for transport associated with the production and delivery of plastic bottles.

This whitepaper will explore the environmental concerns related to plastic water bottles, and provide a detailed examination of how these concerns can be mitigated by instant filtered water systems in both residential and commercial applications.





The full environmental impacts of bottled water

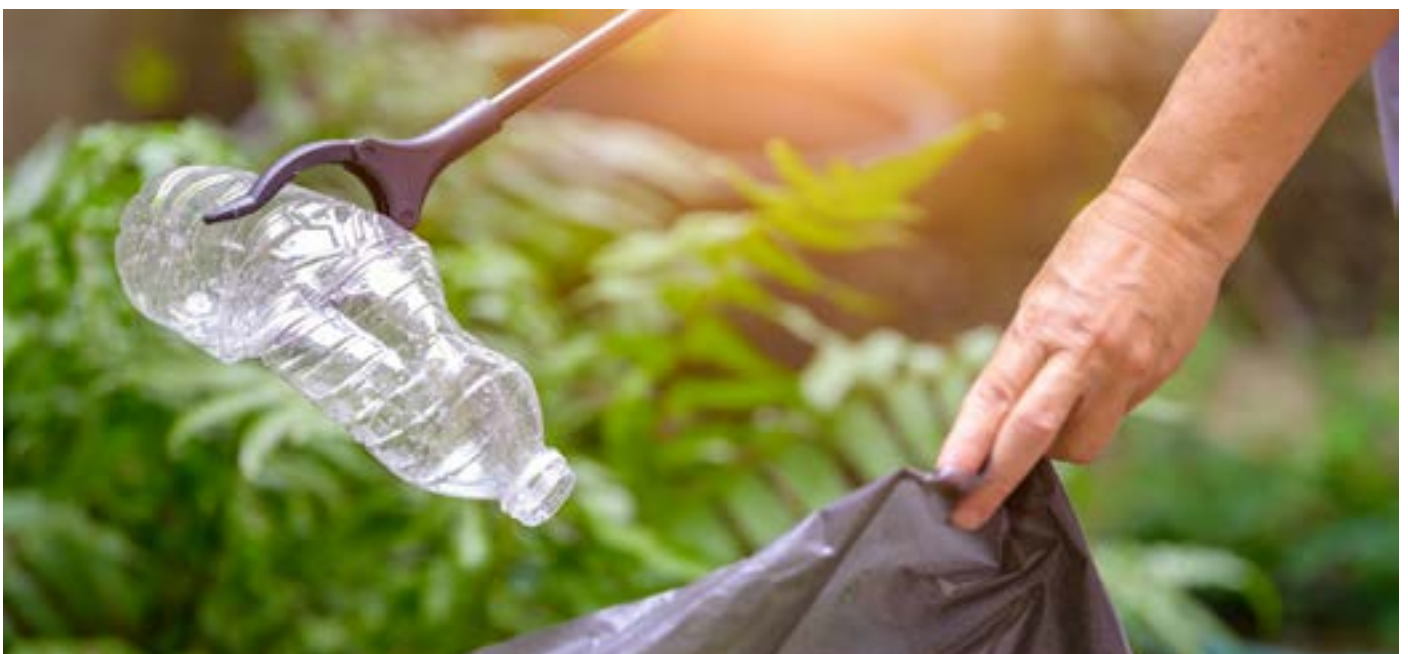
The negative impact of plastics on the natural environment around the world cannot be understated. The world has produced 8.3 billion metric tons of plastic in the last 70 years, and it is estimated that there are now somewhere in the region of 5 trillion pieces of plastic in the world's oceans.¹ Plastic bottles are a significant contributor to those statistics. When many people think of the environmental harm caused by the production of plastic bottles, they think of waste in landfill. Bottled water contributes significantly to landfill in Australia. Plastic water bottles are among the 10 most common rubbish items picked up on Clean Up Australia Day, and Australia recycles only 36% of its PET plastic water bottles, meaning that around 373 million plastic water bottles end up as waste each year.²

But plastic's detrimental effect on the natural environment starts well before the products become waste. The production of PET bottles represents a significant part of the problem. PET plastics are made using crude oil, driving demand for fossil fuel production and requiring even more in the transportation and shipping phase.³ The plastics industry uses as much oil as the aviation sector and currently drives demand for around 8% of global oil production, a figure that is expected to rise to 20% by 2050 based on current consumption trends.⁴ Additionally, it is estimated that around 700 million gallons of oil waste is leaked into the ocean each year, causing havoc to marine ecosystems and fauna.⁵ It's estimated that Australians drink in excess of 726 million litres of bottled water each year,

which uses roughly 460,000 barrels of oil to produce.⁶ Ironically, it can also take up to three litres of water to produce enough plastic for a one-litre bottle.⁷

Within Australia, the vast majority of bottled water (including water cooler bottles) is transported via trucks - contributing further demand for oil through diesel and other petrols. Emissions from heavy trucks in Australia doubled between 1990 and 2017, making them one of the most significant contributors of CO2 emissions in the country.⁸ Within metropolitan areas, delivery trucks dropping off water bottles for fridges and coolers run the same routes daily, often half full. This is inefficient and contributes unnecessary emissions to the air.

It is important to note that the environmental impacts of bottled water traverse the full scope of nature, from our waterways, to our air, to human health. Studies that have been commissioned to test the health properties of bottled water have returned alarming results. In addition to high concentrations of chemicals like chlorine, fluoride and nitrates in excess of the World Health Organisation guidelines, correlations have been made between the presence of Bisphenol A (BPA) in plastic bottles and greater risk of cancer in humans.⁹ It is important to note that these concerns are not purely limited to single use PET bottles, but also to the reusable polycarbonate water bottles that are common with many water cooler systems. In addition, a 2017 study found that microplastics were present in 93% of bottled water samples analysed, debunking the notion that bottled waters are healthier for humans.¹⁰





Bottled water: a choice

There is a very simple reason for the alarming statistics about plastic: there is significant demand for it, and within Australia many people choose to consume water from plastics. It's estimated that almost 30% of the Australian population consumes bottled water¹¹ despite Australia's tap water being rated amongst the highest quality in the world.¹² Among Australians who consume bottled drinking water, many do so because of the incorrect perception that bottled water is purer and therefore better for their health,¹³ or in the case of sparkling water, they do not have access

to a carbonator. Numerous domestic studies have debunked various marketing myths about bottled water in Australia - that it is untreated, or comes from certain springs. The fact is that all bottled water comes from similar aquifers to drinking water supplied and has to be treated in the process in order to be safe for human consumption - the same as tap water.¹⁴ Again, the prevalence of plastic-bottle-style water coolers in workplaces around the country lead people to think that this is the best, or safest, source of hydration within the workplace - an incorrect assumption.



Instant filtered water systems: an environmentally friendly solution

By supplying up to three different types of water from a single unit, instant filtered drinking water systems directly address the needs - and wants - of people when it comes to water, reducing the desire for bottled water products. Instant filtered drinking water systems can provide boiling, chilled, still, sparkling or drinking water direct from tap to cup - or reusable vessel. With chilled & sparkling water being particularly popular bottled water types, having these available direct from a dispenser is a significant step forward in reducing demand for plastics. Instant filtered drinking water systems have self-contained filters, heaters and carbonators, meaning they deliver all the enhanced benefits of these different water types while still utilising tap water. This makes them a long-lasting and cost-effective solution. With no single-use parts, the only transportation requirements for instant filtered drinking water systems following installation are the occasional replacement of filters, reusable CO₂ canisters for sparkling water, and any maintenance that the units may require. This reduces the need for trucks to be

on the road, the overall emissions associated with the lifecycle of the drinking water unit, and reduces the demand for crude oil and other fossil fuels up the chain.

When selecting an instant filtered drinking water system, specifiers should consider the servicing options available from suppliers as managing these effectively will further contribute to the positive environmental impacts associated with the system. In order to ensure a continuous supply of sparkling water, CO₂ bottles should be replaced periodically. Specifiers should therefore opt for a supplier who offers periodic scheduled CO₂ replacements in line with the requirements for the amount of usage the unit receives - this could be anywhere from weekly to annually. Doing this ensures that the CO₂ is replaced as needed while keeping transportation requirements to the bare minimum. Similarly, suppliers should be able to offer a CO₂-for-rent, canister swap system that ensures any used canisters are returned to the supplier for reuse, preventing any used canisters from ending up in landfill.

A modern, sleek, chrome-finished water dispenser with a glass of water next to it. The dispenser has a curved spout and a handle on top. The glass is filled with water and has some condensation on it. The background is a blurred indoor setting with a window and some plants.

Billi Instant Filtered Drinking Water Systems (a Global Hydration partnership with Waterlogic & Purezza)

For more than 30 years, Billi has been a leader in the provision of instant filtered drinking water systems to the Australian market. Backed by a proud history of innovation, Billi products are fully Australian designed and manufactured. Their in-house innovation and research & development teams continue to look to the future and how to better supply sustainable, environmentally friendly filtered water systems to homes and businesses around the world.

Billi operates in parallel partnership with Waterlogic at point of use for bottled water cooler replacement, and Purezza for hospitality options, ensuring that transportation and resources are used as efficiently as possible. Billi Eco and Quadra ranges are GreenTag® certified, providing a globally recognised guarantee that their products conform to the highest environmental standards.

Billi systems deliver instant boiling, chilled, still or sparkling filtered water direct from the unit, reducing the demand for plastic bottled water in both the home and the workplace. Billi also offers refillable CO2 service plan options to ensure continuous sparkling water onsite with scheduled service to suit the CO2 usage of the customer, with all CO2 canisters returned to the supplier for reuse. With periodic plans and plans available for sites with multiple units, Billi offers a bespoke management system for any customer need.

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All information provided correct as of November 2020