

## Policy Position Statement

# Bottled Drinking Water

### Purpose

This Policy Position Statement reviews issues concerning the use of bottled water by the public and the use of water packaged in this way in emergency situations by drinking water suppliers. 'Bottled water' includes natural mineral water, spring water and bottled drinking water supplied to customers in bottles. CIWEM supports action to inform and protect customers and identifies the following key actions for policy-makers.

### CIWEM's Position on Bottled Drinking Water

1. Sustainability: branding and bottling of water where there already exists a wholesome and safe supply of mains drinking water cannot be seen as a sustainable use of natural resources, and adds to the overall levels of waste and pollution to be managed in modern society.
2. Health: there is no general health advantage in replacing tap water with bottled water, and people should be protected from false claims in this regard.
3. Quality: as a minimum, bottled waters should meet the requirements of the appropriate Codex Standard<sup>i</sup> of the Food and Agriculture Organization of the United Nations World Health Organization.
4. Labelling: the labels on bottles in which any treated or untreated water offered for sale to the public should include a chemical and bacteriological analysis of the water and the dates of bottling and analysis. An EU-defined standard for the labelling of bottled waters would be helpful.
5. Infant nutrition: except where it can be demonstrated that a bottled water is suitable for the purpose, it should be made clear to health officials and parents preparing infant formula or follow-on formula milk that tap water rather than bottled water should be used in its preparation<sup>ii</sup>. Bottles of water which have not demonstrated suitability should be required to carry a warning to this effect.
6. Emergencies: drinking water suppliers should have available to them sufficient bottled water or other means of providing their customers who are likely to be left without mains water in an emergency with 7 litres per person per day of water.<sup>iii</sup>
7. Energy: use of energy should be minimised in the production, packaging, transportation and sale of bottled water, and in the transport of packaging for disposal.
8. Disposal/refilling/recycling of empty water bottles: should be undertaken at the least cost to the environment. The responsibility for this should lie with the bottled water producer.

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## Context

Bottled drinking water is now a multi-billion pound international industry. In the UK alone the market grew from several hundred litres a year to 1,692 million litres between 1993 and 2012.

Potable water from the tap is subjected to stringent quality controls, and the public is able to easily access information about its bacteriological and chemical content, for example via the Drinking Water Inspectorate website ([www.dwi.gov.uk](http://www.dwi.gov.uk)). Its price is subject to rigorous control and is, on average, 500 times lower than that of bottled waters.

Bottled water is being consumed in huge amounts by the public, yet its labelling is not required to reflect its chemical and bacteriological content and, while some companies choose to disclose this information, others do not and it is not mandatory that they should make such information publicly available. While the 2003 EU Regulations<sup>iv</sup> now set quality standards for all bottled water, there are still no labelling requirements to enable people to judge for themselves from a standardised set of information whether the beverage is suitable for their nutritional needs, nor how it compares in various respects to similar products and to tap water.

Bottled water marketing has driven a public perception of bottled waters as purer or healthier than water from the tap. Such perceptions are unfounded and can lead to undesirable consequences: for example, the high mineral content of some bottled waters makes them unsuitable for feeding babies and young children. This is recognised in the UK in statutory Regulations<sup>v</sup>, which set specific standards for waters that wish to be labelled as suitable for use in making up infant formula. However, those waters which have not demonstrated their suitability are not required to display this fact, so parents might use such water to make up infant formula feed in the mistaken belief that they are doing their best for their children. CIWEM considers that water which has not specifically demonstrated its suitability for making up infant formula feed should be required to carry a warning to this effect.

There is a range of environmental costs associated with bottled waters, which relate to the impacts of abstraction on the local environment, packaging of the product, resource-use and pollution resulting from transportation of the product and disposal of the waste packaging once the water has been consumed.

## Discussion

### Definitions

There are a proliferation of definitions of bottled waters, some of which are contradictory or vague. CIWEM recommends that the following definitions should be adopted worldwide in order to avoid confusion.

“Natural mineral water” means<sup>vi</sup> microbiologically wholesome water originating in an underground water table or deposit and emerging from a spring tapped at one or more

natural or bore exits. Natural mineral water can be clearly distinguished from ordinary drinking water:

- (a) by its nature, which is characterised by its mineral content, trace elements or other constituents and, where appropriate, by certain effects;
- (b) by its original state,

both characteristics having been preserved intact because of the underground origin of such water, which has been protected from all risk of pollution.

“Spring water” means<sup>vii</sup> water that has been extracted from a spring.

“Bottled drinking water” means<sup>viii</sup> water intended for sale for drinking by humans which is not natural mineral water or spring water. In practice this means that bottled water may simply be filtered tap water.

Bottles can be containers of any size and of any food grade material. These will include plastic and glass bottles and carboys. Plastic bags are also used for emergency water supply.

## Health benefits

Consumers need to be protected from false claims regarding the effects of tap water vis-à-vis bottled water on their health. Particular regard should be made to implications that tap water damages human or animal health, and that bottled water is healthier to drink.

CIWEM supports the following WHO position on the health benefits of drinking bottled water<sup>ix</sup>:

“In European and certain other countries, many consumers believe that natural mineral waters have medicinal properties or offer other health benefits. Such waters are typically of high mineral content and, in some cases, significantly above the concentrations normally accepted in drinking water. Such waters have a long tradition of use and are often accepted on the basis that they are considered foods rather than drinking water per se. Although certain mineral waters may be useful in providing essential micro-nutrients, such as calcium, WHO is unaware of any convincing evidence to support the beneficial effects of consuming such mineral waters. As a consequence, WHO Guidelines for Drinking Water Quality do not make recommendations regarding minimum concentrations of essential compounds.

“On the other hand, in some countries, bottled waters with very low mineral content, such as distilled or demineralised waters, may be offered for sale. While a large number of people have traditionally consumed rainwater which is similarly low in minerals without apparent adverse health effects, WHO has no scientific information on the benefits or hazards of regularly consuming these types of bottled waters.”

## Quality

Under European regulations, all bottled water both produced and imported within the EU is required to meet certain standards with regard to mineral composition, microbiological content etc<sup>x</sup>. Where national regulations are not in place to control the quality of bottled water it is appropriate to use for such control International standards of purity, such as those set out in the EU Regulations<sup>10</sup> the Codex Standards<sup>xi</sup> published by the Food and Agriculture Organization of the United Nations World Health Organization.

## Labelling

In Europe, practices and regulations for the labelling of bottled waters vary from country to country with some requiring an analysis of the contained water to be shown on the label and some not. CIWEM suggests that a uniform, EU-defined, standard would be helpful to customers.

When formula or follow-on formula milk is prepared correctly in accordance with the instructions of the manufacturer CIWEM considers that there should be no bacteriological danger when bottled or tap water is used in their preparation. Where water quality equivalent to that of tap water cannot be guaranteed in bottled water, then using the bottled water to make up formula or follow on formula milk for feeding to infants or young children is inappropriate. CIWEM also considers that advice should be available to health professionals and parents that the high mineral contents of some bottled waters should preclude them from being used for preparing formula or forward formula milk. They should be aware that there are certain bottled waters that have applied for a designation to indicate their suitability, and that where the water has been proven to meet strict standards, this is shown on the label.

## Shelf life

At least one major bottled water trade association contends that bottled water stored correctly will have an indefinite shelf life<sup>xii</sup>. While this may or may not be true, CIWEM considers that customers need to be informed of the date when the water was bottled especially since another source<sup>xiii</sup> puts a viable shelf life for bottled water at one year.

## Emergency drinking water supplies

CIWEM considers that the stockpiling of bottled water is necessary, in order for public and private water suppliers to meet the requirement to provide an adequate emergency supply of water for drinking. How they will provide these emergency supplies needs to be planned and organised. In many countries water suppliers are required by regulation to do this and many use bottled water for this purpose. Other vehicles such as water bowsers and flexible plastics containers are used for the stockpiling of emergency drinking water and CIWEM considers these to be valid alternatives.

## Environment

The abstraction, processing, packaging, transportation and sale of bottled water, and disposal of associated waste, involves a significant amount of energy use and pollution. When placed in the context of consumption of safe and wholesome tapwater, it is hard to view this as anything other than unsustainable. Nevertheless, in a free market economy consumers have the right to purchase bottled water and companies to serve this demand. CIWEM therefore considers that there is a need to ensure that the environmental impacts of bottled water production are minimised and made clear to consumers in labelling.

A major contribution to the cost of bottled water is likely to be transport, certainly where transport is international. The World Wide Fund for Nature argues that the distribution of bottled water requires substantially more fuel than delivering tap water<sup>xiv</sup>. This is especially

true since over 22 million tonnes of the bottled liquid is transferred each year from country to country. Instead of relying on a mostly pre-existing infrastructure of underground pipes and plumbing, transporting bottled water burns fossil fuels and results in the release of thousands of tonnes of harmful emissions. This situation could be ameliorated somewhat if international brands were to licence local supplies to be bottled under their names.

Since some bottled water is also shipped or stored cold, electricity is expended for refrigeration. Energy is likewise used in bottled water processing. In filtration, an estimated two gallons of water are wasted for every gallon purified<sup>xv</sup>.

Most containers for bottled water are made from non-degradable plastics and are not reused or recycled: amounts of plastic waste generated every year are estimated at half a million tonnes. With both landfill and incineration becoming the options of last choice, reusing and recycling containers would benefit the environment and, increasingly, are likely to be cost-effective options.

A WWF Discussion Paper<sup>xvi</sup> points out that PET is increasingly chosen for bottles instead of PVC because of its properties: it is light, easy to work on and very transparent. It can be re-manufactured into many different products, such as fibres for the clothing industry. When incinerated, it does not release chlorine into the atmosphere, unlike PVC.

Negative environmental impacts, in particular energy consumption, are reduced if PET, aluminium and glass packages are washed and re-filled rather than re-manufactured, and strict hygiene criteria must obviously be applied in such situations. Regardless of the material of manufacture, CIWEM considers that bottles should as far as possible be reused and recycled locally. However, it is important that if bottles are to be washed and re-filled, this is only undertaken where water is bottled and distributed to a local market, otherwise the benefits of re-using bottles will be negated by transportation of empty bottles.

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*Note: CIWEM Policy Position Statements (PPS) represents the Institution's views on issues at a particular point in time. It is accepted that situations change as research provides new evidence. It should be understood, therefore, that CIWEM PPS's are under constant review, that previously held views may alter and lead to revised PPS's. PPSs are produced as a consensus report and do not represent the view of individual members of CIWEM.*

## References

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- i Codex Alimentarius Commission: Codex Stan. 108 – 2001 "Codex Standard for Natural Mineral Waters and Codex Stan. 227 – 2001 "General Standards for Bottled/Packaged Drinking Waters (Other than Natural Mineral Waters).
  - ii Department of Health: Bottle feeding. Leaflet No. 31640 2p 500k February 04.
  - iii World Health Organisation: Technical Notes for Emergencies No. 9 – Minimum water quality needed for domestic use in emergencies. Author: Brian Reed.
  - iv EU COUNCIL DIRECTIVE of 15 July 1980 on the approximation of the laws of the Member States relating to the exploitation and marketing of natural mineral waters (80/777/EEC)(OJL229,30.8.1980,p.1) as amended
  - v Food Safety Act 1990 Practice Guidance CHAPTER 3.9: BOTTLED WATERS (<http://www.food.gov.uk/multimedia/pdfs/practiceguidanceeng.pdf>)

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- vi European Commission: Council Directive 80/777/EEC – “COUNCIL DIRECTIVE of 15 July 1980 on the approximation of the laws of the Member States relating to the exploitation and marketing of natural mineral waters”
  - vii Her Majesty’s Stationary Office: Statutory Instrument 1999 No. 1540 - Natural Mineral Water, Spring Water and Bottled Drinking Water Regulations 1999 and Irish Regulation: European Communities (Natural Mineral Waters, Spring Waters And Other Waters In Bottles Or Containers) Regulations 2005 (<http://www.irishstatutebook.ie/2005/en/si/0079.html>)
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  - ix World Health Organisation: Fact Sheet No.256 – Bottled drinking water. October 2000
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  - xii International Bottled Water Association: Answer to a question on their Website FAQs <http://www.bottledwater.org/content/faqs#9>
  - xiii Health Canada: One year ([http://www.hc-sc.gc.ca/fn-an/securit/facts-faits/faqs\\_bottle\\_water-eau\\_embouteillee-eng.php#a19](http://www.hc-sc.gc.ca/fn-an/securit/facts-faits/faqs_bottle_water-eau_embouteillee-eng.php#a19))
  - xiv World Wide Fund for Nature: Discussion Paper – “Bottled Water: Understanding a Social Phenomenon”. Author: Catherine Ferrier April 2001.
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