



Environmental Newsletter

Prepared by WG-5 Environment

ENL N° 30/24 – October 2024

Water Management

Summary

EIGA Working Group 5 – Environment has compiled this environmental newsletter to give information to EIGA members, specifically to site managers, Directors, technical managers, company environmental specialists and National Trade Associations on best practice for managing water and wastewater and minimising usage and discharges.

Introduction

Water use is receiving increased attention with pressure on availability of drinking and other water and in Europe on achieving the European Union targets for water quality. Water is becoming an increasingly scarce and expensive resource with mains water, sewerage and trade effluent charges rising. Unlike greenhouse gas emissions (GHG) which is a global environmental issue, water use is a local environmental issue with water use assessed at the level of river basins or catchment areas. In addition to which the impacts of climate change are being felt across Europe. Over the past thirty years, droughts have dramatically increased in number and intensity in the EU.

As a result of this assessment the Commission presented an initial set of policy options to increase water efficiency and water savings in a Communication published in July 2007. In addition to which, in October 2000 the 'Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy' (EU Water Framework Directive or WFD) was adopted. The purpose of the Directive was to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater.

The European Commission is looking at river basin management under the EU Water Framework Directive 2000/60/EC [1], resulting in a number of initiatives to collect data and to improve water management [2]. The chemical industry is also working on initiatives to improve its Water Footprint [3].

The Carbon Disclosure Project (CDP) [4] requires water reporting and the use of World Resources Institute (WRI) water risk tools [5] to assess any business risk associated with surface or underground water scarcity.

New regulations, such as the European taxonomy will also increase the pressure on companies to accurately manage the environmental impacts of their activity.

The protection of all natural resources is an integral part of EIGA's commitment to sustainable development. Water is essential for life on earth and is also a highly important resource for many industry sectors of the global economy. In the face of the risks linked to water (water stress in terms of both quantity and quality, risks associated with conflicts of use, etc.), EIGA aims to continuously improve guidelines on water management.

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In this context, the main significant water use data becomes a strategic information to allow industrial gases Companies to manage and anticipate potential issues and concerns in the management of water within their activities.

To be able to analyse the data, EIGA's members need accurate data to estimate the potential for improvement in a dedicated geography, for a dedicated use or for anticipating future design standards. In addition, the data is necessary to determine the impact of the activity on the availability of the resource and on the natural water cycle.

Against this background EIGA has written a newsletter to bring together advice to members to help them focus on water usage and minimisation. Many of the processes used in industrial gas operations use water such as water in the cooling towers for air separation plants, water for cleaning vehicles and equipment, process water for manufacturing dissolved acetylene.

Water Footprint definition

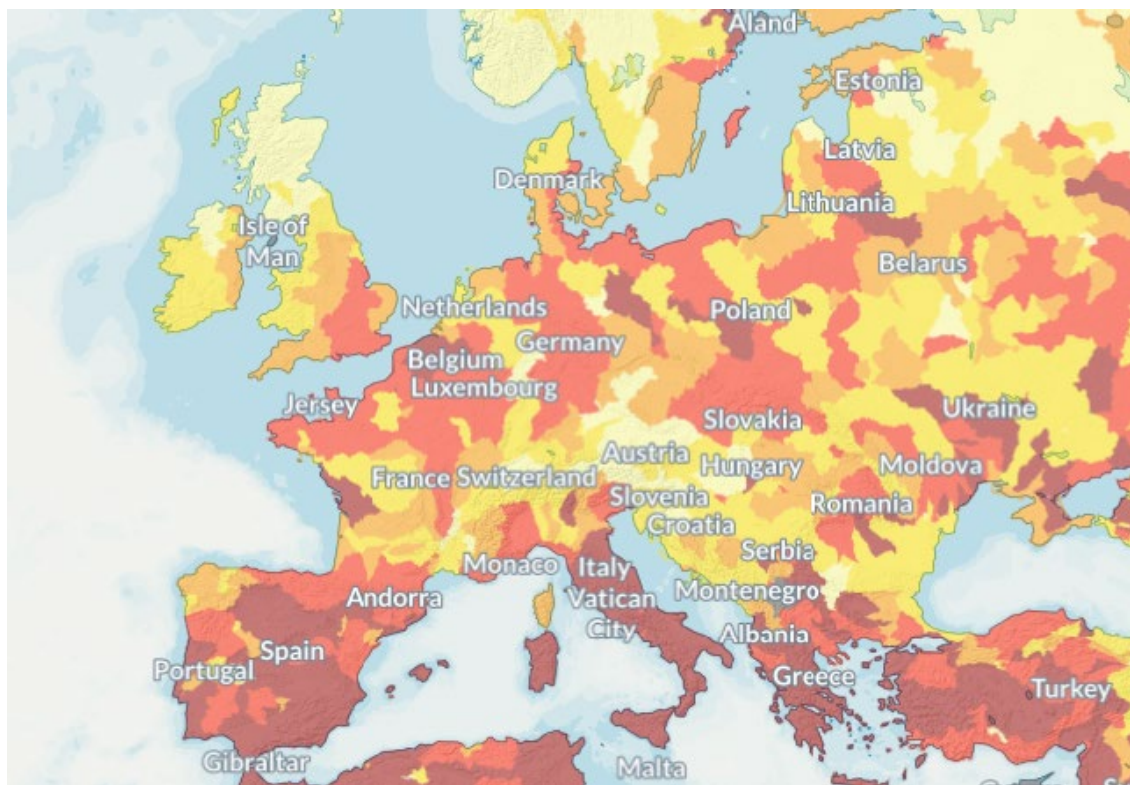
The Water Footprint of a product is the volume of freshwater consumed to produce the product, taking into account the volumes of water consumed and polluted in the different steps of the supply chain. This does not specifically include other ecological impacts. This is not so relevant for industrial gases products (e.g. a cylinder of oxygen etc.) as the products do not contain water.

Water Footprint can also be calculated for organisations, products or sites.

Water abstraction risk assessment is concerned with the local impact of the total volume of water removed from a catchment area. The Carbon Disclosure Project has developed a set of questions as part of their annual water information request which can be used in the development of a Water Footprint and risk assessment.

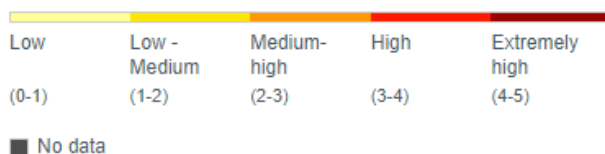
Water stress areas

Many data are now available in order to raise awareness of people on water stress / depletion over the world. The following map is extracted from the Aqueduct project ([Aqueduct | World Resources Institute \(wri.org\)](https://www.wri.org/aqueduct)) in which entities can map water risks such as floods, droughts and stress.



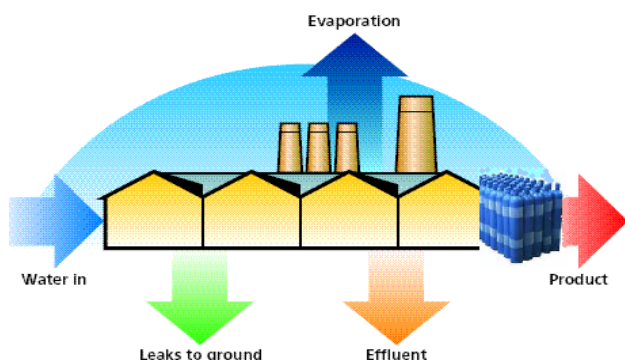
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Physical Risks Quantity



Water balance:

In addition to employing good environmental practice sites that use water should also consider developing a water balance for the site to work out how much you use. Such an approach accounts for where water enters and leaves a site, and where it is used within the business. It typically contains information about the amount of water used by each main process and, for some processes, can be very detailed. Presenting a water balance as a diagram makes it easy to understand and use as a management tool. The type of water used on-site and the type of wastewater generated by site operations/activities will determine how much a company pays for water supply and wastewater disposal. Typically water can come from a number of sources and be discharged as waste water in a number of ways.



Sources:

“Source” refers to the provider of water for the Facility and “destination” refers to the place where the industrial water that can no longer be used by the Facility is discharged. The source and destination of water identified can be the following one:

- Fresh surface water as a source or a destination: all surface water systems containing low concentration of dissolved salts and other dissolved solids, such as ice sheets, ice caps, glaciers, icebergs, bogs, ponds, lakes, rivers and streams.
- Brackish water as a source or a destination: the surface water in which the concentration of salts is high and far exceeds normally acceptable standards for municipal, domestic or irrigation use (at least higher than 10,000 mg/l TDS). Seawater has a typical concentration of salts above 35,000 mg/l TDS.
- Groundwater as a source or a destination: it is where the water is accumulated beneath the earth's surface in rock and soil pore spaces and in the fractures of rock formations. Groundwater is usually recharged from the surface.
- Municipality water system, as a source or a destination: the source is water coming from an outside network also used to provide water for citizens' uses and the destination is when water is discharged in the sewer used for the discharge of citizens' wastewater as well.
- Third party source or destination: the water coming from an outside network and provided by a third party company (e.g. customer, facilities company) or discharged in a third party company sewer, dedicated to industrial wastewater.
- Rainwater source: the water that has fallen as rain and has been directly collected inside or outside the Facility to be used for an industrial purpose.

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