EIGA Environmental Newsletter

Prepared by WG-5 Environment ENL N° 30/16

Water Footprint

Summary

Water Footprints and Water Footprinting methodologies are an emerging topic for regulators and non-government organisations. EIGA has produced this newsletter to provide information to EIGA members on what is meant by Water Footprint, what it means to the industrial and medical gas industry and sources of additional information.

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.

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.

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 [6].

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What is the issue for EIGA members?

Manufacture of industrial and medical gases uses significant quantities of water for cooling. However this water is either evaporated or returned to the catchment area, not consumed or shipped with the products, except for the water that is in lime produced as a by-product from acetylene sites.

EIGA members' operations are often co-located with customers and so we can save water by integrating our utilities such as water with the customers' operations.

EIGA members also use water for periodic operations such as pressure testing, and water is used as a raw material in hydrogen production.

Actions for EIGA members

EIGA members should be aware of questions asked at corporate level, by shareholder based voluntary questionnaires [4] such as that developed by the CDP.

EIGA members should look at risks of water scarcity if production plants are in water stressed areas and should plan to use water efficiently.

EIGA Environmental Newsletter ENL 20 *Water use and minimisation* [7] provides examples and guidance on water use minimisation and how to carry out water balance calculations.

Best practice for EIGA members

Best practices in developing a site action plan for water minimisation and methods of reducing water are discussed in EIGA document ENL 20 *Water use and minimisation* [7] and Doc 117, Environmental Impacts of Customer Installations [8].

Conclusions

Use of water in stressed catchment areas and water footprint is receiving increasing attention from stakeholders and regulators. Industrial and medical gases companies are large consumers and make use of large quantities of cooling water, which is mainly recycled and reused, with a part of it evaporating. Alternatively, it is returned to the source. The use of water in the products themselves is negligible and not considered in the water footprint.

Nevertheless we can expect this to be a topic that stakeholders are showing an interest in and EIGA members should be aware of the potential for these issues to impact permits for operations or new plants, especially where plants or operations are in water stressed areas.

References and further information

[1] 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. http://eur-lex.europa.eu.

[2] Water for Europe Website; CEFIC / SusChem / A.Spire Innovation for Growth Portal. http://www.water-europe.eu/Home.aspx

[3] CEFIC - Water Quality. http://www.cefic.org/Policy-Centre/Environment--health/Water/
CEFIC - Water Innovation Partnership. http://www.cefic.org/Policy-Centre/Environment--health/Water-Innovation-Partnership/

[4] The Carbon Disclosure Project (CDP) 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 Carbon Disclosure Project (CDP) website. https://www.cdp.net

[5] World Resources Institute (WRI) website. http://www.wri.org/

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[6] CDP's 2015 Water Information Request. CDP. https://www.cdp.net/CDP%20Questionaire%20Documents/CDP-Water-information-request-2015.pdf

[7] ENL 20, *Water use and minimisation*. European Industrial Gases Association. www.eiga.eu

[8] Doc 117, *Environmental impacts of customer installations*. European Industrial Gases Association. www.eiga.eu

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