

A NEW INDUSTRIAL EMISSIONS DIRECTIVE

Mastering water efficiency and reuse challenges

March 2021



MASTERING WATER EFFICIENCY AND REUSE CHALLENGES

Water Europe Vision

Water Europe has set out a blueprint for a society in which the true value of water is recognised and realised, and all available water sources are managed in such a way that water scarcity and pollution of water are avoided, water and resource loops are largely closed to foster a circular economy and optimal resource efficiency, while the water system is resilient against the impact of climate change events.



Multiple Waters



Digital Water



Value in Water



Grey-Green Infrastructure

Industrial Emissions Directive

The Industrial Emissions Directive (IED) has proven its added value since industrial emissions, particularly in air, have been decreasing over the past decade in Europe. However, it is now time to focus on pollution reduction to water and soil and improve water efficiency to achieve a European Water-Smart Society in line with the European objectives particularly the Green Deal and the zero-pollution strategy.

If the IED has likely contributed to reduce emissions to water and slightly improve water efficiency, its contribution to water policy remains low with only 17% of Best available techniques (BATs) on water emissions which mostly do not focus on reduction at source; and only 20 BATs out of 850 which promote water use reductions¹.

Europe is not any longer the frontrunner in term of water efficiency and reuse. Today, reclaimed water supplies up to 40% of Singapore's current water needs², while in Europe the unofficial target is 4% by 2025³. Moreover, Chinese regional authorities are already working on water efficiency metric in the Yangtze economic basin (45% of the Chinese GDP, including the plastic valley), calculating the quantity of water needed per unit of GDP (water-nomic)⁴. Some of our members have reported that Chinese legislation is becoming more stringent than the European one for certain threshold limits set for pollutants in industrial water discharges.

The costs of non-action are already high for tackling climate change. "The sooner we start, the lower the cost"⁵. Therefore, the article 11 of the Industrial Emissions Directive must include in the general principle water efficiency, cascading and reuse water for industrial processes. Several technologies and processes are already available⁶.

Water Europe therefore welcomes the initiative of the European Commission to update this directive which will contribute to:



SECURING EUROPEAN COMPETITIVENESS

by avoiding critical choice between production plants due to a missed consideration of the value of water.



IMPROVING OUR ENVIRONMENTAL LEGACY FOR THE FUTURE GENERATIONS.

By 2030, 30%⁷ of Europe will suffer of water scarcity forcing us to adopt now a smart water management. For instance, reuse of treated wastewater might be driven by the need to increase industrial production and reducing administrative burden for pollution permits.



STRENGTHENING EUROPEAN STRATEGIC AUTONOMY

through resource recovery specifically for critical materials embedded in wastewater⁸.

1. Report on IED contribution to water policy, 2018 : <https://circabc.europa.eu/sd/a/af2ff560-431b-4b61-b318-4543a9b176ff/Summary%20on%20IED%20contribution%20to%20water%20policy.pdf>

2. <https://www.pub.gov.sg/watersupply/fournationaltaps/newwater>

3. https://ec.europa.eu/environment/water/blueprint/pdf/BIO_IA%20on%20water%20reuse_Final%20part%20I.pdf

4. Debra Tan, Director and Head of china Water Risk, CDP Webinar, - Water global Forum, 23rd March 2020 : <https://www.chinawaterrisk.org/wp-content/uploads/2019/09/CWR-Yangtze-Water-Risks-Hotspots-Growth.pdf>

5. Frans Timmermans, 7th October, European Parliament.

6. ZEROBRINE : <https://zerobrine.eu/> ; REWATCH : <http://rewatch.eu/>

Consequently, Water Europe suggests five objectives to achieve a Water-Smart Society, in which the industrial stakeholders recognise and realise the true value of water, and all available water sources are managed in such a way, that water scarcity and pollution of groundwater are avoided. Water and resource loops are largely closed to foster a circular economy and optimal resource efficiency, including energy, while the water system is resilient against the impact of climate change events.

1 LEVERAGING WATER-RELATED STANDARDS IN EACH BREF

Despite the fact that this option will be time consuming, the European Commission must include the issue of water reuse and efficiency in European industrial processes in each of the Best Available techniques reference document (BREF) as they are revised, while considering the specificities of each sector. It will have to start with those that consume the most water.

2 SETTING-UP HORIZONTAL BREF ON WATER EFFICIENCY

Water is a crucial resource for several industrial sectors. 90% of our economy depends on water. A horizontal BREF on water efficiency might be a solution to synthesise the best water-smart techniques for industrial processes and support the implementation of the water legislations. In comparison with the BREF on energy efficiency, this horizontal BREF shall be strengthened to avoid the drawbacks of this model⁹. Particularly, the European institutions shall prevent the weaknesses of a horizontal BREF which can dampen the efforts of industrial stakeholders.

3 INCLUDING MANDATORY SYSTEMS ASSESSMENT FOR WATER USAGE

Water Europe supports a mandatory assessment for water usage for all European industries to control the possibilities for cost-effective water savings, with the adaptation to the local situation. In that case, the governance aspect plays a key role to fit the conditions and objectives in line with the regional and local emission-related challenges.

Moreover, the river-basin approach is critical not only to adapt the strategy to the local resources but also to facilitate a strategic approach for exploiting the whole opportunity of cascading and reuse water¹⁰. The case-by-case assessment of industrial infrastructure shall be automatically included in a holistic approach to consider the quality needed by the next user.

The outcome of this report shall be coupled with a labelling system. The end-goal should be to stimulate each industry to reduce its water footprint. It might be also completed by, a European scoring system on products as the one for energy efficiency to support this aforementioned “source approach”. With 50% of water abstraction¹¹, the industrial production can be a powerful source of water efficiency, particularly if we mobilise the European citizens through awareness communication which master the value of water.

7. https://watereurope.eu/wp-content/uploads/2020/04/WE-Water-Vision-english_online.pdf (page 8)

8. Fourth List of CRMs, 2020: https://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en

9. https://ec.europa.eu/info/sites/info/files/file_import/report-2019-commission-staff-working-document-monitoring-application-eu-law-policy-areas-part2_en.pdf

10. For the multiple waters concept, including cascading, reuse water, see Water Europe Vision, page 13.

11. EEA statistics: <https://www.eea.europa.eu/data-and-maps/indicators/use-of-freshwater-resources-2/assessment-3>

4

INCENTIVIZING INDUSTRIAL WATER EFFICIENCY, CASCADING AND REUSE WATER THROUGH SUBSIDIES

An integrated approach of water efficiency should not drive to turn water rights into a financial product as it is the case in Australia¹². The price volatility on the market does not contribute to set up a sustainable framework to achieve a Water-Smart Society.

A good practice in term of encouraging water reuse is the Cyprus' agricultural policy¹³. It reduces pollution emission into water and soil while recovering the critical materials embedded in wastewater. The government subsidises structurally modify business models to make the exception the rule. However, some challenges shall be tackled in this approach:

- ✓ The reuse water process shall include a cascading approach considering the quality required by the end user. A fit-for-purpose strategy shall be implemented here to reduce the cost of water treatment while offering the right quality of water for the next user.
- ✓ The European Union shall recognise water infrastructures as critical infrastructure¹⁴. It shall open up the opportunities for water-smart finance and therefore reach its objectives, particularly included in the Water Framework Directive.

5

DEPLOYING DIGITAL WATER SOLUTIONS FOR WATER-ENERGY EFFICIENCIES AND THE DECARBONISATION OF EUROPEAN INDUSTRY

Digital technologies and artificial intelligence solutions can support the environmental opportunities. To incentivise the uptake of digital technologies by industrial operators, it is important that the BREF process is agile enough to ensure that state-of-the-art technologies are included within the scope of BREFs and BAT conclusions.

The decarbonisation of industry, in line with the European Green Deal, starts with the improvement of water and energy management including in the water-energy nexus. The combination of these recommendations will harness potential efficiencies.



Technology & Innovation