RECOGNIZING THE VALUE OF WATER IN THE NEW EU STRATEGY FOR SUSTAINABLE TEXTILES

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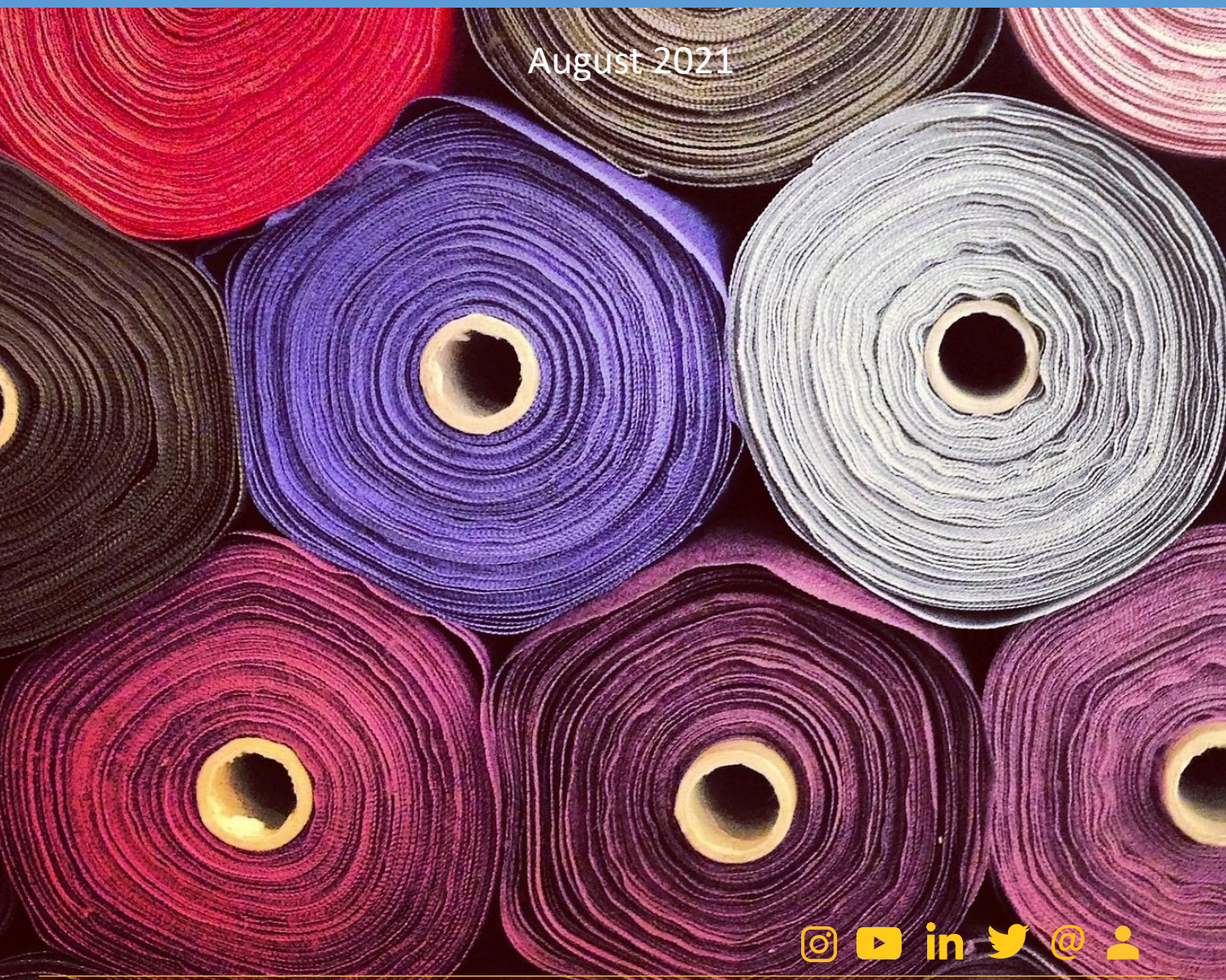

Water Europe (WE) is the voice and promoter of water-related innovation and RTD in Europe. WE is a multi-stakeholder association representing over 230 members from academia, industry, technology providers, water users, water service providers, civil society, and public authorities. WE activities and positions are guided by its Water Vision "The Value of Water: Towards a Future-Proof European Water-Smart Society".

AN OPPORTUNITY FOR A WATER -SMART SOCIETY

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

Hybrid Grey-Green Infrastructure

EU Strategy for Sustainable Textiles

The new EU Strategy for Sustainable Textiles aims to ensure that the textile industry recovers from the COVID-19 crisis in a sustainable way. The EU must therefore take this opportunity to apply innovative solutions and take advantage of the synergies with European legislations (e.g., the European Green Deal, the Circular Economy Action Plan, the Industrial Strategy, the EU's Chemicals Strategy for Sustainability, and the Zero Pollution Action Plan) to address the challenges related to the impact of the textile life cycle on the quality and quantity of water resources[1].

20%
Of global water pollution is caused by dyeing and finishing textile products.

4th
Highest pressure category in the EU for water use.

0,5 Mil tonnes
Of plastic microfibres are released into the ocean annually from washing plastic-based textiles.

A systemic approach that involves design, production, consumption, recycling, and collection of textile waste is the only solution for a global circular economy project for the sector. Water Europe has identified 5 areas where immediate actions can be taken to reduce water consumption and the environmental impact and achieve a Water-Smart textile sector:

1 INCREASING WATER EFFICIENCY, CIRCULAR MANAGEMENT AND REUSE

The textile industry is a high water-intensive sector. Processes require extensive water use for dyeing, rinsing, conditioning, and finishing operations. The new EU Strategy for Sustainable Textiles should therefore encourage a water-smart management by:

- **Incentivizing the reduction of water consumption.** Fibres reuse processes could lead to a reduction in the water consumption necessary for their production in the field, but they could increase the water and energy consumption for their reworking, cleaning, and disinfection. However good water-saving practices exist and can already be encouraged[2].

1. Briefing of the European Environment Agency, "Textiles in Europe's circular economy", 19 Nov 2019, last modified 09 Mar 2021, https://www.eea.europa.eu/publications/textiles-in-europes-circular-economy
2. Eg Water<Less® technique used by Levi Strass & Co, https://www.levi.com/US/en_US/blog/article/how-we-make-jeans-with-less-water/

- **Promoting water reuse by production facilities.** As a JRC study[3] suggests significant improvements could be achieved by appropriately encouraging practices such as the recycling of effluent water.
- **Exploiting the value in water[4] for a circular management system.** Resource recovery from wastewater enables resource efficiency and improved sustainability through reduced consumption of process inputs. For example, with regard to hypochlorite used for bleaching, the development of on-site production systems could be encouraged to create a circular economy system via the use of salts present in wastewater. This would reduce the by-products (chlorates, etc.) normally present in bulk hypochlorite.

ZERO BRINE

Zorlu Textile Factory In Lüleburgaz, Turkey[5]

The recovery of concentrated salt solutions for reuse can result in reduced CO2 emissions and water consumption through additional water reuse. In addition, it reduces industrial saline wastewater streams and brings significant improvements of aquatic environments and protection of soil from salinization.

2 LEVERAGING SYNERGIES WITH THE INDUSTRIAL EMISSIONS DIRECTIVE

In the context of the revision of the Industrial Emissions Directive and also the Reference Document on Best Available Techniques for the Textiles Industry (TXT BREF), synergies must be set up to find a best balance between environmental performance and technical/economical convenience, including regulatory, environmental, and technical constraints.

CHALLENGE

In the BAT-AELs (discharge standards) discontinuous processes are treated in the same way as continuous processes, even though they have a higher specific water consumption. It results in a lack of incentive to stimulate water savings in batch processes.

3 TACKLING THE PRESENCE OF HAZARDOUS SUBSTANCES & MICROPLASTICS

Textile production processes release hazardous chemicals to urban wastewater. In addition, washing releases chemicals and microplastics into households wastewater. Therefore, in line with the objectives of the Zero Pollution Action Plan, we support:

- **The reduction of hazardous chemicals** in production processes, wastewater and finished products. In particular the principles of precaution and control at source must be applied.
- **The implementation of wastewater treatment plants** able to produce water of a quality at least equal to those taken from the environment (e.g., with the introduction of finishing treatments that avoid the introduction of dyes, surfactants, and other by-products of processing in the environment).
- **The disclosure of information** on the environmental impacts of the product over its whole life-cycle.
- **The application of the polluter pays principle** through extended producer responsibility.

3. European Commission's Joint Research Centre (JRC), "Environmental improvement potential of textiles", 27/01/2014, https://op.europa.eu/en/publication-detail/-/publication/f8d0def8-4fd5-4d84-a308-1dfa5cf2e823/language-en
4. The Value in Water indicates the economic and societal value that can be accomplished by extracting and valorising substances such as nutrients, minerals, chemicals and metals, as well as energy, embedded in used water streams.
5. Zero Brine Project, Textile Industry Pilot Plant in Turkey - https://zerobrine.eu/digital-journey-textile-turkey/

4 BOOSTING RESEARCH AND INNOVATION AND DEVELOPMENT OF NEW TECHNOLOGIES TO ADDRESS WATER-RELATED CHALLENGES

Research and innovation in the development of new technologies are key to tackle the challenges related to water efficiency and quality. Since technologies must be adapted to the production processes, collaboration along the entire value chain - especially between the research sector and textile companies - is essential. In particular this can contribute to:

- **Reducing energy and water consumption in the production process** for example by developing water-free technology or energy- and water-efficient finishing machines etc.
- **Promoting water reuse through the development of wastewater treatment technologies**. The finishing and wet processing steps of textiles production often produce a large amount of effluent, which contains a number of environmental pollutants. A direct reuse of the water-based effluent is thus not possible for most steps of textiles production – especially since wet processes in the textile industry need water of the best quality regarding the content of dyes, detergents, and suspended solids. Therefore, water requires further treatment. Encouraging results have been reported regarding the application of ozone treatment (Ciardelli and Ranieri, 1998[6]).
- **Reducing water pollution** through the development of alternatives to the conventional use of chemicals, waste reduction or the development of supporting technologies for the separation of microplastics from sludge in wastewater treatment plants. Particular attention should also be paid to the issue of discharge when reusing recycled water. Indeed, with increasing reuse the content of substances in the wastewater that is not broken down by the wastewater treatment, e.g., recalcitrant COD, increases.

5 ENCOURAGING THE DEPLOYMENT OF DIGITAL TOOLS TO ACCELERATE THE TRANSFORMATION

Digital solutions are strong enablers for industry[7]. A digitalisation of the industry sector would indeed bring great benefits in terms of water consumption and environmental protection.

Data management, data monitoring and data processing are fundamental to identify key water-related challenges and opportunities and to develop modern and innovative solutions. In this regard, the development of Living Labs will enable to develop solutions for green and digital solutions to accelerate zero pollution efforts, with a particular focus on citizen engagement[8].

Digital technologies can be used in the production processes to reduce water and energy consumption.

Exchanges of data across the value chain is key to achieve traceability and assure compliance with legislation and give to customers and partners the information they need.

Strengthen the Polluter-Pay Principle through the development of monitoring and outlook framework.

6. Ciardelli, G., Ranieri, N., 2001. The treatment and reuse of wastewater in the textile industry by means of ozonation and electroflocculation. Water Res. 35, 567–572. Among the wastewater treatment technologies, AOPs are very applicable for the removal of colour, refractory organic compounds, and particularly chromophoric structures.
7. Water Innovation Europe 2021, Session 1 “Water is also your business”
8. Flagship 7, EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'


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