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Position paper on Industrial Waste Water Discharges into Sewers

Contributing to better protecting the aquatic environment, including water resources, and enhancing the circular economy

Summary

Waste water treatment plants (WWTP) remove pollutants from domestic waste water through mechanical and chemical processes and the biological activity of the biomass contained in the reactors. Chemicals coming from industrial waste water discharges into sewers can pose threats to waste water treatment, human health and the environment.

Therefore, controlling hazardous industrial discharges into sewers is an essential measure for protecting the environment, for the effective and sustainable operation of WWTPs, and to allow operators to comply with the Urban Waste Water Treatment Directive (UWWTD). Any sustainable policy framework must start from the Precautionary Principle, the Control at Source Principle and the Polluter Pays Principle, according to Article 191.2 of the Treaty on the Functioning of the European Union (TFEU).

The EU must close any regulatory gaps in the surveillance of industrial emissions to water, including industrial waste water discharges into sewers, by strengthening the provisions of the Industrial Emissions Directive (IED) and the UWWTD and/or its implementing regulations. In particular, Article 11 of the UWWTD needs to be strengthened to ensure the involvement of WWTP operators in the permit process, guarantee their access to timely information, enforce compliance, and apply the Polluter Pays Principle.

In the event of severe contamination, drinking water operators should be alerted immediately so that they can respond appropriately.

1. Industrial waste water and its impacts

Industrial waste water[1] is often discharged indirectly to the water environment via the urban waste water collection and treatment infrastructure. If this industrial effluent contains potentially harmful substances that are not properly controlled, it may pose a threat to the natural environment and ecology of rivers or coastlines. It may also damage sewers and waste water treatment plants (WWTPs), in particular when it is toxic for the biomass used in the biological treatment step. Other relevant exposure risks include waste water service workers and the water resources for drinking water supply.

Waste water operators are responsible for either the sewer system, WWTPs, or both. WWTPs ensure that treated urban waste water complies with the Urban Waste Water Treatment Directive (UWWTD) before it is discharged to the environment, in order to protect human health and ecosystems. Compliance must also be ensured with all applicable EU and national rules regarding sewage sludge[2] and potential reuse of treated urban waste water. This is particularly relevant when treating industrial waste water, as some of the pollutants removed from it, including some contaminants of emerging concern, can end up in the sewage sludge, while others may not be removed at all, hence jeopardising Circular Economy options and hindering the Water Framework Directive (WFD) goals.

Industrial waste water can contain potentially harmful components, such as substances of very high concern (SVHC), endocrine disruptors (EDs), pharmaceuticals, PFAS and other persistent organic pollutants (POPS). These can have negative impacts on workers' safety in waste water networks and treatment plants, on assets condition, on WWTP processes (interruptions resulting in a situation where WWTPs are not able to treat the incoming waste water efficiently, e.g. nitrogen removal), and on the receiving water bodies.

By principle, any sustainable policy framework intended to prevent pollutants from deteriorating the quality of water bodies, aquatic life, natural areas, biodiversity, ecosystems and bathers' health, must start from **the Precautionary Principle, the Control at Source Principle and the Polluter Pays Principle** (according to Article 191.2 of the Treaty on the Functioning of the European Union(TFEU)). This will avoid the need for increased treatment by drinking water and waste water operators including the related energy and chemical use.

2. The regulatory framework

The rules governing industrial waste water discharges into sewers are covered by the UWWTD and the Industrial Emissions Directive (IED).

The **UWWTD** (Art. 11) stipulates that the discharge of industrial waste water into collecting systems and urban WWTPs is subject to prior **regulation and/or** specific **authorisation** by the competent authority or appropriate body. This also requires a pre-treatment prior

1 Industrial waste water means any waste water which is discharged from premises used for carrying on any trade or industry, other than domestic waste water and run-off rain water (Art.2.3 UWWTD).
2 We refer to sewage sludge as defined in EurEau's briefing note on sludge management.

to discharge for the following reasons (Annex IC):

- ~ to protect the health of staff working in collecting systems and WWTPs
- ~ to ensure that collecting systems, WWTPs and associated equipment are not damaged
- ~ to ensure that the operation of the WWTP and the treatment of sludge are not impeded
- ~ to ensure that discharges from the WWTPs do not adversely affect the environment, or prevent receiving waters from complying with other EU law
- ~ to ensure that sludge can be disposed of safely in an environmentally acceptable manner.

The **UWWTD** (Art. 13) addresses specific conditions for direct discharge of biodegradable food processing industries into receiving waters listed in Annex III and with an organic load of more than 4,000 P.E.

The **IED** applies to industrial emissions, including waste water, of about 50,000 large industrial installations and establishes a **permit** to operate that must be granted by the Member State Authorities. The permit conditions, including emission limit values (ELV), must be based on the Best Available Techniques (BAT), as defined in the BAT Reference Documents (BREFs). In case of discharge to the sewer, less stringent emission limit values may be set.

Reporting requirements under the IED and the European Pollutant Release and Transfer Register (E-PRTR) provide data from 30,000 large industrial facilities. However, many small local industrial installations are not covered by these obligations.

The overarching provisions on chemicals under the Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (REACH) also imposes restrictions for the use of hazardous substances to enforce control-at-source.

3. Industrial discharges into sewers, the burden for waste water operators

The current regulatory framework on **industrial waste water discharges into sewers presents gaps in granting authorisations and permits to industry. The involvement of waste water operators in the authorisation process** differs between Member States or regions. Also, **the information flow from industry to waste water operators is often insufficient to effectively control the real discharge into urban sewers (monitoring data and related compliance checks).**

Permit process procedures

- ~ Industrial discharges into sewers are subject to two different permit process procedures with different requirements, with the IED covering the bigger industrial facilities and the UWWTD covering the rest. This disrupts the level playing field for businesses.
- ~ In some cases, waste water operators do not have the possibility to participate in

the process of granting the authorisation and/or in the definition (through information, challenge or approval) of required pre-treatment of industrial discharges prior to the discharge point into sewers. However, in certain Member States, solutions exist with sound local regulations that guarantee the involvement of waste water operators in this process.

- ~ Small waste water operators may lack the resources or the knowledge to assess the permit process procedures.
- ~ Waste water operators are sometimes not informed about the chemicals that are authorised to be released into sewers, nor is there always enough information on the impact of certain chemicals or combined effects of different chemicals or their metabolites on the environment or the treatment biomass.
- ~ Industries are sometimes unwilling to negotiate permit terms with waste water operators.
- ~ When waste water operators are not involved in the granting of authorisations and permits, they assume the responsibility of treating the industrial waste water without agreement, jeopardising the fulfilment of Annex IC (UWWTD) and the possibility to fulfil the requirements of the Sewage Sludge Directive (86/278) and how resources are delivered in a Circular Economy Strategy. These risks must be considered in the risk assessment of the future Resilience of Critical Entities Directive.
- ~ It should be taken into account that the waste water operator is not an authority. If the operator of the WWTP has no possibility to control the industry voluntarily, the permitting authority should have all the regulatory burdens to ensure the efficient operation of the WWTP without interruptions from harmful industrial discharges.

Effective control of industrial discharges

- ~ Industrial installations do not always provide waste water operators with timely and accurate assessments or reports on the volume and composition of the industrial waste water they will discharge into sewers according to the process and equipment that they use. There is often no real-time information nor other type of useful and adequate information on those discharges that are not permitted. Even more, some industries such as certain waste treatment plants even lack sufficient information on the contaminants contained in their own discharges, e.g. solid waste treatment plants.
- ~ The costs for the identification and monitoring of hazardous industrial discharges, for extra treatment and remediation and for management of contaminated sewage sludge are often borne by the waste water operators and therefore, by consumers.
- ~ In some cases, waste water operators just do not have the means to monitor and/or enforce permits. Meanwhile, in some Member States, the tools to control the industry exist and are in the hands of the waste water operators.

Without waste water operator involvement in the granting of the discharge permit, or without a correct information flow from the industry, or without the appropriate and

accurate monitoring, the result can be that:

- some chemicals may only be partially or not at all be removed or degraded in the WWTP, and so released into the water bodies or into reclaimed water.
- some chemicals retained in sewer sediments may be removed during rain events, together with extra discharges from industries, that may be directly released to the water bodies through combined sewer overflows.
- the chemicals removed in the WWTP may contaminate sewage sludge, hampering its recycling.

To remedy this situation, the EU needs a sound framework to enforce the Control at Source Principle.

4. EurEau proposals - towards a better control of industrial waste water discharges into sewers

EurEau compiled a set of proposals in its position paper *Enabling the circular potential of sewage sludge* that would reduce the contamination of waste water by industrial discharges (section 3). These are summarised here along with some additional **recommendations for the revision of the UWWTD and the IED**.

(1) Art. 11 of the UWWTD addressing the control of industrial discharges into sewers should be improved in order to increase the environmental protection, enhance the Circular Economy and secure the affordability of water services.

- There should be an obligation for **involving**, at a certain level, **waste water operators in the prior regulation and/or specific authorisation process** by the competent authority.
    - Waste water operators must have the right to refuse the industrial discharges into the sewers, unless the industry discharger can guarantee certain quality requirements.
    - Waste water operators, in accordance with the competent authorities, may define criteria to accept or refuse industrial waste water into the sewer and may demand from the applicant industry an impact assessment to guarantee compliance with UWWTD in a cost-efficient and/or environmentally sustainable manner.
- The authorisation must be based on, and hence include the right for water **operators** to access **up-to-date information** on flows, substances, concentrations and other relevant issues of the industrial discharges to the sewer, such as:
    - detailed data on the flow and composition of the industrial waste water and in particular identification of the substances used, manufactured and transformed on the applicant industry.
    - a yearly declaration from all connected industries in which substances such as PFAS or REACH SVHC (substances of very high concern) are used or produced, providing data on the likelihood that these chemical substances

risk to be discharged to the urban WWTP.
    - full assessment of the effects of potentially harmful components , their metabolites and combined effects on the waste water assets, receiving environment and sewage sludge quality.
    - information on other polluted streams from the industrial facility such as industrial run-off, water from fire extinction or water from retention tanks likely to be added in the usual industrial waste water stream.
    - the removal efficiency of pre-treatment on the industrial site, including the opportunity to challenge it.
    - requirements for monitoring and reporting by the industry itself to allow control and follow-up of the industrial discharge, communicated to the waste water operators.
    - requirements for setting operational contingency procedures to avoid industrial discharges into the sewers during heavy rain periods.
- The waste water operators must have the right to intervene as a receiver of information or as an executor of the monitoring and controlling in the case of an EQS non-compliance in the receiving water body. Likewise, the waste water operators must have the right to lead or to be informed of the search of the polluter in the sewer network when an unauthorised industrial discharge is detected in the inlet of the WWTP.
- The enforcement of the Polluter Pays Principle has to be made possible in the authorisation. If extra investments and/or operational costs are needed to treat the industrial waste water (chemicals, energy, sludge disposal, …), waste water operators must have the (legal) means to make an economic agreement with the industrial facility to recover these expenditures. This might be especially relevant for industries that have UWWTD-compatible but too high peak loads or large amounts of waste water, or in cases when the waste water operators need to enlarge their infrastructure with additional capacity infrastructure or treatment steps.
- Annex IC "ensure[s] that sludge can be disposed of safely in an environmentally acceptable manner" should be expanded to include all recovery products and to promote the Circular Economy.

(2) For the industrial facilities where the IED applies, the same principles as outlined above for the UWWTD Art. 11 should apply. However, following the TFEU principles, large industries/IED industries should preferably not discharge into the sewer system, but instead treat their waste water on their own and aim at zero-liquid-discharge into the urban sewer system, unless the large industrial installation/IED installation and the UWWTP operator jointly agree the conditions of such a discharge.

(3) Support focused Innovation. Innovation has to focus on monitoring (on line water quality instrumentation, non-target-analyses, passive samplers), modelling and digitalisation to improve the surveillance and identification of incidents, accidents or unauthorised industrial discharges into sewers.

(4) Facilitate flow of information. In case of severe contamination or events arising in hazardous industries in the protected areas, drinking water operators should be alerted immediately so that they can respond appropriately. In this case, the Environmental Liability Directive (ELD) applies. Experience shows, however, that the effectiveness of the ELD is often unsatisfactory[2]. Furthermore, access to relevant information should be guaranteed to all water users and regulators in a specific river basin area, in line with the Aarhus Convention.

To conclude, the EU must close any regulatory gaps in the surveillance of the industrial emissions to water, including the industrial waste water discharges into sewers. The provisions of the IED and the UWWTD and/or its implementing regulations need to be improved by ensuring the participation of the waste water operators and in order **to enhance pollution control at source**.

About EurEau

EurEau represents 34 national associations of drinking water and waste water service operators from 29 countries in Europe, from both the private and the public sectors. We bring national water professionals together to agree European sector positions regarding the management of water quality, resource efficiency and access to water for Europe's citizens and businesses.

With a direct employment of around 476,000 people, the European water sector makes a significant contribution to the European economy.

[2] Special Report 12/2021: The Polluter Pays Principle: Inconsistent application across EU environmental policies and actions (europa.eu))