

# Revision of the EU Urban Wastewater Treatment Directive – Main measures (Proposal)

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## Why is the EU revising the rules on treating urban wastewater?

- UWWTD currently in force is more than 30 years old (1991)
- high level of compliance with the Directive across the EU: 98% of wastewater collected and 92% satisfactorily treated
- Yet, pollution remains that is not covered by the current rules and needs to be addressed to achieve a pollution-free environment by 2050
  - pollution from smaller cities, pollution caused by storm water and combined sewer overflows
  - at present, micropollutants are also not covered
- WWTPs are one of the biggest consumers of energy in the public sector → energy neutrality target for the sector
- Recent experience has shown that viruses can be tracked with high reliability in wastewaters: this provides precious information for public health decisions → to be able to collect the necessary data

## What does the European Commission aim to achieve with this proposal?

- To protect better the health of Europeans and the environment. More specifically, the revision aims to:
- **Make the wastewater sector energy-neutral** and move it towards climate neutrality by reducing energy use,
- **Make industry responsible for treating toxic micropollutants** (“polluter pays” principle) that are released into the environment from the use of their products, especially harmful residues from the pharmaceutical and cosmetics sector,
- **Improve access to sanitation** in public spaces and for the 2 million most vulnerable and marginalised people in the EU,
- **Require the monitoring of health parameters in wastewater** in order to enhance the EU's preparedness against pandemics or other major public health threats, as is currently being done for COVID-19.

# Main measures - Proposal

## PROPOSAL

### Implementation planning

*Very ambitious!*

	2025	2030	2035	2040
<b>Storm water overflows and urban runoff (rain waters)</b>	Monitoring in place	Integrated plans for agglo. > 100.k p.e. + areas at risk identified	Integrated plans in place for agglo. at risk between 10 and 100k p.e.	Indicative EU target in force for all agglomerations > 10.000 p.e.
<b>Individual appropriate systems</b>	Regular inspection in all MS + Reporting for MS with high IAS	EU standards for IAS		
<b>Small-scale agglomerations</b>	New thresholds of 1.000 p.e.	All agglo.> 1.000 p.e. compliant		
<b>Nitrogen and phosphorus</b>	Identification of areas at risk (agglomerations 10 to 100k p.e.)	Interim target for N/P removal in facilities > 100 000 p.e. + New standards	N/P removal in all facilities above 100k p.e. + Interim target for areas at risk	N/P removal in place in all areas at risk (between 10 and 100k p.e.)
<b>Micro-pollutants</b>	Setting up extended producer responsibility schemes	Areas at risk identified (10 to 100k p.e.) + Interim target for facilities above 100.k p.e.	All facilities > 100k p.e. equipped + interim targets for areas 'at risk'	All facilities at risk equipped with advanced treatment
<b>Energy</b>	Energy audits for facilities above 100k p.e.	Audits for all facilities above 10k p.e. Interim target	Interim target for energy neutrality	Energy neutrality met and related GHG reduction met

**NEW!**

**NEW!**

**NEW!**

**NEW!**

# Individual appropriate systems

## Implementation planning

	2025	2030	2035	2040
<b>Individual appropriate systems</b>	Regular inspection in all MS + Reporting for MS with high IAS	EU standards for IAS		

- Individual systems have to be designed, operated and maintained in a manner that ensures at least same level of treatment as secondary and tertiary treatment
- Justification if individual systems treat more than 2% of urban WW load from agglomerations  $\geq 2,000$  PE

# Small scale agglomerations

## Implementation planning

	2025	2030	2035	2040
<b>Small-scale agglomerations</b>	New thresholds of 1.000 p.e.	All aggro.> 1.000 p.e. compliant		

- By end of 2030: all agglomerations **between 1,000 and 2,000 PE** comply with following requirements:
  - They are provided with collecting systems
  - All their sources of domestic wastewater are connected to the collecting system

# Enhanced P and N Removal

## Implementation planning

	2025	2030	2035	2040
Nitrogen and phosphorus	Identification of areas at risk (agglomerations 10 to 100k p.e.)	Interim target for N/P removal in facilities > 100 000 p.e. + New standards	N/P removal in all facilities above 100k p.e. + Interim target for areas at risk	N/P removal in place in all areas at risk (between 10 and 100k p.e.)

- Tertiary treatment on UWWTPs  $\geq 100,000$  PE into operation by end of 2035 (50% by end of 2030)
- By end of 2025: list of areas that are sensitive to eutrophication (update every 5 years)
- Tertiary treatment on UWWTPs between 10,000 and 100,000 PE in risk areas into operation by end of 2040 (50% by end of 2035)
- Treatment goal: max. **0.5 mg/L TP** and max. **6 mg/L TN** in WWTP final effluent (annual mean) / 90% min. percentage of reduction for TP and 85% min. percentage of reduction for TN
- Monitoring: for WWTPs  $\geq 100,000$  PE  $\rightarrow$  one sampling per day  
for WWTPs  $\geq 50,000$  PE  $\rightarrow$  one sampling per week  
for WWTPs  $\geq 10,000$  PE  $\rightarrow$  one sampling every 2 weeks

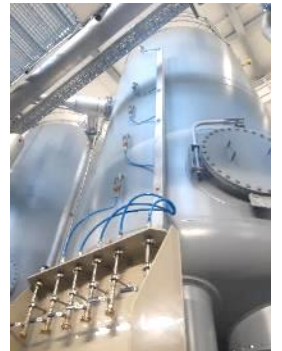


# Targeted micropollutant removal (quaternary treatment)

## Implementation planning

	2025	2030	2035	2040
Micro-pollutants	Setting up extended producer responsibility schemes	Areas at risk identified (10 to 100k p.e.) + Interim target for facilities above 100.k p.e.	All facilities > 100k p.e. equipped + interim targets for areas 'at risk'	All facilities at risk equipped with advanced treatment

**NEW!**



- Targeted **micropollutant removal** step on UWWTPs  $\geq 100,000$  PE into operation by end of 2035 (50% by end of 2030)
- By end of 2030: list of areas where concentrations or accumulation of micropollutants represent a risk for human health or the environment (review every 5 years)
- Targeted micropollutant removal step on UWWTPs between 10,000 and 100,000 PE in risk areas into operation by end of 2035 (50% by end of 2030)
- Treatment goal: minimum 80% removal for at least 6 substances (list of 12 substances, 2 categories)
- Monitoring: for WWTPs  $\geq 50,000$  PE  $\rightarrow$  two sampling campaigns per week  
for WWTPs  $< 50,000$  PE  $\rightarrow$  one sampling campaign per month

Category 1:  
Amisulprid  
Carbamazepine  
Citalopram  
Clarithromycin  
Diclofenac  
Hydrochlorothiazide  
Metoprolol  
Venlafaxine

Category 2:  
Benzotriazole  
Candesartan  
Irbesartan  
4- and 5-  
methylbenzotriazole



# Targeted micropollutant removal (quaternary treatment)

## Implementation planning

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Micro-pollutants	Setting up extended producer responsibility schemes	Areas at risk identified (10 to 100k p.e.) + Interim target for facilities above 100.k p.e.	All facilities > 100k p.e. equipped + interim targets for areas 'at risk'	All facilities at risk equipped with advanced treatment

**NEW!**

- Costs of advanced treatment → **extended producer responsibility**
- Obligation for producers (including importers) to contribute to the costs of advanced treatment (pharmaceutical and cosmetic industries)
- Financial contribution established on the basis of quantities and toxicity of products placed on the market
- Minimum requirements for producer responsibility organisations

- National urban wastewater monitoring: presence of relevant public health parameters such as SARS-CoV 2 virus and its variants, poliovirus, influenza virus, emerging pathogens, contaminants of emerging concern
- Set up of national system for permanent cooperation and coordination between authorities responsible for public health and for wastewater treatment
- When public health emergency due to SARS-CoV-2 declared → monitoring in wastewater from at least 70% of national population and at least 1 sample per week for agglomerations  $\geq 100,000$  PE
- For agglomerations  $\geq 100,000$  PE: monitoring of antibiotic-resistant bacteria at least twice a year in inlet and outlet of WWTPs (and when relevant in sewer systems) by 1<sup>st</sup> January 2025

**NEW!**



# Energy neutrality on WWTPs

## Implementation planning

	2025	2030	2035	2040
Energy	Energy audits for facilities above 100k p.e.	Audits for all facilities above 10k p.e. Interim target	Interim target for energy neutrality	Energy neutrality met and related GHG reduction met

**NEW!**

- Energy audits of UWWTPs and collecting systems every 4 years
- Identification of potential for cost-effective use or production of renewable energy → focus to identify and utilize potential for **biogas production** while **reducing methane emissions**
- First audits shall be carried out by end of 2025 for UWWTPs  $\geq 100,000$  PE and collecting system / by end of 2030 for UWWTPs between 10,000 PE and 100,000 PE and collecting system
- Energy neutrality for WWTPs  $\geq 10,000$  EW by end of 2040 (50% by end of 2030, 75% by end of 2035)

Source: European Commission, 2022

- Development of renewable energies on site: photovoltaic installations, wind turbines...
- Development of biogas production (anaerobic sludge treatment)



WWTP Mannheim



# Integrated urban wastewater management plans

## Implementation planning

	2025	2030	2035	2040
<b>Storm water overflows and urban runoff (rain waters)</b>	Monitoring in place	Integrated plans for agglo. > 100.k p.e. + areas at risk identified	Integrated plans in place for agglo. at risk between 10 and 100k p.e.	Indicative EU target in force for all agglomerations > 10.000 p.e.

**NEW!**

- Integrated plans established for agglomerations  $\geq 100,000$  PE by end of 2030
- Integrated plans established for agglomerations  $\geq 10,000$  PE by end of 2035 where urban runoff or CSOs pose a risk to the environment for human health.
- **Analysis of the initial situation of drainage area:**
  - Detailed description of sewer network, storage capacities of the network, existing treatment capacities in case of rainfall
  - Dynamic analysis of flows during rainfall based on use of hydrological, hydraulic and water quality models, including estimation of pollution loads released (storm water and CSOs)
- **Objectives for the reduction of pollution:**
  - Indicative objective that CSOs represent no more than 1% of annual collected wastewater load during dry weather (until end of 2035 or end of 2040)
  - Progressive elimination of untreated discharges through separate sewer networks, unless it can be demonstrated that those discharges do not cause adverse impacts on receiving water quality


# Integrated urban wastewater management plans

## Implementation planning

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- Measures to be taken accompanied with **clear identification of the actors involved and their responsibilities** in the implementation of the integrated plan
- When assessing measures, competent authorities should consider at least:
  - Firstly: **Preventive measures** aiming at avoiding entry of unpolluted storm water into sewers, measures promoting natural water retention or rainwater harvesting, measures increasing green areas or limiting impermeable surfaces
  - Secondly: **Measures to better manage and optimize use of existing infrastructure** (storage volumes, treatment facilities) → polluted stormwater is collected and treated / CSO events are minimized
  - Finally: **Additional mitigation measures:** adaptation of existing infrastructure (collection, storage and treatment), creation of new infrastructures → priority to green infrastructures (vegetated ditches, constructed wetlands, storage ponds)
  - Where relevant: **water reuse** shall be considered





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