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Delegations will find attached document SWD(2022) 544 final.

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**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**

***Accompanying the document***

**Proposal for a Directive of the European Parliament and of the Council**

**concerning urban wastewater treatment (recast)**

{COM(2022) 541 final} - {SEC(2022) 541 final} - {SWD(2022) 541 final}

## EXECUTIVE SUMMARY

The European Union adopted in 1991 the Urban Waste Water Treatment Directive (UWWTD). The objective of this Directive is to "*protect the environment from adverse effects of waste water discharges from urban sources and specific industries*". Member States (MS) are required to ensure that waste water from all agglomerations above 2.000 inhabitants is collected and treated according to EU minimum standards. MS have also to designate 'sensitive areas' according to criteria included in the Directive where stricter standards apply.

The 2019 REFIT Evaluation confirmed that significant reduction of domestic pollutant releases[1] into the environment was achieved thanks to the Directive. The effects on the quality of the EU lakes, rivers and seas is visible and tangible. One of the key reasons for the Directive's effectiveness lies in the simplicity of its requirements which allows a straightforward enforcement. Its level of implementation is high: 98% of EU waste waters are adequately collected and 92% adequately treated, even if a limited number of MS have still difficulties to reach full compliance. European funds were also a key driver to support investments in the required infrastructures (around € 2 billion each year for the water sector).

Waste water operators are public companies (60%) or private companies operating for a public authority or mixed companies. They are operating in a 'captive' market: citizens and businesses connected to the public network cannot choose their operators. Around 30% of the costs related to water supply and sanitation are covered by public budgets and 70% by water tariffs with large differences between MS. The sector is mainly reactive to legal requirements.

## PROBLEM DEFINITION

In the REFIT Evaluation, the following three main sets of problems were identified:

**1. Remaining pollution from urban sources[2].** The initial Directive was focused on pollution from domestic sources collected and treated in centralised facilities, for which the requirements are clear and precise. Less attention was given to other sources of urban pollution (smaller agglomerations, non-centralised treatment facilities or heavy rains) for which the requirements were kept more generic. The emissions from these sources have progressively become key remaining sources of urban pollution, as illustrated in *Figure 1*.

Part of this pollution can be avoided, even if there are limits to what can be done with the current treatment techniques. Depending on the pollutant, discharges from **non-compliant agglomerations** still represent between 1.9% (Nitrogen - N) and 7,78 % (Phosphorus - P) of the remaining pollution. Pollution due to heavy rains (**storm water overflows (SWO) and urban runoff)** represent another sizeable remaining source of loads sent to the environment: between 7,2% (N) and 29,77% (E. Coli). Non-centralised treatment systems **(Individual or other Appropriate Systems - IAS)**, authorised under the Directive as long as they achieve

[1] Mainly Nitrogen (N), Phosphorus (P), Organic pollution expressed as Biological Oxygen Demand (BOD)

[2] The standard unit to measure pollution is the 'population equivalent' (p.e.): 1 p.e. corresponds to the average pollution generated by 1 person. For some pollutants (Nitrogen, Phosphorus and organic matters - BOD) it is possible to convert p.e. into quantities (grams) of pollutants.

the ‘same level of environmental protection’, represent between 4,7% (micro-pollutants) and 16,1% (E. Coli) of the remaining pollution.

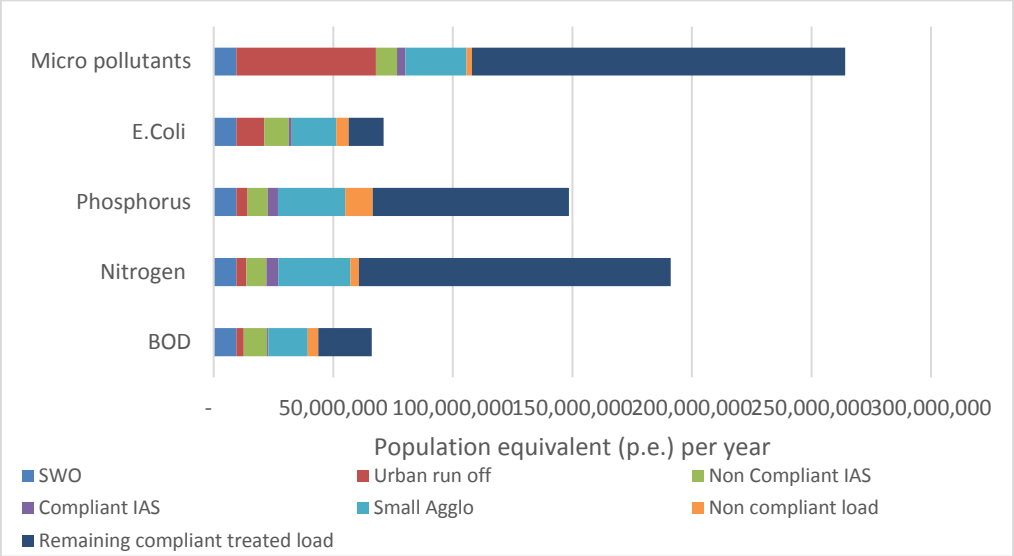



***Figure 1: Remaining loads from urban sources (p.e./year)- Current situation - Source JRC***

**Small agglomerations** below 2.000 p.e. constitute another significant pressure on EU’s water bodies - between 9,7% (micro-pollutants) and 26,2% (E. Coli) of the remaining pollution. Despite the emission reduction achieved with the existing Directive**,** waste water treatment plants remain a source of **N/P** to the environment, respectively amounting to 134 and 94 million p.e. per year. New **pollutants** such as micro-plastics and micro-pollutants, were also identified in the Evaluation as a source of concern. Micro-plastics are relatively well captured in treatment facilities, which is not the case for micro-pollutants: every year around 254 million p.e. are sent to water bodies in the EU causing concerns for the environment and public health. Treatment facilities also receive not well controlled **non-domestic waters** including industrial waste waters (mainly from SME’s) connected to the public network.

**2. Insufficient alignment of the Directive to EU Green Deal (EGD) policy objectives** (other than pollution-reduction)**:** the sector accounts for 0.8% of the total energy use in the EU and was responsible, in 2018, for 0,86% of the total **EU GHG emissions**. Almost one third of these emissions could be avoided by improving treatment process, better using sludge and increasing the uptake of **energy efficiency and renewable** technologies which is still very low. A better inclusion of the sector in the **Circular Economy** is also needed: sludge management and water reuse is not optimal as too many valuable resources are still lost. Finally, waste waters are a swift and reliable source of useful information for **public health**. This was shown with the surveillance of **COVID-19 and its variants** as a complement to manage the recent pandemics. The lack of coordination between public health and waste water authorities represents a barrier for an optimal use of this information.

**3. Insufficient and uneven level of governance**: the Evaluation and recent OECD studies have highlighted that the level of the **operator’s performance** greatly varies from one to another. This is also the case in relation to **transparency** and access to key information. As

mentioned in a recent Court of Auditor report, and contrary to the principles of the EU Treaty, the **'polluters pays' principle** is not sufficiently applied. **Monitoring and reporting** methods are not adapted to the needs and to the possibilities offered by **digitalisation. Access to sanitation** remains an issue preventing the EU to fully implement SDG 6.

## OBJECTIVES

The EU intervention has two main general objectives: (1) **protect EU citizens and ecosystems** from the remaining sources of insufficiently treated waste water; (2) improve the **transparency** and **governance of the sector;** and two complementary objectives: 3) better align the sector to the objectives of the **Green Deal** - in particular by steering it towards **Energy neutrality** as a contribution to Climate Neutrality, and by supporting its necessary transition towards **Circular Economy, Zero Pollution** and enhanced protection of **Biodiversity**; (4) make a smarter use of waste water parameters as a support for **public health** action. To do so, it is essential to provide a **long term vision** as well as **legal certainty**, since investments in this sector take time and must be planned well in advance.

## JUSTIFICATION TO ACT AT EU LEVEL

EU action remains essential to ensure that all EU citizens can draw benefits from improved water quality of rivers, lakes, ground-waters and seas. As **60% of the EU water bodies are transboundary**, it is necessary to ensure the same level of protection everywhere and at the same rhythm, to avoid the risk that efforts made by some MS are jeopardised by the lack of progress of others. The Evaluation has shown that in most MS the Directive was the **unique driver for investing** in the required infrastructures.

## POLICY OPTIONS

For each of the problem, several options were defined based on the **best practices in place** in the MS as well as on an **in depth consultation** of the stakeholders. Options lacking support from the stakeholders or too complex to implement were discarded at an early stage. Different options were developed starting from low ambition (measures applied only to larger facilities) to high ambition (same measures but applied also to smaller facilities).[3] For some problems options were limited – this is the case for instance for non-centralised facilities (IAS), improving transparency or monitoring health parameters. For other problems (heavy rain waters, IAS or energy use), in line with the subsidiarity principle, enough flexibility was left to allow for the most cost effective solutions at local level.

## PREFERRED OPTION

The impacts of the options were assessed using a model developed by the Joint Research Centre and used in the REFIT Evaluation. A baseline scenario (assuming full compliance) and a maximum feasible scenario were developed as comparison points. For each problem, the choice of the preferred option was based on several criteria: costs/benefits,

[3] The threshold for 'Larger' facilities was fixed to 100.000 p.e. taking into account that 46% of the generated load is treated in a relatively low number of 'larger' facilities (974). Another threshold of 10.000 p.e. was fixed as 81% of the load is treated in 7.527 facilities above 10.000 p.e.

costs/effectiveness, level of contribution to the EU Green Deal objectives and to water pollution reduction, enforceability and administrative burden.

In the preferred option, in order to tackle the key **remaining pollution sources**, it is proposed to (1) expand the **scope** of the Directive to **cover all urban agglomerations above 1.000 p.e**.; (2) develop new EU standards for IAS and require MS to put in place effective inspection strategies; (3) establish and implement **integrated water management plans** in all large agglomerations and in those above 10.000 p.e. where there is a risk for the environment, and, when required, limit the pollution from heavy rain waters with a priority for preventive (including green) measures. To further limit nutrient releases, **more stringent limit values** to treat Nitrogen and Phosphorus will be progressively applied to all larger facilities but also in all facilities above 10.000 p.e. located in areas where eutrophication remains an issue. New limit values on **micro-pollutants** will progressively be imposed first for all large facilities and then for facilities above 10.000 p.e. where there is a risk to the environment on the basis of clear and simple criteria. In line with the suggestions of several stakeholders, the feasibility of a **system of producer responsibility** for the additional treatment needed for micro-pollutants was assessed and is included in the preferred option.[4] New monitoring requirements will be put in place notably on GHG emissions, pollution from rain waters and health parameters.

**Energy** audits will be progressively imposed to all facilities above 10.000 p.e. so that energy neutrality could be met by 2040 at the level of the sector, in line with best practices already in place in some MS for 2025/2030. To increase the possibilities of re-using sludge and re-use water after treatment, MS will be required to better monitor and track at source non domestic pollution. Finally, in order to secure an overall better governance of the sector, reporting will be simplified and further digitalised. The effects of additional measures to **improve transparency**, the operator's **performances** as well as **access to sanitation** are presented in the IA. All measures included in the preferred option will be progressively applied by 2040.

**MAIN IMPACTS**

By 2040, the impacts on **water pollution** of the preferred options are summarised in *Figure 2* below. Compared to the baseline, the total pollution would be reduced by 4,8 million p.e. (or 105.014 tons) for BOD, 56,4 million p.e. for N (or 229.999 tons), 49,6 million p.e. (or 29.678 tons) for P, 77,4 million p.e. for toxic load of micro-pollutants and 24,8 million p.e. for *E. coli*. These reductions represent 27% of what is 'technically feasible' for BOD, 62% for N, 61% for P, 63% for the toxic load of micro-pollutants and 50% for *E. coli*. Micro-plastics emissions would be reduced by 9% mainly though actions on SWO and urban runoff.

With the planned measures to reach energy neutrality, **GHG emissions** would be reduced by 4,86 million tons (37,32 % of the avoidable emissions from the sector which represents 0.86% of the total EU emissions). Compared to 1990, and together with the expected effects of the baseline this would represent a reduction of 62.51% of the GHG emissions - in line with the objectives of the EU Climate Law and the 'Fit for 55' climate package.

[4] The envisaged system would be similar to systems in place for solid waste management: importers and producers would be financially responsible for the treatment of the pollution generated by their products. In this case, pharmaceuticals and personal care products (PCP's) represent the main sources of micro-pollutants.

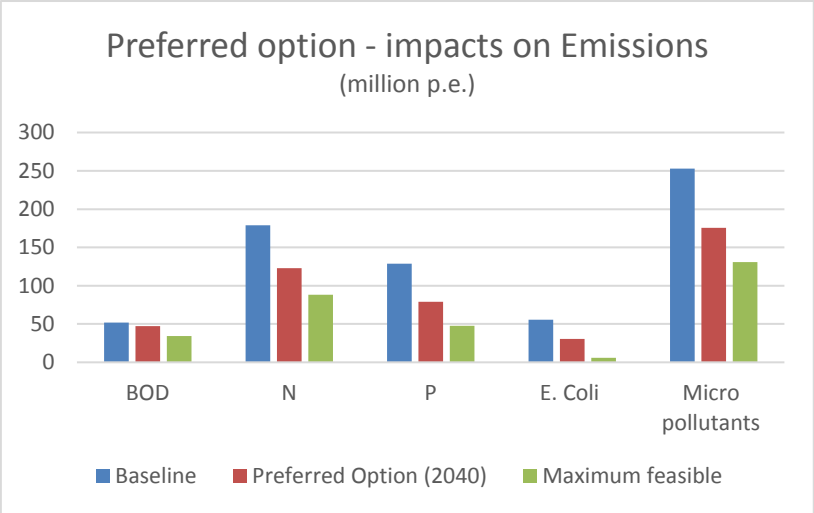



***Figure 2: Preferred option – impacts on emissions (million p.e. per year in 2040)***

The expected monetised benefits of the preferred option by 2040 at EU level (**€ 6,643 bn/year)** are above the costs (**€ 3,793 bn per year**). In all MS the benefits are higher than the costs - knowing that, for micro pollutants (representing 27% of the total costs of the preferred option), no methodology is available to monetise the benefits linked to their reduction.

The costs of the initiative would represent an increase of 3,79% compared to the current expenditures for water supply and sanitation.[5] These additional expenses would be partly covered by the producer responsibility system (around € 1,2 billion/year needed to treat micro-pollutants) with limited impacts expected on final product prices or on the benefit margins of the sector (**0.6% on average**). Based on current MS financing strategies, it can be assumed that around 30% (or € 0,774 billion/year) of the remaining costs would be covered by public budgets and 70% (or € 1,806 billion/year) by water tariffs. This would represent a **2,26% increase** of the average **EU water tariffs**. **Affordability** of water prices would **not be in danger**, though in a limited number of MS accompanying social measures would be useful. **EU funds** (around € 2 bn/year for the water sector) would remain indispensable to cover part of the investments needed to reach full compliance with the revised Directive. Even if digitalisation can help to improve and simplify monitoring and reporting, additional efforts would be needed to better track remaining sources of pollution. **EU water industry** is expected to **benefit from new business opportunities** while innovation and research will be promoted contributing to maintain and improve the competitive position of the water industry.

With the preferred option, the Directive would be fully aligned with all other key Green Deal objectives, including the overarching climate-neutrality goal, while being fully consistent with several ongoing/planned legislative proposals such as the reviews of the Environmental Quality Standard Directive, the Bathing Water Directive, the Marine Strategy Framework Directive and the Evaluation of the Sewage Sludge Directive. It will also directly contribute to a better implementation of the SDG 6 on access to adequate and equitable sanitation.

[5] around 100 billion/year according to the OECD