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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE
COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE
COMMITTEE OF THE REGIONS**

**Tenth report on the implementation status and programmes for implementation (as
required by Article 17 of Council Directive 91/271/EEC, concerning urban waste water
treatment)**

{SWD(2020) 145 final}

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EXECUTIVE SUMMARY

The Urban Waste Water Treatment Directive (UWWTD) has a role to play in steering the EU towards the zero pollution ambition proclaimed in the European Green Deal¹.

It requires Member States to ensure that agglomerations (cities, towns, urban settlements) collect and treat in a suitable manner waste water which would otherwise pollute rivers, lakes and seas. By doing so, UWWTD plays a key role in protecting human health and sustaining the overall resilience of aquatic ecosystems. It also has an important role to play in the circular economy, through the reuse of treated waste water and sewage sludge, the production of renewable energy, and the recycling of nutrients.

This is the 10th biennial report on Member States' implementation of the UWWTD and their programmes of investment. It covers 2016 and encompasses over 23,600 agglomerations where people (and, to a limited extent, industry) generate waste water amounting to 612 million population equivalents (p.e.). Collection and treatment of urban waste water have improved over the last decade in the EU, with compliance rates of 95% for collection, 88% for secondary (biological) treatment, and 86% for more stringent treatment (removal of phosphorus and nitrogen). However, we are still some way from attaining full compliance with UWWTD. The distance to target remains significant in some Member States: an amount of urban waste water corresponding to 6.6 million p.e. (1%) is not collected, over 37 million p.e. (6%) of the waste water collected are not sufficiently well treated to meet secondary treatment standards, while nearly 32 million p.e. (8%) do not meet more stringent treatment standards. This means there are agglomerations in the EU where infrastructure needs to be built or improved. Infringement cases are systematically launched in cases of non-compliance.

Finance and planning remain the main challenges facing the water service sector. The total investment needs to ensure compliance with UWWTD, as estimated in 2016 by all Member States (including the UK at the time) come to almost EUR 229 billion. The OECD similarly estimates that EU countries and the UK will need to spend an additional EUR 253 billion between 2020 and 2030 to reach and maintain compliance with UWWTD. Current spending in many Member States has been found to be too low to reach and maintain long-term compliance.²

The data of the 10th report were used not only to analyse implementation but also to evaluate this directive. The UWWTD was subject to a REFIT evaluation. The results were published in 2019.³ In response to the evaluation's findings, the Commission launched an impact assessment which will assess policy options to make the UWWTD fit for future.

¹ Communication from the Commission, The European Green Deal (COM/2019/640): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN>

² OECD, 2020 Estimating investment needs and financing capacities for water-related investment in EU member countries: https://ec.europa.eu/environment/water/water-framework/economics/OECD_study_en.htm

³ Evaluation of the UWWTD (SWD(2019)701): <https://ec.europa.eu/environment/water/water-urbanwaste/pdf/UWWTD%20Evaluation%20SWD%20448-701%20web.pdf>

1. POLICY CONTEXT

The Urban Waste Water Treatment Directive⁴ (UWWTD) has a role to play in steering the EU towards the ambition of zero pollution proclaimed in the European Green Deal⁵. The UWWTD is a ‘basic measure’ under the Water Framework Directive⁶(WFD). It plays a significant role in improving the status of bodies of water in the EU, improving the resilience of ecosystems and protecting biodiversity. In view of the significant challenge to ensure good status for the EU’s bodies of water by latest 2027, effective collection and treatment of urban waste water is very important. It also plays a role in protecting human health e.g. waste water surveillance supported detecting COVID-19 before and during the pandemic and can provide early warning for health authorities⁷.

The water service sector is important for the European Green Deal, being a necessary measure towards achieving the EU’s ambitions of reaching climate-neutrality and eliminating pollution while also creating sustainable growth and jobs. The waste water sector can contribute to the circular economy through the reuse of treated waste water and sewage sludge, the production of renewable energy, and the recycling of nutrients.

The UWWTD is also a step on the way to achieving the United Nations’ Sustainable Development Goals, particularly SDG 6, ensuring access to water and sanitation for all.⁸ Worldwide, 2.4 billion people (around 10 million of whom live in the EU) have no access to improved sanitation facilities. The EU is a source of green technologies for the water service sector worldwide and of innovative solutions; of the world’s largest water companies, 8 out of 15 are EU-based.⁹

In 2020, the Commission launched an impact assessment to assess policy options to make UWWTD fit for the future. This was done in response to the UWWTD evaluation conducted in parallel with the fitness check on the WFD, its daughter directives and the Floods Directive in 2019.

2. COMPLIANCE RATE IN THE EU

This is the 10th biennial report on Member States’ implementation of UWWTD and their investment programmes.¹⁰ It summarises the assessment of data reported for 2016 based on the requirements of Article 15 and 17 of the UWWTD.

⁴ Council Directive concerning urban waste water treatment (91/271/EEC): <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1581334912523&uri=CELEX:01991L0271-20140101>

⁵ Communication from the Commission, The European Green Deal (COM/2019/640)

⁶ Water Framework Directive (2000/60/EC): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02000L0060-20141120>

⁷ <https://ec.europa.eu/jrc/en/science-update/call-notice-feasibility-assessment-eu-wide-wastewater-monitoring-system-sars-cov-2-surveillance>

⁸ United Nations, Sustainable Development Goals: <http://www.un.org/sustainabledevelopment/water-and-sanitation/> and <https://ec.europa.eu/eurostat/web/sdi/clean-water-and-sanitation>

⁹ Evaluation of the UWWTD (SWD(2019)701)

¹⁰ 2016 UWWTD data includes data from the UK. It excludes most data on Croatia, which was not subject to compliance obligations in 2016.

Collection and treatment of urban waste water has improved. However, full compliance with UWWTD has not yet been achieved throughout the EU.

The EU reached high compliance rates in 2016:

- 95% for collection (through collecting systems and individual or other appropriate systems - IAS);
- 88% for secondary treatment (biological treatment);
- 86% for treatment more stringent than secondary treatment (mostly removal of nitrogen and/or phosphorus in agglomerations >10,000 p.e. that discharge waste water into sensitive areas and their catchments).

As the figure below shows, not all waste water collected has to be cleaned to the same standard or to meet requirements under Articles 4 and 5. The required level of treatment depends on the size of the agglomeration and on the sensitivity of water into which the effluent is discharged.

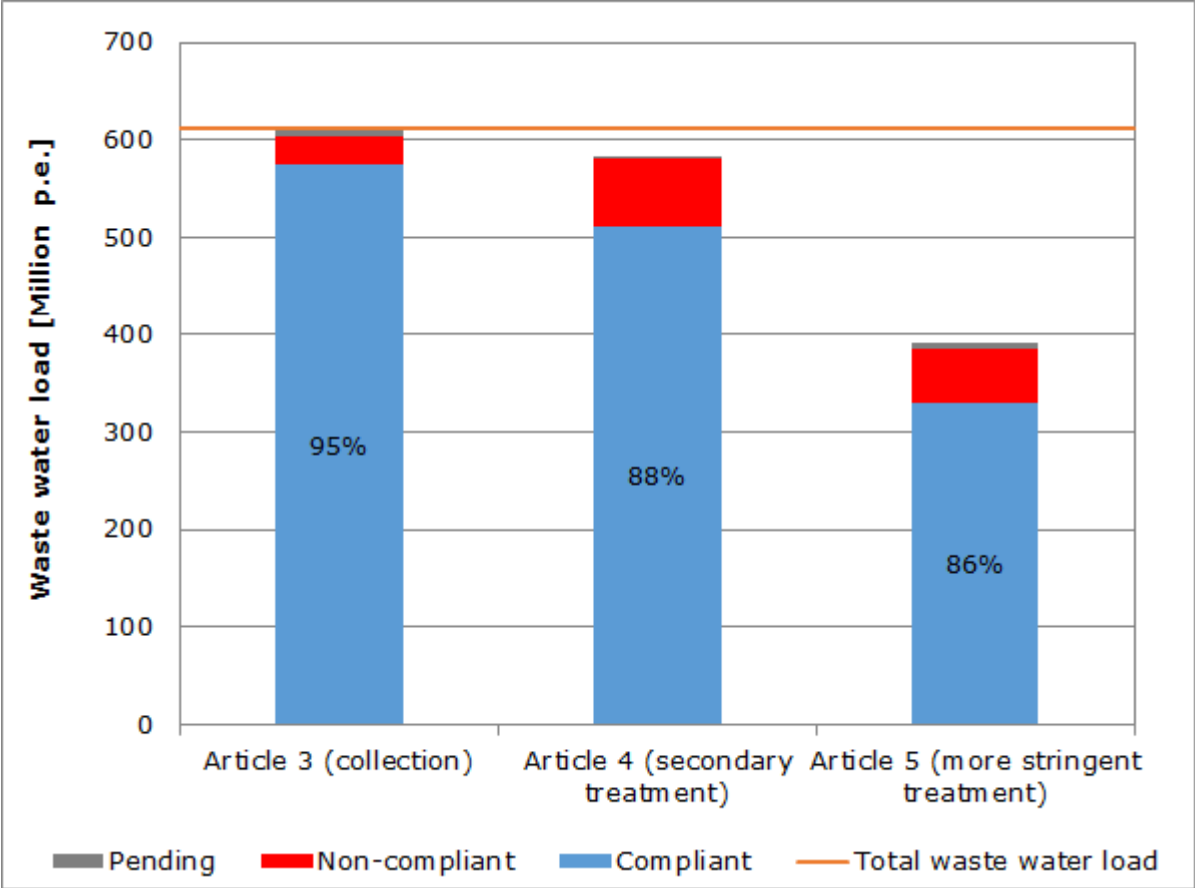


Fig 1 – 2016 compliance rate in the EU with Articles 3, 4 and 5 [percentage of waste water load of agglomerations which complied with a given article]

Pending (grey) refers to transitional periods applicable to waste water generated in recently designated sensitive areas. Article 5 compliance rate includes the data of Member States applying Article 5(4).

In 2016, the Member States reported over 23,600 agglomerations with a population equivalent (p.e.) of 2,000 and above. These agglomerations generated a waste water load of **612 million** p.e., mostly from domestic sources, but also including industrial waste water and run-off

rainwater. Industry’s share is limited but its waste water may contain pollutants that are not as effectively removed by urban treatment plants. There was an increase of 1.5% in the waste water generated, compared with 2014. The treatment capacity of existing treatment plants (783 million p.e.) is higher than the waste water load currently generated, to enable them to cope with variations in the load entering the plant and to accommodate greater needs in future.

Nearly 90% of the EU’s waste water load is generated by agglomerations >10,000 p.e.; half comes from big cities (52% from agglomerations >100,000 p.e.). This may lead Member States to focus their investments on non-compliant waste water infrastructure in bigger agglomerations (>10,000 p.e.).

2.1 Trends in compliance

Since UWWTD’s adoption, significant progress has been made in its implementation and in rates of compliance with Articles 3, 4 and 5.

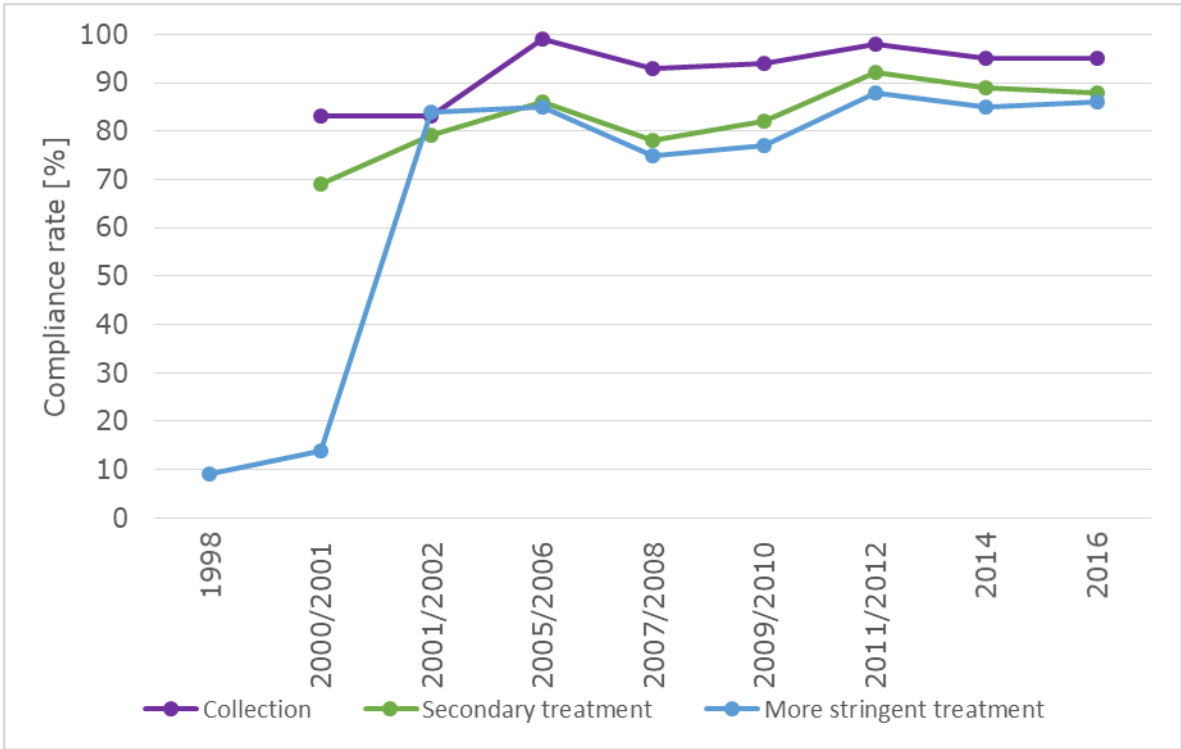


Fig 2 - Historical trends in rates of compliance with Articles 3, 4 and 5 (1998-2016)

In recent years, the compliance level has stabilised. In 2016 the rate of compliance with Article 3 remained at the same level as in 2014, while the rate for Article 4 fell by 1% and the rate for Article 5 rose by 1%. The 2016 data give a more complete overview than the 2014 data because a number of Member States (e.g. Poland, Hungary and Slovenia) reached their final deadlines in 2016. More data were thus taken into account in calculating the compliance rate.

The compliance rate values for Articles 3, 4 and 5 are combined to give a single number. The overall compliance rate for the EU increased and it was 81% in 2016.

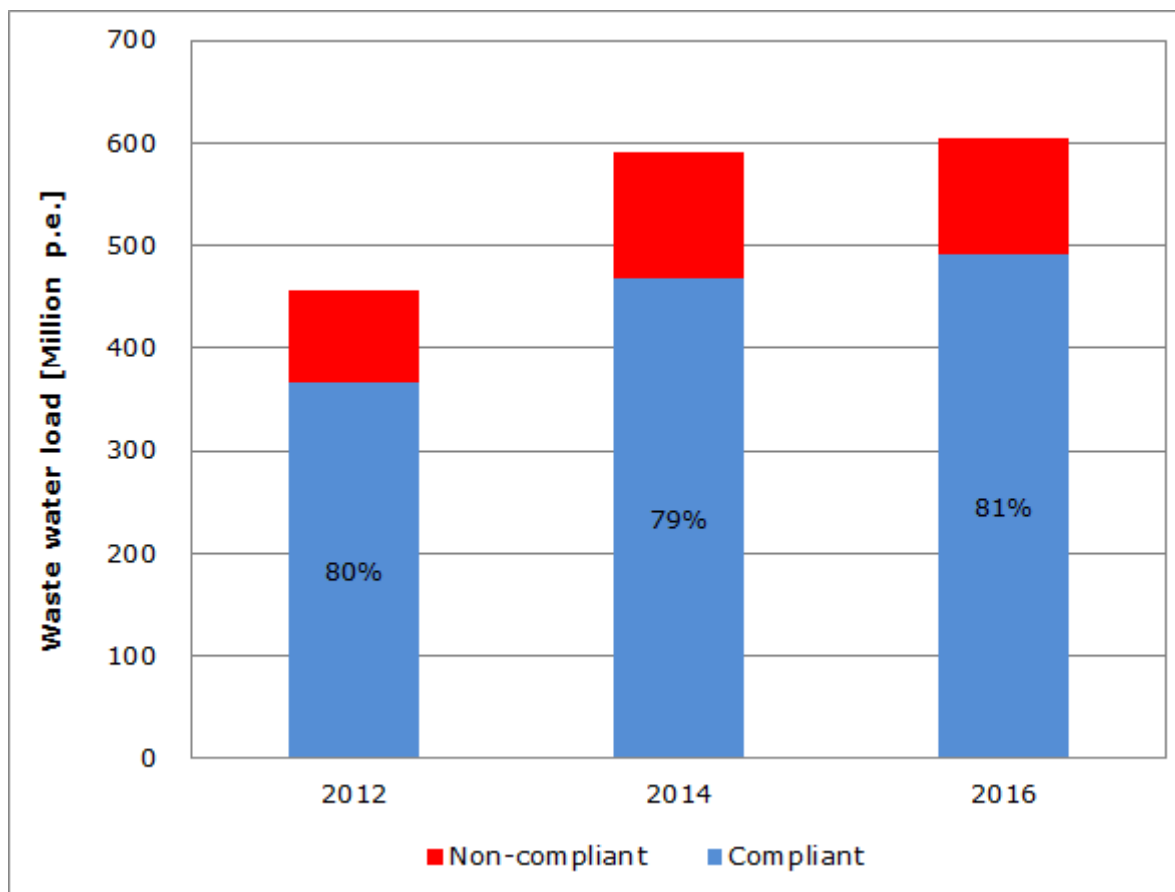


Fig 3 – Rate of compliance with UWWTD in the EU, 2012-2016 [percentage of waste water load in agglomerations that met the standards in the year concerned] *2012 column shows 2010-2012 data

3 IMPLEMENTATION STATUS - DISTANCE TO TARGET

The ‘distance to target’ is an indicator showing the scale of efforts still needed to meet the standards laid down in UWWTD.

3.1 Collection of waste water

- **1%** of the waste water load (approximately **6.6 million** p.e.) remains to be collected.

In 2016, in the EU¹¹, nearly 6,605,000 p.e. of the waste water generated by compliant and non-compliant agglomerations was not collected. The figure below shows that the distance to target is quite small.

¹¹ Member States and the UK, which was a Member State in the reporting period.

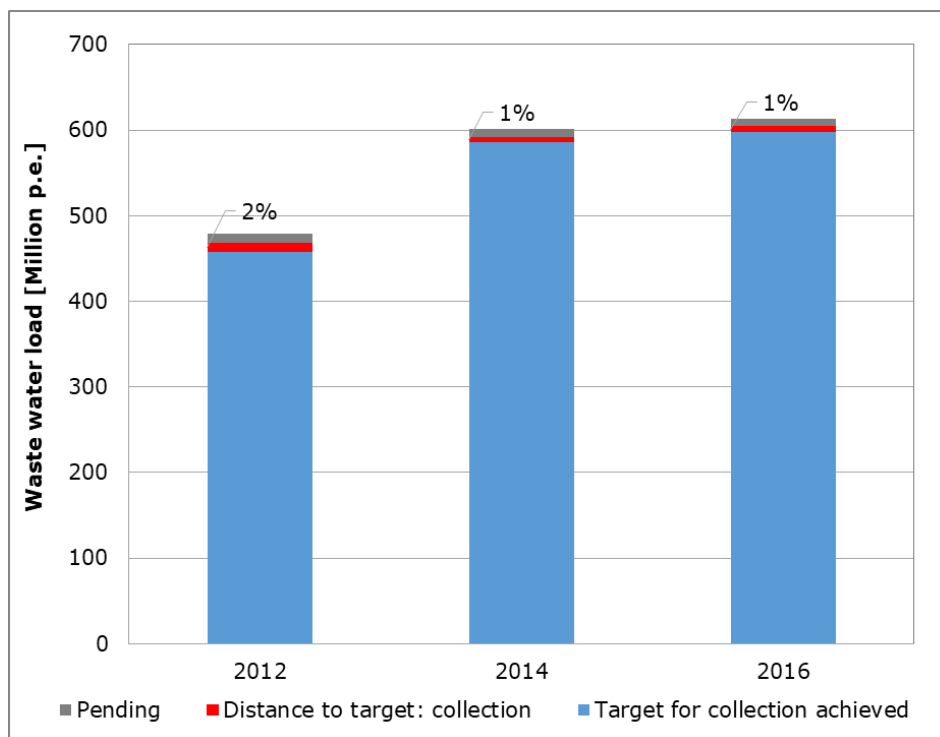


Fig 4 - Distance to target for waste water collection in the EU, 2012-2016 [percentage of waste water load in all agglomerations. This load did not meet the criteria for compliance in the year concerned.]

Figure 4 does not show the full picture because over 8,300,000 p.e. was excluded from the calculation of distance to target for collection, this being the waste water load subject to pending deadlines in 2016.¹²

3.1.1 Individual systems or other appropriate systems

Both the REFIT evaluation and data reported by the Member States under the WFD indicate that in many areas non-centralised sanitation systems (known as IAS¹³) place considerable pressure on bodies of water. The Commission is investigating whether the conditions for operating these systems (registration, permits, monitoring and inspections) are met in those Member States that make extensive use of them.¹⁴

The figure below shows which Member States use IAS:

- Poland, Hungary, Slovakia, Slovenia, Greece, Bulgaria, Czechia and Latvia reported that over 5% of waste water is collected and/or treated by IAS.
- Poland, Hungary, Greece, Italy and Germany reported that the load collected and/or treated by IAS exceeded 1 million p.e.

¹² It refers to transitional periods applied to sensitive areas recently designated.

¹³ Art. 3: Where the establishment of a general collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive cost, individual systems or other appropriate systems which achieve the same level of environmental protection shall be used.

¹⁴ The Commission sent letters of formal notice to Member States that make extensive use of IAS to ask whether they have introduced a legal obligation to connect to sewerage networks, where this is feasible.

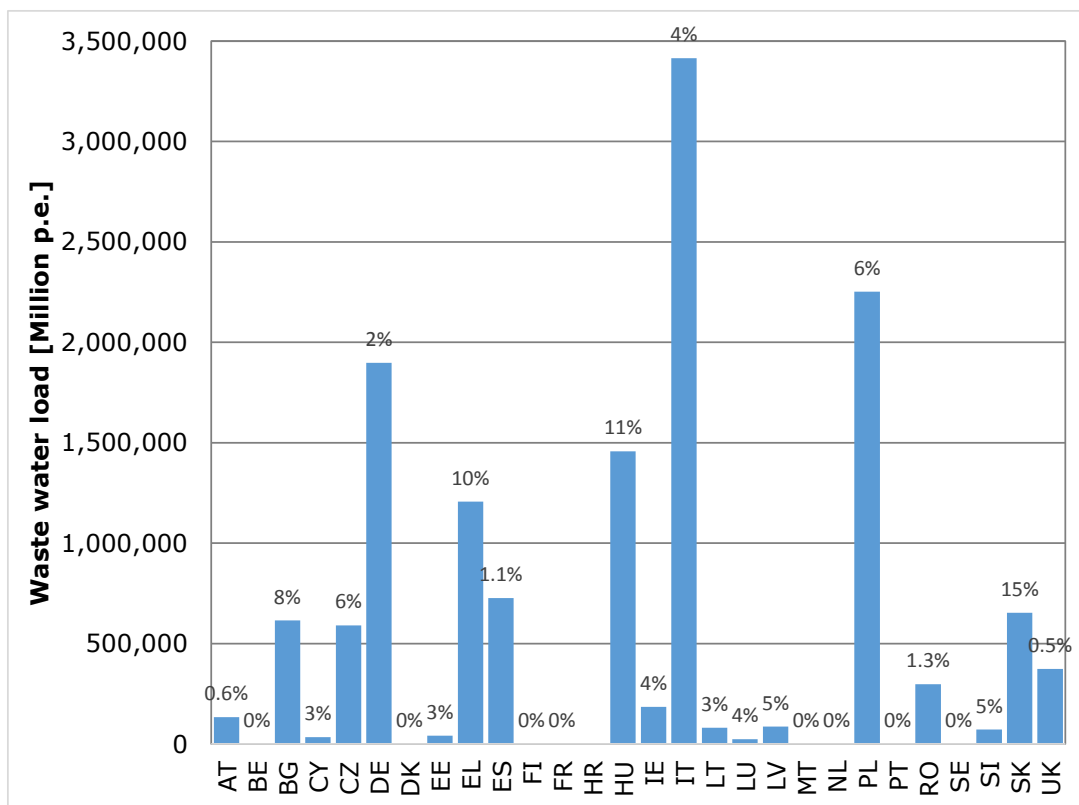


Fig 5 – The use of IAS in Member States in 2016 [waste water load of all agglomerations in each Member State expressed in million p.e. and in percent of the total generated]

3.2 Secondary or biological treatment

- **6%** of the collected waste water load (approximately **37 million p.e.**) must still undergo secondary treatment in line with the requirements of UWWTD.

Member States must provide secondary treatment¹⁵ for all agglomerations >10,000 p.e. and agglomerations >2,000 p.e. that discharge to freshwater and estuaries. In 2016, over 37,116,000 p.e. of the waste water collected by compliant and non-compliant agglomerations in the EU was not subject to secondary treatment and/or did not yet meet the requirements for discharge laid down in UWWTD.

¹⁵ Secondary treatment supplements the elimination of solid matter (primary treatment) by breaking down organic substances using bacteria.

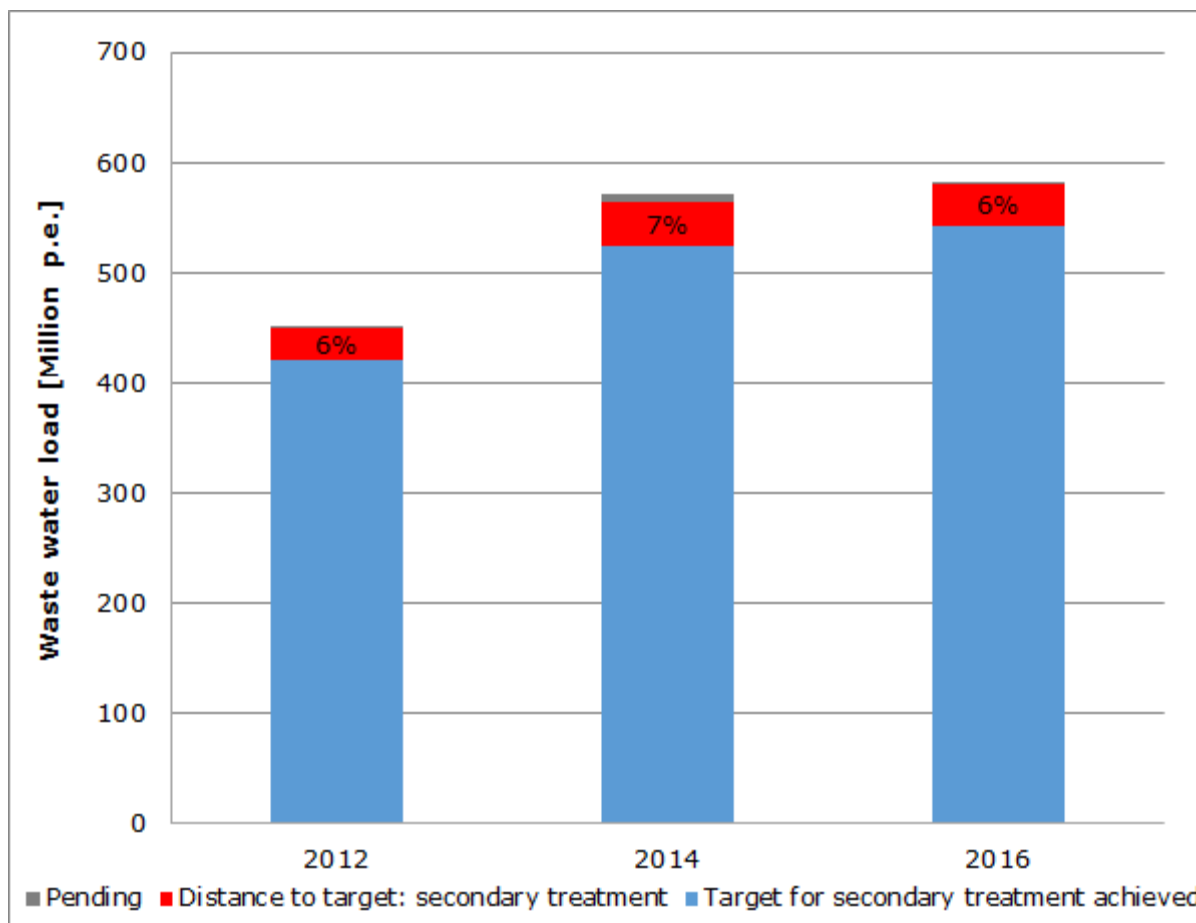


Fig 6 - Distance to target for secondary treatment in the EU, 2012-2016 [percentage of waste water load of all agglomerations. This load did not meet the criteria for compliance in the year concerned.]

The distance to target misses 300,000 p.e. which was excluded from the calculations, as it was still subject to pending deadlines in 2016. Moreover, the waste water that was not collected was not treated or taken into account in calculating the distance to target for secondary treatment.

3.3 More stringent or tertiary treatment

- **8%** of the collected waste water load (almost **32 million** p.e.) must still undergo more stringent treatment in line with the requirements of UWWTD¹⁶.

Member States must generally provide more stringent treatment¹⁷ for agglomerations >10,000 p.e. that discharge to designated sensitive areas and their catchments. In 2016, nearly 31,780,000 p.e. of the waste water load collected by all agglomerations in the EU was not subject to more stringent treatment and/or fell short of the requirements for discharge laid down in UWWTD.

¹⁶ SWD(2019)701 indicates a 7% distance to target. Clarification e.g. by Cyprus after the publication of SWD(2019)701 evaluation increased the percentage by app 1%.

¹⁷ More stringent treatment involves the removal of phosphorus or nitrogen (nutrients) to protect waters threatened by eutrophication. It can also involve disinfection to protect bathing or shellfish waters.

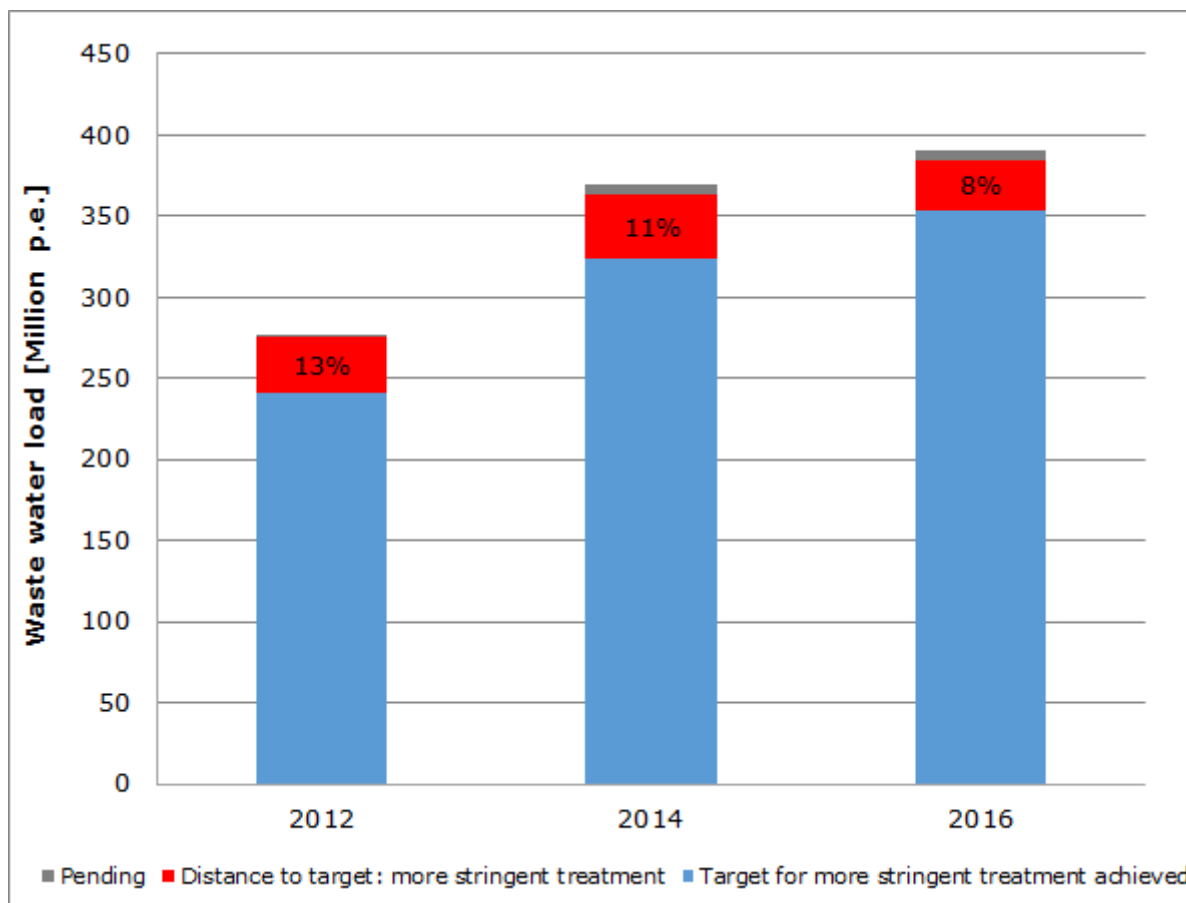


Fig 7 - Distance to target for more stringent treatment in the EU, 2012-2016 [percentage of waste water load of all agglomerations. This load did not meet the criteria for compliance in the year concerned.]

The distance to target does not show the full picture because nearly 6,300,000 p.e. was excluded from the calculations as it was still under pending deadlines. Moreover, the waste water that was not collected was not treated or taken into account in calculating the distance to target for more stringent treatment either.

3.3.1 Designation of sensitive areas by Member States

In a quarter of EU territory (24%), more stringent treatment is not required. Whether there is a need for more stringent treatment (i.e. whether the area is sensitive) is determined at national level. UWWTD states that the required level of treatment depends on the sensitivity of the body of water into which waste water is discharged. As the map below shows, some countries designate their entire territory as sensitive (green, blue and purple), while others have identified only a few sensitive areas (shown as green patches in yellow areas of the map).

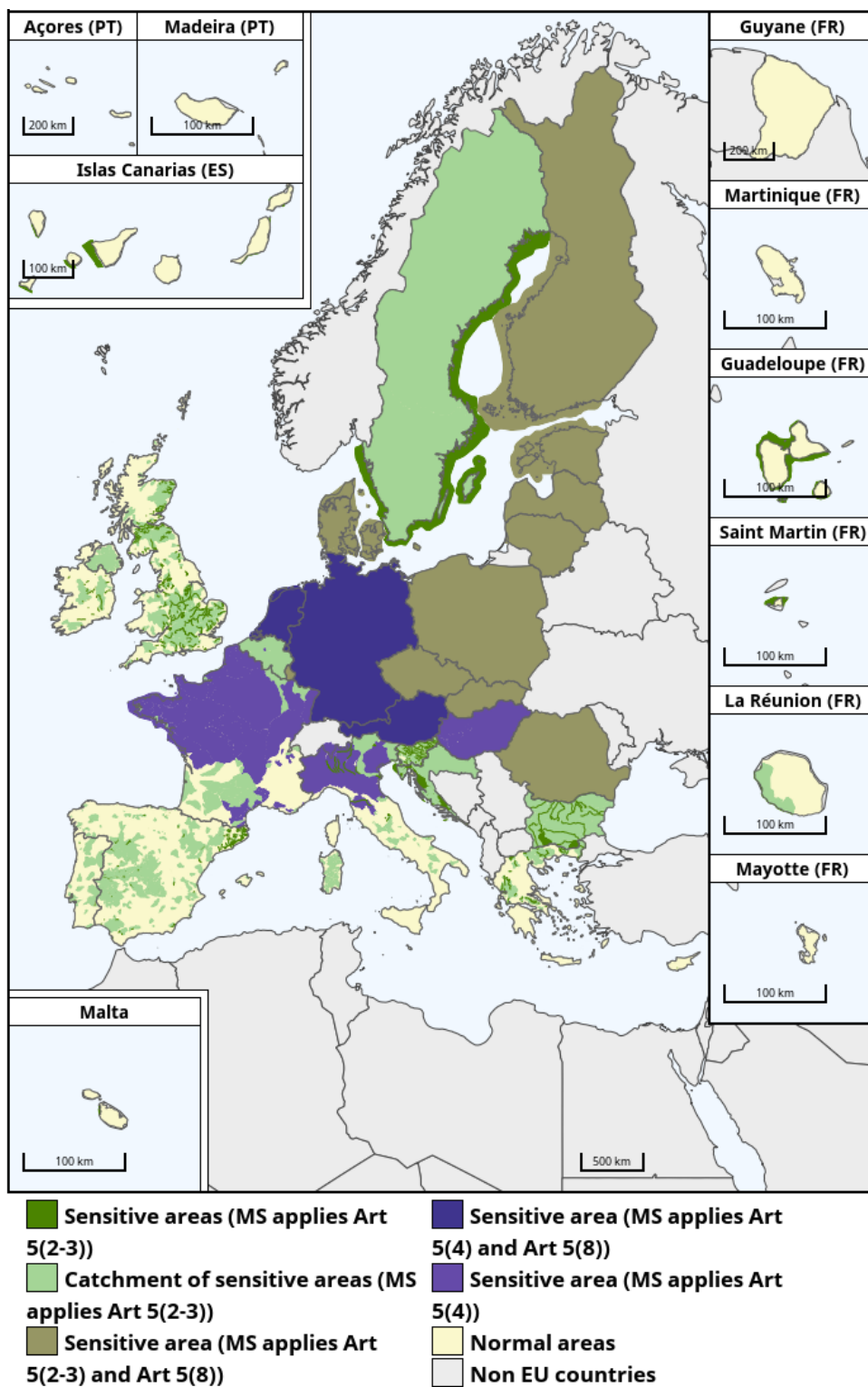


Fig 8 - Overview of sensitive areas and catchments of sensitive areas in the EU in 2016.

Article 5(2-3): more stringent treatment in agglomerations > 10,000 p.e.

Article 5(4): 75% removal of nitrogen and phosphorus

Article 5(8): more stringent treatment applies to whole country

4 NATIONAL PROGRAMMES FOR IMPLEMENTATION

This section summarises the information reported by the Member States under Article 17 of the UWWTD on the forecast cost of investment in reaching compliance with UWWTD and the expected cost of investment in installing and renewing waste water collection and treatment infrastructure.

Total investment needs to ensure compliance with UWWTD, as estimated by national authorities¹⁸ and included in their national plans, come to nearly **EUR 229 billion**. This covers work on treatment plants (over EUR 166 billion forecast) and on collecting systems (nearly EUR 63 billion forecast). By way of a comparison, the OECD estimates that EU countries will need to spend an additional EUR 253 billion between 2020 and 2030 to attain full compliance with UWWTD and maintain it¹⁹.

The ‘investment needs’ by definition cover non-compliant agglomerations only and take account neither of operational costs nor of the costs of maintaining infrastructure in good condition so as to remain in compliance with UWWTD. The number of years covered by this forecast differs from one country to another.

Unlike the ‘investment needs’ described above, the ‘expected investment costs’ by definition are an estimate of future investments and include the expected costs of maintaining infrastructure in a good state so that it remains compliant. The number of years covered by this forecast differs from one country to another. Figure 7 shows that only two countries expect to invest over EUR 100 per capita annually. Most countries report that they expect to invest an annual amount of under EUR 40 per capita. Figure 7 should be treated with caution, as not all Member States include all investment and maintenance costs in the reports under Article 17. Moreover, the period on which they report for the forecast differs from one country to another: Belgium reported on 2009-2017, whereas Czechia’s report covers 2016-2017. The size of the country may also affect the numbers in Figure 7: Luxembourg’s investments appear largest here, but this may be attributable to one large planned investment in a small country.

¹⁸ 27 Member States and the UK, which was a Member State in the reporting period.

¹⁹ OECD, Estimating investment needs and financing capacities for water-related investment in EU member countries: https://ec.europa.eu/environment/water/water-framework/economics/OECD_study_en.htm

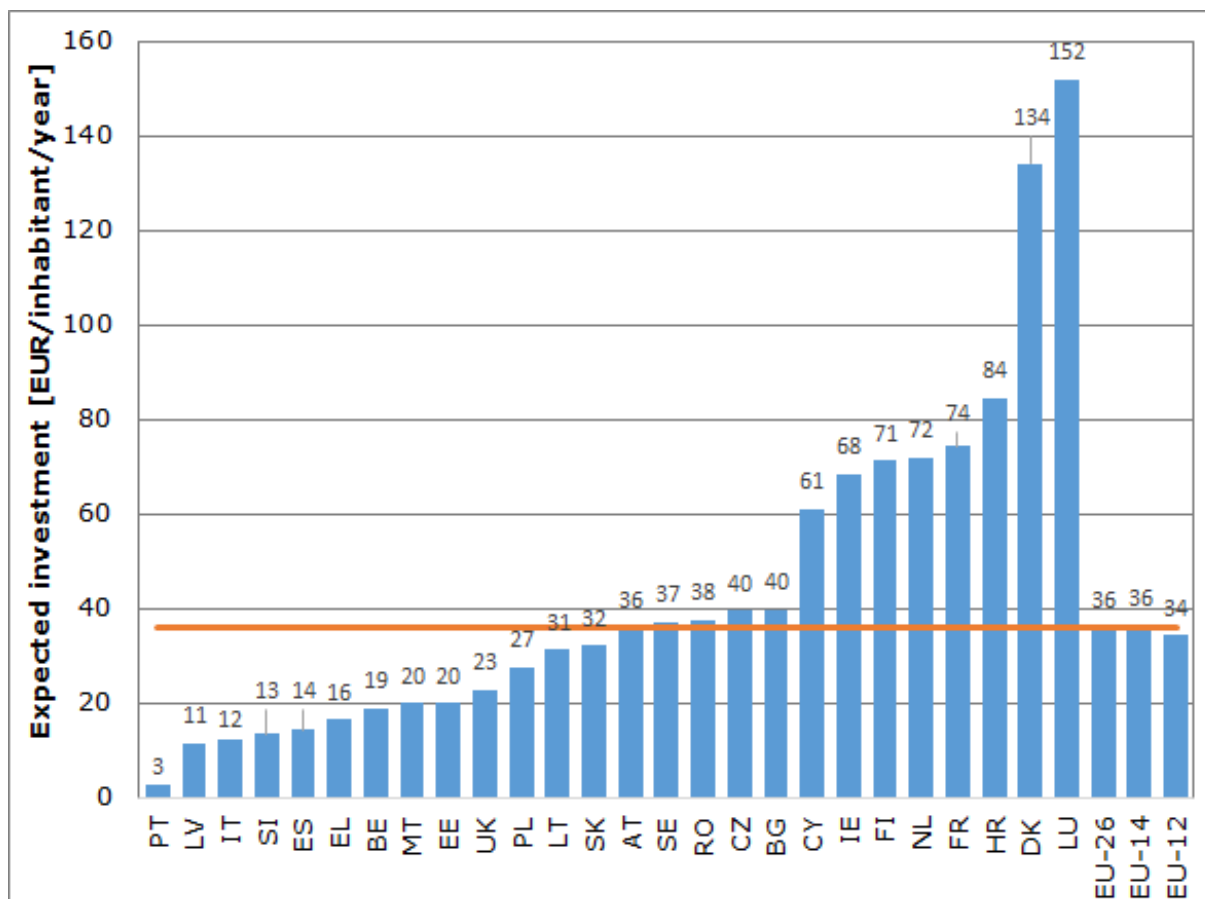


Fig – 9 Member States' programmes for implementation – expected annual investment costs per capita for installing and renewing waste water collecting systems and treatment plants [EUR/inhabitant/year]

Note: Germany and Hungary did not provide any data on expected investments.
The orange line running across the graph is the average annual expected investment cost in the EU.

5 PROMOTING COMPLIANCE

5.1 Funding and financing investments

The Commission has set up several initiatives to support efforts to comply in full with the UWWTD. They include initiatives to improve the planning of investments (e.g. an OECD study providing comparable data on financing strategies and investment needs) and EU cohesion policy funding (the proposed 2021 – 2027 cohesion policy is closely linked to national investment planning for sustainable water management).

5.1.1 Financing strategies

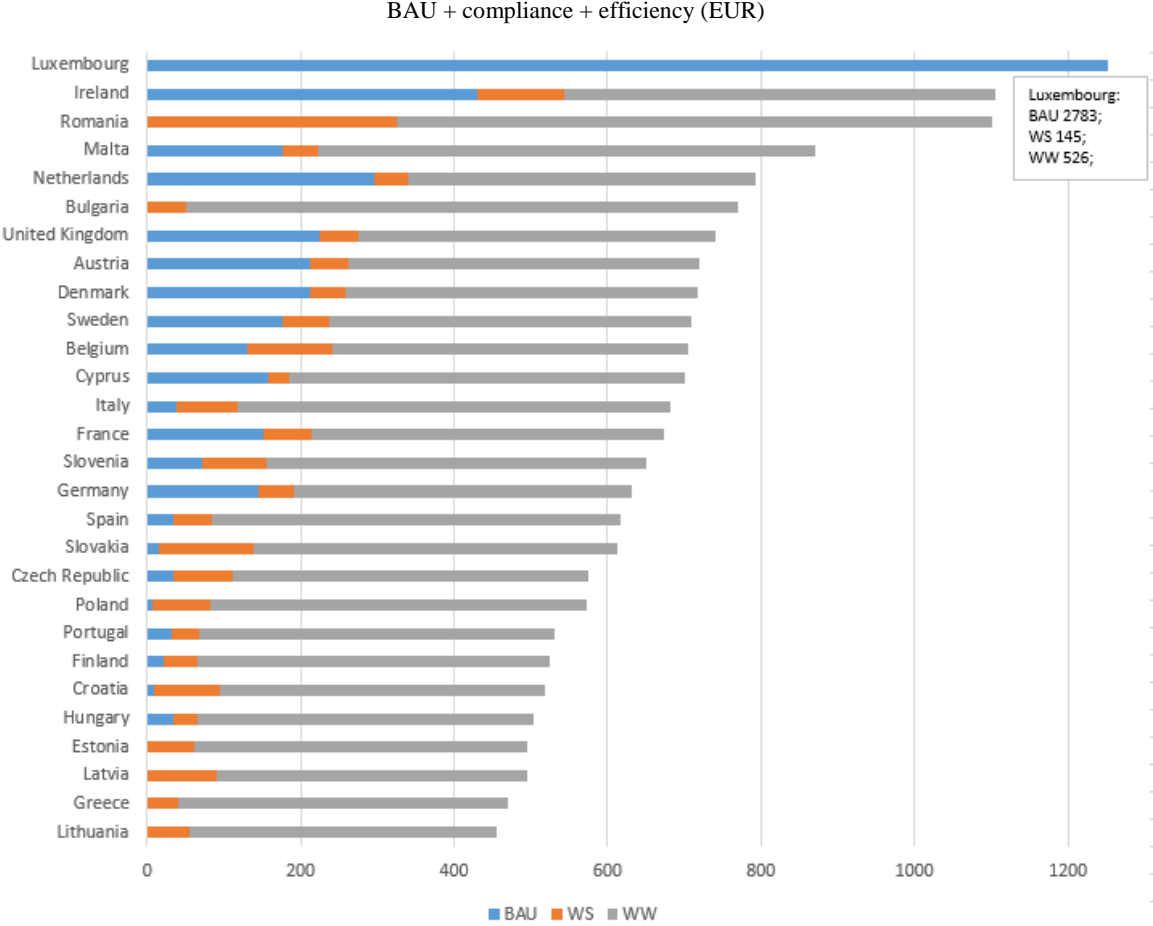
The OECD has made recommendations to address financing challenges in Member States with a limited financing capacity and high investment needs. These include making better use of existing assets and financial resources, minimising investment needs, and harnessing additional sources of finance²⁰.

²⁰ Chapter 5 of the OECD study, Estimating investment needs and financing capacities for water-related investment in EU member countries: https://ec.europa.eu/environment/water/water-framework/economics/OECD_study_en.htm

The OECD has projected the overall investment needed to reach compliance with the UWWTD. Below is a comparative overview presenting cumulative additional expenditures by 2030 for water supply and for sanitation per capita, combining three scenarios:

- business as usual (driven by urbanisation),
- compliance with the Drinking Water Directive (DWD) and the Urban Waste Water Treatment Directive (UWWTD), and
- efficiency (reduction of leakage in water supply).

The investment required to reach full compliance with the UWWTD for the 27 Member States and the UK comes to a cumulative additional total of EUR 253 billion between 2020 and 2030.



Source: OECD analysis based on European Commission and Eurostat data.

Explanation of scenarios:

- the BAU scenario (business-as-usual) captures what should be spent by 2030 with population growth
- the WS scenario (water supply) captures what should be spent by 2030 to meet the requirements of the recast DWD
- the WW scenario (waste water) captures what should be spent by 2030 to meet the requirements of the UWWTD

Fig – 10 Additional expenditures by 2030 per capita for waste water (ww) and drinking water systems (ws) [EUR/inhabitant] Source: OECD (2020)

Figure 9 shows that investing in waste water infrastructure to reach compliance with the UWWTD accounts for the largest share of total additional expenditure. Additional expenditure per capita ranges from EUR 500 to EUR 1,000 for water supply and sanitation.

Summarising, it was found that **current spending in many Member States is too low to reach compliance and to maintain it in the long term.**

5.1.2 EU funding

European funds, in particular the European Regional Development Fund and the Cohesion Fund, have a role to play in developing waste water infrastructure where Member States lack sufficient means to invest in their waste water sector. For the 2014-2020, Member States have allocated EUR 15,4 billion of the cohesion policy funds to water management. The largest share of the planned budget (about EUR 10,8 billion) goes on waste water treatment, including building or upgrading plants and sewerage networks, with some funding also going to sludge management.²¹ In 2014-2020, Member States are expected to connect 17,7 million people to new or upgraded waste water treatment facilities.²² This support leverages additional national and private funding and is complemented by other EU funding sources, such as LIFE and Horizon 2020. With the total contribution of over EUR 300 million over 2014-2018, Horizon 2020 and LIFE co-funded over 70 research and innovation projects to do with waste water.²³

For the 2021-2027 cohesion policy funds, the Commission proposed national investment plans as a precondition for funding, to ensure that resources are used in the most effective way.

5.2 Legal enforcement

Most of the non-compliant agglomerations identified in the implementation reports are covered by infringement cases. The Commission systematically pursues cases in which UWWTD has been poorly or wrongly applied. For countries which joined the EU in 2004 or later, cases were launched in 2016-2018 and are in progress, with some Member States (Latvia and Lithuania) close to compliance and one case (Cyprus) before the Court of Justice. Cases corresponding to the deadlines that expired in 2014 and 2015 will also be launched. In parallel, older cases have reached the Court of Justice for a second judgment. The Court has issued six judgments, three of which imposed fines and penalty payments on Member States²⁴ of up to EUR 25 million (as a lump sum) and approximately EUR 30 million as a penalty payment every six months.

6 IMPACT ON THE WATER ENVIRONMENT

UWWTD plays a key role in sustaining the overall resilience of aquatic ecosystems and protects their biodiversity, essential for achieving the objectives of the WFD. Over the past 30 years, progress in implementing the UWWTD has done much to improve the quality of rivers,

²¹ European Structural and Investment Funds: <https://cohesiondata.ec.europa.eu/EU-Level/ESIF-Categorisation-Intervention-Fields-with-filte/8m22-gy44> and https://ec.europa.eu/regional_policy/en/policy/what/key-achievements/

²² European Structural and Investment Funds, common indicators, 2014-2020: <https://cohesiondata.ec.europa.eu/stories/s/4ij4-23vs>.

²³ EASME internal data provided in 2019 to ENV.C.2

²⁴ C-205/17 (25.7.2018) Com v. Spain, C-251/17 (31.5.2018) Com v. Italy, C-328/16 (22.2.2018) Com v. Greece

lakes and seas. The figure below, for example, models a reduction in loads reaching bodies of water that can be attributed to the implementation of the UWWTD.²⁵

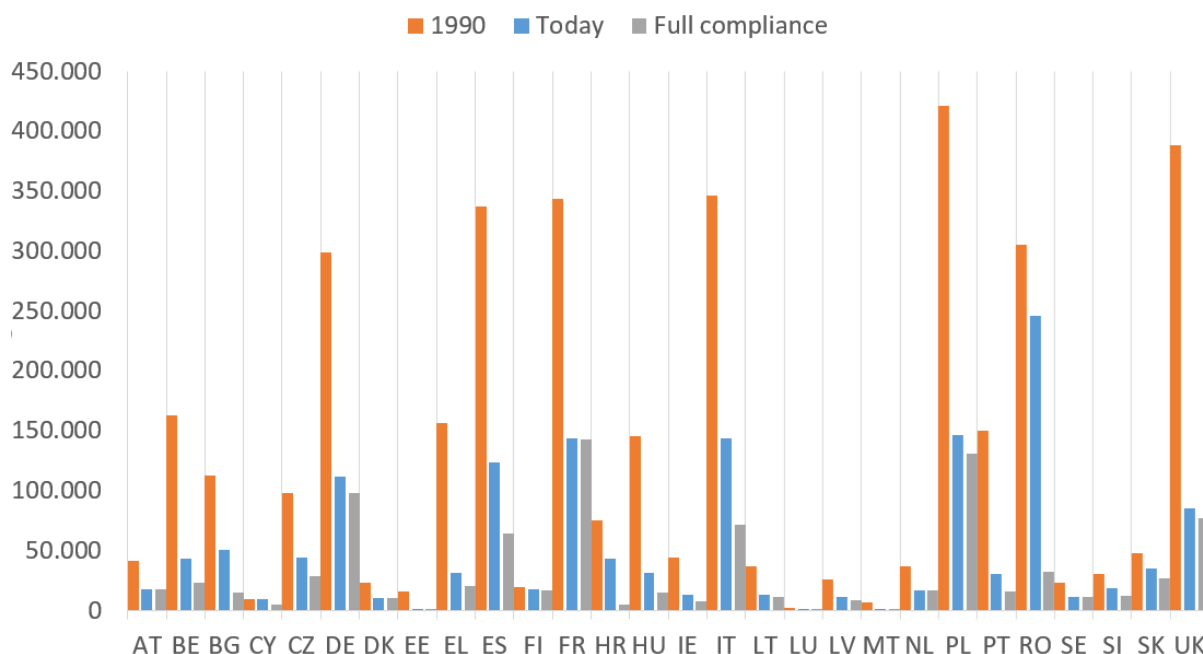


Fig 11 - Reduction of BOD loads (tonnes/year) in treated waste water.

7 CONCLUSIONS

With this report, the Commission concludes that the collection and treatment of urban waste water in the EU has improved. Collecting and treating waste water in accordance with the UWWTD is an essential step on the way to achieving the objectives of the Water Framework Directive.

However, there is still some way to go to achieve full compliance with UWWTD. The implementation of this Directive requires ongoing commitment from the Member States, with improved planning of investments, including forward-looking plans for the renewal of waste water infrastructure. The Commission has set up several initiatives to help Member States achieve compliance.

Finance and planning remain the main challenges facing the water service sector. Current investment in many Member States has been found to be too low to reach and maintain compliance in the long term.

The Commission has evaluated UWWTD²⁶ and has now launched an impact assessment to assess policy options to make UWWTD fit for future.

²⁵ Evaluation of the UWWTD (SWD(2019)701): <https://ec.europa.eu/environment/water/water-urbanwaste/pdf/UWWTD%20Evaluation%20SWD%20448-701%20web.pdf>

²⁶ Including the Recovery Plan for Europe: <https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/recovery-plan-europe>