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2025 Environmental Implementation Review

Environmental implementation for prosperity and security

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This 2025 Environmental Implementation Review (EIR) – the fourth since the Commission started this process in 2016[1] – is a periodic report on the state of implementation of European Union (EU) environmental law and policies. This EIR package comprises this communication, focusing on EU-wide trends, and 27 reports on the state of implementation in each Member State. Those reports also recommend "priority actions" to take by each Member State.

I. The role of implementation in EU environmental law and policy

1. Goals and challenges

Climate change, pollution, and biodiversity loss are among the most serious and urgent risks today, both globally and in the EU, and they are exacerbated by unsustainable resource use.[2] EU environmental law and policy aims to address these risks, and the past decade has shown significant improvements in its implementation. EU-wide indicators related to circular material use rate and resource productivity show progress in the transition of Member States to a circular economy. Air quality – and the associated health benefits – has also substantially improved. Industrial emissions and the frequency of industrial accidents have both dropped noticeably. And there has been an important increase in protected areas throughout the EU, which sets the EU on track towards achieving the Global Biodiversity Framework target of 30% of legally protected land. Also, the EU's 2030 climate targets are within reach.[3] At the same time, there is still an implementation gap. In certain areas progress needs to accelerate to reduce ongoing damage and associated costs, reach the 2050 goals laid down in the EU's 8th Environment Action Programme (EAP),[4] and respond to people's concerns.

All of this should be achieved while recognising that **sustainability and competitiveness go hand in hand**. The goal is to ensure that decarbonisation and nature protection lead to a circular, competitive economy that gives back to nature more than it takes away from it.[5] **To reach this objective, implementation and simplification are key.**

The repeated and linked environmental disasters and risks – such as floods, droughts, fires, and zoonotic diseases – show that environmental protection is a matter of security. For instance, protecting nature means securing the EUR 234 billion of ecosystem services that nature currently provides to our economy;[6] reducing pollution improves people's health, water management, and nature; and the circular economy reduces pollution from extraction

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1 See the Commission's 2016 communication announcing a regular Environmental Implementation Review: "Delivering the benefits of EU environmental policies through a regular Environmental Implementation Review", COM(2016)316 final, 27.5.2016. See also the webpage showing all EIR editions. So far, the Commission has adopted EIR packages every two to three years, in 2017, 2019, and 2022.

2 JRC, "Cross-border and emerging risks in Europe", 2024, document JRC137818; World Economic Forum, "Global Risks Report", 2025; Trust et al., "Planetary Solvency – Finding our balance with nature – Global risk management for human prosperity", University of Exeter, 2025; EEA, "Editorial — Time to speed up towards a sustainable and resilient Europe", 24.9.2024; EEA, "Editorial — Why Europe needs to stay the course to sustainability in a changing world", 16.12.2024; EEA 2025 State of the Environment report, due on 30.9.2025; Richardson et al., "Earth beyond six of nine planetary boundaries", Sci. Adv. 9, 2023.

3 Communication delivering the Union's 2030 energy and climate objectives, 27 May 2025, COM(2025)274.

4 8th Environment Action Programme, OJ L 114, 12.4.2022, p. 22-36.

5 "The Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation", document COM(2025)85 final, 26.2.2025.

6 Eurostat, "Accounting for ecosystems and their services in the European Union", 2021.

and waste, and improves resource efficiency (including water efficiency) and therefore economic security.[7] High environmental standards drive private sector innovation – the globally competitive EU clean tech sector – which is also a key driver of the green transition, both in the EU and globally.[8] In sum, **environmental policy is a key factor of competitiveness for the EU.**

Reaching these goals requires a consistent, long-term, well-financed, whole-of-society approach, both at EU level and at Member State level. Each actor must do its part.

2. The role of the EIR in steering implementation

The primary responsibility for the implementation of EU environmental law and policy on the ground lies with the Member States.[9] The Commission supports the Member States' implementation efforts in many ways. For example, through political and technical dialogues; providing guidance on the interpretation of relevant legislative provisions; providing EU financing for example through the LIFE, cohesion and regional funds, the Common Agriculture Policy, and the Recovery and Resilience Facility; and providing technical assistance (knowledge, best practices, training).[10]

Where necessary, the Commission also takes enforcement action through infringement cases, in its role as Guardian of the Treaties.[11] The Commission's enforcement role and its role in steering EU funding towards environmental priorities in the Member States are complementary. On certain conditions, EU funding can be used to prevent or end infringements. Conversely, environmental infringement cases act as a strong incentive to direct EU funding towards fixing those cases.

The EIR is an additional tool to monitor and support implementation.

- ***Monitoring implementation***. **The EIR takes stock of the current state of implementation of EU law and policy in the Member States, using harmonised data and methods to allow benchmarking and comparisons across Member States and over time**. The EIR relies on data from inter alia the Commission, the European Environment Agency (EEA), and national authorities. The EIR raises awareness of Member States' authorities and the public at large about the most important implementation and investment gaps and needs, across all major fields EU environmental

7 European Water Resilience Strategy, 4 June 2025, COM(2025)280.

8 "A Competitiveness Compass for the EU", document COM(2025)30 final, 29.1.2025; "The Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation", document COM(2025)85 final, 26.2.2025; Commission 2024-2029 Political Guidelines; Council 2024-2029 Strategic Agenda; EIB, "Financing and commercialisation of cleantech innovation", 2024.

9 Article 4(3) TEU and Article 197(1) TFEU.

10 Article 197(2) TFEU: "The Union may support the efforts of Member States to improve their administrative capacity to implement Union law. Such action may include facilitating the exchange of information and of civil servants as well as supporting training schemes".

11 Article 17 TEU and Articles 258 to 260 TFEU; Commission Communication, "EU law: Better results through better application", OJ C18/10, 19.1.2017; Commission Communication, "Enforcing EU law for a Europe that delivers", 13.10.2022; Annual Report on Monitoring the Application of EU law.

law and policy: circular economy and waste, zero pollution, nature and biodiversity, climate, governance, and financing.[12]

- ***Supporting implementation***. **The EIR identifies good practices and challenges in the Member States and recommends improvements and solutions as well as "priority actions".** This helps decision-makers in the Member States and in the Commission to prioritise resources, such as EU funds and technical assistance, when implementing EU environmental law. This is particularly relevant in the context of the EU's next budget (Multiannual Financial Framework).[13] To monitor and support implementation, this EIR communication contains annexes showing an overview of all priority actions, per area and per Member State, as well as a scoreboard showing a positive, neutral, or negative assessment per area and per Member State as regards the state of implementation of environmental legislation. The EIR highlights the current state of implementation as well as trends, while the priority actions and the scoreboard focus on necessary action at the moment.

The EIR is a policy instrument that provides a picture of the state of implementation of environmental law in the Member States. Its findings do not entail legal consequences for the Commission's or the Member States' rights and obligations. The EIR does not affect the Commission's powers to assess Member States' compliance with EU law, for example in the framework of infringement proceedings.

By identifying problems and providing solutions, the EIR will be the central tool to support the Implementation Dialogues and inform the Annual Progress Reports on Enforcement and Implementation, in light of the simplification objective.[14] **Implementation and simplification go hand in hand as they share the same goal: reaching targets in a cost-effective way**. Finally, by identifying priority actions in the short and medium terms, the EIR facilitates the implementation of the **8th Environment Action Programme (EAP)** and informs the **European Semester** exercise.

3. A significant implementation and investment gap

This EIR sets out the state of implementation of EU environmental law and policy

- for each thematic area, for the whole EU, in part II of this communication;
- for each Member State, in each thematic area, in the individual country reports accompanying this communication.

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[12] Several EU environmental laws adopted pursuant to the European Green Deal legislative programme between 2019 and today only entered into force after this EIR was drafted, or will enter into force in the future. This applies to the revised Urban Waste Water Treatment Directive, the revised Ambient Air Quality Directive, the Nature Restoration Regulation, the EU Anti-Deforestation Regulation, for example. For the sake of clarity, these are noted in the text of this EIR communication and the EIR country reports where appropriate, but this EIR does not assess the Member States' compliance with those laws.

[13] Commission communication, "The road to the next multiannual financial framework", document COM(2025)46 final, 11.2.2025.

[14] Commission communication, "A simpler and faster Europe: Communication on implementation and simplification", document COM(2025)47, 11.2.2025.

The EIR showcases progress in terms of resource use and circularity, cleaner air and water, protected nature areas, and the climate. However, the Member States have yet to meet all their obligations under EU environmental law.[15]

The implementation gap concerns all areas of EU environmental law and all Member States, to varying degrees (see the list of priority actions in Annex 1). Out of the 96 priority actions recommended to the Member States, 22 concern circular economy and waste; 36 concern water and pollution; 28 concern nature and biodiversity; 9 concern governance cases; and 1 concerns financing.

National authorities and national courts, which are primarily responsible for the implementation of EU law, have made efforts to implement and enforce EU environmental rules, with the Commission's support. However, the number of environment-related court cases, infringement cases, petitions and complaints, at both national and EU level, reflects the insufficient level of implementation of EU environmental law. **In some cases, there are significant differences between regions within a single Member State**.

When the Commission detects an infringement that falls within its enforcement priorities and that is not swiftly solved through bilateral contacts, it may take enforcement action under Article 258 of the Treaty on the Functioning of the European Union (TFEU). **In more than 90 % of the cases, the infringement case is closed without referring it to the Court of Justice of the European Union (CJEU).[16] This shows that the Commission and the Member State often agree on the interpretation of the rules and on the measures needed to ensure compliance**. But the cost of environmental degradation may have persisted for months, and sometimes years.

As of 2 April 2025, there were **309 ongoing infringement cases** concerning EU environmental law, excluding climate law. This is about 19% of the overall Commission case load across all areas of EU law. Of these 309 cases,

- 24% concern circular economy and waste cases; 45% concern zero pollution cases; 24% concern nature and biodiversity cases; and 7% concern governance cases;
- 5% concern **non-communication** (failure to communicate to the Commission the national rules transposing EU directives); 25% concern **non-conformity** (failure to ensure that national rules transpose EU directives in a correct, clear and precise way); and 70% concern **bad application** (failure to meet substantive obligations laid down in EU legislation, such as environmental targets);
- In 62 cases (20% of the 309 infringement cases on EU environmental law), the Court has delivered a **ruling with which the Member State has not yet complied.**

In some cases, the Commission can ask the Court of Justice to impose a lump sum and/or a periodic penalty payment on a Member State for failure to comply with an earlier judgment of the Court of Justice. In the field of EU environmental law, five Member States currently pay penalties into the EU budget as they have not reached compliance yet. Table 1 below lists those penalties definitively paid since penalties became possible thanks to the 1992

[15] See the 2025 EIR individual country reports and the 8th Environment Action Plan Mid-Term Review. See also JRC, "Delivering the EU Green Deal – Progress towards targets", 2025.

[16] Commission, "Stocktaking report on the Commission working methods for monitoring the application of EU law", 14.7.2023.

Maastricht Treaty, although in practice all those penalties were ordered and paid in the last 15 years. **In total, those penalties amount to almost EUR 1.2 bn**.

Table 1 – Total lump sums and periodic penalty payments paid by Member States pursuant to Article 260 TFEU in ongoing environmental non-compliance cases, as of 2 April 2025

Member State	*Total paid in EUR*
Italy	806 399 685
Greece	232 962 511
Spain	90 510 924
Ireland	17 225 744
Romania	8 000 400
Total	*1 155 099 265*

In addition to the implementation gap, there is an investment gap between Member States' current environmental spending and the spending level which is necessary to close the implementation gap. This "investment gap" stands at EUR 122 billion per year, which is equivalent to 0.8% of EU GDP.[17] This gap varies considerably across Member States, from 0.1% to 2.9% of national GDP. 48% of this investment gap concerns pollution, including water management. Nature and biodiversity accounts for 30%. The circular economy and waste account for the remaining 22%. These investment gap estimates do not include the necessary investments into climate mitigation and adaptation.

4. Full, timely, fair, and cost-effective implementation is critical

Implementation is a key priority of the Commission. The recent Communication on a "Simpler and Faster Europe" recalls the importance of swift and resolute enforcement action and the need for the Commission to "continue to pursue its strategic approach, prioritising breaches that have the most significant impact on public and business interests".[18]

Moreover, because of the implementation gap in the field of EU environmental law, the EU is currently incurring large costs of non-implementation such as premature deaths – one in ten deaths in the EU can be linked to pollution[19] –, the cost of disease, including healthcare costs and lost productivity, cleanup costs, and reduced ecosystem services.[20]

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17 Source: DG Environment calculations, 2025.

18 Commission communication, "A simpler and faster Europe: Communication on implementation and simplification", document COM(2025)47, 11.2.2025.

19 EEA/JRC, Second zero pollution monitoring and outlook 2025.

20 Ecosystem services are the services that nature currently provides to our economy for free – for example, erosion control, soil quality, temperature control, flood protection, water storage, pollination, and carbon storage. The ECB has estimated that almost 75% of bank loans to companies in the euro area are granted to companies that are highly dependent on at least one ecosystem service. See Frank Elderson, "Taking account of nature, naturally", 19.11.2024. Ecosystem services are very difficult or very expensive to replace. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) highlights the macro-economic effects of reduced ecosystem services. See NGFS, "Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors", July 2024. See also Commission statement on the urgent need for EU action to preserve nature and protect biodiversity to

Considering these types of costs across the three main areas of EU environmental law – circular economy and waste, zero pollution, and nature/biodiversity – a recent study has found that **the cost of not fully implementing EU environmental law and policy amounts to at least EUR 180 billion a year**.[21]

In other words, the implementation gap is costing the EU EUR 180 billion per year, but it would take less than that to fix it (EUR 122 billion per year). This means that full, timely, and cost-effective implementation of EU environmental law is an investment, because dealing with the consequences of environmental degradation is far more costly, and those consequences take place today.

5. Key factors of good implementation

Implementing EU environmental law and policy requires a sustained effort based on long-term planning, a good knowledge base, cooperation with regional and local authorities, substantial infrastructure and financing, and bringing stakeholders on board.

In light of the Commission's experience in discussing implementation with the Member States in the framework of infringement cases, funding requests, and technical assistance requests, it is possible to identify **five key factors that make the difference between good implementation and poor implementation**.

These factors are: (1) the integration of environmental objectives in public policies, through political dialogues and choices on sharing the implementation cost among stakeholders; (2) financing; (3) administrative capacity, especially to ensure proper planning and coordination; (4) digital data; and (5) the role of public participation in environmental decision-making and access to justice.

All stakeholders – from the Commission to Member States, regional and local authorities, the private sector, civil society and households – have a role to play in pursing their common interest in environmental implementation.

Integration of environmental objectives in public policies, through political dialogues and choices on sharing the cost of implementation among stakeholders

Implementation experience shows that it is crucial to ensure sufficient integration of environmental policy in the framing and execution of public policies, in a systematic, upstream and cross-cutting way. This means, for instance, accounting for the impact of public policies, the budget and the economy on the environment – and ultimately on human health and security. This relationship also works the other way: it is crucial to account for the impacts of the environment on public policies, the budget and the economy.

A further aspect of environmental integration concerns sharing the cost of implementation among stakeholders. This requires fair, timely, and stable political decisions. For example, air, nature and water policy require placing obligations on various stakeholders such as the public sector, industry, agriculture and households. Reconciling

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avoid the extinction of species (2024/2995(RSP)), 18.12.2024; Mundaca and Heintze, "Banking on ecosystem services", Ecological Economics, volume 224, 2024; IPBES, Nexus Assessment Report, 16.12.2024; and IPBES, Transformative Change Report, 18.12.2024.

[21] Logika Group/EMRC/RPA Europe study, April 2025. This includes targets set in strategies and action plans, and excludes climate law and policy.

nature restoration, farming, housing, industry, and sustainable energy requires decisions on land use. Each Member State can decide on sharing the implementation cost among stakeholders in light of its own situation – at national level and sometimes at regional and local level – to get the balance right. This requires early and extensive dialogues and consultation, recognising common interests, and stable and predictable legal frameworks that do not risk annulment by the courts.

For example, the 2024 Agreement on a Green Denmark is a landmark achievement in this respect. This broad political compromise – with support from agricultural, environmental and other stakeholders as well as a majority of political parties – envisages in particular a tax on emissions from livestock, agricultural lime and drained peatlands in agricultural use and converting about 400 000 hectares of agricultural land into nature and forests in Denmark.[22]

By contrast, **the longer the delay in facing environmental problems, the more environmental costs accumulate, until they become so large that they require drastic short-term action that can cause strong opposition from affected stakeholders**. In such scenarios, environmental inaction or belated action is likely to trigger court cases causing further delays and reducing the scope for political dialogue and resolution.

Financing

A key enabler of environmental implementation is financing. Currently, the Member States are not relying much on environmental taxation. Member States may further consider how to steer businesses' and consumers' choices while bringing in tax revenue that could be used to address the investment gap. Across the EU, the environmental tax revenue-to-GDP ratios ranged in 2022 from 0.9% (Ireland) to 5.6% (Greece).[23]

Taxes, extended producer responsibility schemes, and other mechanisms could be used to better implement the polluter-pays principle. Bringing in private finance requires appropriate incentives, for example encouraging firms to appropriately value ecosystem services and to pay for them.[24]

Moreover, Member States engage in significant levels of environmentally harmful spending (EHS), such as fossil fuel subsidies (FFS).[25] This leads to different types of government spending working at cross-purposes, thereby reducing the efficiency of spending and slowing down the green transition. Both this EIR package and the 2024 European Semester package recommend reducing EHS.

Spending should also be channeled towards green R&D, as it can significantly accelerate technological advancements and market adoption, bringing down the costs of environmental implementation.[26]

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22 Ministry for Green Transition of Denmark, Bred politisk aftale om Den Grønne Trepart, 18.11.2024.

23 Source: Environmental tax statistics - Statistics Explained - Eurostat.

24 Including through the Commission's upcoming "Roadmap towards Nature Credits".

25 Jan Nill, Directorate-General for Economic and Financial Affairs, European Commission, "Fossil Fuel Subsidies in EU Member States – Trends and Analytical Challenges", Discussion Paper 214, 2024.

26 The Pact for Research and Innovation in Europe (2021) reaffirms an investment target of 3% of GDP for R&D. This was reiterated among others in the European Council Conclusions from 17-18 April 2024. See

Administrative capacity

Environmental implementation requires adequate staffing, skills, budgets, data, and digitalisation, at national, regional, and local levels. **The purpose of improved administrative capacity in the environmental field is to deliver outcomes – such as administrative and judicial decisions or infrastructure – efficiently and swiftly**. This works for the benefit of the public and private sector and ultimately the environment and human health and security. This needs to be backed up by adequate data collection and monitoring, enforcement bodies with inspection powers, and specialised police, prosecutors, and courts.

The Commission assists the Member States in this regard through EU financing and through the ComPAct initiative, the Technical Support Instrument, and TAIEX capacity-building and technical assistance programmes (see part II, section 5 below).[27] The number of technical support requests from Member States constantly exceeds the available resources and shows the interest and usefulness of these tools in possibly addressing and supporting administrative capacity in Member States.

Administrative capacity for the purpose of environmental implementation also requires adequate planning and coordination. This requires coherent long-term planning to identify links across different policy areas. For example, an over-dimensioned wood-fired power plant or incinerator is likely to cause significant environmental impacts. Conversely, a single project can create synergies – furthering several environmental goals at the same time. For example, wetland restoration can contribute to carbon sequestration, flood protection, and species recovery at the same time.

Accordingly, a more integrated, holistic approach – for example, bringing together authorities in different policy areas or regions – tends to be more long-term, inclusive, consistent, effective and efficient.[28] By contrast, siloed, fragmented approaches tend to be more short-term, contradictory (or duplicative), and are more susceptible to capture by special interests.

For example, before authorising activities with a likely significant environmental impact, all relevant environmental aspects should be assessed systematically to prevent and reduce risks to the environment. **If well designed and well implemented – with the right timeline, knowledge and human and digital resources –, environmental impact assessments and permitting can be swift and aligned with the competitiveness objective**. In 2022 the Commission provided recommendations and guidance contributing to simplifying and accelerating permitting for renewable energy projects and continues to provide support to the Member States in this regard.[29]

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also ECORYS/Ramboll study, "The economic and competitive benefits of environmental policy", Publications Office of the European Union, 2024.

[27] See Commission communication, "Enhancing the European Administrative Space (ComPAct)", 25.10.2023, document COM(2023)667 final; the TSI homepage; and the TAIEX homepage.

[28] See e.g. Scientific Advice Mechanism, "One Health governance in the European Union", 2024, pages 13-14 on the "integrated approach", and IPBES Nexus Report, 2024, referring to "fragmented governance of biodiversity, water, food, health and climate change with different institutions and actors often working on disconnected and siloed policy agendas, resulting in conflicting objectives and duplication of efforts".

[29] Commission recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements, 18.5.2022, document C/2022/3219 final and Guidance to

Implementation of national environmental policy at regional and local level also needs to be supported. This requires vertical coordination between national, regional, and local authorities ("multi-level governance"). In some Member States, regional or local authorities have powers to take environmental actions yet they do not always have the necessary staff, skills and budgets. National environmental agencies play a supporting role by providing knowledge, technical assistance, or coordination services, but this is sometimes insufficient to ensure timely and effective action at local level.

Digital data

Another key determinant of environmental implementation is the availability and use of digital data. Data about the state of the environment and about environmental policy is crucial to support decision-making and scientific knowledge, monitor progress, and enable benchmarking, policy evaluation, and accountability. This requires collecting, analysing, and disseminating data that are FAIR (Findable, Accessible, Interoperable, and Reusable) and that have the right level of granularity, frequency, and user-friendliness.[30] Estonia in particular stands out for its deep and widespread use of digital data for environmental monitoring purposes, including waste management.

On the Member States' side, full implementation of the Environmental Information Directive is the strict minimum in this respect, but using more and better data supports environmental implementation as a whole. Digital data from rapidly evolving technologies such as Earth Observation and the Copernicus system in general provide new opportunities to assure environmental compliance more efficiently.[31] It is also important to improve existing data sets. For example, the Commission recently noted "the Member States' insufficient progress in digitalising water data".[32] In this respect, it is important to find the right balance between the availability of data and the protection of business secrets or confidential proceedings of public authorities.

Public participation in environmental decision-making and access to justice

Finally, the implementation gap shows that public participation in environmental decision-making at national level and access to justice in the national courts has not been sufficient. Ensuring that these tools are effective is a key component of environmental implementation.

Stakeholders play a significant role in contributing with facts and assessments to environmental decision-making, in the framework of the procedure established under the Environmental Impact Assessment Directive and the Strategic Environmental Assessment Directive. Stakeholders play an equally significant role in the enforcement of EU environmental law through the national courts. The new Environmental Crime Directive

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Member States on good practices to speed up permit-granting procedures for renewable energy projects and on facilitating Power Purchase Agreements, 18.5.2022, document SWD(2022)0149 final.

30 8th Environment Action Programme, Article 3(y); 8th Environment Action Programme Mid-Term Review, point 3.7.

31 See https://publications.jrc.ec.europa.eu/repository/handle/JRC140211.

32 Report from the Commission to the Council and the European Parliament on the implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC), document COM(2025)2 final, 4.2.2025.

(ECD) and the evaluation of the Environmental Liability Directive (ELD) lay the groundwork for increased effectiveness of remedies and sanctions.

On the Member States' side, it is crucial to implement the revised ECD; to increase deterrence through inspections and sanctions; and to maintain adequately resourced enforcement bodies as well as specialised police, prosecutors, and courts.

On the Commission's side, the priority is to continue to support national enforcement and judicial bodies through information, training, and sharing best practices. Another priority is to improve the legal framework on actionable rights, access to justice and sanctions in sector-specific legislation. For example, the recently revised Ambient Air Quality Directive and Industrial Emissions Directive reflect improvements in this regard.[33] Finally, the Commission completed its evaluation of the ELD in April 2025 (see below, part II.5).

6. Conclusion

EU environmental law and policy contributes to the EU's prosperity, competitiveness and security and is essential to achieve its sustainable development. The Commission will continue to improve implementation of EU environmental law and policy by supporting the Member States with technical capacity and funding, and through simplification and enforcement as appropriate.

There has been a significant improvement in the implementation of some areas of environmental law and policy in the EU, with direct impacts in terms of saving lives and avoiding costs. However, the pace of progress should accelerate to meet the requirements of EU environmental law and the 2030 and 2050 goals laid down in the 8th Environment Action Programme. These goals reflect scientific assessments as well as the EU's international commitments.

Until EU Member States close the implementation gap, they incur substantial costs of non-implementation – at least EUR 180 billion per year, not counting climate law and policy. This is the cost of lives lost, disease, healthcare, cleanup, and reduced ecosystem services. This does not include other, less quantifiable costs such as the degradation of the rule of law and of the level playing field. Crucially, the cost of implementation is much lower than the cost of non-implementation. Implementation is a sound investment.

Environmental implementation in the Member States could be improved through better integration of environmental objectives in public policies, through political dialogues and choices on sharing transition cost among stakeholders; financing; better administrative capacity; effective use of digital data; and public participation and access to justice in environmental matters. All parts of society – such as national and regional governments, local authorities, the private sector, and civil society at large – have a shared interest in using these levers to make environmental implementation simpler and more cost-effective.

[33] Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast), OJ L, 2024/2881, 20.11.2024; Directive (EU) 2024/1785 of the European Parliament and of the Council of 24 April 2024 amending Directive 2010/75/EU of the European Parliament and of the Council on industrial emissions (integrated pollution prevention and control) and Council Directive 1999/31/EC on the landfill of waste, OJ L, 2024/1785, 15.7.2024.

II. The state of implementation of EU environmental law and policy

1. Circular economy and waste

Context: long-term goals and trends, key indicators and key legislation in this area

As highlighted in the Competitive Compass and the Clean Industrial Deal communication,[34] the EU's competitiveness, employment growth, economic security, resilience, climate neutrality and overall environmental sustainability rely on the efficient and circular use of resources. Circular practices help to reduce costs for EU manufacturing companies, which generally spend more than twice as much on materials as on labour or energy. Re-use and recycling, while reducing landfilling, are key to saving energy, reducing greenhouse gases emissions, reducing pollution, increasing the security of supply of raw materials and reducing EU dependencies on imports from non-EU countries. They create local jobs and boost innovation in new technologies for sustainable products and materials management.

This EIR reports on the Member States' implementation of the EU's policy framework for the transition to a circular economy as laid down in the 2020 Circular Economy Action Plan.[35] It aims to scale up circular solutions to make sustainable products the norm, turn waste into economic value and focus on key value chains. It introduces a set of legislative and non-legislative actions across the life cycle of products and across value chains. These include for example the Ecodesign for Sustainable Products Regulation,[36] which will introduce performance and information requirements on a product group basis.. Dedicated initiatives were introduced for key value chains because of their potential to improve circularity. These include for instance the EU Strategy for Sustainable and Circular Textiles,[37] the Batteries Regulation,[38] and the Packaging and Packaging Waste Regulation.[39]

In this context, EU waste policy aims to contribute to the circular economy by extracting high-quality resources from waste, including critical raw materials. The main objective of EU waste policy is to protect the environment and human health from the adverse impacts of waste generation and management.

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34 "A Competitiveness Compass for the EU", document COM(2025)30 final, 29.1.2025; "The Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation", document COM(2025)85 final, 26.2.2025.

35 "A new Circular Economy Action Plan For a cleaner and more competitive Europe", document COM/2020/98 final, 11.3.2020.

36 Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products, amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repealing Directive 2009/125/EC, OJ L, 2024/1781, 28.6.2024.

37 "EU Strategy for Sustainable and Circular Textiles", document COM(2022)141 final, 30.3.2022.

38 Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC, OJ L 191, 28.7.2023, p. 1-117.

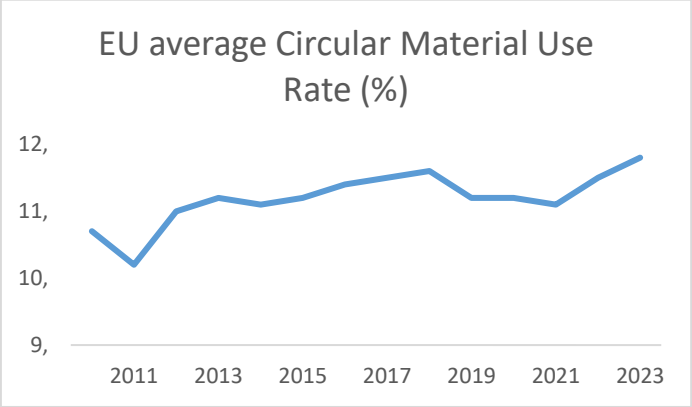
39 Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC, OJ L, 2025/40, 22.1.2025.

Key legislation in this area includes the Waste Framework Directive,[40] the Landfill Directive,[41] the Regulation on batteries and waste batteries,[42] the proposed End of Life Vehicles Regulation replacing the current directive,[43] the directive on Waste from Electrical and Electronic Equipment,[44] and the Waste Shipments Regulation.[45] Waste management rules are set in those and other pieces of legislation concerning persistent organic pollutants, hazardous waste, ship recycling, mining waste and waste lubricant oils.[46]

While there is no comprehensive indicator for the transition to a circular economy, key indicators include the Circular Material Use Rate, which measures the proportion of secondary raw materials in EU demand for materials, and resource productivity, which measures gross domestic product (GDP) generated per unit of domestic material consumed (see figures below). Key indicators for waste are waste generation figures as well as recycling rates and landfilling rates.

Key figures at EU level

Figure 1



Source: Eurostat, 'Circular material use rate', env_ac_cur, last updated 13 November 2024, accessed 10 December 2024, https://ec.europa.eu/eurostat/databrowser/view/env_ac_cur/default/table?lang=en.

40 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, 22/11/2008, p. 3-30.

41 Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, OJ L 182, 16.7.1999, p. 1-19, as amended.

42 Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC, OJ L 191, 28.7.2023, p. 1-117.

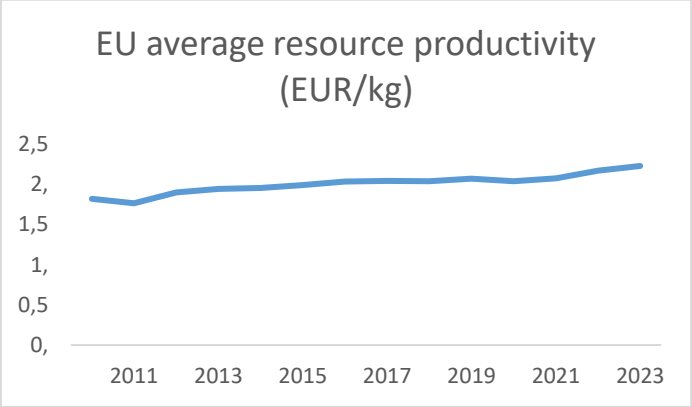
43 Proposal for a Regulation of the European Parliament and of the Council on circularity requirements for vehicle design and on management of end-of-life vehicles, amending Regulations (EU) 2018/858 and 2019/1020 and repealing Directives 2000/53/EC and 2005/64/EC, COM/2023/451 final.

44 Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), OJ L 197, 24.7.2012, p. 38-71.

45 Regulation (EU) 2024/1157 of the European Parliament and of the Council of 11 April 2024 on shipments of waste, amending Regulations (EU) No 1257/2013 and (EU) 2020/1056 and repealing Regulation (EC) No 1013/2006, OJ L, 2024/1157, 30.4.2024.

46 See https://environment.ec.europa.eu/topics/waste-and-recycling_en.

Figure 2



Source: Eurostat, 'Resource productivity', env_ac_rp, last updated 7 August 2024, accessed 10 December 2024, https://ec.europa.eu/eurostat/databrowser/view/env_ac_rp/default/table?lang=en.

Key findings

- Member States show slight progress in their transition to a circular economy. Figure 1 shows that between 2020 and 2023 the EU-wide circular material use rate increased from 11.2% to 11.8%, while the objective laid down in the Circular Economy Action Plan is to double the 2020 circularity rate by 2030, to 22.4%. Accordingly, more effort is needed, especially to introduce upstream circularity measures across the value chain[47], focusing on waste generation reduction and material reuse.

- Some Member States and regions are spearheading the transition, in terms of circularity indicators and implemented measures, while others lag behind.

- The circular transition is urgently needed in particular in the built environment[48], to reduce impact (mainly resource consumption and waste), while retaining the value of products and assets within the system, and creating additional environmental, economic and social benefits[49].

- Despite an increase in recycling and a reduction of landfill of municipal waste, many Member States are at risk of not achieving the 2025 "preparing for re-use" and recycling target for municipal waste (55%), the 2025 packaging waste recycling target (65%), and the 2035 landfill target for municipal waste (10%). Recycling rate of waste excluding major minerals has not progressed much over the past two decades.

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47 This is echoed also by the European Court of Auditors' special report on circular economy (Special report 17/2023: Circular economy – Slow transition by member states despite EU action, 3.7.2023) which identified a gap in Member States' progress despite EU action and called for better monitoring of Member States' transition to circular economy, an analysis of the reasons for low take up of EU funding for circular design and to consider scope for greater incentivisation.

48 NEB Investment Guidelines.

49 NEB Investment Guidelines, page 172.

- Member States should ensure they have updated national waste prevention programmes to prevent non-recyclable waste. Many have recently adopted and are implementing waste reforms that to increase recycling rates. High capture rates and quality of separate collection are essential preconditions for preparing for re-use and recycling.

- It is necessary to use the full spectrum of economic measures – such as incentives and investments – to reduce landfilling and incineration. Investments are needed to develop waste infrastructure that supports prevention, re-use and recycling performance, particularly for bio-waste and plastic, and to introduce Deposit Refund Schemes on packaging.

Examples of good practices

- In Estonia, a real-time digital system on waste data and traceability will be launched in 2025.[50] The system will allow companies to send waste data sets electronically to national government authorities thus reducing the administrative burden. It is also expected to support enforcement and policy development.

- Poland has adopted a partial exemption to the waste fee[51] for property owners who compost their waste at home. This encourages home composting and improves monitoring because, to obtain this exemption, home-composting must be reported by households to the municipality.

2. Zero pollution including chemicals

The second Zero Pollution Monitoring and Outlook[52] clearly demonstrates that progress on achieving clean air, clean water and clean soil is insufficient. Taking into account the new and revised legislation adopted over the past years, the focus of achieving these targets must be on implementation.

A. Water

Context: long-term goals and trends, key indicators and key legislation in this area

The protection of water resources and dependent ecosystems, as well as the availability of a clean water supply, are fundamental to human life, the economy (water supports all economic sectors) and the environment. EU water policy is comprehensive: it covers water quality and quantity, and it lays down obligations for competent authorities and the water industry.[53] The European Water Resilience Strategy[54] builds on the strength of the existing policy and develops it to make the EU's economy, society and nature more resilient against water-related risks. Additionally, water resilience is a key component of the EU's competitiveness. A water-smart economy that maintains its cutting-edge water industry will allow the EU to achieve its environmental and economic ambitions while maintaining its strategic autonomy.

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50 See https://realtimeeconomy-bsr.eu.

51 Polish Journal of Laws of 2019, item 1579, as amended, available at https://dziennikustaw.gov.pl/DU/rok/2019/pozycja/1579

52 https://environment.ec.europa.eu/strategy/zero-pollution-action-plan/zero-pollution-targets_en.

53 See https://environment.ec.europa.eu/topics/water_en.

54 European Water Resilience Strategy, 4 June 2025, COM(2025)280.

The main EU laws in this area are the Water Framework Directive (WFD)[55] and its daughter directives on surface and groundwater, the Floods Directive,[56] the Water Reuse Regulation,[57] the Drinking Water Directive,[58] the Bathing Water Directive,[59] the Nitrates Directive,[60] the Urban Waste Water Treatment Directive[61] and the Marine Strategy Framework Directive (MSFD).[62] The evaluations carried out so far show that the Water Directives are broadly fit for purpose but require better implementation. The Drinking Water Directive and the Urban Wastewater Treatment Directive have been revised, in 2020 and 2024 respectively.

Every six years, Member States must report their river basin management plans (RBMPs) and their flood risk management plans (FRMPs) to the Commission. The Commission assessed the third cycle of RBMPs and the second cycle of FRMPs, covering the period 2022-2027, which were to be submitted by March 2022 and reported to the European Parliament and the Council in February 2025.[63]

Key figures at EU level

The state of EU water bodies has failed to significantly improve when looking at the aggregated figures. There are clearly positive reductions in certain pressures where Member States have increased their water expenditure or made significant progress in implementing other relevant legislation. For groundwaters bodies, a large majority has good quantitative and chemical status with a positive trend since the last reporting cycle (Figures 5 and 6 below). In contrast, surface waters are in a highly critical situation. Less than a half (39.5%) of the assessed EU surface water bodies is in good ecological status, and less than a third (26.8%) in good chemical status (Figures 3 and 4 below).[64]

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55 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327, 22.12.2000, p. 1-73.

56 Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks, OJ L 288, 6.11.2007, p. 27-34.

57 Regulation (EU) 2020/741 of the European Parliament and of the Council of 25 May 2020 on minimum requirements for water reuse, OJ L 177, 5.6.2020, p. 32-55.

58 Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast), OJ L 435, 23.12.2020, p. 1-62.

59 Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, OJ L 64, 4.3.2006, p. 37-51.

60 Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources, OJ L 375, 31.12.1991, p. 1-8.

61 Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment, OJ L 135, 30.5.1991, p. 40-52.

62 Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), OJ L 164, 25.6.2008, p. 19-40.

63 See https://environment.ec.europa.eu/topics/water/water-framework-directive/implementation-reports_en.

64 "Report from the Commission to the Council and the European Parliament on the implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC), Third river basin management plans and Second flood risk management plans", document COM(2025) 2 final, 4.2.2025.

Figure 3: Change in the ecological status of EU surface water bodies from the first, second and third RBMPs (respectively 2009, 2015, 2022)

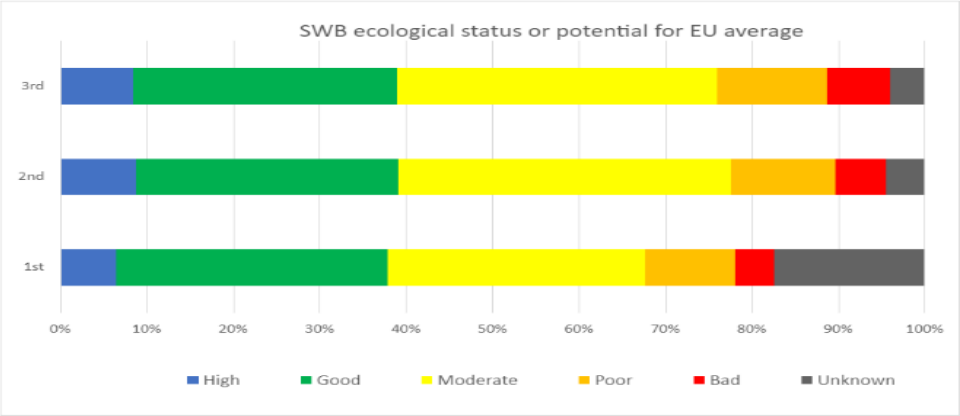


Figure 4: Change in the chemical status of EU surface water bodies from the first, second and third RBMPs (respectively 2009, 2015, 2022)

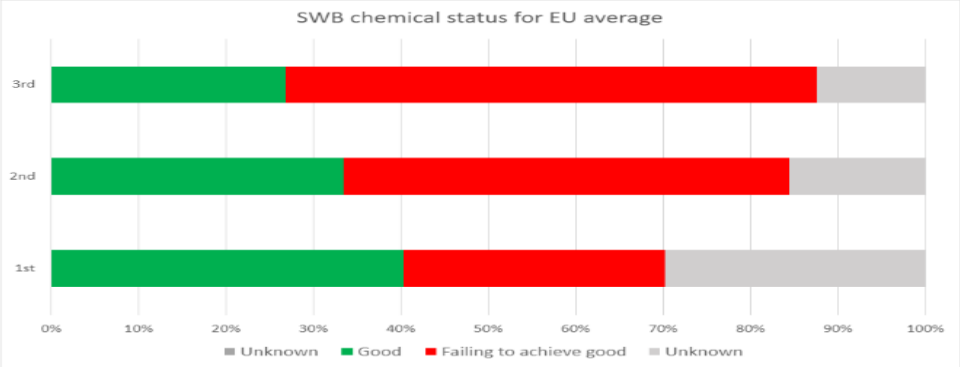


Figure 5: Change in the quantitative status of EU groundwater bodies from the first, second and third RBMPs (respectively 2009, 2015, 2022)

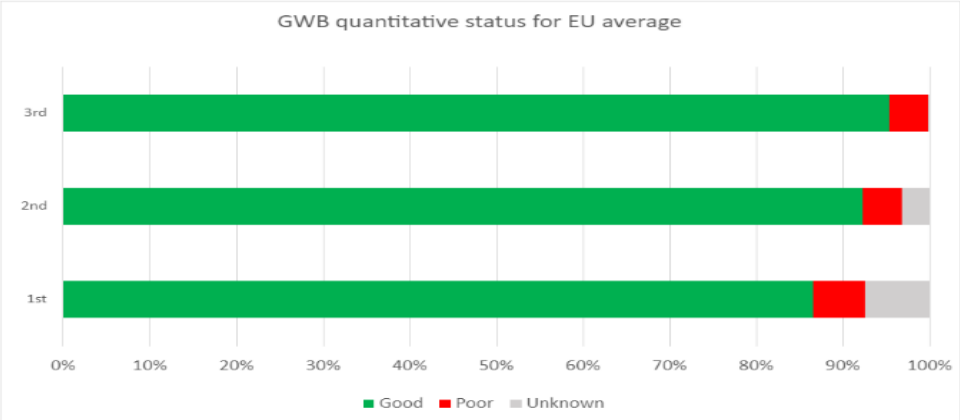
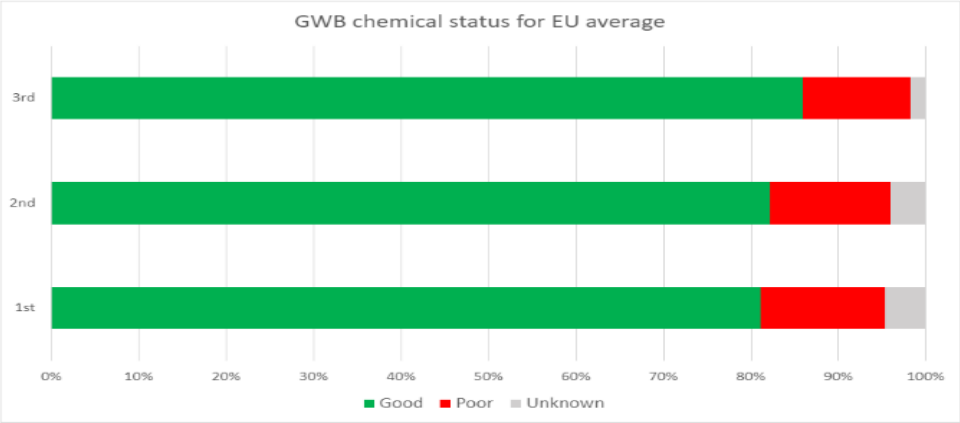


Figure 6: Change in the chemical status assessment of EU groundwater bodies from the first, second and third RBMPs.



Key findings

- The Commission report on the third RBMPs covers 20 Member States, as the other seven Member States did not report on time. Nonetheless, the report covers around 90% of the EU's surface water and groundwater bodies (or approximately 97 000 surface water bodies and 15 000 groundwater bodies).

- Member States' knowledge of the state of water bodies has increased, including improvements in the geographic coverage of monitoring systems, in the number of biological and chemical water-quality elements covered, and in the number of priority substances monitored. Nevertheless, there are great differences in Member States' practices and major gaps in ecological status monitoring remain.

- The low percentage of surface water bodies in good chemical status (less than 30%) is largely due to "ubiquitous persistent, bioaccumulative and toxic" substances (uPBTs), without which 81% of surface waterbodies would have reached good chemical status.

- It is clear from Member States' forecasts that full compliance with the WFD's objectives by 2027 will not be achieved with the programme of measures set out in the third RBMPs. Member States should thus increase their ambition level and accelerate action to reduce the compliance gap. Tackling the significant funding gaps and better integrating water in other relevant policies will be particularly crucial. Member States should also put in place additional measures to reduce existing persistent environmental pressures based on robust gap analyses in particular to reduce pollution from nutrients and pesticides, to improve river continuity and hydromorphological conditions, tackle legal and illegal over-abstractions and promote water efficiency.

- All Member States, at different levels, face problems with nutrients pollution, including from agriculture. They should step up their efforts to further reduce nitrate pollution from agriculture in groundwater and eutrophication by including appropriate measures in their action plans, ensuring that nitrate-vulnerable zones are correctly and timely designated.

- Despite some progress, urban wastewater is still not collected and treated as it should in many Member States, and most of them face infringement proceedings[65] while some are paying financial penalties.[66] Progress depends on Member States prioritising investments for wastewater collecting systems and treatment plants, including through cohesion policy funding and European Investment Bank loans. The Urban Wastewater Treatment Directive was revised in 2024 to strengthen existing treatment standards and establish a new additional treatment of micropollutants in urban wastewater. Other new requirements relate to moving towards energy neutrality of the sector; establishing an Extended Producer Responsibility system to ensure sustainable financing of micropollutant treatment by the most polluting industries; and ensuring access to sanitation, especially for vulnerable and marginalised groups. Finally, Member States will have to ensure that a wide range of PFAS are monitored in urban wastewater discharged in catchment areas of water bodies used for abstraction of drinking water. Transposition should be completed by 31 July 2027.

- There has been a notable improvement in flood risk management, compared to the previous cycle. All Member States have set flood risk management objectives and more Member States provide a clear link between these objectives and the implementing measures. However, only few flood risk management plans report progress made against the objectives, making difficult to conclude on the effectiveness of the plans. Climate change impact is better considered through modelling and scenarios, with a higher number of identified areas of risk.

- Overall, the Bathing Water Directive shows high rates of excellent or good performance in the EU.

- The recast Drinking Water Directive is now in force, although some Member States lag behind in terms of transposition.[67] In this field, the Commission adopted delegated and implementing acts[68] to implement the Directive, in particular to establish an EU system for testing and approving materials that will be allowed to be in contact with drinking water. On PFAS, the Commission provided Member States with supporting technical guidelines on monitoring methods in drinking water. From January 2026, harmonised PFAS quality standards will apply. Due to evolving scientific knowledge on human health effects, the Commission also engaged with the World Health Organisation to determine updated health-based PFAS values for drinking water by the end of 2026.[69]

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65 Infringement procedures for bad application of the UWWTD are currently ongoing for 18 Member States: ES, PT, IT, IE, EL, SE, FR, EE, CZ, LT, SI, SK, HU, BG, PL, MT, RO, CY.

66 EL, ES and IT.

67 Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption (recast), OJ L 435, 23.12.2020, p. 1-62.

68 Drinking water - European Commission

69 Exposure to PFAS increases the risks of adverse health effects, such as impacts on the thyroid gland, the liver, fat metabolism and the immune system. Studies on the socioeconomic costs resulting from impacts on human health and the environment from the use of PFAS indicate that the costs are substantial. Annual health-related costs are estimated at EUR 52-84 billion for all EEA countries. See Goldenman, Fernandes, Holland, Tugran, Nordin, Schoumacher and McNeill, "The costs of inaction – a socioeconomic analysis of environmental and health impacts linked to exposure to PFAS", 2019.

- The progress on the MSFD appears in the country reports in the biodiversity chapter as action taken to reduce pollution or protect the marine environment ultimately lead to the health and resilience of marine species and their habitats. Since the 2022 EIR, the Commission looked into the level of adequacy of the updated Programme of Measures in Member States' marine strategies to reach the objective of the MSFD, which is to maintain or achieve good environmental status of EU marine waters.[70]

Examples of good practices

- Luxembourg's third RBMPs focus on reducing pressures from morphological alterations through mitigating and compensatory measures, to better regulate and ensure appropriate ecological flow regimes. For example, the renaturalisation of the river Pétrusse, co-funded by the EIB, will help reduce flood risks, increase biodiversity and contribute to climate change adaptation.

- Czechia's Strategic Plan for the Common Agricultural Policy pays attention to improving water quality. This includes incentivising farmers to apply wide buffer strips for pesticides around water courses and increasing organic farming from 16% (above the EU average of ca 10% in 2021) to 21.3% of agricultural land in 2030 (the EU Green Deal target being 25%).

B. Air and noise

Context: long-term goals and trends, key indicators, and key legislation in this area

Air and noise pollution has serious impacts on human health and the environment. They are main sources of environmental pollution which contributes to at least 10% of annual premature deaths in the EU mainly through posing significant health risks, including respiratory and cardiovascular diseases.[71] Air pollution also affects physical exercise, a key determinants of health. On one side, air pollution discourages outdoor physical exercise.[72] On the other side, outdoor physical exercise despite air pollution may cause harmful effects.[73]

The clean air legislation in force lays down two main types of obligations targeting air pollutants to reduce air pollution.

- First, there are health-based standards for air pollutant concentrations in ambient air.[74] These apply to particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide (NO_2), sulphur dioxide (SO_2), benzene, carbon monoxide (CO), lead (Pb), arsenic (As), cadmium (Cd), nickel (Ni), benzo(a)pyrene, and ozone.

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70 See also the MSFD evaluation dated 6.3.2025 at https://environment.ec.europa.eu/news/commission-evaluates-sea-protection-and-bathing-water-quality-laws-2025-03-06_en.

71 Premature deaths caused by environmental pollution | European zero pollution dashboards.

72 Tainio et al., "Air pollution, physical activity and health: A mapping review of the evidence", Environment International, 2021.

73 Münzel et al. "Running in polluted air is a two-edged sword — physical exercise in low air pollution areas is cardioprotective but detrimental for the heart in high air pollution areas", European Heart Journal, 2021.

74 Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast), OJ L, 2024/2881, 20.11.2024.

- Second, there are national emission reduction commitments for five air pollutants, namely sulphur dioxide (SO_2), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOC), ammonia (NH_3), and fine particulate matter ($PM_{2.5}$).[75]

The urban population, in particular, continues to be exposed to levels of air pollutants that are damaging to health.[76] Air pollution also negatively affects ecosystems, mainly through acidification, eutrophication, and oxidation from ground-level ozone, leading to biodiversity loss and reduced agricultural yields. Overall, people in the EU remain exposed to air pollutant concentrations that are considerably above the levels recommended by the World Health Organization (WHO). The European Environment Agency estimates that, in 2022, about 239 000 annual deaths in the EU-27 were attributable to exposure to $PM_{2.5}$ above WHO air quality guideline levels.[77]

The implementation of EU clean air policy has achieved significant air quality improvements: between 2005 and 2022, the number of deaths in the EU attributable to $PM_{2.5}$ fell by 45%, thus moving closer to achieving the 55% reduction target outlined in the zero pollution action plan for 2030.[78] Nevertheless, in many Member States, exceedances of limit values for air pollutants under the Ambient Air Quality Directive (AAQD) or failures to reach the emission reduction commitments set out in the NEC Directive remain and are closely monitored by the Commission.

Environmental noise is the second major cause of adverse environmental health impacts after air pollution, leading to 27 000 new cases of heart disease and 4.5 million people suffering from a highly disturbed sleep per year in the EU-27.[79] Member States would need to step up efforts to reach the 2030 target on noise[80]. The Environmental Noise Directive[81] seeks to protect human health by requiring Member States to assess noise levels and to adopt action plans with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health.

75 Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC, OJ L 344, 17.12.2016, p. 1-31.

76 EEA, "Europe's air quality status 2024".

77 WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide.

78 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "Pathway to a Healthy Planet for All – EU Action Plan: Towards Zero Pollution for Air, Water and Soil", 12.5.2021, document COM/2021/400 final.

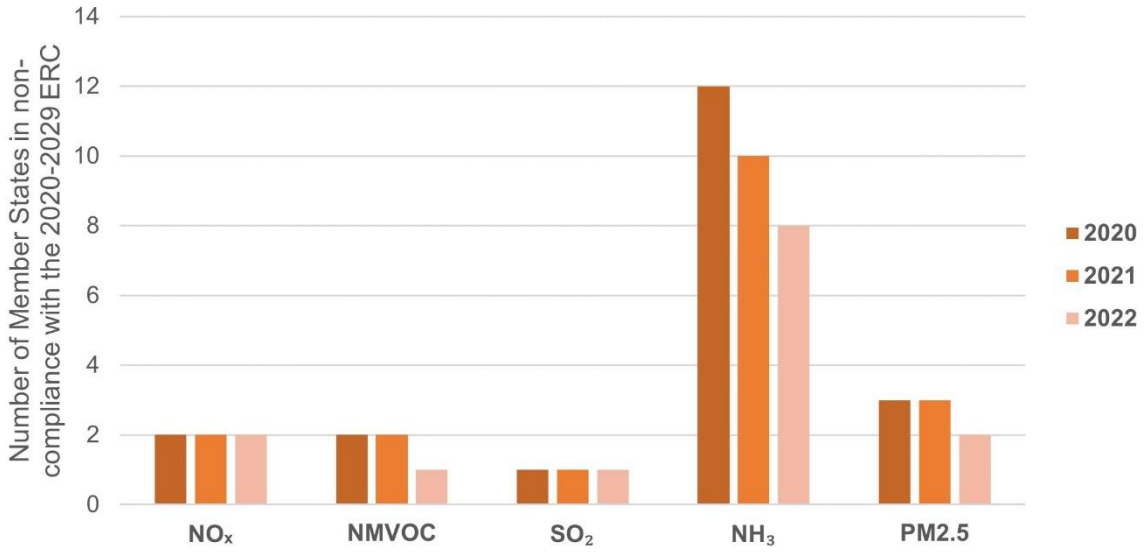
79 EEA, "Health risks caused by environmental noise in Europe", 2020.

80 https://environment.ec.europa.eu/strategy/zero-pollution-action-plan/zero-pollution-targets_en.

81 Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise, OJ L 189, 18.7.2002, p. 12-25.

Key figures at EU level

Figure 7: Member States in non-compliance with the respective NEC Directive's 2020 - 2029 emission reduction commitments in 2020-2022



Key findings

- Despite improvements, air pollution is still a major health concern in the EU. Where air quality limit values have persistently been exceeded, the Commission has consistently opened infringement proceedings for key pollutants, such as PM and NO_2.[82] In many cases, the Court of Justice has already issued judgments requiring Member States to take remedial action.[83]

- Member States need to fulfil air quality monitoring requirements in a systematic and consistent way to better inform clean air and biodiversity policies at EU and national level.

- Over the years, Member States have reduced emissions of the main air pollutants, though at different paces depending on the type of pollutant and sector. In particular, emission reduction commitments for NH_3, primarily stemming from agriculture, require further efforts as eight Member States did not meet their commitment in 2022.[84] Achieving compliance requires measures such as introducing low-emission agricultural techniques, including for livestock, manure, and fertiliser management. Four Member States do not meet one or several emission reduction commitments related to NO_x[85], $PM_{2.5}$[86] NMVOC[87] and SO_2[88] in 2022.

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82 Open infringements procedures over PM_{10} exceedances for BG, CZ, HR, FR, EL, HU, IT, PL, RO, SK, SI, ES, SE; open infringement procedures over $PM_{2.5}$ exceedances for IT and HR; open infringement procedures over NO_2 exceedances for BE, DE, FR, EL, ES, IT, PL, PT, and RO.

83 CJEU rulings over particulate matter exceedances for BG, PL, RO, IT, HU, FR, SK, EL; CJEU rulings over NO_2 exceedances for FR, DE, IT, ES, EL and PT.

84 Member States that are non-compliant with the NEC Directive's emission reduction commitments for NH_3 according to the 2024 inventory review: AT, BG, HU, IE, LT, LV, PT, SE.

85 For NO_x: LT, RO.

- There has been an improvement in the adoption of maps and action plans under the Environmental Noise Directive, but they are still lacking in several Member States that are subject to infringement proceedings[89], some of which have been referred to the CJEU.

Examples of good practices

- Ireland has made use of the TAIEX-EIR tool to organise a multi-country workshop on measures to reduce air pollution from transport and residential energy which allowed for exchanges of good practices, including on communication.[90]

- Romania carried out a TAIEX-EIR workshop on good practices on noise abatement measures and noise mapping to learn from other Member States and to provide examples of good practices regarding the implementation of noise abatement measures and noise mapping for road traffic, railway traffic, airport traffic and industrial sites.[91]

C. Industrial emissions and chemicals

Context: long-term goals and trends, key indicators, and key legislation in this area

Four key components of EU policy and legislation on industrial emissions and chemicals can be identified.

First, the industrial emissions directive (IED)[92] is the main EU instrument to reduce emissions into air, water and land from large industrial installations and intensive livestock farms (pig and poultry). Under the IED, permits are granted to the concerned installations and farms by national permitting authorities, based on best available techniques (BAT) which are the most environmentally effective and economically and technically viable for the prevention and control of emissions.

The IED was revised in 2024, setting higher ambitions to achieve the EU zero pollution objective. The new IED aims to (i) protect air, water, and soil, preventing harmful effects on human health and the environment; (ii) prevent waste generation and promote circular economy; (iii) improve energy and resource efficiency; and (iv) contribute to decarbonisation. It also lays down strengthened provisions on penalties.

Second, the Seveso Directive on the prevention of major industrial accidents (Directive 2012/18/EU or Seveso III directive)[93] aims to (i) control major-accident hazards involving dangerous substances, especially chemicals; (ii) limit their consequences on human health

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86 For $PM_{2.5}$: HU, RO.

87 For NMVOC: LT.

88 For SO2: CY.

89 Infringement procedures for bad application of the Environmental Noise Directive are currently open for BG, DE, EL, ES, FR, HU, PL, PT, RO, SI, and SK.

90 https://webgate.ec.europa.eu/TMSWebRestrict/resources/js/app/#/library/detail/85767?hasBackBtn=false.

91 https://webgate.ec.europa.eu/TMSWebRestrict/resources/js/app/#/library/detail/81665?hasBackBtn=false.

92 Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (recast), OJ L 334, 17.12.2010, p. 17-119.

93 Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC, OJ L 197, 24.7.2012, p. 1-37.

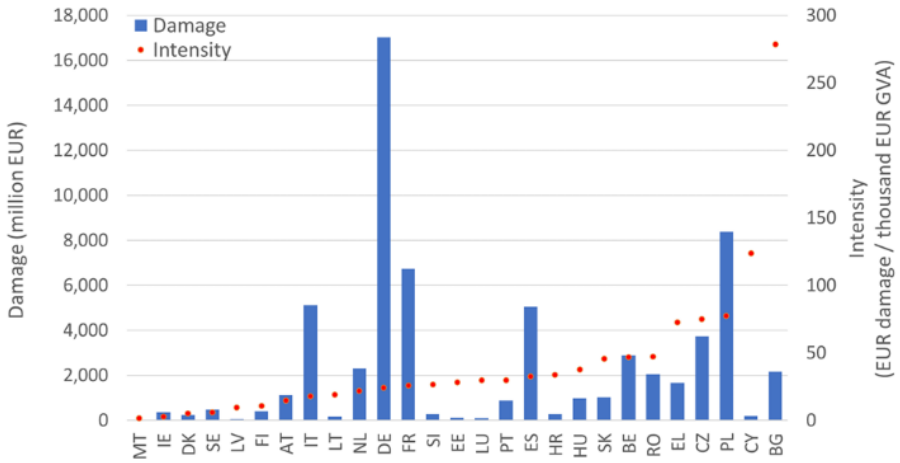
and the environment; (iii) improve the prevention of, preparedness for and response to major accidents.

Third, the Mercury Regulation[94] establishes measures and conditions concerning the use and storage of and trade in mercury, mercury compounds and mixtures of mercury, the manufacture and use of and trade in mercury-added products and the management of mercury waste. The 2024 revision of the regulation sets out rules to address the last intentional uses of mercury in the EU[95].

Fourth, in the field of chemicals, the REACH[96] and CLP[97] regulations create a comprehensive framework for sound chemicals management through bans, restrictive measures, and product-related obligations.[98]

Key figures at EU level

Figure 8: Industrial air pollution damage and intensity (2021)



94 Regulation (EU) 2024/1849 of the European Parliament and of the Council of 13 June 2024 amending Regulation (EU) 2017/852 on mercury as regards dental amalgam and other mercury-added products subject to export, import and manufacturing restrictions, OJ L, 2024/1849, 10.7.2024.

95 By phasing out the use of dental amalgam by 1 January 2025 and prohibiting the manufacture and export of additional mercury-containing lamps from 1 January 2026 or 1 January 2028 (depending on the lamp category).

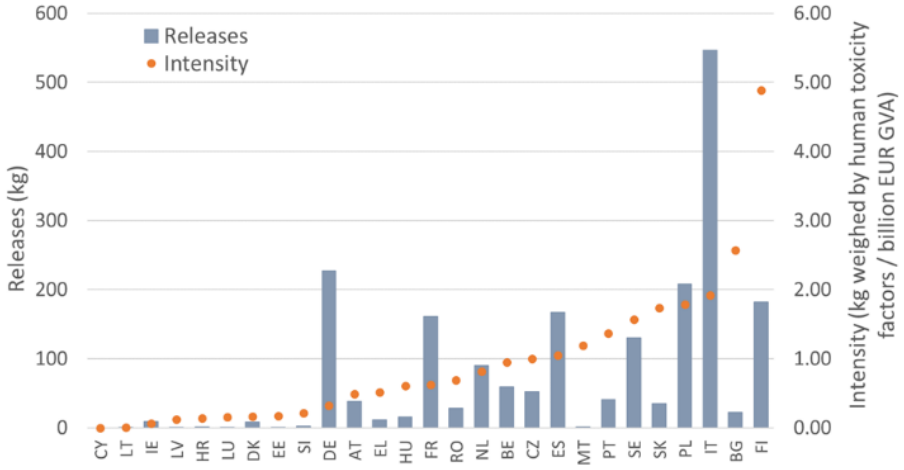
96 Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, OJ L 396, 30/12/2006, p. 1-849.

97 Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, OJ L 353, 31.12.2008, p. 1-1355.

98 Such as obligations on information requirements (tests to be performed on substances), self-classification for hazards, recommended risk management measures and operating conditions for substances and mixtures.

Source: EEA, 2024, EU large industry air pollution damage costs intensity

Figure 9: Industrial releases and intensity of heavy metals to water (2022)



Source: EEA, 2024, EU large industry water pollution intensity

Key findings

- According to the European Industrial Emissions Portal,[99] between 2012 and 2021, industrial air emissions caused an estimated damage of between EUR 2.7 to EUR 4.3 trillion, averaging between EUR 268 to EUR 428 billion per year.[100] Over the same period, damages caused by air pollution from industry decreased by nearly 35%, although they rebounded after a drop in 2020. Most of the decrease in the last decade occurred in the energy sector, driven by the successful implementation of best available techniques (BAT) and a shift to less polluting and carbon-intensive fuels.

- A small number of facilities remain responsible for 50% of the damage caused by the main air pollutants. Almost half of the 50 most polluting facilities in 2021 were lignite or hard coal thermal power stations, most of them located in Germany and Poland.

- Overall, the industrial emissions to water in the EU have decreased over time for all the main pollutants. On average in the EU, they appear to be decoupled from industrial activity which has increased over the same period.

- The Seveso Directive, covering around 12 000 industrial plants, has helped to lower the frequency of major accidents and is widely considered as a benchmark for industrial accident policy and a model for legislation in many countries worldwide.

- To secure the full benefits of this legislation, the Commission launched infringement proceedings against several Member States for failure to correctly transpose the Industrial Emissions Directive[101] and the Seveso III Directive[102].

99 European Industrial Emissions Portal.

100 European Environment Agency, "The costs to health and the environment from industrial air pollution in Europe – 2024 update".

101 Among those, cases are still open with regard to AT, CZ, DE, HR, IE, PL, and PT.

- The data shows relatively high levels of non-compliance with the REACH and CLP obligations.[103] Preliminary findings point to the lack of proper updating of the safety data sheets, circulated in supply chains to ensure proper information of the operators and guarantee proper management of chemicals. Moreover, findings show that authorisation decisions derogating from bans of substances were often not fully respected, as regard the operating conditions and risks management measures. Finally, many cases of non-compliance relate to substances and mixtures sold on the internet.

Examples of good practices

- There are several successful practices related to the use of digital tools to reduce administrative burden under the IED. Belgium (Flanders) has developed e-permitting for IED installations. Finland developed digital tool addressing requirements on the management of chemicals in IED installations. The Netherlands developed several electronic tools for simplification of pollution reporting and permitting of livestock farms (e.g. Permit Check, a tool that shows for which activities one needs to apply for a permit).

- There are also examples of progressive regulation (or preparation of regulatory measures) of emerging pollutants. Starting from 2024, per- and polyfluorinated hydrocarbons (PFAS) in releases to water from industry are monitored and reported in Czechia. The obligation concerns the total amount discharged for 20 PFASs. In 2023, France launched an action plan targeting PFAS pollution. This includes a measurement campaign for emissions of 20 PFAS to water from 31 industrial sectors and for emissions of 49 PFAS to air from waste incineration.

3. Nature and biodiversity

Context: long-term goals and trends, key indicators and key legislation in this area

Biodiversity and healthy ecosystems underpin our well-being, economy and capacity to mitigate and adapt to climate change. The Kunming-Montreal Global Biodiversity Framework (GBF), agreed under the Convention on Biological Diversity (CBD), aims to steer global action to protect and restore biodiversity and secure its benefits for people. By the end of 2024, every CBD Party, including the EU and all Member States, had to adopt a national biodiversity strategy or action plan (NBSAP) and to submit national targets to implement the GBF.

The EU Biodiversity Strategy for 2030[104] is the main policy instrument for the EU to deliver on its obligations under the GBF. It sets EU level targets to protect and restore ecosystems and ensure their sustainable use, as well as enabling measures to ensure implementation and support global biodiversity.

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102 AT, BG, CZ, DE, EE, FI, FR, HR, HU, LT, PL, PT, SK.

103 Forum for Exchange of Information on Enforcement of the European Chemicals Agency.

104 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "EU Biodiversity Strategy for 2030 Bringing nature back into our lives", 20.5.2020, document COM/2020/380 final.

The strategy estimates the biodiversity financing needs for its implementation at EUR 20 billion/year, to be mobilised from public and private sources at national and EU level. The EU aims to allocate to biodiversity objectives at least 7.5 % of annual spending under the EU budget in 2024, rising to 10 % in 2026 and 2027.

The strategy further calls on Member States to better integrate biodiversity considerations into public and business decision-making at all levels and to develop natural capital accounting. Regulation (EU) 2024/3024[105] introduces new ecosystem accounting modules that will bring better data on ecosystem extent, condition and services as of 2026. The EU Business & Biodiversity (B&B) Platform supports businesses and financial institutions to integrate nature and biodiversity into their decision making.

The Biodiversity Strategy is complemented by the EU Soil Strategy for 2030[106] and EU Forest Strategy for 2030[107] both of which outlined a framework and concrete measures to protect and restore soils and forests and ensure that they are used sustainably and enhance their role in tackling climate change and biodiversity loss. Both also envisaged legislation to improve forest and soil monitoring. The Soil Monitoring Law is now subject to final interinstitutional negotiations.

The Birds and Habitats Directives,[108] and the EU Nature Restoration Regulation (NRR)[109] are the key legal instruments to maintain and restore biodiversity in the European territory of the Member States.

The Birds and Habitats Directives have brought about a significant increase of protected areas on land and at sea. The Natura 2000 network, with its site selection process based on scientific information, a biogeographical approach beyond national boundaries, and its vision as a coherent trans-national network of sites, is more effective than purely national approaches. It also allows the EU to be on track towards achieving the Global Biodiversity Framework targets of 30% of land and sea legally protected. The directives establish the objective of favourable conservation status while leaving Member States with significant flexibility to choose amongst a variety of possible measures, mechanisms and procedures to achieve that goal and to address emerging challenges such as climate change.

In line with the EU Biodiversity Strategy, the EU Nature Restoration Regulation (NRR), adopted in 2024, aims to put in place effective restoration measures on 20% of EU land and

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105 Regulation (EU) 2024/3024 of the European Parliament and of the Council of 27 November 2024 amending Regulation (EU) No 691/2011 as regards introducing new environmental economic account modules, OJ L, 2024/3024, 6.12.2024.

106 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Soil Strategy for 2030 Reaping the benefits of healthy soils for people, food, nature and climate, document COM/2021/699 final.

107 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, New EU Forest Strategy for 2030, document COM/2021/572 final.

108 Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Codified version), OJ L 20, 26.1.2010, p. 7–25., Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, 22.7.1992, p. 7-50.

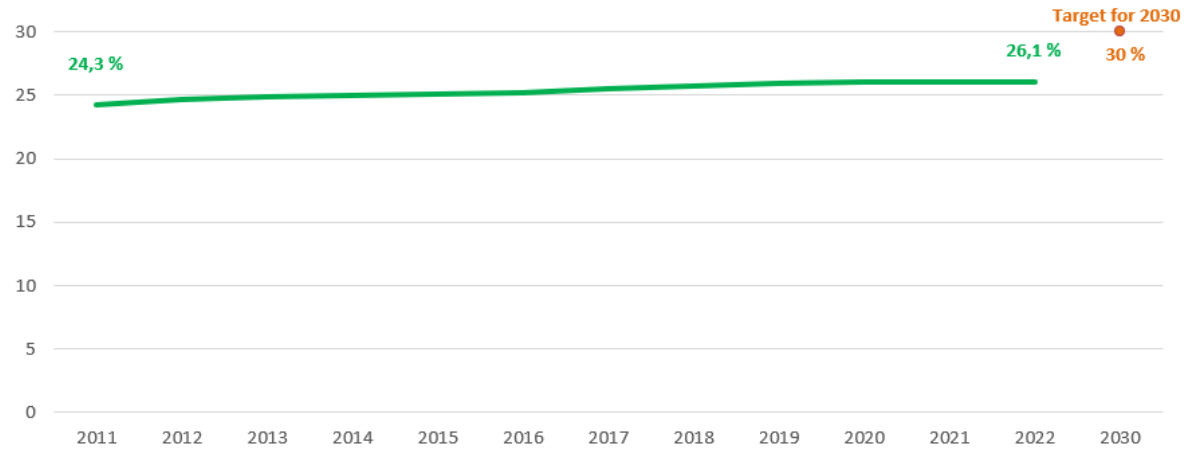
109 Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on nature restoration and amending Regulation (EU) 2022/869, OJ L, 2024/1991, 29.7.2024.

sea areas by 2030. Member States have until September 2026 to submit draft national restoration plans, quantifying the areas to be restored and detailing the measures to be undertaken to meet the targets and fulfil the obligations set out in the NRR, including the estimated financing needs and the means of intended financing. The Commission encourages Member States to advance preparatory work drawing on best available knowledge, in an inclusive process involving all relevant stakeholders and, where relevant, fostering synergies with other Member States and with existing regional cooperation structures.

Finally, the Invasive Alien Species (IAS) Regulation[110] lists, at present, 88 IAS that inflict major damage to biodiversity and the economy. Under the Regulation, Member States are required to take measures to prevent the introduction of IAS, ensure their early detection and rapid eradication, and manage species that are already widespread on their territory. In line with Article 24(1) of the IAS Regulation, Member States must report to the Commission on the implementation of the regulation by 1 June 2025.

Key figures at EU level

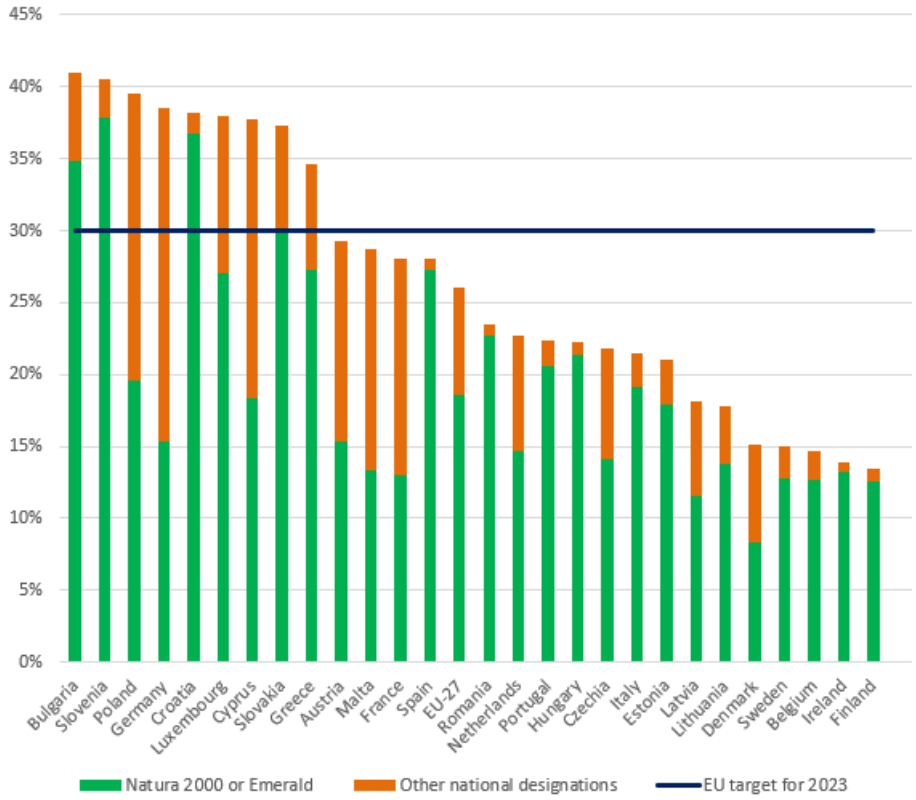
Figure 10 – Coverage of terrestrial protected areas in the EU-27



Source: Terrestrial protected areas in Europe | European Environment Agency's home page

[110] Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species, OJ L 317, 4.11.2014, p. 35-55.

Figure 11 – Terrestrial protected area coverage by country and in the EU-27 by end of 2022



Source: Terrestrial protected areas in Europe | European Environment Agency's home page

Key findings

- The Birds and Habitats directives have brought about significant improvements in the legal protection of many species that were subject to intentional persecution or unsustainable levels of hunting. Many previously threatened mammal and bird species (including large carnivores, seals, otters and beavers, storks, cranes, herons and most birds of prey) have significantly recovered due to their legal protection by the directives. In some cases, this may have led to coexistence challenges that are being addressed.

- Generally speaking, however, biodiversity loss still prevails over recoveries. Further steps are needed to prevent nature degradation due to land use changes and agricultural intensification. There is an urgent need to increase the protection of those habitats in the worst conservation status, namely grasslands, dunes, peatlands and wetlands as well as aquatic habitats.

- In particular, all Member States – at all levels – should focus on achieving the following objectives: (a) further improving the management of Natura 2000 sites and nationally protected areas; (b) extending the coverage of protected areas (including Natura 2000 sites) so as to achieve a more robust and coherent Trans-European nature network; (c) stepping up investments in nature restoration and to prepare National Restoration Plans; and (d) strengthening capacity of inspecting authorities and enforcement on invasive alien species.

- On the GBF implementation and NBSAPs, to date, only 11 Member States have adopted NBSAPs (Austria, Cyprus, Denmark, France, Hungary, Ireland, Italy, Luxembourg,

Malta, Spain and Slovenia). Several (Croatia, Czechia, Finland and Sweden) have only submitted national targets, some of them in draft form. The Commission calls on all Member States that have not yet done so to adopt NBSAPs and to submit national targets as soon as possible, in line with CBD Decision 15/6 on "Mechanisms for planning, monitoring, reporting and review", and to engage in their urgent implementation.

- On biodiversity finance, estimates of financing for biodiversity programmed by Member States under EU funding instruments indicate that the EU is close to achieving the biodiversity spending target of 7.5% for 2024. However, there are significant variations in the uptake of biodiversity financing across EU countries and EU funding instruments. Furthermore, estimates indicate that the EU will fall significantly below the biodiversity financing target for 2026 and 2027. Member States are strongly encouraged to explore further opportunities for mobilising EU financing for biodiversity, and to ensure the full uptake of programmed financing avoiding late re-allocation to other objectives.

Examples of good practices

- Under the EU Recovery and Resilience Facility, Ireland allocated EUR 108 million to support biodiversity and ecosystems by restoring wetlands and shifting land use from peat extraction to carbon sequestration.[111]

- The pilot programme "Blooming Meadows" (2023–2026) under LIFE IP "LatviaNature" supports landowners in managing perennial grasslands to enhance biodiversity and help them qualify as EU-protected habitats of Community Importance. Targeting biologically valuable grasslands where natural characteristics are returning, the initiative offers consultations, expert guidance, and financial aid. Achieving protected habitat status makes landowners eligible for continuous support through CAP funding. This programme exemplifies effective voluntary conservation on private land.

4. Climate action

Context: long-term goals and trends, key indicators and key legislation in this area

The pace of anthropogenic global warming continues to accelerate and is impacting all regions of the world, with Europe warming twice as fast as the global average.[112] To limit warming to the 1.5 °C Paris Agreement temperature target, secure a liveable future for all, and avoid the worst impacts of climate change, global greenhouse gas emissions should fall by 43% below 2019 levels by 2030 and by 84% by 2050.[113] Climate change makes extreme events, including deadly heatwaves, extreme rainfall, hurricanes, forest fires and droughts more frequent and intense.[114] After 60 000 to 70 000 heat-related deaths in Europe in 2022,[115] [116] heatwaves in 2023 killed nearly 50 000 Europeans.[117] Moreover, climate policy is

111 Investment measure 1.6, "Enhanced rehabilitation of 33,000 hectares of peatlands" (2021-2026).

112 Copernicus, European State of the Climate: Summary 2023, 2024.

113 IPCC, Climate Change 2023: Synthesis Report - Summary for Policymakers, IPCC, Geneva, 2023.

114 EEA, European Climate Risk Assessment (EUCRA) report, 2024.

115 Ballester J. et al., "Heat-related mortality in Europe during the summer of 2022", Nature Medicine, No 29, 1857-1866, 2023.

116 Commission Communication on managing climate risks, March 2024.

closely related to sustainable resource use, pollution reduction, and biodiversity conservation. All three are important factors of climate mitigation and climate adaptation. For instance, climate change is one of the main causes of biodiversity loss while nature restoration is essential to adapt to climate change and increase the resilience of our society.

For the EU to contribute to global efforts, the 2021 European Climate Law[118] sets a binding target of achieving climate neutrality by 2050 and reducing its net greenhouse gas emissions by at least 55% by 2030 compared to 1990.

To this end, the EU has put in place a comprehensive framework of new and enhanced policies and measures, known as the "Fit for 55 package." The package seeks to accelerate emissions reductions in the sectors covered by the EU emissions trading system (EU ETS) and those covered by the Effort Sharing Regulation, and to increase carbon removals in the land use, land use change and forestry (LULUCF) sector. The Parliament and Council have now adopted all the proposals in the package, except the Revision of the Energy Taxation Directive,[119] so that EU policies are now aligned with the abovementioned 2030 target. The focus is currently on their implementation, which will enable the EU and its Member States to reduce by 2030 net GHG emissions by at least 55% compared to 1990 levels,[120] and to make steady progress on adaptation to climate change.

In recent decades, the EU has reduced net emissions of greenhouse gases (GHG) while simultaneously fostering economic prosperity. In 2022, net GHG emissions had fallen by 31% compared to 1990 levels. With this, the EU continues its sharp decline in GHG emissions, marking an important step towards achieving a net 55% reduction by 2030. To close the remaining gap by 2030, it is essential that emissions reductions continue at a swift pace over the coming years. On the path to climate neutrality by 2050, the Commission proposed on 2 July 2025 to amend the European Climate Law by setting an intermediate 2040 climate target of 90%.

There is more information about climate policy implementation in the Climate Action Progress Report.[121]

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117 Gallo et al., "Heat-related mortality in Europe during 2023 and the role of adaptation in protecting health". Nature Medicine, 2024.

118 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'), OJ L 243, 9.7.2021, p. 1–17.

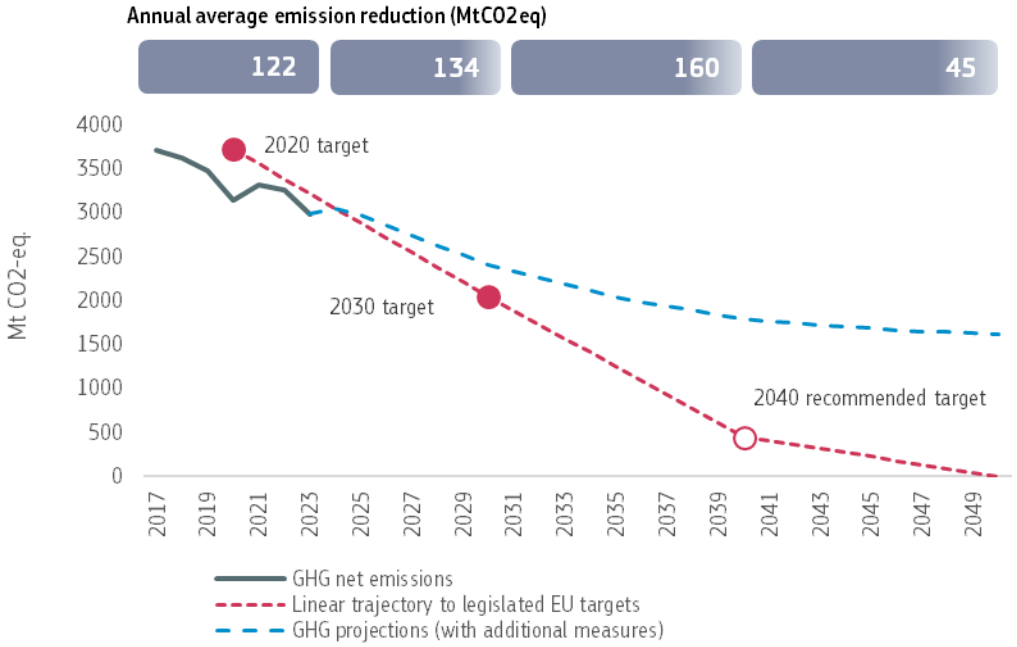
119 This includes the revised EU ETS Directive, a new ETS for buildings, road transport and fuels, the Market Stability Reserve, the Effort Sharing Regulation, CO_2 standards for cars and vans, the Land Use, Land Use Change and Forestry Regulation, the Carbon Border Adjustment Mechanism, the establishment of the Social Climate Fund, FuelEU Maritime, the Alternative Fuel Infrastructure Regulation (AFIR), ReFuel EU Aviation, the Energy Efficiency Directive and the Renewable Energy Directive. Only the proposed revised energy taxation directive is still pending agreement.

120 The legislation as adopted is estimated to result in a net domestic reduction of GHG emissions of 57% by 2030 compared to 1990.

121 Climate Action Progress Report.

Key figures at EU level

Figure 12: EU GHG net emissions, projections and targets



Key findings

- Several Member States have difficulties with the implementation of emission trading system for buildings, road transport and small industry (ETS2). 12 Member States haven't communicated the transposition[122] and 5 Member States communicated only partial transposition.[123]

- The Effort Sharing Regulation sets the EU-wide target to reduce emissions from the effort sharing sectors by 40% by 2030 compared with 2005 levels. The overall EU target is broken down into national GHG emission reduction targets for 2030 and annual GHG emissions limits for the Member States. In 2022, EU-wide emissions in the Effort Sharing Regulation sectors were 3.1% below the aggregated emissions limit, while emissions exceeded the annual emission allocations in eight Member States.[124]

- The LULUCF target is to increase land-based net removals in the EU by an additional -42 million tonnes of CO_2 equivalent ($MtCO_2$-eq) by 2030.[125] This will result in total net removal at the EU level of -310 $MtCO_2$-eq. Based upon data for two years within the compliance period 2021-2025 and excluding flexibilities available to Member States at the end of the compliance period, eight Member States showed accounting debits, meaning they may face challenges in meeting the commitment in 2025, with France,

[122] Bulgaria, Czechia, Estonia, Spain, France, Croatia, Hungary, Luxembourg, Latvia, Poland, Portugal, Romania.

[123] Belgium, Cyprus, Finland, Slovenia, Slovakia.

[124] Croatia, Cyprus, Hungary, Italy, Ireland, Lithuania, Malta, Romania

[125] As compared to the yearly average of net removals over the reference period 2016-2018.

Finland and Czechia showing the biggest debit.[126] In 19 Member States, the accounted removals are higher than accounted emissions, meaning they are in line with the 'no-debit' commitment, with Romania, Spain and Germany having the largest net credit in the EU.[127]

5. Governance

Context: long-term goals and trends and key legislation in this area

Environmental governance is a broad concept concerning Member States' activities regarding the integration of environmental considerations into decision-making, public participation, access to justice in environmental matters, sharing of environmental information, addressing environmental liabilities, and enforcement and deterrence at Member State level (through effective inspections, prosecutions and sanctions). EU-supported capacity-building activities can improve environmental governance in the Member States.

The Environmental Information Directive[128] is a key part of environmental governance. In addition, the INSPIRE directive[129] aims to set up a European spatial data infrastructure for sharing public environmental spatial data between public authorities and with businesses and the public. Most Member States[130] still need to make spatial data more widely accessible and prioritise environmental datasets in implementing the INSPIRE Directive, especially those identified as high value spatial datasets. As part of the GreenData4All initiative,[131] the Commission is currently conducting an evaluation of the INSPIRE Directive.

In light of the Competitiveness Compass[132] and the Clean Industrial Deal,[133] EU, national, and local institutions must make a major effort to produce simpler rules and to accelerate the speed of administrative procedures whilst maintaining environmental safeguards and protecting human health. National and local institutions are encouraged to make the most of the simplification possibilities available in the EU environmental legislation, notably combining environmental assessments and exploiting the full potential of digitalisation in permit granting.

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126 Member States with debits in decreasing order of magnitude: France, Finland, Czechia, Portugal, Slovenia, Estonia, Belgium and Cyprus.

127 Member States with credits in increasing order of magnitude: Malta, Luxembourg, Latvia, Netherlands, Slovakia, Croatia, Greece, Bulgaria, Poland, Lithuania, Italy, Austria, Ireland, Hungary, Sweden, Denmark, Germany, Spain, Romania.

128 Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC, OJ L 41, 14.2.2003, p. 26-32.

129 Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), OJ L 108, 25.4.2007, p. 1-14.

130 Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Lithuania, Latvia, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden.

131 https://wikis.ec.europa.eu/display/InspireMIG/Action+3.1+GreenData4all+initiative.

132 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a Competitiveness Compass for the EU. COM/2025/30 final.

133 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation. COM/2025/85 final.

The Environmental Impact Assessment (EIA) and the Strategic Environmental Assessment (SEA) Directives[134] are designed to identify potential significant environmental impacts of, respectively, new projects and plans/programmes before any decision is made. A key benefit of such assessments is that they increase transparency and social acceptance while facilitating sustainable solutions. Consultations with the public, environmental, local and regional authorities are key features of the assessment procedures. Ten Member States[135] face infringement cases on the transposition of the EIA Directive. Some Member States[136] have not provided sufficient information on the speed of EIA processes. And over half of the Member States[137] still need to ensure that relevant information on EIA and SEA procedures is provided in an adequate electronic format, in a timely manner, and at the appropriate administrative level.

Access to justice in environmental matters remains a priority for the Commission, even more so to facilitate the enforcement of recent environmental legislation.[138] The EU has made significant efforts to incorporate access to justice provisions in instruments such as the Urban Waste Water Directive,[139] the Ambient Air Quality Directive,[140] and the Deforestation Regulation.[141] Furthermore, the access to justice provisions in the IED have been strengthened in the revised IED.[142] Infringement procedures against Member States have also aimed at ensuring the uniform application of the access to justice case law of the Court of Justice of the EU.[143] However, there has been limited progress among Member States in improving access to justice, particularly concerning plans and programmes related to water, air, noise, and nature. Barriers that were identified in the 2022 EIR, such as the length of procedures or excessive costs, still persist in 19 Member States.[144]

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134 Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification), OJ L 26, 28.1.2012, p. 1-21; and Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, OJ L 197, 21.7.2001, p. 30-37.

135 Austria, Croatia, Denmark, Finland, France, Hungary, Ireland, Poland, Slovakia, Sweden.

136 Austria, Belgium, Czech, France, Germany, Ireland, Italy, Netherland, Portugal, Spain.

137 Austria, Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Poland, Portugal, Spain, Romania, Slovakia.

138 Commission, European Green Deal communication, 11.12.2019, document COM(2019)640 final.

139 Directive (EU) 2024/3019 of the European Parliament and of the Council of 27 November 2024 concerning urban wastewater treatment (recast), OJ L, 2024/3019, 12.12.2024.

140 Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe (recast), OJ L, 2024/2881, 20.11.2024.

141 Regulation 2023/1115/EU of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010, OJ L 150, 9.6.2023, p. 206–247.

142 Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (recast), OJ L 334, 17.12.2010, p. 17-119.

143 Austria, Bulgaria, Hungary, Malta, Netherlands, Poland, Slovakia, Slovenia

144 Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Finland, Germany, Hungary, Ireland, Italy, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

The relevant EU legal framework has been significantly improved by adopting new detailed provisions on inspections and penalties in several new or revised Union laws, such as the revised IED and Waste Shipment Regulation. It is crucial that Member States provide sufficient resources to their inspections and enforcement authorities and ensure specialisation.

To address the ever-growing rise and seriousness of environmental crime, the new Environmental Crime Directive (ECD), which replaces the previous ECD from 2008 (Directive 2008/99/EC), entered into force in May 2024.[145] The Member States are required to transpose the new ECD into national law by 21 May 2026 and are encouraged to take additional and more ambitious measures to strengthen the fight against environmental crimes, such as strenghening the enforcement chain and to more effectively combat environmental crime through better training, coordination, cooperation and strategic approaches.

The Environmental Liability Directive (ELD)[146] establishes a framework for environmental liability based on the polluter pays principle, to prevent and remedy environmental damage. The ELD objectives contribute to halting the loss of biodiversity and ensuring clean water and healthy soils. In April 2025 the Commission finalised the evaluation of the ELD, concluding that while the ELD has been effective in ensuring that all EU Member States have rules that address environmental damage, it is not evenly applied across Member States and it is underused in some of them.

Finally, to support environmental governance in the Member States, the Commission funds technical assistance and capacity-building. The Commission uses three main tools for this purpose: ComPAct, TSI, and the TAIEX-EIR peer to peer tool:

- The Commission's 2023 ComPAct initiative[147] assists public administrations and national authorities in the Member States in implementing reforms and anticipating future trends with specific actions implemented in 2025 and 2026. ComPAct promotes the use of the EIR to identify the root causes of inefficient implementation of environmental legislation and policy by the Member States, with a view to designing support measures to improve environmental governance.

- The Technical Support Instrument (TSI) is the main EU funding programme that provides tailor-made technical expertise to Member States to design and implement reforms.[148] The support provided is demand-driven and does not require co-financing from Member States. It is available to any Member State facing challenges in designing, developing and implementing reforms. This includes both reforms aiming to address EU priorities and reforms undertaken at the Member State's own initiative. Each year, Member States must submit their requests by 31 October. The Commission then approves the most urgent and highest quality requests within the contraint of its annual budget and resources. Since its

145 Directive 2024/1203/EU of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law and replacing Directives 2008/99/EC and 2009/123/EC, OJ L, 2024/1203, 30.4.2024.

146 Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, OJ L 143, 30.4.2004, p. 56-75.

147 Commission Communication, "Enhancing the European Administrative Space (ComPAct)", 25.10.2023, document COM/2023/667 final and https://reform-support.ec.europa.eu/public-administration-and-governance-coordination/enhancing-european-administrative-space-compact_en.

148 See TSI Regulation and TSI homepage.

inception, every single year, the demand largely outstripped the available budget and resources (the budget is EUR 864.4 million for the 2021-2027 period in current prices). The TSI has made a significant contribution to the implementation of environmental reforms. For instance, the TSI has supported projects on green budgeting, the implementation of the "Do No Significant Harm" principle in public finances, the preparation of national financing plans for biodiversity conservation, and removing environmentally harmful subsidies (EHS).

- The TAIEX-EIR peer-to-peer tool[149] provides a flexible, demand driven, quick to implement and tailor-made tool in supporting peer to peer exchanges between Member States' national, regional and local authorities implementing environmental policy and legislation. The peer learning activities build capacity and improve skills in national environmental authorities and help to share experience and good practices. The programme runs successfully with the involvement of all Member States and different levels of environmental authorities – from local to national – with around 100 TAIEX-EIR peer-to-peer events (workshops, study visits and expert missions) since 2017. Since 2022, the Commission has decided to organize multi-country strategic flagship workshops to present new or upcoming legislation to all Member States, with so far 19 multi-country workshops taking place (situation as of 3 April 2025).

Examples of good practices

- Romania has drawn up national guidelines for the preparation of EIA reports on hydropower projects.
- Spain has developed IT tools for risk analysis, which can be used to calculate the financial security and to monetise the costs of remediation measures under the ELD.

6. Financing

Context: long-term goals and trends, key indicators and key legislation in this area

To support sustainable competitiveness, it is essential that EU environmental legislation is fully implemented and properly funded. Most of the financing needs to be provided by Member States' public budget and private funds. However, EU funds (in particular cohesion policy, CAP and RRF) provide a considerable contribution[150] to steer implementation and help meet the EU's environmental investment needs, which are still significant.

The 2020 European Green Deal Investment Plan links environmental funding and investments and mobilises EUR 1 trillion in green investments (public and private) over the decade. It is backed by the 2021-2027 EU budget, including the multiannual financial framework (MFF) and further supported by the Recovery and Resilience Facility (RRF) since 2021. Currently, different programmes accounting to approximately half of the 2021-2027 EU budget (e.g. the Recovery and Resilience Facility, the Cohesion Policy funds, the

[149] See https://environment.ec.europa.eu/law-and-governance/environmental-implementation-review/peer-2-peer_en.

[150] EU funds are estimated to reach 20% of the total environmental financing from EU, national and private sources combined. Of this, 4.1% belongs to cohesion policy, 3.4% to CAP, 8.6% to RRF and 2.6% to EIB. Cohesion policy provides EUR 120 billion contribution to climate objectives and EUR 78 billion to environmental objectives during 2021-2027.

InvestEU Fund) include the 'Do No Significant Harm' (DNSH) principle with the aim of avoiding supporting activities that harm EU climate and environmental objectives.[151]

The EU Taxonomy of sustainable activities[152] and other sustainable finance initiatives (such as the Sustainable Finance Disclosure Regulation and the European Green Bonds Standard) have started to increase transparency, mainstream environmental considerations and are expected to redirect private capital flows towards the environmental objectives.

The Nature Restoration Regulation[153] will require the mobilisation of public and private financing, including innovative financing tools to close the gaps in biodiversity and ecosystems restoration.

The EIR continues to look into the investment needs of environmental implementation and to compare these with the resources made available, responding to the mandate given in the 2020 European Green Deal Investment Plan.

Key figures at EU level[154]

Table 2: Estimated breakdown of the EU's environmental investment gap

Environmental objective	Estimated investment gap (EU-27, per year)	
	EUR billion	% of total
Circular economy & waste	26.6	22%
Pollution prevention & control	35.6	29%
Water protection and management	22.4	18%
Biodiversity & ecosystems	37.4	31%
Total	**122.0**	**100%**

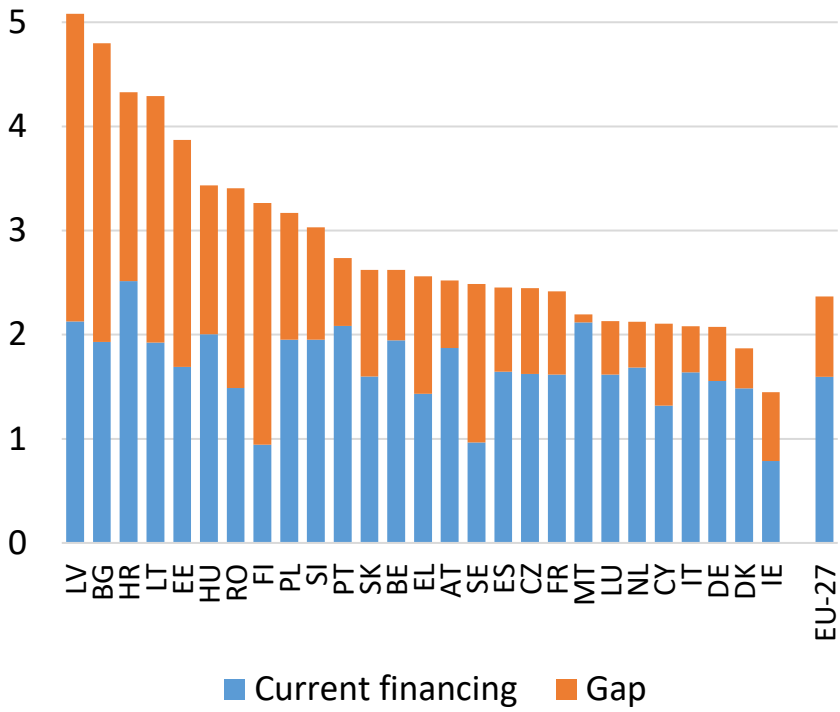
151 Beltran Miralles, M., Gourdon, T., Seigneur, I., Arranz Padilla, M. and Pickard Garcia, N., "The implementation of the 'Do No Significant Harm' principle in selected EU instruments", Publications Office of the European Union, Luxembourg, 2023, JRC135691.

152 Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment, Delegated Regulation (EU) 2021/2139 of 4 June 2021 (Climate Delegated Act), Delegated Regulation (EU) 2022/1214 of 9 March 2022 (Complementary Climate Delegated Act), Delegated Regulation (EU) 2023/2485 of 27 June 2023 amending the Climate Delegated Act, and Delegated Regulation (EU) 2023/2486 of 27 June 2023 (Environmental Delegated Act).

153 Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on nature restoration and amending Regulation (EU) 2022/869. See https://environment.ec.europa.eu/topics/nature-and-biodiversity/nature-restoration-regulation_en.

154 Source: DG Environment internal analysis, 2025.

Figure 13: Total environmental financing and investment gap in the EU27 (2021-2027, % of GDP)



Source: DG Environment calculations, 2025

Key findings

- The overall level of financing for environmental investments[155] (from national and EU sources combined) in 2021-2027 is estimated to be around 1.6% of GDP in the EU-27. This is higher compared to the EIR 2022 estimate (0.6-0.7% of GDP, for 2014-2020), mainly due to a significant increase in the circular economy baseline investments.[156] 17% of the estimated financing comes from EU funding across the EU-27.[157] In some countries over 50% (e.g. Greece, Romania, Bulgaria) or close to that (e.g. Croatia, Slovakia) comes from EU funding. As an EU-average, half of the total financing (50.2%) came from public sources (EU funds and national public sources combined), and in the case of nine countries the share of public funding is over two-thirds, demonstrating the importance of public financing sources.

- The EU-level annual environmental investment needs for the 2021-2027 programming period are estimated to be around 2.4% of GDP, indicating a considerable investment gap

[155] Green finance includes climate finance, but also financing of specific environmental objectives, such as industrial pollution control, water management and biodiversity protection. Given its scope, the EIR looks at these separately.

[156] Following Eurostat's revision of the CE private investment indicator (cei_cie012), that increased the baseline from ca. EUR 20 billion per year to ca. 120 billion per year (via a wider composition list), which also increases the total investment needs. Also note that a broader capture of the relevant EU funds also contributed to increases of the estimated financing level.

[157] With around 3% additional from EIB, putting the total EU contribution to around 20%.

(0.8% of GDP, amounting to EUR 122 billion per year), that needs to be addressed to ensure the implementation of the environmental priorities and to support the EU's green transition. The gap varies considerably across Member States, between 0.4% and 2.9% of GDP.[158]

- Almost half of the environmental investment gap relates to (the sum of) tackling pollution (29%) and protecting and managing our water bodies (18%). The annual biodiversity and ecosystems financing gap is around 31% of the total, reaching EUR 37 billion per year.[159] The investment gap for the circular economy and waste is estimated to be 22% of the total, amounting to at least EUR 27 billion per year.

- The additional investment needs (i.e. the investment gap) for climate mitigation (energy, transport) was estimated to be EUR 477 billion per year (in relation to 2030 targets) with additional EUR 35 billion per year for the REPowerEU, and additional (cumulative) EUR 92 billion in 2023-2030 for boosting the EU's net-zero manufacturing capacities.[160] Climate adaptation costs can also be significant, ranging from EUR 35-62 billion (narrower scope) to EUR 158-518 billion (wider scope) per year. The green investments allocated to energy and transport support significantly the environmental objectives, for example to make Europe's air cleaner or to help reduce environmental noise. However, they will not meet, for instance, the significant needs in water and waste infrastructure and management.

- Out of the entire RRF allocation (grants and loans) of EUR 650 billion, EUR 343 billion contributes to the green transition (around 53%). Within the total green contribution, 27% concerns energy efficiency, 26% sustainable mobility and 19% renewable energy and networks. The total contribution to the environmental objectives reaches 13%: water and marine accounts for 6%, the transition to circular economy 4%, biodiversity 2%, (dedicated) pollution prevention and control 1%. Moreover, for the RRF as a whole, estimated climate expenditure amounts to about 42%, above the 37% target.[161]

- Environmental taxes reached 2.02% of GDP (EUR 320.8 billion) in 2022 (EU-27), of which 1.56% were energy taxes, 0.38% transport taxes and 0.08% pollution/resource taxes. Total energy subsidies reached EUR 354 billion in 2023 (EU-27), of which 213 billion concerned the energy demand, 75 billion the support to production, 44 billion the support to energy efficiency, 9 billion the support to infrastructure, 7 billion the support to R&D and 5 billion the support to industry restructuring. Fossil fuel subsidies in the EU-

158 Source: DG Environment. Note, that water resilience and the wide-spread implementation of circular economy may add to the investment needs. This is currently subject to (more) granular studies concerning the investment needs.

159 Also incorporating additional costs of sustainable soil management arising from the Soil Monitoring Law initiative, beyond what is already included for sustainable soil management among the costs of the biodiversity strategy for 2030.

160 Commission Staff Working Document, "Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity", SWD(2023) 68 final, 2023.

161 See the RRF scoreboard at https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html.

27 amounted to EUR 56 billion in 2021 (0.36% of EU GDP, being stable over time, varying across Member states, spanning between 0.10% and 1.40%).[162]

Examples of good practices

- Some Member States have implemented a pay-as-you-throw tax that applies to the weight or volume of waste generated by households and businesses and collected by the waste collection authorities. That instrument supports the waste prevention principle.
- Germany, France, the Netherlands, Italy and Spain stood out with a high level of green bond issuances in 2021-2023, totalling EUR 420 billion (73% of the EU total).
- Italy made progress on the tracking and reporting of the environmental impacts of its national budget (green budgeting). Since 2000, Italy has developed reporting on planned expenditure on environmental protection and resource management. The reporting also incorporated 12 indicators on fair and sustainable wellbeing in accordance with the SDGs and targets of Agenda 2030.

[162] Jan Nill, Directorate-General for Economic and Financial Affairs, European Commission, "Fossil Fuel Subsidies in EU Member States – Trends and Analytical Challenges", Discussion Paper 214, 2024.