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Environmental Implementation Review 2022
Country Report - PORTUGAL

Accompanying the document

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

Environmental Implementation Review 2022: *Turning the tide through environmental compliance*

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This report has been written by the staff of the Directorate-General for Environment, European Commission. Any comments are welcome to the following e-mail address: ENV-EIR@ec.europa.eu

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Executive summary

In previous Environmental Implementation Reviews (EIRs), the main challenges identified for Portugal for the implementation of EU environmental policy and law were:

- Improving waste management and developing the potential of the circular economy.
- Enhancing the effective protection of the Natura 2000 network.
- Improving water management, including completing urban wastewater treatment.

Various measures have been taken or are in the pipeline on **waste management and the circular economy**. Portugal adopted a national Circular Economy Action Plan in 2017 and a new one is being prepared. A new national legislation on waste management was approved in 2020. The new national waste management plan is undergoing adoption, as well as other national strategic plans in the waste sector. However, the progress in this field has been limited. Portugal is far below the EU average on circular economy and waste management indicators. Portugal has missed the EU target of recycling 50% of municipal waste by 2020. The overall recycling rate was of 29% in 2019 and 26.5% in 2020 (provisional data), against an EU average of 48%. Achieving the EU targets for the next decade, including reaching 55% recycling of municipal waste by 2025, will require significant efforts.

Portugal boasts a rich **biodiversity**. The 20.6% of its territory belongs to the EU Natura 2000 network (EU average is 18.5%). However, a scientific assessment of Natura 2000 in Portugal concluded that some species and habitats, particularly in the marine environment, are not sufficiently protected. Therefore, Portugal should extend its Natura 2000 network with additional designations, particularly for marine sites. Furthermore, Portugal needs to adopt the management plans of the sites already designated, identifying the conservation objectives and conservation measures and providing the necessary resources. Moreover, complementary measures are still required to ensure that the EU Invasive Alien Species Regulation is properly applied.

Despite the progress that Portugal has made in recent years, challenges remain in **water management**, especially in the areas of water governance, water body rehabilitation and water efficiency. Further infrastructure investment are needed to improve water management, such as in wastewater collection and treatment, reduction of leaks in the networks and general water supply, improving monitoring (quality and quantity), as well as nature-based solutions and river restoration. Moreover, Portugal should take advantage of the potential of water reuse. Portugal continues to work in this sector and will soon adopt the third cycle or River Basin Management Plans under the Water Framework Directive. Portugal is also preparing the PENSAARP 2030, a new national strategic Plan for water supply, wastewater and pluvial waters management.

Anticipating the adverse effects of **climate change**, such as floods, coastal erosion, droughts, heat waves and forest fires, remains a core challenge in Portugal. In addition, **sustainable development** could be further mainstreamed into other policy areas.

On air pollution, Portugal presents a mixed picture. While emissions of several air pollutants has fallen in recent decades, **air quality** in Portugal continues to give cause for concern, mainly as regards nitrogen dioxide. In particular, personal transport exacerbates problems with air quality and traffic congestion in the major metropolitan areas in Portugal, leading to health and economic costs. Further measures are also needed to comply with the **Noise** Directive.

The support of **EU funding** has significantly contributed to improving the implementation of EU environmental law and policy in Portugal. Total environmental financing reached around 1% of GDP in 2014-2020. Nevertheless, Portugal still faces considerable challenges and investment needs, estimated to be at least 1.26% of GDP, signalling a potential financing gap of 0.26% of GDP over baselines. EU financing will continue to play a key role in addressing these shortcomings and closing the investment gaps.

Under NextGenerationEU, Portugal is set to receive EUR 16.6 billion in grants and loans from the Recovery and Resilience Facility (RRF) until 2026. The Portuguese Recovery and Resilience Plan (RRP) is based on three pillars: resilience, climate transition and digital transition. It devotes around 38% of its budget to the climate change objectives. There are some components with a special focus on the environment; in particular, on forest management, water management and bio-economy.

In 2021-2027, EU Cohesion Policy will support long-term development objectives in Portugal by investing EUR 22.75 billion, including EUR 223.8 million from the Just Transition Fund directed to alleviate the socio-economic impacts of the green transition in the most vulnerable regions. The Partnership Agreement with Portugal is under negotiation, but apart of the Cohesion Fund and a relevant percentage of the ERDF will probably be devoted to environmental investments. Furthermore, other EU Funds will also contribute to support environmental projects in Portugal: EARDF, EMFAF, LIFE, Horizon Europe, etc.

Part I: Thematic Areas

1. Circular Economy and waste management

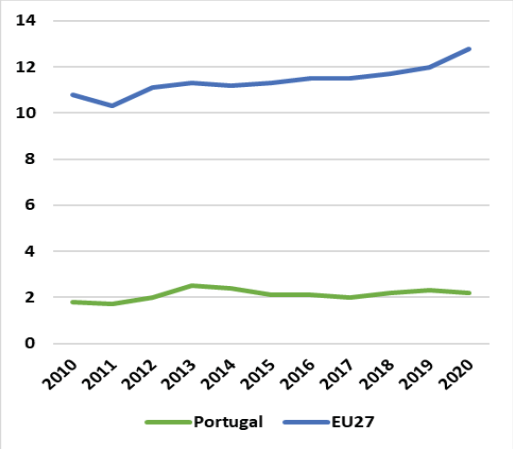
Measures towards a circular economy

The new Circular Economy Action Plan adopted in March 2020 is one of the main building blocks of the European Green Deal. The EU's transition to a circular economy will reduce pressure on natural resources and will create sustainable growth and jobs. It is also a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss. The Action Plan announces initiatives along the entire life cycle of products, aiming to reduce the EU's consumption footprint and to double the EU's circular material use rate by 2030. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible

The circular material use rate is a good indicator of an economy's circularity, as it includes all the materials that are fed back into our economy. Large differences in the circularity rate exist between countries. To help achieve the goal of the EU Circular Economy Action Plan of doubling the EU circular material use rate by 2030, ambitious measures targeting the whole product life cycle are needed at Member States' level. Such measures range from sustainable product design that makes it possible to increase durability, reparability, upgradability and recyclability of products, to other measures like remanufacturing, increasing the circularity in production processes, recycling, as well as boosting eco-innovation and increasing the uptake of green public procurement.

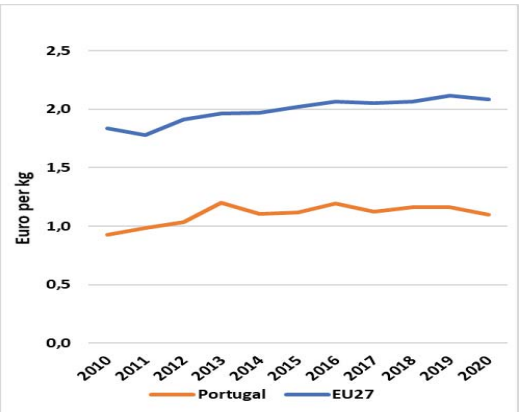
Portugal's circular (secondary) use of material was 2.4% in 2014 and 2.2% in 2020, compared to the EU average of 12.8%. Therefore, not only is Portugal well below the EU average, but in 2020 its performance was worse than 6 years earlier.

Figure 1 – Circular material use rate (%), 2010-2020[1]



Resource productivity expresses how efficiently the economy uses material resources to produce wealth. Improving resource productivity can help to minimise negative impacts on the environment and reduce dependency on volatile raw material markets. As shown in Figure 2, with EUR 1.1 generated per kg of material consumed in 2020, resource productivity in Portugal is well below the EU average of EUR 2.09 per kg.

Figure 2: Resource productivity 2010-2020[2]



Circular Economy Strategies

The Commission encourages Member States to adopt and implement national/regional circular economy

[1] Eurostat, Circular Economy Monitoring Framework.
[2] Eurostat, Resource productivity.

strategies covering the whole life cycle of products. This is because such strategies are one of the most effective ways to progress towards a more circular economy at Member State level. Since the launch of the European Circular Economy Stakeholder Platform in 2017[3], national, regional or local authorities have used the platform to share their strategies and roadmaps.

As explained in the 2019 EIR, in December 2017 Portugal adopted a national Circular Economy Action Plan (PAEC). It was set to be reviewed in 2020 but it has been extended to 2021 and a new Action Plan is reportedly under preparation. It is worth mentioning that amongst the numerous implementing actions introduced in the framework of the 2017-2021 Action Plan[4], a 2020 Resolution has approved the Resource Efficiency Program in Public Administration for the period up to 2030.

Therefore, a new PAEC is currently undergoing adoption. It will have the European framework as a background, as well as the objectives established in the Thematic Agenda 3 "Climate transition and sustainability of resources" of the 2030 Portugal Strategy:

- Make the economy more efficient;
- Turning waste into resources;
- Make the economy regenerative;
- Promote a more sustainable society.

Portugal has currently no sectoral strategy on textiles and plastics. Moreover, there is no specific strategy is targeting the construction sector. However, Portugal is active in this area through the 2021 "Circular Agreement" with the construction industry. This agreement aims to support companies in the transition, for example by helping them to incorporate more recycled materials in construction works.

Some recent projects in Portugal to support the circular economy in certain economic sectors can be highlighted as good practice, for example:

- The "Guidance on Good Practices and Tools for More Sustainable Tourism", including: Circular and Sustainable Restoration; Best Practices for a Circular Economy in Tourist Accommodation; Sustainable Construction in Tourist Resorts; Single-Use Plastics in the Tourism Sector (2021).
- The "CirCo Project" that trains companies in eco-design (2021/2022).
- The Circular Construction Protocol with business associations, to raise awareness and provide technical support in companies on the new legal framework (2021/2022).

Another example is the initiative "Economia Circular nas Freguesias (Juntar +)". This supports circular economy measurres at a local level (civil parish), and demonstrates the associated economic, social and environmental benefits (2018/2019/2021).

It is also worth mentioning the mobilisation of different actors around the Portuguese Pact for Plastics (February 2020), which has more than 100 members, representing the different stages of the plastic value chain.

As part of the circular economy-related reforms included in the RRP, Portugal has committed to implement the New General Waste Management System in view of simplifying the use of by-products, as well as aligning the waste policy in Portugal with the circular economy principles. There are also other measures promoting the circular economy in Component 12 on Bio-economy of the RRP Portugal.

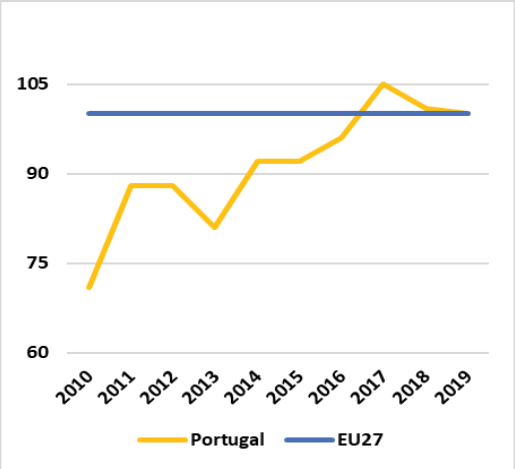
Portugal has approved in December 2021 the National Sustainable Bioeconomy Action Plan (PABS), Horizon 2025[5]. This Plan is a strategic document that frames the main measures to accelerate the transition of the Portuguese economy to a sustainable and circular bioeconomy. It identifies future high potential sectors in bioeconomy and, in particular, three key economic activities (Textile and Clothing, Footwear and Natural Resin) that, by the nature of its activities, for its socio-economic importance, and for the potential for development in the area of Bioeconomy, it is considered to have the conditions to decisively leverage the implementation of models based on Bioeconomy.

Eco-Innovation

A successful transition to a circular economy requires social and technological innovation. This is because the full potential of the circular economy can only be reached when it is implemented across all value chains. Therefore, eco-innovation is an important enabling factor for the circular economy. New approaches to product design and new business models can help to produce systemic circularity innovations, creating new business opportunities.In the 2021 Eco-Innovation Scoreboard[6], Portugal ranked 11th in the list of EU countries with a total score of 115, just below the EU average of 121. In three components of the 2021 Eco-innovation Index, Portugal performs below the EU average (eco-innovation inputs, eco-innovation outputs, and resource efficiency outcomes), while it performs above the EU average in two of them (eco-innovation activities and socio-economic outcomes).

[3] The European Circular Economy Stakeholder Platform
[4] Updated information on the circular economy in Portugal is available in the eco.nomia Portal.
[5] PABS – Resolution of the Council of Ministers nº 183/2021 of 28 December 2021.
[6] See the EU Eco-Innovation Scoreboard 2021.

Figure 3 – Eco-innovation performance 2010-2019[7]



EU Ecolabel and EMAS

The number of EU Ecolabel[8] products and EMAS[9] licensed organisations in a given country provides some indication of the extent to which the private sector and national stakeholders are actively engaged in the transition to a circular economy. It also shows how committed public authorities are to supporting instruments designed to promote the circular economy.

By September 2021, Portugal had 5.109 products and 23 licences registered in the EU Ecolabel scheme out of 83.590 products and 2.057 licences. This is a modest increase of licences compared with the 2019 EIR, while the overall number of products in the EU have quadrupled. Moreover, in October 2021, 47 organisations from Portugal were registered in EMAS, the European Commission's Eco-Management and Audit Scheme, compared with 53 organisations reported in the 2019 EIR.

Green Public Procurement (GPP)

Public procurement accounts for a large proportion of European consumption, with public authorities' purchasing power representing around 14% of EU GDP. Although GPP is a voluntary instrument, it has a key role to play in the EU's efforts to become a more resource-efficient and sustainable economy. The Commission is helping to increase the use of GGP or green purchasing. Thus, EU GGP criteria are set up for many sectors[10].

Portugal adopted a first GPP national action plan in 2008 and renewed it in 2016. Part of the strategy has involved identifying priority groups of products and services, and developing Criteria Guidelines for them. The first monitoring exercise, in early 2021, revealed that between 2017 and the first quarter of 2020 less than20% of public procurement exercises (and their respective budgets) contained green criteria. The monitoring also revealed, however, that this share is growing.

A new GPP Strategy is being prepared, to be adopted in the second half of 2022, aiming more ambitious targets, more effectiveness and reinforcing circular aspects of public procurement, as well as carbon neutrality objectives. A specific GPP Action Plan will also be part of the implementation framework.

Meanwhile, a legislative instrument for Public Administration modernization and innovation was adopted and included specific targets for GPP use in the three major governmental areas for 2023[11].

In conclusion, Portugal has made some progress in strengthening its circular economy policy framework, and is developing a new Action Plan. Given that its circular material use rate is far below the EU average a priority action on this is proposed. Further measures to enhance GGP are also under preparation but need to be effectively adopted.

2022 priority actions

- Adopt the new Portuguese Circular Economy Action Plan (PAEC) and implement the measures set up properly and in good time.

Waste management

Turning waste into a resource is supported by:
(i) fully implementing EU waste legislation, which includes the waste hierarchy, the need to ensure separate collection of waste, the landfill diversion targets, etc.;
(ii) reducing waste generation and waste generation per capita in absolute terms;
(iii) limiting energy recovery to non-recyclable materials and phasing out landfilling of recyclable or recoverable waste.

[7] European Commission - Directorate-General for Environment (DG ENV), Eco-innovation Observatory, Eco-innovation scoreboard and the eco-innovation index.
[8] European Commission, Ecolabel Facts and Figures.
[9] EMAS is the European Commission's Eco-Management and Audit Scheme, a programme to encourage organisations to behave in a more environmentally sustainable way.
[10] In the Communication 'Public procurement for a better environment' (COM (2008) 400) the Commission recommended the creation of a process for setting common GPP criteria. The EU GGP criteria are regularly published and updated.
[11] Council of Ministers Resolution nº 55/2020, of 31 July 2020.

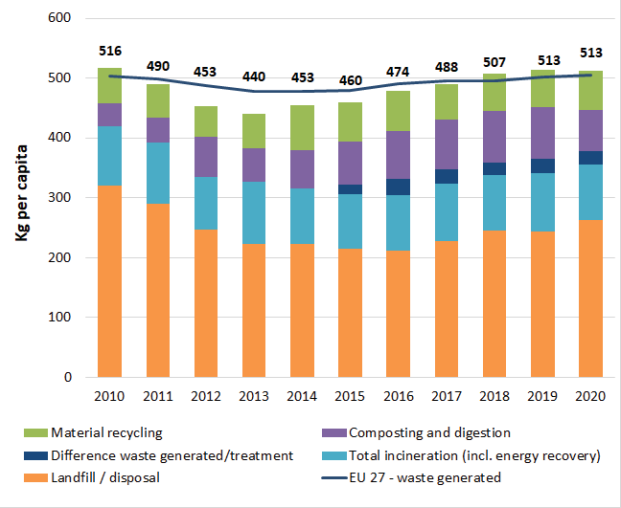
This section focuses on management of municipal waste[12] for which EU law sets mandatory recycling targets.

Preventing products and materials from becoming waste for as long as possible is the most efficient way to improve resource efficiency and to reduce the environmental impact of waste. Waste prevention and re-use are the most preferred options and are therefore at the top of the waste hierarchy. The amount of municipal waste generated is a good indicator of the effectiveness of waste prevention measures.

After a downward trend, municipal waste generation in Portugal has started to increase over the last decade. It came to 513 kg/year/inhabitant in 2020. The waste generation per capita is now slightly above the EU average (505 kg/year/inhabitant), although it remains close to it, as Figure 4 shows. This trend seems to show that Portugal's economic growth is not yet decoupled from the generation of waste.

Figure 4 also shows municipal waste by type of treatment, in terms of kilos per capita. The picture is overall steady in the last years. Thus, Portugal's incineration rate has been stable at around 19% since 2015, while landfilling accounts for 48% in 2019 (far above the EU average of around 24%). The situation varies by region, but managing waste efficiently remains a major challenge for Portugal.

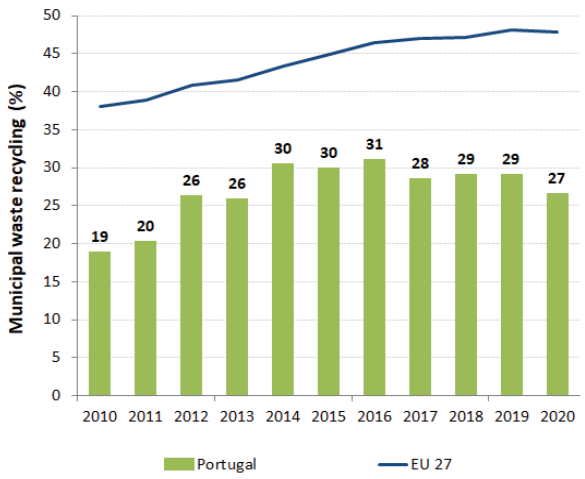
Figure 4: Municipal waste by treatment in Portugal, 2010-2020[13]



Moreover, based on information available to the Commission, it appears that a significant number of irregular and substandard landfills operate in Portugal. These sites do not meet the EU landfilling standards (.i.e. they lack pre-treatment of waste or do not treat the organic fraction) and present serious risks for human health and the environment. A study[14] launched by the Commission to investigate the landfilling of untreated non-hazardous municipal solid waste revealed shortcomings in four of the five landfills visited in Portugal. At least 59% of the municipal waste is landfilled without any treatment. Furthermore, Portugal has not set up a suitable integrated network of waste management installations for mixed municipal waste. In February 2022, the Commission has therefore initiated an infringement procedure for failing to comply with the Landfill[15] and the Waste Framework Directive[16] with the notification of a letter of formal notice to Portugal[17].

Portugal had made slow but steady progress over the past decade in increasing its recycling rate and diverting municipal waste from landfilling. However, the recycling rate for municipal waste in 2019 was 29 % (12% of which was recycled, while 17% was composted). This is well below the EU average of 48 % (2019) and shows no improvement since 2016. Furthermore, provisional data for 2020 shows a recycling rate of around 27%. Figure 5 shows that Portugal needs to step up investment in recycling to meet the EU recycling targets.

Figure 5: Recycling rate of municipal waste in Portugal, 2010-2020[18]



[12] Municipal waste consists of (a) mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture; (b) mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households. (Directive 2008/98/EC, Art. 3 2b).

[13] Eurostat, Municipal waste by waste operation, April 2022.

[14] European Commission, Study to assess the implementation by the EU Member States of certain provisions of Directive 1999/31/EC on the landfill of waste.

[15] Directive 1999/31/EC

[16] Directive 2008/98/EC

[17] See press release, INF/22/601.

[18] Eurostat, Recycling rate of municipal waste, April 2022.

Portugal is one of the countries that has missed the EU target of recycling 50% of municipal waste by 2020. There are also big differences between Portugal's regions. The EU has set up even more ambitious targets for the next decade, including achieving 55% recycling of municipal waste by 2025.

Therefore, significant efforts are needed to increase the prevention, minimisation, sorting, reuse and recycling of waste, thereby diverting waste away from landfills or incinerators, and to modernise waste recycling and treatment facilities.

Nevertheless, it is fair to acknowledge that the extended producer responsibility has played a key role for the improvement of the municipal waste management.

The situation of the waste management sector was already reflected in the 2018 Commission's Early Warning report'[19], which listed key priority measures which Portugal should take to close the implementation gap. The Commission is currently finalising its analysis of the progress on the recommendations from the 2018 Early Warning Reports as a well as an analysis of progress towards achieving the 2025 waste recyling targets. The Commission will issue this report at the end of 2022. It will assess the progress made to date, and make new recommendations as appropriate.

Implementation of the 2018 waste legislative package

By 5 July 2020, Member States had to bring their national laws in line with modifications included in the revised Waste Framework Directive, the Packaging and Packaging Waste Directive and the Landfill Directive[20]. Portugal has notified the transposition of the 2018 waste package to the Commission. A conformity assessment of the national transposing measure[21] is currently ongoing.

Waste Management Plans and Waste Prevention Programmes are central for a sound implementation of the EU waste legislation. They set out key provisions and investments to ensure compliance with existing and new legal requirements (e.g. waste prevention, separate collection for a number of specific waste streams, recycling and landfill targets). Revised plans and programmes were also due on 5 July 2020.

The 2019 EIR reflected the situation on waste prevention and waste management planning in Portugal, which is now finalising the new National Waste Management Plan (PNGR 2030), as well as the new Strategic Plan for Municipal Waste (PERSU 2030) and the Strategic Plan for non-Municipal Waste (PERNU 2030). The adoption of these key tools for the waste management policy is foreseen for 2022.

In the 2019 EIR, Portugal received three priority actions, which included a wide range of recommendations. Some initiatives, e.g. supporting municipalities, as well as the new national legislation on waste management address some of them, although they need to be implemented. Other aspects are still relevant and applicable, and in view of the upcoming Early Warning Report they are proposed again, together with the new planning requirements.

2022 priority actions

- Ensure that a national waste management plan and the pertinent regional or intermunicipal waste management plans in line with the revised Waste Framework Directive are in place.
- Improve waste management and increase recycling rates to meet the EU targets and promote circular economy by enhancing coordination among all levels of government and further investment.
- Review treatment infrastructure requirements, taking into account the changes in waste collection and the need to move away from mixed waste treatment.
- Close and rehabilitate the non-compliant landfills as a matter of priority.

[19] European Commission, Report on the implementation of waste legislation, including the early warning report for Member States at risk of missing the 2020 preparation for re-use/recycling target on municipal waste, SWD(2018)422 accompanying COM(2018)656.

[20] Directive (EU) 2018/851, Directive (EU) 2018/852, Directive (EU) 2018/850 and Directive (EU) 2018/849 amend the previous waste legislation and set more ambitious recycling targets for the period up to 2035.

[21] The New General Waste Management System, adopted by the Decree-Law 102-D/2020 of 10.12.2020, rectified by Declaration 3/2021, of 21.01.2021, and amended by Law 52/2021, of 10.08.2021, entered into force on 1.7.2021.
The Packaging and Packaging Waste Directive was transposed by the 4th amendment of Decree-Law 152-D/2017 of 11 December 2017 through Decree-Law 102-D/2020 of 10 December 2020.

2. Biodiversity and natural capital

The EU Biodiversity Strategy for 2030 adopted in May 2020 aims to put the EU's biodiversity on a path to recovery and sets out new targets and governance mechanisms to achieve healthy and resilient ecosystems.
In particular, the strategy sets out ambitious targets to:
(i) protect a minimum of 30% of the EU's land area and 30% of its sea area and integrate ecological corridors, as part of a true trans-European nature network;
(ii) strictly protect at least a third of the EU's protected areas, including all remaining EU primary and old-growth forests;
(iii) effectively manage all protected areas, defining clear conservation objectives and measures, and monitoring them appropriately.
The strategy also sets out an EU nature restoration plan – a series of concrete commitments and actions to restore degraded ecosystems across the EU by 2030, and manage them sustainably, addressing the key drivers of biodiversity loss.

The Habitats and the Birds Directives are key legislative tools to deliver on the Strategy's targets and are the cornerstone of the European legislation aimed at the conservation of the EU's wildlife[22].

Portugal's National Strategy of Nature Conservation and Biodiversity 2030 (NSNCB)[23] was approved by the Government on 5 April 2018. It identifies 2030 goals reflected into more than 100 measures, each with corresponding indicators, priorities, deadlines, means of verification, tools and responsible entities.

Furthermore, on 1 August 2019, the Portuguese Government adopted Resolution 143/2019, containing a strategy and recommendations for the implementation of a network of marine protected areas.

Nature protection and restoration

Natura 2000[24], the largest coordinated network of protected areas in the world, is the key instrument to achieve the Birds and Habitats Directives' objectives to ensure the long term protection, conservation and survival of Europe's most valuable and threatened species and habitats and the ecosystems they underpin. The setting up of a coherent Natura 2000 network, the designation of Sites of Community Importance (SCI) as Special Areas of Conservation (SAC), and the setting of conservation objectives and measures for the Natura 2000 sites are key milestones towards meeting the objectives of the Directives.

Setting up a coherent network of Natura 2000 sites

Portugal hosts 99 habitat types[25] and 335 species[26] covered by the Habitats Directive. The country also hosts populations of 90 bird taxa listed in the Birds Directive Annex I[27].

By 2021, 20.6% of the national land area of Portugal was covered by Natura 2000 (EU coverage 18.5%), with Special Protection Areas (SPAs) classified under Birds Directive covering 10% (EU coverage 12.8%) and Sites of Community Importance (SCIs) or Special Areas of Conservation (SACs) under the Habitats Directive covering 17% (EU coverage 14.2%) of the Portuguese territory.

The latest assessment of the SCI/SAC part of the Natura 2000 network shows that there are insufficiencies in designation for several species and habitat types. The Commission has lauched an infringement procedure and a letter of formal notice on this issue was notified to Portugal in July 2019. Although some insufficiencies have been corrected in the meantime, the assessment of the case has found that insufficiencies persist. Therefore, the Commission has decided to advance with this infringement procedure and has notified a reasoned opinion to Portugal in May 2022.

Considering both Natura 2000 and other nationally designated protected areas, Portugal legally protects 22.4% of its terrestrial areas (EU 27 coverage 26,4%) and 4.5 % of marine areas (EU 27 coverage 10,7%)[28].

[22] These should be reinforced by the Nature Restoration Law, according to the new EU Biodiversity Strategy.
[23] Estratégia Nacional de Conservação da Natureza e Biodiversidade 2030, Resolução do Conselho de Ministros n.º 55/2018 - Diário da República N.º 87 Série I, de 7 de maio.
[24] Natura 2000 comprises Sites of Community Importance (SCIs) designated pursuant to the Habitats Directive as well as Special Protection Areas (SPAs) classified pursuant to the Birds Directive; figures of coverage do not add up due to the fact that some SCIs and SPAs overlap. Special Areas of Conservation (SAC) means a SCI designated by the Member States.
[25] EEA, Article 17 dashboard, Annex I total, 2019.
[26] EEA, Article 17 dashboard, Annex II + Annex IV excluding those in Annex II + Annex V excluding those in Annex II, 2019. This counting only takes into account species and habitats for which assessment of conservation status was requested.
[27] EEA, Article 12 dashboard, Annex I, 2020. This counting only takes into account birds taxa for which information was requested.
[28] European Environment Agency, Protected Areas, terrestrial protected area percentage (2021) and marine protected area percentage (2019), March 2022.

Figure 6: Marine & terrestrial protected area coverage, 2021[29]

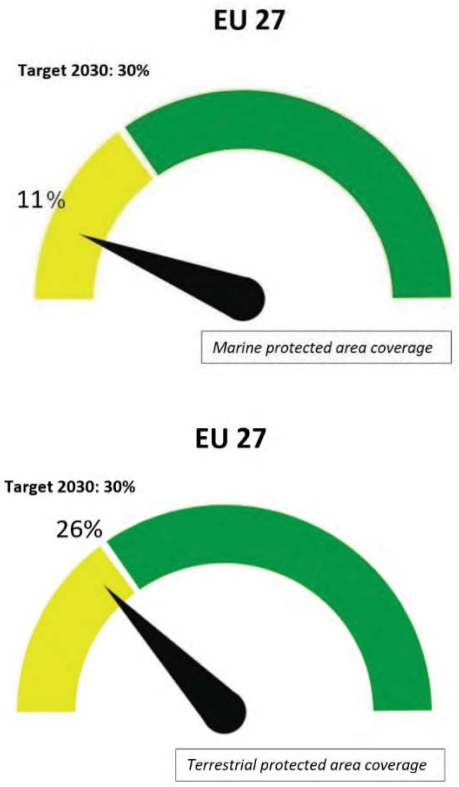
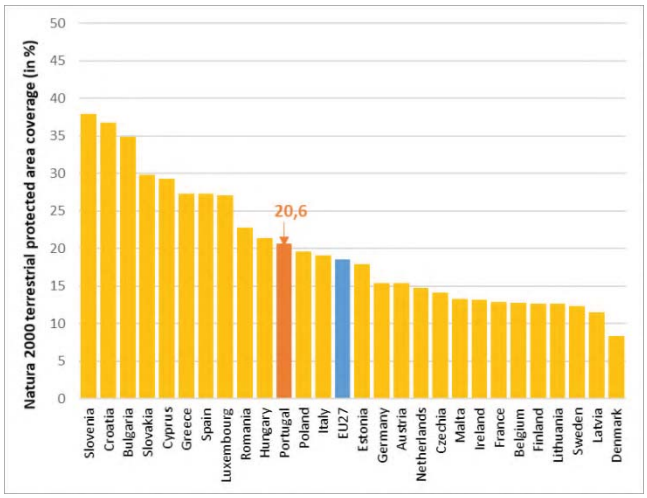


Figure 7: Natura 2000 terrestrial protected area coverage, 2021[30]



[29] EU Biodiversity Strategy Dashboard, indicators A1.1.1 and A1.2.1, February 2022.

[30] European Environment Agency, Natura 2000 Barometer, February 2022.

Designating Special Areas of Conservation (SACs) and setting conservation objectives and measures

Following a ruling by the Court of Justice of the European Union on 5 September 2019, Portugal designated as Special Areas of Conservation (SACs) all the existing Sites of Community Importance in the mainland (Atlantic and Meditrerranean biogeographical regions). Most of the sites in the Macaronesian biogeographical region had already been designated as SACs. There are, however, two pending designations, for the SCIs 'Menez Gwen' and 'Lucky Strike', for which the 6-year deadline set by the Habitats Directive has already expired.

The decree that designated the SACs on the mainland, Decreto Regulamentar 1/2020, does not identify the habitat types and the species protected in each of the sites and is therefore considered by the Commission as not fulfilling Portugal's obligations under Article 4(4) of the Habitats Directive.

Moreover, Portugal has not yet adopted management plans for any of the SACs on the mainland and the management plans adopted in the past for the Macaronesian SACs are not sufficiently specific in terms of conservation objectives and measures.

The Commission therefore considers that Portugal has not yet complied with the ruling of the Court of Justice and has launched an infringement procedure under Article 260 of the Treaty, which is currently ongoing.

Progress in maintaining or restoring favourable conservation status of species and habitats

To measure the performance of Member States, Article 17 of the Habitats Directive and Article 12 of the Birds Directive require reporting on the progress towards maintaining or restoring favourable conservation status of species and habitats.According to the report submitted by Portugal on the conservation status of habitats and species covered by the Article 17 of the Habitats Directive for the period 2013-2018, the share of assessments for habitats in good conservation status in 2018 is 23.7%. This is less than the 29.5% reported under the previous reporting period (2007-2012). As to protected species, the share of assessments in good conservation status in 2018 is 26.5%, more than the 19.7% reported under the previous reporting period (2007-2012). Only 4% of the forest area show a favourable conservation status[31]. As far as birds are concerned, 30% of the breeding species showed short-term increasing or stable population trends (for

[31] State of Nature Report. EEA 2021.

wintering species this figure was 38.5%).

At the same time, the share of habitats assessed to have a bad conservation status has increased to 28.8% and the share of assessments for species in bad conservation status has also increased to 11.3%. The main pressures are from agriculture, urban development and alien and problematic species.

Figure 8: Assessments on conservation status for habitats for 2007-2012 and 2013-2018 reporting periods[32]

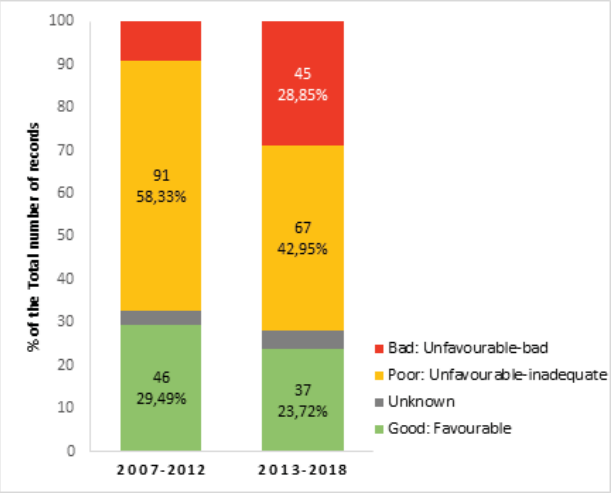
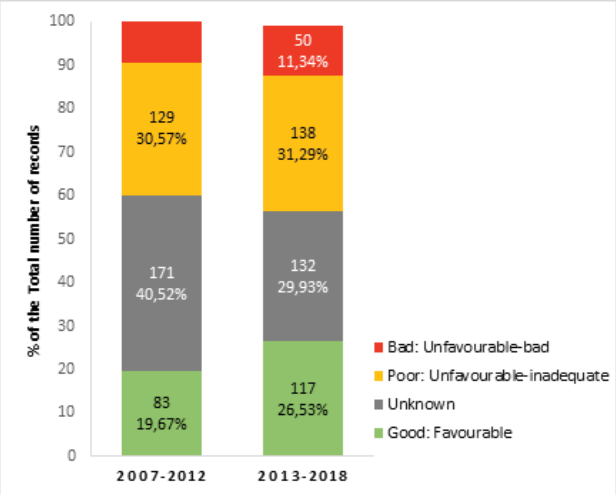


Figure 9: Assessments on conservation status for species for 2007-2012 and 2013-2018 reporting periods[33]



It is difficult to assess how the conservation status of habitats and species is evolving, since the worsening trend may in part be due to improved knowledge rather than to actual degradation. It is clear, however, that a lot of work is needed to reach favourable conservation status and, mainly for what concerns habitat types, even to fill in the knowledge gaps, which are still very big.It can be highlighted as a good practice the "We are ON the network (Natura 2000)" communication campaign, which reached 3500 school pupils and 150 teachers, promoting curiosity, public participation and visits to eight Natura 2000 sites in Portugal. This relatively small-scale project demonstrates through its tailor-made educational activities how to achieve big, long-lasting impacts.

Bringing nature back to agricultural land and restoring soil ecosystems

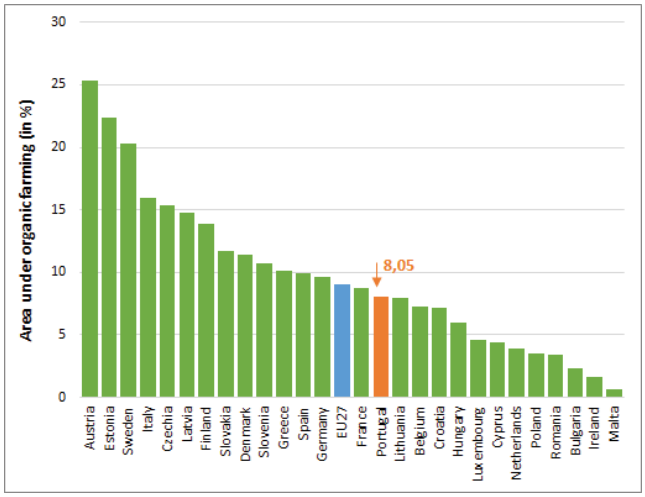
Agricultural land

The Biodiversity Strategy works alongside the new Farm to Fork Strategy and the new Common Agricultural Policy (CAP) to support and achieve the transition to fully sustainable agriculture.
The Biodiversity and Farm to Fork Strategies have set four important targets for 2030:
- a 50% reduction in the overall use of – and risk from – chemical pesticides;
- a 50% reduction in the use of more hazardous pesticides;
- a 50% reduction in losses of nutrients from fertilisers while ensuring there is no deterioration of soil fertility (which will result in a 20% reduction in the use of fertilisers);
- bring back at least 10% of agricultural area under high-diversity landscape features and increase areas under organic farming to at least 25%.

Portugal with estimated 8.05% of area under organic farming is marginally below the EU average of 9.07% (2020 data, Eurostat).

[32] European Environment Agency, Conservation status and trends of habitats and species, December 2021. Please note when comparing the figures shown for 2007-2012 and 2013-2018 these may also be affected by changes of methods or due to better data availability.
[33] idem

Figure 10: Share of total utilised agricultural area occupied by organic farming per Member State, 2020[34]



According to the Commission recommendations for Portugal's CAP strategic plan[35], water availability and soil quality are two significant challenges for the agricultural sector in Portugal. Likewise, preserving biodiversity remains a challenge in Portugal where the conservation status of agricultural habitats is largely assessed as "unfavourable-inadequate". It should be noted that the abandonment of agricultural activity is considered a key factor that has negatively affected some of these farming systems.

The Commission considers that Portuguese agriculture needs to improve its ecological and climate transition in line with the objectives of the Farm to Fork and the Biodiversity Strategies. The future CAP strategic plan should play a major role by setting a greater environmental ambition raising the level of minimum requirements and developing appropriate incentives. Preserving areas of extensive agriculture, as well as providing incentives for use agricultural models helping in maintain or increase biodiversity needs to be prioritised.

Soil ecosystems

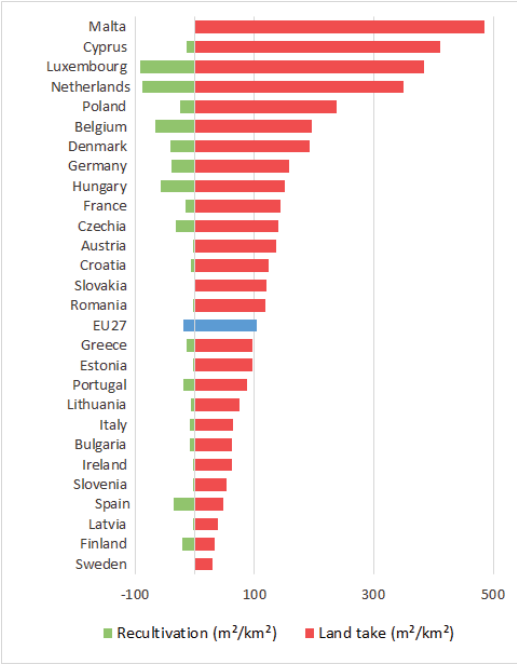
Soil is a finite and extremely fragile resource. It is increasingly degrading in the EU.
The new EU soil strategy, adopted on 17 November 2021, stresses the importance of soil protection, of sustainable soil management and of restoring degraded soils to achieve the Green Deal objectives as well as land-degradation neutrality by 2030.
This entails:
(i) preventing further soil degradation;
(ii) making sustainable soil management the new normal;
(iii) taking action for ecosystem restoration.

One factor in the degradation of soil ecosystems is the area of soil that is sealed or atificialised[36]. In Portugal (Figure 12) the land taken per year in the period 2012-2018 can be seen as a measure of one important pressure on nature and biodiversity. At the same time, land use change constitues an environmental pressure on people living in urbanised areas.

Portugal ranks below the EU average with net land take of 67,8 m^2/km^2 (EU-27 average: 83,8 m^2/km^2).

In 2018, Portugal updated its reporting on land degradation according to the PRAIS3 reporting platform[37] with actions intended to combat the degradation identified.

Figure 11: Land take and re-cultivation in EU27 (m2/km2), 2012-2018[38]



[34] https://ec.europa.eu/eurostat/databrowser/view/sdg_02_40/default/table?lang=en (Eurostat, Area under organic farming, February 2022).
[35] Commission recommendations for Portugal's CAP Strategic Plan. SWD (2020) 398 final of 18.12.2020.
[36] Artificial land cover is defined as the total of roofed built-up areas (including buildings and greenhouses), artificial non built-up areas (including sealed area features, such as yards, farmyards, cemeteries, car parking areas etc. and linear features, such as streets, roads, railways, runways, bridges) and other artificial areas (including bridges and viaducts, mobile homes, solar panels, power plants, electrical substations, pipelines, water sewage plants, and open dump sites).
[37] UNCCD, Prais3
[38] European Environment Agency, Land take in Europe, December 2021.

However, Portugal has not yet committed to set Land Degradation Neutrality targets under the United Nations Convention to Combat Desertification (UNCCD)[39].

Contamination can severely reduce soil quality and threaten human health or the environment. Lastest data Member States estimated that potentially polluting activities have taken or are still taking place on approximately 2.8 million sites in the EU[40]. At EU level, 650.000 of these sites have been registered in national or regional inventories. 65.500 contaminated sites have already been remediated. Portugal had registered 181 sites where potentially polluting activities took place, and among these 83 sites had already been remediated.

Soil erosion by water is a natural process, which can be aggravated by climate change and human activities such as inappropriate agricultural practices, deforestation, forest fires or construction works. High levels of soil erosion can reduce productivity in agriculture and can have negative and transboundary impacts on biodiversity and ecosystem service, and on rivers and lakes (increased volume of sediments, transport of contaminants). According to the RUSLE2015 model[41], Portugal has an average soil loss rate by water of 2.31 tonnes per hectare per year compared to a EU average of 2.46 t ha, which indicates soil erosion is medium on average. It is important to note that these figures are the output of a model run at EU level and therefore should not be considered as values measured in-situ. The actual soil loss rate can vary widely within the Member State depending on local conditions.

Soil organic matter plays an important role in the carbon cycle and in climate change. Soils are the second largest carbon sink in the world after the oceans.

To face all these challenges, as part of the European Green Deal initiatives, the Commission has adopted in November 2021 the new EU Soil Strategy for 2030[42], Reaping the benefits of healthy soils for people, food, nature and climate.

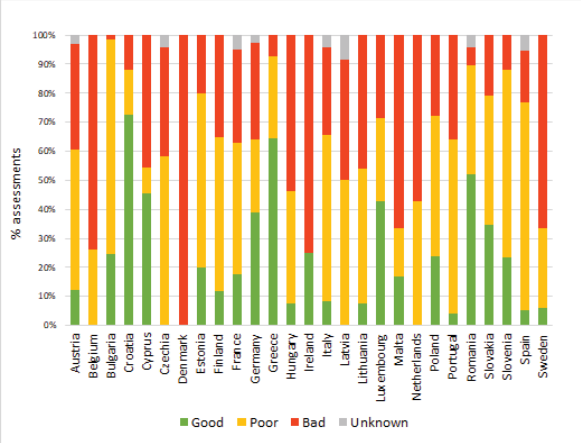
Forests and timber

The EU Forest Strategy for 2030, adopted in July 2021, is part of the 'Fit for 55' package. The strategy promotes the many services that forests provide. Its key objective is to ensure healthy, diverse and resilient EU forests that contribute significantly to the strengthened biodiversity and climate ambitions.
Forests are important carbon sinks and conserving them is vital if the EU is to achieve climate neutrality by 2050.

Out of the 27% of EU forest area protected under the Habitats Directive, less than 15% of assessments show a favorable conservation status[43]. The share of forested areas in the EU with a bad conservation status increased from 27% in 2015 to 31% in 2018.

In Portugal, forests cover 37.21% of territory[44] and more than 90% of the forest habitats assessments covered by the Habitats Directive reveal a bad to poor status[45] (Figure 12). 24.000 ha in Portugal is covered by primary forests[46].

Figure 12: Conservation status of forests protected under the Habitats Directive in EU Member States, 2013-2018 (% assessments)[47]



The European Union Timber Regulation EUTR)[48] prohibits the placing on the EU market of illegally harvested timber. According to the EUTR, EU Member States' competent authorities must conduct regular checks on operators and traders, and apply penalties for non-compliance. With the amendment of Article 20 of the EUTR, reporting every 2 years has been changed to become annual reporting, and covers the calendar year as of 2019.

[39] UNCCD, The LDN Target Setting Programme
[40] Ana Paya Perez, Natalia Rodriguez Eugenio (2018), Status of local soil contamination in Europe: Revision of the indicator "Progress in the management Contaminated Sites in Europe".
[41] Panagos, P., Borrelli, P., Poesen, J., Ballabio, C., Lugato, E., Meusburger, K., Montanarella, L., Alewell, C., The new assessment of soil loss by water erosion in Europe, (2015) Environmental Science and Policy, 54, pp. 438-447.
[42] See the EU Soil Strategy for 2030
[43] EEA, State of Nature in the EU.
[44] EEA, Forest information system for Europe.
[45] COM SWD (2021) 652
[46] JCR, Mapping and assessment of primary and old-growth forests in Europe, p. 13.
[47] European Environment Agency, Conservation status and trend in conservation status by habitat group - forests, January 2022.
[48] Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010.

In the period March 2017 – February 2019[49], Portugal carried out 97 checks on domestic timber operators. It also carried out 40 checks on operators importing timber. It is estimated that Portugal had 1.056 operators placing domestic and 4.144 operators placing imported timber types onto the internal market over the reporting period.

The new Deforestation Regulation[50] will repeal and replace the EU Timber Regulation, as it will essentially integrate and improve the existing system to check the legality of timber.

Invasive alien species (IAS)

IAS are a key cause of biodiversity loss in the EU (alongside changes in land and sea use, overexploitation, climate change and pollution).
Besides inflicting major damage on nature and the economy, many IAS also facilitate the outbreak and spread of infectious diseases, posing a threat to humans and wildlife.
The implementation of the EU Invasive Alien Species Regulation and other relevant legislation must be stepped up.
The biodiversity strategy for 2030 aims to manage recognised invasive alien species and decrease the number of 'red list' species they threaten by 50%..

The core of the IAS Regulation (EU) 1143/2014[51] is the list of Invasive Alien Species of Union concern.

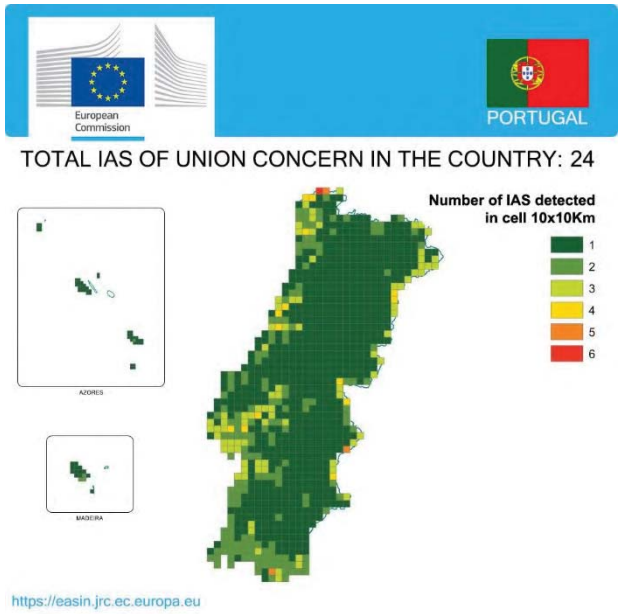
The total number of invasive alien species (IAS) of Union concern is currently 66, of which: 30 are animal species and 36 are plant species; 41 are primarily terrestrial species, 23 are primarily freshwater species, 1 is a brackish-water species and 1 is a marine species.

According to a 2021 report[52] on the review of the application of the IAS Regulation based on reports that Member States submitted for the period 2015-2018, the implementation of the IAS Regulation is already starting to deliver on its objectives such as a coherent framework for addressing IAS at EU level and increased awareness of the problem of invasive alien species, including among the general public. At the same time, the above report identified some challenges and areas for improvement.

Given that the deadlines for implementing the various obligations of the IAS Regulation applied gradually between July 2016 and July 2019, it is premature to draw conclusions on several aspects of the implementation of the IAS Regulation.

A 2021[53] on the baseline distribution shows that from the 66 species on the Union list, 24 have been observed in the environment in Portugal. The spread can be checked in the next figure.

Figure 13: Number of invasive alien species of EU concern, based on available georeferenced information for Portugal, 2021



An infringement procedure is ongoing as Portugal failed to establish and implement one single action plan or a set of action plans fulfilling the requirements specified in Article 13 of of the IAS Regulation by 13 July 2019 and to transmit it/them to the Commission without delay.

2022 priority actions

- Portugal needs to complete its Natura 2000 network on the basis of the existing knowledge, and to complete the designation of SACs, making sure that the legislation that designates the SACs

[49] COM/2020/629 final
[50] Proposal for the Regulation on the making available on the EU market and export of products associated with deforestation and forest degradation.
[51] 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
[52] Report from the Commission to the European Parliament and the Council on the review of the application of Regulation (EU) No 1143/2014. COM (2021) 628 final, 13.10.2021.
[53] Cardoso A.C., Tsiamis K., Deriu I., D' Amico F., Gervasini E., EU Regulation 1143/2014: assessment of invasive alien species of Union concern distribution, Member States reports vs JRC baselines, EUR 30689 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-37420-6, doi:10.2760/11150, JRC123170.

includes all the necessary information, namely on the habitat types and species protected in each area.

- It is also urgent that adequate management plans, which identify site-specific conservation objectives and measures for each area are put in place and that the actual management of the Natura 2000 sites is fully in line with those management plans.
- The management plans to be set up or revised need to take full account of the main pressures and threats in each area and identify the necessary measures to address those pressures and threats adequately, so that conservation status can improve significantly.
- Strengthen the integration of biodiversity concerns into other policies (in particular in agriculture, but also in fisheries, urban and infrastructure planning and sustainable tourism).
- Take additional measures to fight against land degradation, soil erosion and desertification.
- Adopt and implement actions plans as required by the Invasive Alien Species Regulation.

Marine ecosystems

The EU Biodiversity Strategy for 2030 aims to substantially reduce the negative impacts on sensitive species and habitats in marine ecosystems and to achieve good environmental status as well as eliminate or reduce the incidental catches of protected, endangered, threatened and sensitive species to a level that allows species recovery and conservation[54].

The Marine Strategy Framework Directive (MSFD)[55] requires Member States to achieve Good Environmental Status (GES) of their marine waters. To that end, Member States have to develop marine strategies for their marine waters, and cooperate with Member States sharing the same marine region or subregion. These marine strategies comprise different steps to be developed and implemented over six-year cycles.

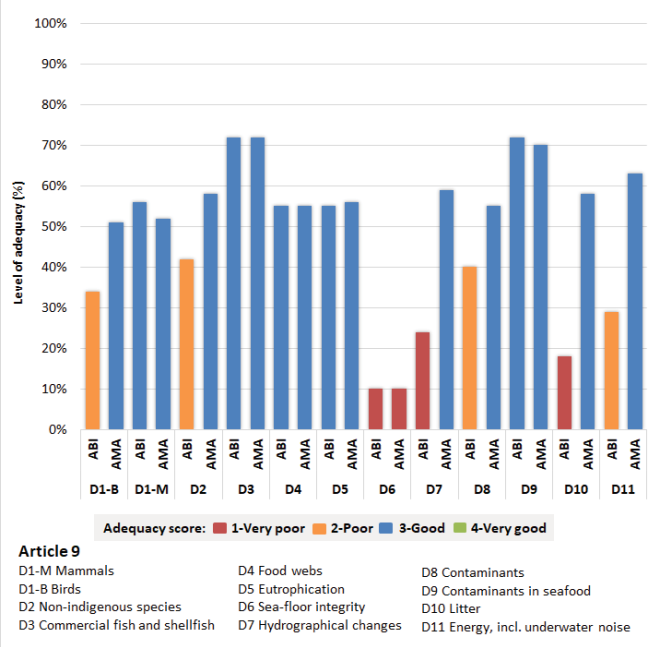
Among other obligations, the MSFD requires Member States by 15 October 2018 to define a set of GES characteristics for each descriptor (article 9), and to provide an initial assessment of their marine waters (article 8). The Commission then assesses whether this constitutes an appropriate framework to meet the requirements of the Directive.

[54] The EU Common Fisheries Policy (CFP) aims to contribute to the achievement of the objectives of the environmental legislation for marine ecosystems.

[55] Marine Strategy Framework Directive 2008/56/EC

The Commission assessed Portugal's 2018 determinations of GES for each MSFD's 11 descriptors[56] and determined their level of adequacy in relation to the Commission GES Decision[57]. A good or very good score indicates that the national determinations of GES are well aligned with requirements of the Commission GES Decision, providing qualitative and quantitative national environmental objectives to be achieved for their marine waters.

Figure 14: Level of adequacy of GES determination by Portugal (ABI and AMA regions) with criteria set under the Commission GES Decision – article 9 (2018 reporting exercise)[58]



Portugal is included in two marine sub-regions:

- ABI-NE Atlantic: Bay of Biscay and Iberian Coast. In this marine sub-region, 4 out of 11 determinations of GES were assessed as good or very good. The national determination of GES by Portugal is coherent for 4 out of 11 descriptors.
- AMA-NE Atlantic: Macaronesia. In this marine sub-region, 10 out of 11 determinations of GES were assessed as good or very good. The national

[56] Annex I of Directive 2008/56/EC.

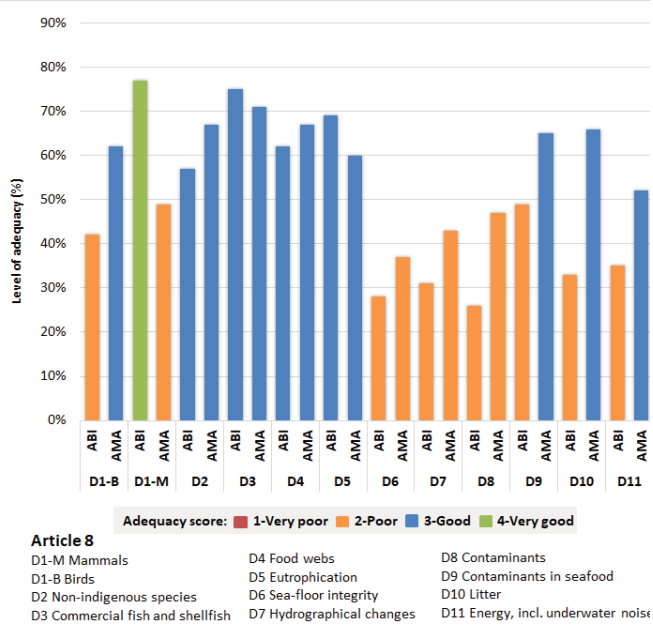
[57] Commission Decision (EU) 2017/848 laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU.

[58] Assessment carried out by the European Commission of the data reported by the Member States, January 2022. Please note that only two sub-sections of descriptor D1 are displayed (D1-M Mammals and D1-B Birds). For the analysis, these two sub-sections were considered as a whole after averaging them.

determination of GES by Portugal is coherent for 10 out of 11 descriptors.

The MSFD also requires that Member States make an assessment of the current environmental status of their marine waters in relation to the determination of GES. A good or very good score indicates Member States has good capabilities to assess their marine environment in accordance with the requirements set out in the Commission GES Decision.

Figure 15: Level of adequacy of initial assessment of Portugal's marine environment (ABI and AMA regions) with criteria set under the Commission GES Decision – article 8 (2018 reporting exercise)[59]



In the marine sub-region ABI-NE Atlantic: Bay of Biscay and Iberian Coast, 5 descriptors out of 11 were scored as good or very good. Portugal's assessment of its marine environment is coherent with requirements set under the Commission GES Decision for 5 out of 11 descriptors.

In the marine sub-region AMA-NE Atlantic: Macaronesia, 7 descriptors out of 11 were scored as good or very good. Portugal's assessment of its marine environment is coherent with requirements set under the Commission GES Decision for 7 out of 11 descriptors.

In the 2019 EIR, the Commission suggested Portugal a couple of priority actions related to the measures to be adopted and another one on regional cooperation, which have been partially adressed.

As highlighted in the Commission's report on the implementation of the MSFD[60], while regional cooperation has improved since the adoption of the MSFD, more cooperation is needed to attain full regional coherence of the marine strategies, as required by the Directive. Furthermore, in March 2022, the European Commission published a Communication with recommendations for Member States. The Commission assessment highlights that Member States need to step up their efforts to determine the good environmental status and the use of the criteria and methodological standards according to the Commission GES Decision. The above considerations form the basis for the 2022 priority actions.

2022 priority actions

- Ensure regional cooperation with Member States sharing the same marine (sub)region to address predominant pressures.
- Implement the recommendations made by the Commission in the Staff Working Document[61] accompanying the Communication[62] on recommendations per Member States and region on the 2018 updated reports for Articles 8, 9 and 10 of the MSFD.

Ecosystem assessment and accounting

The EU Biodiversity Strategy for 2030 calls on Member States to better integrate biodiversity considerations into public and business decision making at all levels and to develop natural capital accounting. EU needs a better performing biodiversity observation network and more consistent reporting on the condition of ecosystems.

The ecosystem assessment is an analysis of the pressures and the condition of terrestrial, fresh-water and marine ecosystems and their services using spatially explicit data and comparable methodology based on European data about the functions of ecosystem assets and the ecosystem services they produce, using relative to the baseline year 2010.

The ecosystem accounting is built on five core accounts (ecosystem extent, ecosystem condition, physical ecosystem services, monetary ecosystem services and

[59] Idem.

[60] COM(2020)259
[61] SWD(2022)1392.
[62] COM(2022)550.

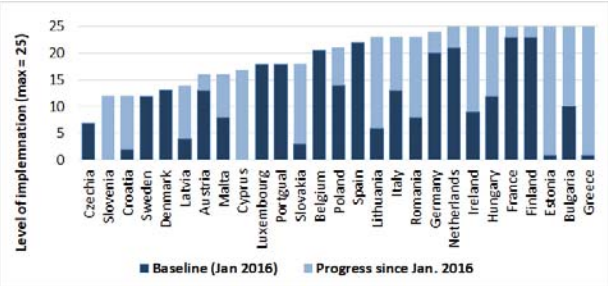
monetary ecosystem assets). These accounts are compiled using indicators of ecosystem assets and the ecosystem services they produce.

Portugal has carried out a regional ecosystem assessment in Alentejo, but upscaling to national level is still lacking and a comprehensive approach is needed. Portugal has a lot of fragmented experience and interest from the local level, NGOs, universities and other stakeholders. The government launched several initiatives taking on board the importance of ecosystem services and natural capital for growth and jobs, such as green economy initiative, green tax reforms, TEEB approaches and an ecosystem services assessment.

A long-term process was to begin in 2016 covering the territory of the Portuguese mainland. Developing a network platform was part of this effort.

Portugal has not provided updated information and therefore no progress has been recorded since January 2016. This assessment is based on 27 implementation questions and updated every six months.

Figure 16: ESMERALDA MAES Barometer (January 2016 - March 2021)[63]



Ecosystem assessment has been extended to 5 EU outermost regions (including Azores) and 10 overseas territory assessment.

Business and Biodiversity platforms, networks and communities of practice are key tools for promoting and facilitating natural capital assessments (NCA) among business and financial service providers for instance via the Natural Capital Protocol of the Natural Capital Coalition[64]. NCA helps private business to better understand and value not only their impacts but also their dependencies on nature and thereby contributing to the EU Biodiversity Strategy. At EU level[65] and in a number of the Member States – however not all - such platforms have been established.

The Initiative on Business and Biodiversity[66], a national platform in Portugal aims to promote the introduction of biodiversity strategies within businesses through voluntary arrangements.

2022 priority actions

- Continue supporting the mapping and assessment of ecosystems and their services, and ecosystem accounting development, through appropriate indicators to integrate ecosystem extent, condition and services (including some monetary values) into national accounts. Continue supporting the development of national business and biodiversity platforms, including natural capital accounting systems to monitor and value the impact of business on biodiversity.

[63] European Commission, Joint Research Centre, EU Ecosystem assessment: summary for policymakers, page 80, May 2021.
[64] Natural Capital Coalition, Natural Capital Protocol
[65] Business and Biodiversity, The European Business and Biodiversity Campaign aims to promote the business case for biodiversity in the EU Member States through workshops, seminars and a cross media communication strategy.
[66] Portugal, Initiative on Business and Biodiversity

3. Zero Pollution

Clean air

EU clean air policies and legislation need to significantly improve air quality in the EU, moving the EU closer to the quality recommended by the WHO and curbing emissions of key air pollutants.
Air pollution and its impacts on ecosystems and biodiversity should be further reduced with the long-term aim of not exceeding critical loads and levels. This requires strengthening efforts to reach full compliance with EU clean-air legislation and defining strategic targets and actions for 2030 and beyond.
The 2030 zero-pollution action-plan targets are to reduce the health impacts of air pollution by 55% and to reduce the EU ecosystems threatened by air pollution by 25%, compared to 2005.

The EU has developed a comprehensive suite of air quality legislation, which establishes health-based air quality standards[67] and emission reduction commitments[68] per Member State for a number of air pollutants.

Air quality in Portugal continues to give cause for concern. The latest available annual estimates (for 2019) from the European Environment Agency[69] indicate that around 4.900 premature deaths per year (or 51.100 years of life lost (YLL)) can be attributed to fine particulate matter concentrations[70], 270 (2.900 YLL) to ozone concentration[71] and 540 (5.600 YLL) to nitrogen dioxide[72] concentrations[73].

The emissions of key air pollutants have decreased significantly in Portugal over the last years, while GDP growth continued (Figure 17). According to the latest projections as submitted under Article 10(2) of the National Emission Reduction Commitments Directive (NECD[74]), Portugal forecasts that it will meet the emissions reduction commitments for all air pollutants covered by the Directive for the period 2020 to 2029 - and for most pollutants for 2030 onwards. The projections however do not demonstrate reaching the 2030 onwards emission reduction commitments for $PM_{2.5}$. Latest inventory data submitted by Portugal, prior to review by the Commission, indicate that Portugal is in compliance with the emission reduction commitments for NO_x, NMVOC, SO_2 and $PM_{2.5}$, and in non-compliance with the emission reduction commitment for NH_3 in 2020.

Portugal has submitted its National Air Pollution Control Programme (NAPCP) on 1 April 2019.

Figure 17: Emission trends of main pollutants/ GDP in Portugal, 2005-2019[75]

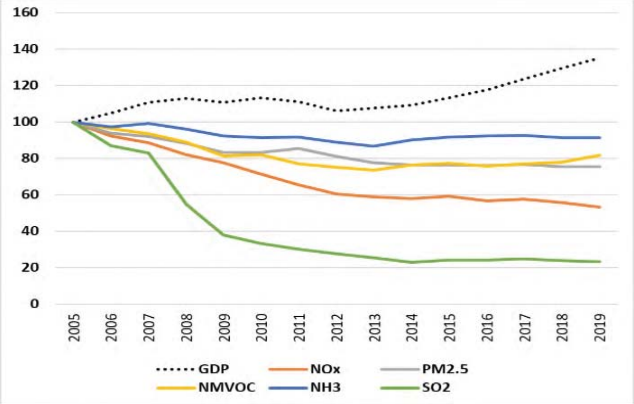
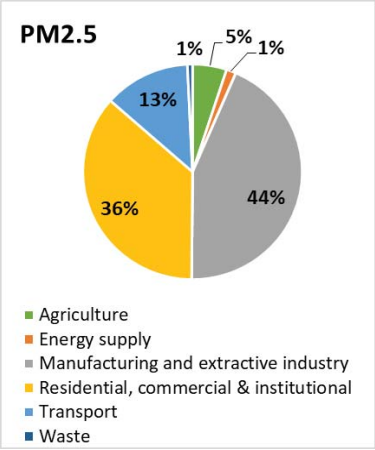
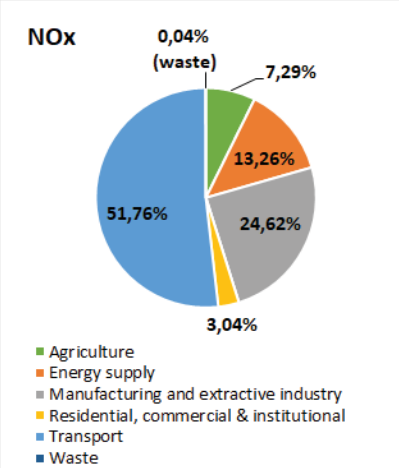


Figure 18: PM2.5 and NOx emissions by sector in Portugal (2019)[76]



[67] European Commission, 2016. Air Quality Standards
[68] Reduction of national emissions of atmospheric pollutants.
[69] European Environment Agency. Air Quality in Europe – 2021 Report. Please see details in this report as regards the underpinning methodology, p.106.
[70] Particulate matter (PM) is a mixture of aerosol particles (solid and liquid) covering a wide range of sizes and chemical compositions. PM10 (PM2.5) refers to particles with a diameter of 10 (2.5) micrometres or less. PM is emitted from many human sources, including combustion.
[71] Low-level ozone is produced by photochemical action on pollution.
[72] NOx is emitted during fuel combustion e.g. from industrial facilities and the road transport sector. NOx is a group of gases comprising nitrogen monoxide (NO) and nitrogen dioxide (NO2).
[73] Please note that these figures refer to the impacts of individual pollutants, and to avoid double-counting cannot be added up to derive a sum.
[74] Directive 2016/2284/EU

[75] European Environment Agency.
[76] European Environment Agency.



For the year 2020, no exceedances above the limit values established by the Ambient Air Quality Directive (AAQD) were registered for nitrogen dioxide (NO_2), particulate matter (PM_{10}), or fine particulate matter ($PM_{2.5}$). However, for several air quality zones the target values for ozone concentration have not been met[77].

Persistent breaches of air quality requirements, which have severe negative effects on health and environment, are being followed up by the European Commission through infringement procedures (mainly over PM_{10} and NO_2 exceedances) covering all Member States concerned, including Portugal. The European Commission has referred Portugal to the Court of Justice of the European Union over exceedances of NO_2 limit values. The aim is that appropriate measures are put in place to bring all air quality zones into compliance.

Portugal has not yet ratified the Protocol on persistent organic pollutants (POPs) under the United Nations Economic Commission for Europe (UNECE) Air Convention.

In the 2019 EIR, Portugal received two priority actions, related to the upcoming NAPCP and the need to reduce the main emission sources for the main pollutants through targeted actions. Although the NACPCP has been adopted, there has been limited progress. Therefore, priority action in this regard are still pertinent together with the other new ones.

2022 priority actions

- Take, in the context of the National Air Pollution Control Programme (NAPCP), actions towards reducing emissions from the main sources mentioned above.
- Ensure full compliance with the EU air quality standards and maintain downward emissions trends of air pollutants, to reduce adverse air pollution impacts on health and economy with a view to reaching WHO guideline values in the future.
- Portugal is strongly encouraged to accelerate the ratification of the POPs Protocol under the UNECE Air Convention.

Industrial emissions

The main objectives of EU policy on industrial emissions are to:
(i) protect air, water and soil;
(ii) prevent and manage waste;
(iii) improve energy and resource efficiency;
(iv) clean up contaminated sites.
To achieve this, the EU takes an integrated approach to the prevention and control of routine and accidental industrial emissions. The cornerstone of the policy is the Industrial Emissions Directive (IED)[78]. The Commission tabled a proposal in April 2022[79]. The revision seeks to improve the Directive's contribution to the zero-pollution objective, as well as its consistency with climate, energy and circular economy policies.

The overview of industrial activities regulated by IED below is based on data reported to the EU Registry (2018)[80]

In Portugal, around 740 industrial installations are required to have a permit based on the IED. The distribution of installations is shown in Figure 19.

The industrial sectors in Portugal with the most IED installations in 2018 were intensive rearing of poultry and pigs (35%), followed by food and drink production (14%), the waste management sector (14%), surface treatment of metals (10%) and mineral production (6%).

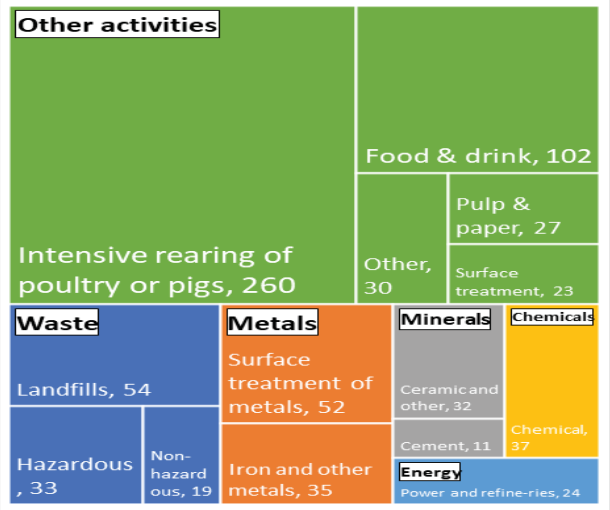
[77] European Environment Agency, Eionet Central Data Repository

[78] Directive 2010/75/EU covers industrial activities carried out above certain thresholds. It covers the energy industry, metal production, the mineral and chemical industry, waste management, and a wide range of industrial and agricultural sectors (e.g. intensive rearing of pigs and poultry, pulp and paper production, painting and cleaning).

[79] European Commission, proposal for a revision of the Industrial Emissions Directive, 4 April 2022. The revision of the IED is performed in parallel to the revision of Regulation (EC) No 166/2006 on the European Pollutant Release and Transfer Register (E-PRTR).

[80] European Environment Agency, European Industrial Emissions Portal.

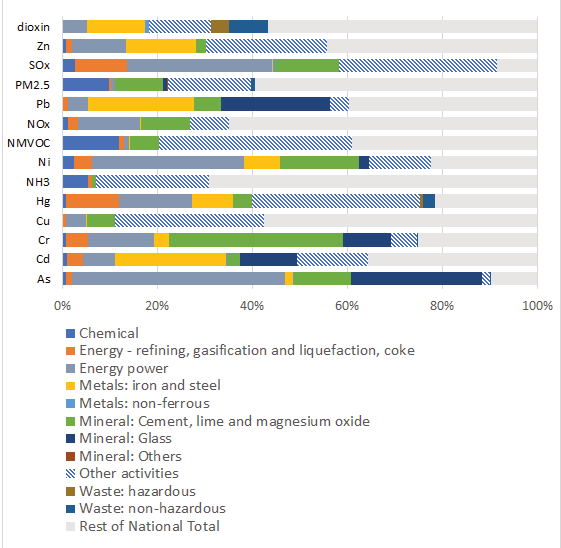
Figure 19: Number of IED industrial installations per sector in Portugal, 2018[81]



The industrial sectors identified as contributing the largest burden to the environment for emissions to air were the power sector for Sulphur Oxides (SOx), Nitrogen Oxides (NOx), Arsenic (As), Chromium (Cr), Mercury (Hg) and Nickel (Ni); pulp and paper production for Particulate Matter ($PM_{2.5}$), Zinc (Zn) and SOx; surface treatment using organic solvents for Non Methane Volatile Organic Compounds (NMVOCs); intensive rearing of poultry or pigs for Ammonia (NH_3); other solvent use for dioxins; non-ferrous metals (stationary combustion) for Hg; other industrial product use for Copper (Cu); mineral production for Chromium (Cr), Lead (Pb), Nickel (Ni), Zn, NOx and $PM_{2.5}$; metal production for Cadmium (Cd), Lead (Pb), Zn and waste management for dioxins.

The breakdown, based on E-PRTR data, is presented in the figure below.

Figure 20: Emissions to air from IED sectors and rest of national total air emissions in Portugal, 2018[82]



The environmental burdens for industrial emissions to water mainly result from the production of pulp and paper for nitrogen, phosphorous and total organic carbon, and from waste management activities, refineries and non-ferrous metals industries in case of heavy metals. The breakdown, based on E-PRTR data, is presented in the figure below.

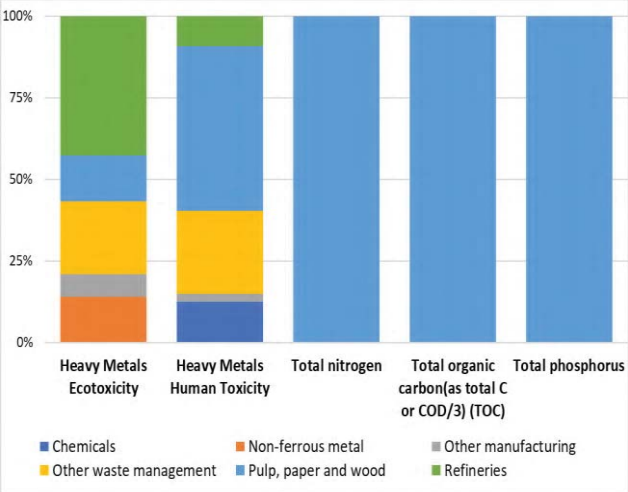
The European Environment Agency in its report on 'Costs of air pollution from European industrial facilities 2008–2017'[83], has identified the coal-firing thermal power station in Sines as one of the 30 industrial facilities in Europe with the highest absolute damage costs from emissions of the main air pollutants and greenhouse gases in 2017.

[81] European Environment Agency, EU Registry, European Industrial Emissions Portal (data retrieved on 3 November 2021).

[82] European Environment Agency, LRTAP, Air pollutant emissions data viewer (Gothenburg Protocol, LRTAP Convention) 1990-2019 (data retrieved on 3 November 2021).

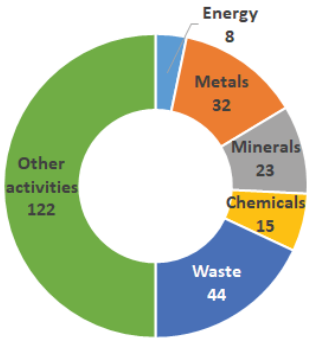
[83] EEA (2021). Costs of air pollution from European industrial facilities 2008–2017. Eionet Report - ETC/ATNI 2020/4. The ranking is based on the approach accounting for the value of a life year (VOLY), table 42, p.129 and table 44, p.140.

Figure 21: Relative releases to water from industry in Portugal[84], 2018[85]



The EU approach to enforcement under the IED creates direct rights for the public to have access to relevant information and to participate in the permitting process for potentially polluting installations. This empowers the public and NGOs to ensure that permits are appropriately granted and that the conditions of these permits are complied with. As part of environmental inspection, competent authorities undertake site visits to IED installations to take samples and to gather necessary information. According to Article 23(4) of the IED, site visits must be carried out between once a year and once every three years, depending on the environmental risks posed by the installations. In 2018, Portugal undertook 263 site visits, most of which to installations for the intensive rearing of poultry or pigs (27%), followed by waste including landfill sites (9%), the food and drink industries (8%), and energy installations (3%).

Figure 22: Number of inspections in IED installations in Portugal in 2018[86]



The development of Best Available Techniques (BAT) Reference Documents (BREFs) and BAT Conclusions ensures a good collaboration with stakeholders and enables a better implementation of IED[87]. Since the last EIR report, BAT Conclusions were adopted for Waste Incineration, for the Food, Drink and Milk Industries and for Surface Treatment Using Organic Solvents including Wood and Wood Products Preservation with Chemicals.

The Commission relies on the efforts of national competent authorities to implement the legally binding BAT conclusions and associated BAT emission levels in environmental permits.This should result in considerable and continuous reduction in pollution.

In 2019, Portugal received priority actions to review permits and to strengthen control and enforcement to ensure compliance with newly adopted BAT Conclusions. The Commission has followed up on these actions through the reporting by Portugal to the EU Registry. The Commission is currently checking with Portugal the reported information about the permits granted for each installation in the scope of the IED. Another priority action was to tackle air pollution from the power sector, which is still the case as mentioned above and needs to be addressed by the implementation of the BAT Conclusions for large combustion plants by August 2021.

2022 priority actions

- Continue addressing emissions from the energy sector, especially from the Sines power plant.

Major industrial accidents prevention, SEVESO

The main objectives of EU policy on the prevention of major industrial accidents are to:
(i) control major accident hazards involving dangerous

[84] The heavy metals are presented both as a weighted sum of eco toxicity and human toxicity factors to illustrate both the ecological and human impact (based on USEtox).

[85] European Environment Agency, E-PRTR, European Industrial Emissions Portal. The heavy metals are presented both as a weighted sum of eco toxicity and human toxicity factors to illustrate both the ecological and human impact (based on USEtox) (data retrieved on 3 November 2021).

[86] European Environment Agency, EU Registry, European Industrial Emissions Portal (data retrieved on 3 November 2021).

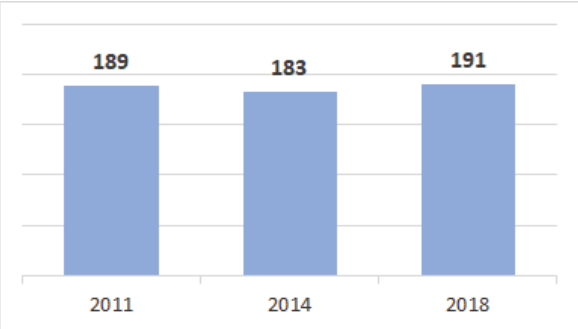
[87] European Commission BAT reference documents

substances, especially chemicals;
(ii) limit the consequences of such accidents for human health and the environment;
(iii) continuously improve prevention, preparedness and response to major accidents.
The cornerstone of the policy is Directive 2012/18/EU (the Seveso-III Directive[88]).

The overview detailed below of industrial plants regulated by the Seveso-III Directive, hereafter 'Seveso establishments', is based on data reported to the eSPIRS database (2018)[89] and the Portugal report on the implementation of the Seveso-III Directive for the period 2015-2018[90].

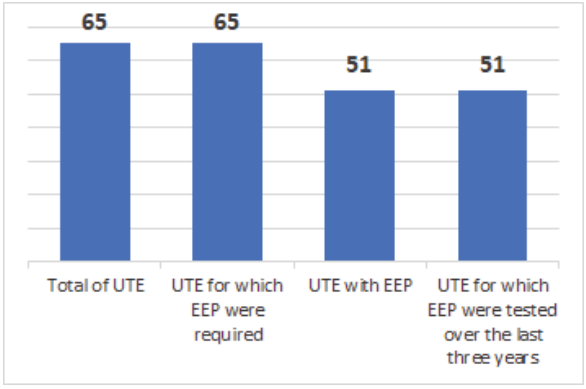
In Portugal, among the 191 Seveso establishments, 126 are categorised as lower-tier establishments (LTE) and 65 as upper-tier establishments (UTE) – based on the quantity of hazardous substances likely to be present. The UTE are subject to more stringent requirements. The evolution of the number of Seveso establishments is presented in Figure 23.

Figure 23: Number of Seveso establishments in Portugal, 2011, 2014 and 2018[91]



According to Portugal, the External Emergency Plan (EEP) is required for 65 UTE. In 2018, 51 UTE had an EEP and 51 of these EEP had been tested over the last 3 years. The summary is shown in Figure 24. The establishment of EEPs is essential to allow proper preparation and effective implementation of the necessary actions to protect the environment and the population should a major industrial accident nevertheless happen.

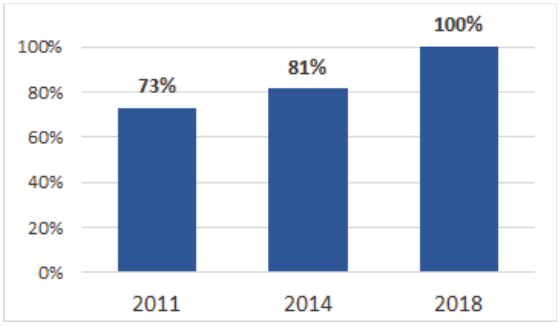
Figure 24: Situation regarding EEP in Portugal, 2018[92]



The information to the public referred to in annex V of the Seveso-III Directive – especially about how the public concerned will be warned in case of a major accident ; the appropriate behaviour in the event of a major accident ; and the date of the last site visit – are permanently available for 100% of the Seveso establishments in Portugal.

The share of UTE for which information on safety measures and requisite behaviours were actively made available to the public over the last years are presented in Figure 25.

Figure 25: Share of UTE for which information on safety measures and requisite behaviours were actively made available to the public in Portugal, 2011, 2014 and 2018[93]



2022 priority actions

- Strengthen control and enforcement to ensure compliance with Seveso-III Directive provisions, especially on EEP.

[88] Directive 2012/18/EU on the control of major accident hazard involving dangerous substances.
[89] European Commission, Seveso Plants Information Retrieval System.
[90] As provided for by Article 21(2) of the Seveso-III Directive
[91] European Commission, Assessment and summary of Member States' implementation reports for Implementing Decision 2014/896/EU (implementing Directive 2012/18/EU on the control of major accident hazards involving dangerous substances), 2022.
[92] Idem.
[93] Idem.

Noise

The Environmental Noise Directive[94] provides for a common approach to avoid, prevent and reduce the harmful effects of exposure to environmental noise although it does not set noise limits as such. The main instruments it uses in this respect are strategic noise mapping and planning. A relevant 2030 zero pollution action plan target is a reduction by 30% of the share of people chronically disturbed by transport noise compared to 2017.

Excessive noise from aircraft, railways and roads is one of the main causes of environmental health-related issues in the EU. It produces ischemic heart disease, stroke, interrupted sleep, cognitive impairment and stress[95].

In Portugal, based on a limited set of data[96], environmental noise is estimated to cause at least around 100 premature deaths and 400 cases of ischemic heart disease annually[97]. Moreover, some 90 000 people suffer from disturbed sleep. In Portugal, the people exposed to noise decreased by 41% between 2012 and 2017. On the basis of the latest full set of information that has been analysed, noise mapping of agglomerations, roads and railways remains incomplete. Moreover, Portugal still lacks action plans for two agglomerations and some roads and railways. These instruments, adopted after a public consultation, should include the measures to keep noise low or reduce it.

In the 2019 EIR, Portugal received two priority actions to complete noise maps and action plans, where there has been limited progress. Therefore, they are reiterated.

The Commission launched an infringement procedure against Portugal on the Noise Directive[98]. The Commission referred the case to the Court of Justice of the European Union[99], which by Judgment of 31 March 2022 has condemned Portugal for the failure to draw up certain strategic noise maps and action plans for agglomerations, major road sections and major railway sections and failure to communicate a summary of those action plans. The Portuguese authorities has to take the appropriate measures in order to comply with the terms of this judgment.

2022 priority actions

- Complete noise mapping.
- Complete action plans for noise management of agglomerations, major roads and major railways.

Water quality and management

EU legislation and policy requires significant reduction of the impact of pressures on transitional, coastal and fresh waters (including surface and ground waters). Achieving, maintaining or enhancing good status of water bodies as defined by the Water Framework Directive will ensure that EU citizens benefit from high standards for safe drinking and bathing water, and that the nutrient cycle (nitrogen and phosphorus) is managed in a more sustainable and resource-efficient way.

Water Framework Directive

The Water Framework Directive (WFD)[100] is the cornerstone of the EU water policy in the 21st century[101]. The WFD along with other water-related legislation[102] set the framework for sustainable and integrated water management, which aims at a high level of protection of water resources, prevention of further deterioration and restoration to good status.

By March 2022, Member States have to report the third generation of River Basin Management Plans (RBMPs) under the WFD. The Commission will assess the reported status and progress, checking how the findings identified in the assessment of the second RBMPs[103] have been addressed. Portugal has not yet reported the third RBMPs.

The Commission published in December 2021 the 6th Implementation Report[104]. It includes, amongst others, an interim assessment of progress on the implementation of the Programmes of Measures and on

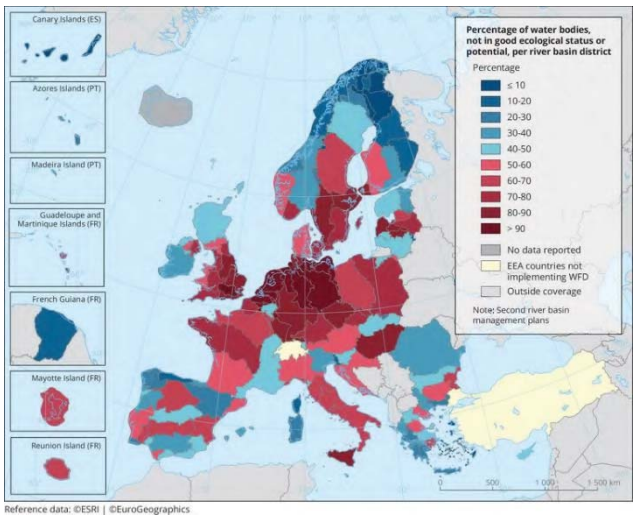
[94] Directive 2002/49/EC
[95] WHO 2018, Environmental Noise Guidelines for the European Region.
[96] For further information: European Environment Agency, Noise Fact Sheets 2021.
[97] These figures are an estimation by the European Environmental Agency based on : (i) the data reported by Member States on noise exposure covered by Directive 2002/49/EC; (ii) ETC/ATNI, 2021, Noise indicators under the Environmental Noise Directive 2021: Methodology for estimating missing data, ETC/ATNI Report No 2021/06, European Topic Centre on Air Pollution, Transport, Noise and Industrial Pollution; (iii) the methodology for health impact calculations, ETC/ACM, 2018, Implications of environmental noise on health and wellbeing in Europe, Eionet Report ETC/ACM No 2018/10, European Topic Centre on Air Pollution and Climate Change Mitigation.
[98] Infringement procedure 2017/2066.
[99] Case C-687/20
[100] The Water Framework Directive (2000/60/EC).
[101] The EU Water Policy.
[102] This includes the Groundwater Directive (2006/118/EC), the Environmental Quality Standards Directive (2008/105/EC), the Floods Directive (2007/60/EC), the Bathing Water Directive (2006/7/EC), the Urban Waste Water Treatment Directive (91/271/EEC), the new Drinking Water Directive (2020/2184/EC), the Nitrates Directive (91/676/EEC), the Marine Strategy Framework Directive (2008/56/EC), the Industrial Emissions Directive (2010/75/EU) and the new Regulation on minimum requirements for water reuse (2020/741).
[103] Detailed information can be found in the 5th Report from the Commission on the implementation of the Water Framework Directive and the Floods Directive, as well as in the 2019 EIR.
[104] See the 6th Implementation Report of the WFD and FD.

monitoring of the new priority substances. The assessment report for Portugal[105] showed that most Portuguese River Basin Districts have already completed some of the measures envisaged in the second RBMPs. However, the implementation of the measures in Madeira is lagging behind.

Based on the 2nd RBMPs reporting and data published 2020[106], in Portugal 52.6% of all surface water bodies[107] reach good ecological status (with unknown status 4.7%) and only 25.1% have good chemical status (with unknown 73.6%). For groundwaters, 9.3% failed to achieve good chemical status and 2.6% are in poor quantitative status.

Figure 26 illustrates the proportion of surface water bodies in Portugal and other European countries that failed to achieve good ecological status.

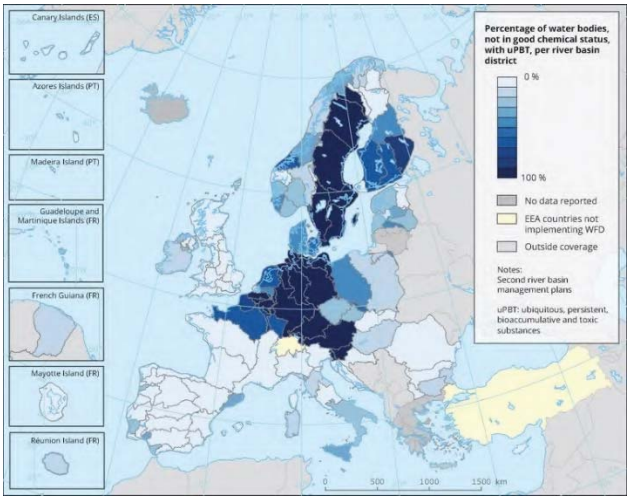
Figure 26: Proportion of surface water bodies (rivers, lakes, transitional and coastal waters) in less than good ecological status per River Basin District[108]



Reference data: ©ESRI | ©EuroGeographics

Figure 27 presents the percentage of surface water bodies in Portugal and other European countries failing to achieve good chemical status. For Portugal, the percentage is 1.3%, if one includes water bodies failing due to substances behaving as ubiquitous PBTs (Persistent, Bio-accumulative, and Toxic). Without uPBTs, the percentage of surface water bodies failing to achieve good chemical status remains the same.

Figure 27. Percentage of surface water bodies not achieving good chemical status[109]

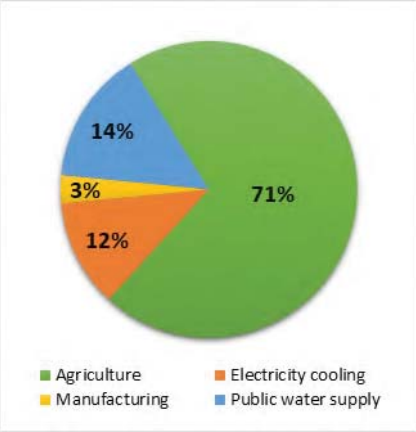


Under the IED framework, it should be stressed that Portugal showed over the last decade a significant decrease (15.9%) in industrial releases of heavy metals like Cd, Hg, Ni, Pb and in Total Organic Carbon, TOC (38%) to water[110].

Total water abstracted annually (corresponding to 2019 baseline) in Portugal from surface and groundwater sources is 5.407.85 hm^3 (EEA, 2022). The percentage for water abstraction per sector is 70.64% for agriculture, 14.56% for public water supply, 11.7% for electricity, 3.09% for manufacturing, as illustrated in the following Figure. Portugal uses a register to control water abstractions. According to the Portuguese Law 58/2005 (Water Law), permits are required as a general rule. A simple communication to authorities is necessary even for small extraction with no significant impacts in water quality.

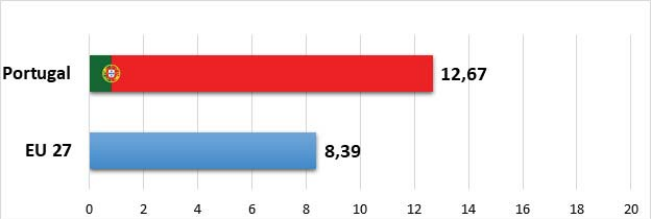
[105] European Commission, Directorate-General for Environment, Assessment of Member States' progress in Programmes of Measures during the second planning cycle of the Water Framework Directive. Member State: Portugal, 2022.
[106] See WISE - Freshwater
[107] Rivers, lakes, transitional, coastal, territorial.
[108] European Environment Agency, 2021.
[109] European Environment Agency, December 2019.
[110] European Environment Agency, June 2021.

Figure 28. Water abstraction per sector in Portugal[111]



In Portugal, the water exploitation index plus (WEI+)[112] is 12.67% (corresponding to year 2017), which is less than 20% that is generally considered as an indication of water scarcity[113], although it ranks above the EU average.

Figure 29. Water exploitation index plus (WEI+) inside EU, 2017[114]



Portugal has recently approved a policy to produce reclaimed water to be used in multiple non-potable purposes[115]. This is a positive initiative and can be highlighted as a good practice.

Floods Directive

As mentioned, the Commission published in December 2021 the 6th Implementation Report. It includes, amongst others, the review and update of the Preliminary Flood Risk Assessments during the second cycle (2016-2021).

The assessment report[116] showed that Portugal has developed a clear methodology for defining past floods with significant adverse impacts, including a mechanism for the collection of detailed information on the impact of flooding. However, the assessment of potential adverse consequences of future floods, including a quantitative methodology and consideration of the effectiveness of manmade infrastructures needs further improvement.

Portugal has not yet reported the second generation of Flood Risk Management Plans (FRMPs) under the Floods Directive. The European Commission will assess progress since the adoption of the first Flood Risk Management Plans and publish a new report, as done in 2019.

It can be highlighted as a good practice that Portugal has developed an online platform for the reporting of flood events to optimise the recording of occurrences in the field.

Drinking Water Directive

As regards the Drinking Water Directive, no new assessment of the quality of drinking water is available since the EIR 2019. The quality of drinking water in Portugal has not been indicated as an area of concern.

The recast Directive 2020/2184 entered into force on 12 January 2021, Member States have until 12 January 2023 to transpose it into their national legal system. Portugal will have to comply with the reviewed quality standards.

Bathing Water Directive

Regarding the Bathing Water Directive, it should be highlighted that in 2020, out of the 630 Portuguese bathing waters, 89.2% were of excellent quality[117]. Detailed information on the Portuguese bathing waters is available from a national portal[118] and via an interactive map viewer of the European Environment Agency.

[111] European Environment Agency, Water abstraction by source and economic sector in Europe, 2022.

[112] The Water Exploitation Index plus (WEI+) is a measure of total fresh water use as a percentage of the renewable fresh water resources (groundwater and surface water) at a given time and place. It quantifies how much water is abstracted and how much water is returned after use to the environment.

[113] By May 2022, EEA will develop seasonal WEI+ at river basin and NUTS2 level, which provide a more complete picture of water stress and water scarcity for each Member State.

[114] European Environment Agency, Water exploitation Index Plus, 2022.

[115] Decree-Law 119/2019, to be applied with Regulation (EU) 2020/741.

[116] European Commission, Directorate-General for Environment, Assessment of Second Cycle Preliminary Flood Risk Assessments and Identification of Areas of Potential Significant Flood Risk under the Floods Directive : Member State : Portugal, 2022

[117] European Environment Agency, 2021. State of bathing waters in 2020 – Portugal country report.

[118] Portuguese Environmental Agency (APA) – Bathing waters in Portugal

Figure 30: Bathing water quality in Europe in the 2020 season[119]

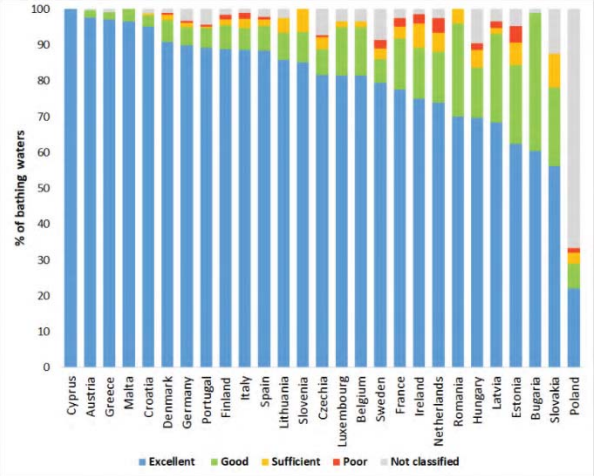
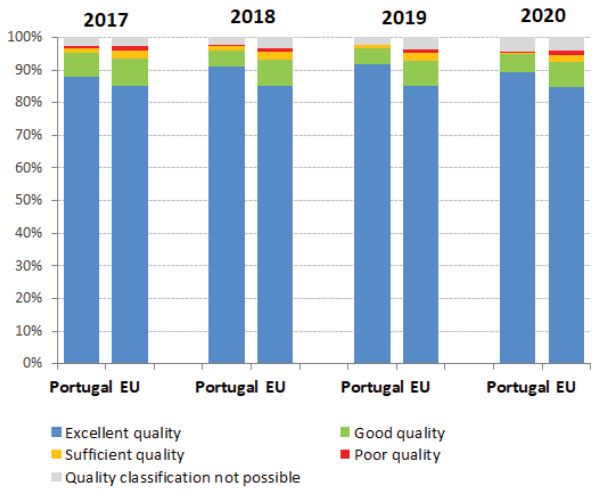


Figure 31: Portugal, Bathing water quality 2017-2020[120]



**For 2017, 2018 and 2019, data about the UK bathing waters are included under the EU average.*

Nitrates Directive

The latest Commission Report on the Implementation of the Nitrates Directive[121], referring to the period 2016-2019[122], warns that nitrates are still causing harmful pollution to water in the EU. Excessive nitrates in water are harmful to both human health and ecosystems, causing oxygen depletion and eutrophication. Where national authorities and farmers have cleaned up waters, it has had a positive impact on drinking water supply and biodiversity, and on the sectors such as fisheries and tourism that depend on them. Nevertheless, excessive fertilisation remains a problem in many parts of the EU.

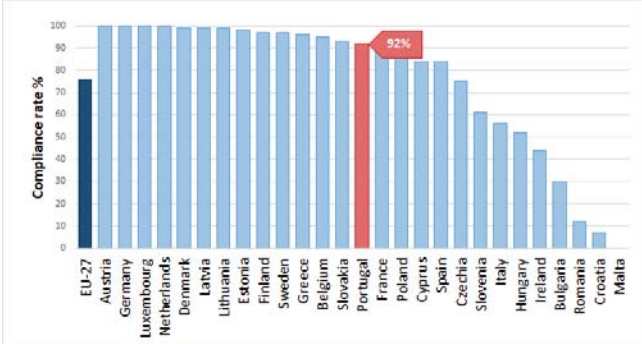
Portugal has a nitrogen and phosphorus surplus which is slightly lower than the EU average. The network of monitoring stations is concentrated in Nitrate Vulnerable Zones (NVZ) but there are also stations outside NVZ to follow the development of the possible nitrates pollution. There is a high number of groundwater hotspots showing nitrates concentration above 50 mg/l in NVZ, also a high number of stations show an increasing trend. A high number of surface waters are affected by eutrophication of which very high number is outside NVZ. The Action Programmes were revised in 2012[123].

Urban Waste Water Treatment Directive

Over the years, Portugal has encountered difficulties implementing the Urban Waste Water Treatment Directive (UWWTD).

According to the last available data[124], the overall compliance rate in Portugal is 92%, which is higher than the EU average of 76% in 2018 (see figure 32). Regarding the amount of urban wastewater which still needs to be collected or treated according to the requirements of the UWWTD, further efforts are needed to provide collection (0.1%), biological treatment (6.2%) and biological treatment with nitrogen and/or phosphorus removal (14.8%). On the other hand, Portugal reuses only 1.2% of treated urban wastewater.

Figure 32: Proportion of urban waste water that meets all requirements of the UWWTD (collection, biological treatment, biological treatment with nitrogen and/or phosphorus removal) in compliant urban areas of the UWWTD ('compliance rate'), 2018[125]



Portugal is the only EU Member State which has identified "less sensitive" areas[126], or areas in principle

[119] European Environment Agency – European Bathing Water Quality in 2020, 2022.
[120] European Environment Agency, European Bathing Water Quality in 2017, 2018, 2019, 2020.
[121] Implementation of the Nitrates Directive in the EU.
[122] Last Implementation Report 2016-2019.
[123] Commission SWD accompanying the Implementation Report 2016-2019 on the Nitrates Directive – Fiche on Portugal.
[124] WISE – Country profiles on urban waste water treatment - Portugal.
[125] European Commission, WISE Freshwater, 2021.
[126] E.g.: open bays, estuaries and other coastal waters with a good water exchange.

not adversely affected by wastewater discharges due to their intrinsic features[127].

Despite the improvement in compliance throughout the years, for which the use of EU funding has been fundamental, the incomplete implementation of the UWWTD has led to several rulings of the Court of Justice of the European Union against Portugal. Some of these cases, including one paying fines, were already solved. However, there are two judgments of the Court of Justice not fully implemented.

It should be noted that Portugal is preparing the PENSAARP 2030, a new national strategic Plan for water supply, wastewater and pluvial waters management. The Water and Waste Services Regulatory Authority (ERSAR) has developed a programme to collect a set of indicators on the value, knowledge and management of infrastructure in order to better understand the state of water services' assets and thereby contribute to more rigorous planning and decision making in operation, maintenance and renovation. However, at the municipal level, the sector remains fragmented and the reorganisation of water supply and wastewater sanitation services has not yet revealed its full potential and requires additional effort to create economies of scale and increase technical capacity. Water policies should ensure that all relevant sectors are prepared for future climate impacts, which requires improvements in monitoring the projected water availability and the integration of the water policy into the relevant sectoral policies.

The 2019 EIR for Portugal included six priority actions on water management. Considering that the assessment of the third cycle RBMPs will take some time, some of these are reiterated, and the following ones are suggested.

2022 priority actions

- New physical modifications of water bodies should be assessed in line with Article 4(7) of the WFD. In these assessments alternative options and adequate mitigation measures have to be considered.
- Continue current efforts to further reduce nitrates pollution from agriculture in groundwater. Portugal should revise and reinforce its action programmes to tackle the groundwater pollution in hot spots and revise NVZ designation to address eutrophication of surface waters where agriculture pressure is significant.
- Efforts should be made to improve the coordinated implementation between water, marine and nature policies.
- Complete implementation of the Urban Waste Water Treatment Directive for all agglomerations, by building up the necessary infrastructure, as well as develop the potential of water reuse.

Chemicals

The EU seeks to ensure that chemicals are produced and used in a way that minimises any significant adverse effects on human health and the environment. In October 2020, the Commission published the Chemicals Strategy for Sustainability / Towards a Toxic-Free environment[128], which led to some systemic changes in EU chemicals legislation. The strategy is part of the EU's zero-pollution ambition – a key commitment of the European Green Deal.

The EU's chemicals legislation[129] provides baseline protection for human health and the environment. It also ensures stability and predictability for businesses operating within the internal market.

Since 2007, the Commission has gathered information on the enforcement of the Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals (the REACH Regulation) and the Regulation on Classification, Labelling and Packaging (the CLP Regulation). In December 2020, the Commission assessed the Member States reports on the implementation and enforcement of these Regulations[130], in line with REACH Article 117(1) and CLP Article 46(2). According to the latest available data, national enforcement structures have not changed much. However, it is apparent from this report that there are still many disparities in the REACH-CLP implementation and notably in the area of the law enforcement. The recorded compliance levels seem to be quite stable over time, but with a slight worsening trend likely due to enforcement authorities being more effective in detecting noncompliant products/companies and more non-compliant products being put on the EU market.

In August 2021, the Commission published a measurable assessment of the enforcement[131] of the two main EU Regulations on chemicals using a set of indicators on different aspects of enforcement.

[127] Portugal reports regularly to the Commission on its areas identified as "less sensitive areas": "Cabo da Roca/Estoril" and "Madeira Island".

[128] See the Chemicals Strategy, COM(2020) 667 final.

[129] The REACH Regulation – The CLP Regulation.

[130] Final Report on the operation of REACH a CLP. Member States reporting 2020.

[131] European Commission, REACH and CLP enforcement: EU level enforcement indicators

Portugal has various national enforcement authorities for REACH and CLP, depending on the scope:

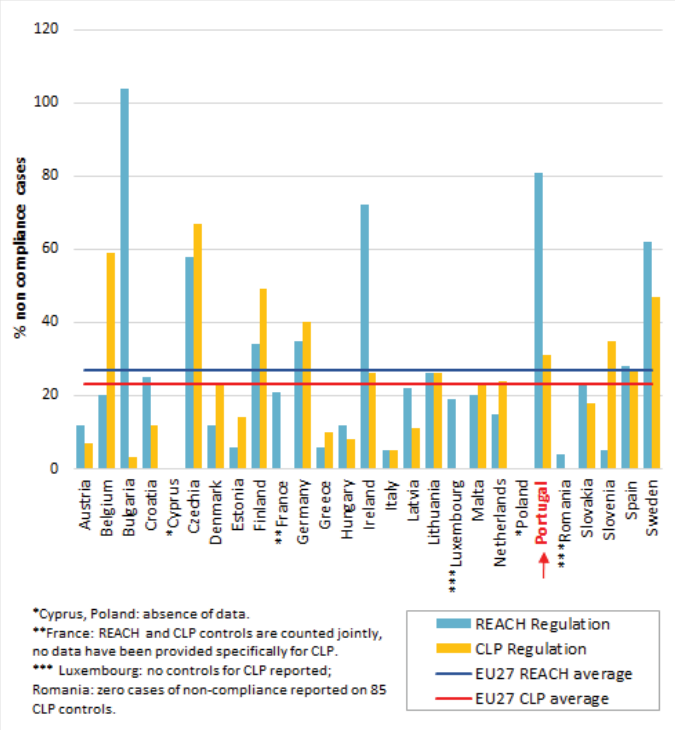
- General Inspectorate for Agriculture, Sea, Environment and Spatial Planning (IGAMAOT),
- Authority for Economic and Food Safety (ASAE),
- Tax and Customs Authority (AT),
- Regional Inspectorate for Environment of the Autonomous Region of Azores,
- Regional Directorate for Environment and Climate Change, Institute of Health Administration and Regional Authority for Economic Activities of the Autonomous Region of Madeira.

Portugal has devised and partially implemented both REACH and CLP enforcement strategies. The Enforcement strategy is included in the Annual Plan of Activities of IGAMAOT. The priorities are based on REF and pilots projects and results from past years inspections. The Annual report on enforcement activities is conducted with suggestions for enforcement priorities in the next years.

As a rule, all infringements of REACH are classed as serious or very serious environmental administrative offences. If the infringement is sufficiently serious, the competent authority may decide to impose further penalties in addition to a fine. That authority may also, where necessary, order the provisional seizure of assets and documents.

In Portugal, only 11 staff members are allocated to REACH and CLP enforcement, under the General Environment Inspectorate (IGAMAOT). Accordingly, REACH and CLP controls in 2019 remain with 105 well below the EU average. Furthermore, proactive inspections remain far below average. Although the actual level of expertise has increased since the last reporting, it is still not sufficient for some specific tasks under REACH, namely in relation to risk management and some specific areas of concern such as nanomaterials and endocrine disruptors. It should be mentioned the significant percentage of non-compliance cases out of the total number of REACH and CLP controls, far above the average.

Figure 33: Percentage % of non-compliance cases out of the total number of REACH and CLP controls during 2019 per Member State and compared to the EU average[132]



2022 priority actions

- Upgrade the implementation and enforcement administrative capacities towards a zero tolerance to non-compliances.

[132] European Commission, Final Report, on the operation of RREACH and CLP, pp.87-88, 2022.

4. Climate Action

In line with the Paris Agreement and as part of the European Green Deal, the European Climate Law sets the EU target of reaching climate neutrality by 2050 and reducing greenhouse gas (GHG) emissions by 55% by 2030 compared to 1990. The law also limits the contribution that carbon removals can make towards emission reductions in 2030 to ensure a sufficient mitigation effort.

The EU and its Member States submitted updated nationally determined contributions (NDC) to the UNFCCC in December 2020.

The EU is working across all sectors and policies to cut GHG emissions and make the transition to a climate-neutral and sustainable economy, as well as addressing the unavoidable consequences of climate change.

EU climate legislation incentivises emissions reductions from transport, the maritime sector and fluorinated gases (F-gases) used in products.

For road transport, EU legislation requires the GHG intensity of vehicle fuels to be cut by 6% by 2020 compared to 2010[133] and sets binding GHG emission standards for different vehicle categories[134].

Under the F-gas Regulation, the EU's F-gas emissions will be cut by two thirds by 2030 compared with 2014 levels.

From 2021, emissions and removals of GHGs from LULUCF have been included in the EU emission-reduction efforts.

The EU adaptation policy is an integral part of the European Green Deal. From 2021, Member States are required to report on their national adaptation policies[135], as the EU Climate Law recognises adaptation as a key component of the long-term global response to climate change. Member States will be required to adopt national strategies, and the EU will regularly assess progress as part of its overall governance on climate action. The updated EU adaptation strategy, published in February 2021, sets out how the EU can adapt to the unavoidable impacts of climate change and become climate resilient by 2050.

Key national climate policies and strategies

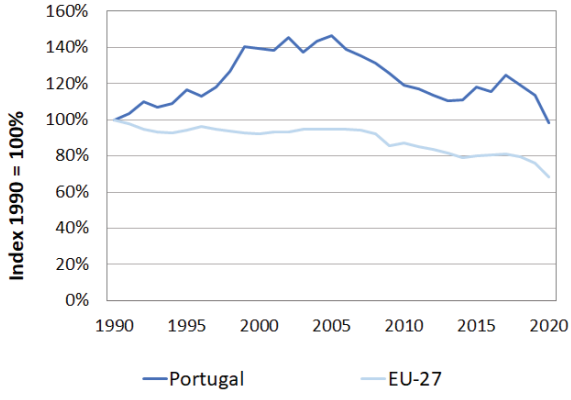
Portugal has an integrated National Energy and Climate Plan (NECP) for the years 2021–2030. In 2021, the first Portuguese Climate Law was adapted, which recognizes the climate emergency and consolidates the objectives, principles and obligations, in respect to climate action, at the various levels of governance, with regards to public policies, citizens and private sector.The work is consistent with the Carbon Neutrality Roadmap for 2050, and builds on the Portugal Green Growth Commitment and the National Programme for Climate Change 2020/30 set up in 2015. Portugal's national objective is to reach carbon neutrality by 2050.

In its Recovery and Resilience Plan, Portugal allocates nearly 38% of the plan to climate objectives and outlines crucial reforms and investments to further the green transition, including many measures for decarbonisation of industry, sustainable transport, and forest management (see more details in Chapter 5).

The National Adaptation Strategy was published in 2010 and revised in 2015. There is a significant shift towards the development of Local Adaptation Strategies, with the project ClimAdaPT. There is a significant shift towards the development of Local Adaptation Strategies, with the project ClimAdaPT, having led to 27 local adaptation strategies. In 2019, Portugal adopted the Climate Change Adaptation Action Programme and is currently preparing a national adaptation roadmap (planned for 2023-2024).

The country's total greenhouse gas emissions have decreased by 1% between 1990 and 2020. Although its economy has a higher emissions intensity than the EU average, emissions per capita are lower

Figure 34: Left hand side: Total greenhouse gas emissions (incl. international aviation) in Portugal, 1990-2020



Effort sharing target

For emissions not covered by the EU ETS, Member States have binding national targets under the Effort Sharing legislation for the period 2021-2030. Under EU legislation, Portugal has a target of limiting increase of

[133] The Fuel Quality Directive (Directive 98/70/EC) sets strict quality requirements for fuels used in road transport in the EU to protect human health and the environment, and to make road travel across the EU safer.

[134] Directive 98/70/EC.

[135] Article 29 of Regulation (EU) 2018/1999.

greenhouse gas emissions in the non-ETS sectors (buildings, road and domestic maritime transport, agriculture, waste and small industries) to +1 by 2020 and reduce emissions by 17% by 2030, compared to 2005 levels. The country's ESR emissions in 2019 were much below its 2020 target.

In its National Energy and Climate Plan, Portugal intends to achieve more reductions than its current ESR target for 2030 of -17%.

Figure 35: Emissions and targets under the Effort Sharing Decision/ Effort Sharing Regulation in Portugal, 2020 and 2030 as percentage change from 2005.

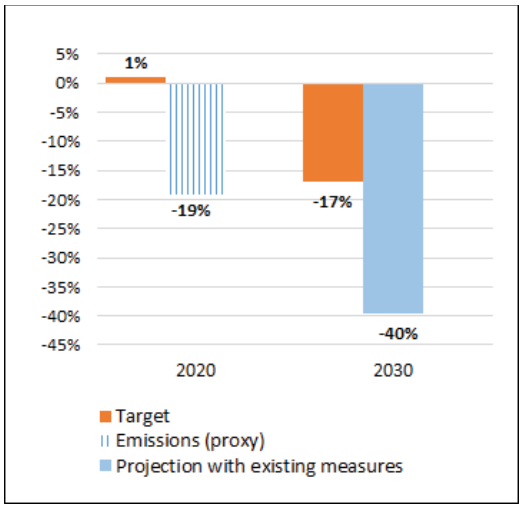
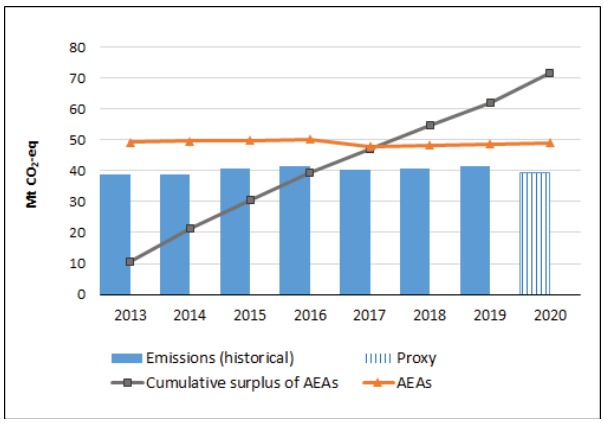


Figure 36: Emissions, annual emission allocations (AEAs) and accumulated surplus/ deficit of AEAs under the Effort Sharing Decision in Portugal, 2013-2020



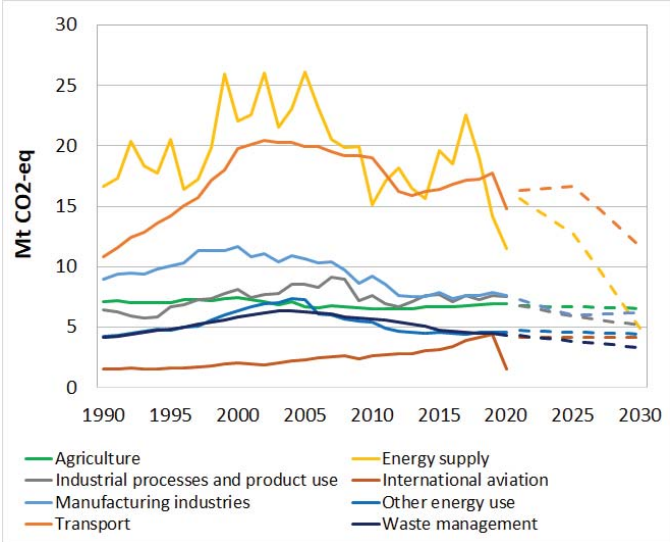
Key sectoral developments

In road transport, the GHG intensity of vehicle fuels in Portugal has decreased by 3, 1% from 2010 to 2019. The country needs to act swiftly to meet the current EU-wide reduction target of 6% by 2020. There are several types of action that Member States can take in this regard, for example, further expanding the use of electricity in road transport, supporting the use of biofuels, in particular advanced biofuels, incentivizing the development and deployment of renewable fuels of non-biological origin and reducing upstream emissions before refining processes.

Road transport in 2019 represented 25% of the total greenhouse gas emissions. To further reduce emissions in buildings, more building renovation programmes, as included in Portugal's Recovery and Resilience Plan, are needed.

19 in Portugal represented 25% of the total greenhouse gas emissions. Emissions have decreased by 12% compared to 2005.

Figure 37: Greenhouse gas emissions by sector in Portugal[136] – historical emissions 1990-2019, projections 2021-2030[137]



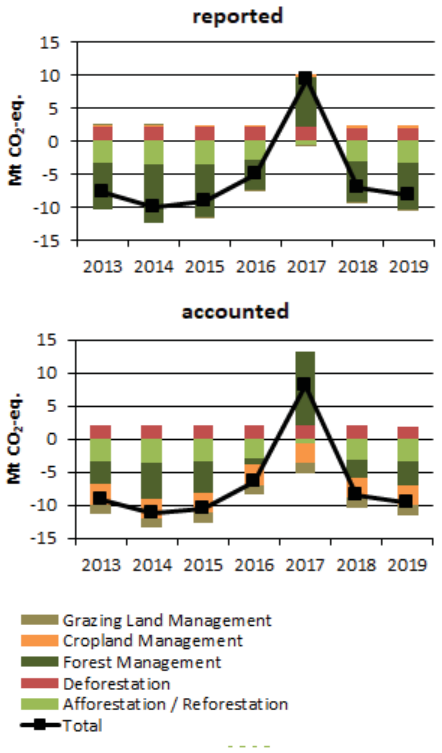
Emissions from agriculture have increased slightly since 2005.

In the Land Use, Land Use Change and Forestry (LULUCF) sector, Portugal is projected to see increasing net removals by 2030. Reported quantities under the Kyoto Protocol for the LULUCF sector in Portugal show net removals of, on average, -5.4 Mt CO_2-eq for the period 2013 to 2019. In this regard, Portugal contributes with 1.6% to the annual average sink of -344.9 Mt CO_2-eq of the EU-27.

[136] The sectors in the figure correspond to the following IPCC sectors: Energy supply: 1A1, 1B and 1C. Energy use in manufacturing industries: 1A2. Industrial processes and product use: 2. Transport: 1A3. Other energy use: 1A4, 1A5 and 6. Agriculture: 3. Waste: 5. International aviation: 1.D.1.a.

[137] European Environmental Agency, Total GHG trends and projections.

Figure 38: Reported and accounted emissions and removals from LULUCF in Portugal [138]



Use of revenues from the auctioning of EU ETS allowances

The total revenues from the auctioning of emission allowances under the EU ETS over the years 2012-2021 were about EUR 1.7 billion. In Portugal, all revenues from auctioning are channelled to the Environmental Fund (alongside other revenues) which finances environmental projects that may or may not be directly related to climate objectives.

2022 priority actions

- Decarbonise the transport sector. Road transport in particular continues to represent a large share of Portugal's energy consumption.
- Further increase the uptake of renewables. Portugal has ambitious plans to increase the role of renewables, notably in the heating and cooling sector, and to invest in small scale decentralised renewable electricity production. It also plans significant investments in hydrogen. There is room to further diversify renewable energy generation. Portugal presents unique conditions to develop a green hydrogen economy. Favourable conditions include the existence of a modern natural gas infrastructure, very competitive renewable electricity production prices and a strategic geographical location that facilitates exports.
- Speed up the renovation of buildings
- Take full advantage of the opportunities that arises from greening the economy. Automotive manufacturing is a major employer, and Portugal could benefit from investing and leading in low-emission technology in this sector.
- Take further adaptation measures due to Portugal's vulnerability to climate change effects.

[138] The differences between reported and accounted emissions from LULUCF under the Kyoto Protocol are described in the '*explanatory note on LULUCF – accounted and reported quantities under the Kyoto Protocol*'.

Part II: Enabling framework: Implementation tools

5. Financing

Environmental investment needs in the European Union

Financing environmental measures is essential for their success. Although most financing comes from national sources, various EU funds contribute significantly, helping to close the financing gaps.

Post-2020, environmental implementation will also be supported by the EU's COVID-19 recovery fund (via the RRF) and the 'do no significant harm' principle which runs across the EU budget. The renewed commitments made at COP26 (Glasgow, October-November 2021) and the Biodiversity Convention (April-May 2022)[139] will also be reflected in the EU budget.

Overall environmental investment gaps (EU-27)

The EU's investment needs for the green transition cover a range of interlinked areas. The additional investment needs over the baselines (i.e. the gap between what is needed and what is forecast to be invested if no additional action is taken) for climate, energy and transport were estimated in 2021 at EUR 390 billion per annum (EU27)[140] with a further EUR 130 billion a year to deliver the EU's core environmental objectives[141]. Climate adaptation costs can also be significant, reaching a total of EUR 35-62 billion (narrower scope) or EUR 158-518 billion (wider scope) per year[142]. Those investment needs reflect the implementation objectives to 2020 and to 2030 (except for climate adaptation, the cost of which costs are expected to last over a longer time horizon).

A preliminary update of the EU's core environmental investment gap is provided in Table 1[143]. Almost 40% of the environmental investment needs relate to dealing with pollution, which account for nearly two-thirds of the total gap if combined with water management. The investment gap in circular economy and waste is estimated between EUR 13-28 billion a year, depending on the levels of circularity implemented. The annual biodiversity financing gap is estimated at around EUR 20 billion.

Table 1: Estimated breakdown of the EU's environmental investment gaps, by environmental objective, 2021-2030 per annum[144]

Environmental objective	Estimated investment gap (EU-27, p.a.)	
	EUR million	%
Pollution prevention & control	42.8	39%
Water management & industries	26.6	24%
Circular economy & waste	13.0	12%
Biodiversity & ecosystems [145]	21.5	20%
R & D & I and other	6.2	6%
Total	**110.1**	**100%**

Environmental investment needs in Portugal

During the last decades, the support of the EU funding has significantly contributed to improve the implementation of the EU environmental law and policy in Portugal. Nevertheless, Portugal still faces considerable challenges and investment needs in the areas of water and waste management, air quality and nature protection.

In this sense, the following environmental needs have been identified by sector:

Pollution prevention & control

The EU's first Clean Air Outlook[146] under the clean air programme estimated that the total air pollution control

[139] The Convention on Biological Diversity (cbd.int); Post-2020 Global Biodiversity Framework | IUCN.

[140] SWD(2021) 621, accompanying proposal COM(2021)557 to amend the REDII Directive (EU) 2018/2001.

[141] Identifying Europe's recovery needs. SWD(2020) 98 final/2

[142] Impact assessment of the new LIFE Regulation. SWD(2018)292

[143] With decreases due to Brexit and some reconciliation among the objectives. DG ENV"Study supporting EU green investment needs analysis" (ongoing, 2021-2023) and DG ENV internal analysis "Environmental Investment needs and financing in the EU's green transition", July 2020.

[144] European Commission, DG Environment, "Study supporting EU green investment needs analysis" (ongoing, 2021-2023) and DG Environment internal analysis "Environmental Investment needs and financing in the EU's green transition", July 2020.

[145] To meet the needs of the EU Biodiversity Strategy for 2030 (Natura 2000, green infrastructure), at least EUR 20 billion a year should be unlocked for nature, while to fully cover the strategy (including restoration) EUR 30-35 billion may be needed, indicating a gap of EUR 10-20 billion a year compared to current baseline expenditure.

costs for Portugal to reach the NECD emission reduction requirements[147] by 2030 amount to a total of EUR 1 066 million per year, including EUR 727 million for capital investment (assuming the achievement the 2030 climate and energy targets).

As the second EU's Clean Air Outlook[148] suggests, implementing all relevant legislation adopted up to 2018, the 2030 climate/energy measures and the NAPCP should largely facilitate to reach the 2030 climate and 2018 energy targets. Furthermore, implementing the measures announced in the Member States in their NACPs, the EU would largely achieve the reductions of air pollutant emissions that correspond to the obligations under the NEC Directive for 2030, except for 15 Member States for ammonia[149].

Water management

Despite the progress that Portugal has made in recent years, challenges remain in water management, especially in the areas of water governance, water body rehabilitation and water efficiency. Further infrastructure investment is needed to improve water management, such as in wastewater collection and treatment, reduction of leaks in the networks and general water supply, improving monitoring (quality and quantity), as well as nature-based solutions, floods prevention and river restoration. Moreover, Portugal should take further advantage of the potential of water reuse. Further measures are also needed to face water scarcity and droughts.

A study conducted under the cooperation agreement between the European Commission and the Organisation for Economic Cooperation and Development (OECD) estimated investment needs and financing capacities for water-related investment in EU Member States[150]. There are also country factsheets for all Member States and OECD recommendations for some of them, including Portugal[151]. Up to 2030, the cumulative additional capital investment need for Portugal was estimated at EUR 3.6 billion over baseline levels (around 360 million per year), with over 90% of that related to wastewater. Moreover, the recent 6th Water Framework Directive and Floods Directive Implementation Report[152] and the financial - economic study[153] accompanying it, are also a relevant source of information in this domain.

Waste & circular economy

According to a Commission study[154], the capital investments need in the waste sector in Portugal are estimated at an additional EUR 670 million during 2021-2027 (and EUR 911 million in 2021-2035) over baselines, with corresponding annual investment needs between EUR 65-90 million a year on average. This concerns municipal and packaging waste measures related to collection, recycling reprocessors, bio-waste treatment, waste sorting facilities and waste registry digitalisation. This does not include the investment necessary for other key waste streams (plastics, textile, and furniture) or to scale up circularity and waste prevention across the economy.

Biodiversity & ecosystems

Prioritised action frameworks (PAFs) adopted by the Member States according to Article 8 of the Habitats Directive present the conservation priorities for the Natura 2000 network and its supporting green infrastructure, their costs and planned funding sources for the period corresponding to the current MFF (2021-2027). Portugal has submitted, in October 2021, to the European Commission the three PAFs: mainland Portugal, the Azores Autonomous Region and Madeira Autonomous Region. For Portugal, the total identified needs amount to EUR 341.8 million per year (including EUR 63 million annual one-off costs). The biggest part of this (more than EUR 210 million per year) is for Natura 2000 site-related maintenance and restoration measures for species and habitats, namely for agroecosystems, woodlands and forests and heathlands and shrubs. The main funding sources foreseen in the Portuguese PAFs are the EAFRD, ERDF, Cohesion Fund and LIFE. The above amounts do not cover additional costs concerning the Biodiversity Strategy to 2030, including on increased protection and restoration.

EU environmental funding 2014-2020

The multiannual financial framework (MFF) 2014-2020 allocated EUR 960 billion (in commitments, 2011 prices)

[146] International Institute for Applied Systems Analysis (IIASA), Progress towards the achievement of the EU's air quality and emissions objectives, 2018.

[147] Covering the reductions of and the emission ceilings for 5 atmospheric pollutants, SOx, NOx, PM2.5, NH3 and VOC by 2030, compared to 2005. Source: Progress towards the achievement of the EU's air quality and emissions objectives, IIASA 2018. (Page 29). Requirements are based on Directive (EU) 2016/2284.

[148] COM (2021) 3 Final and Report Annex.

[149] Nevertheless, the NECD also foresees deliveries by 2020 and 2025. Communication Second Clean Air Outlook.

[150] See the outcomes of the cooperation agreement between European Commission and OECD.

[151] See country fiche for Portugal.

[152] WFD and FD Implementation Reports – DG Environment – European Commission.

[153] European Commission, Directorate-General for Environment, Economic data related to the implementation of the WFD and the FD and the financing of measures, Final report. Publications Office, 2021.

[154] European Commission: Study on investment needs in the waste sector and on the financing of municipal waste management in Member States, 2019.

for the EU[155]. The commitment to green transition included a 20% climate spending target and funding opportunities for the environment; in particular, under the European Structural and Investment (ESI) Funds[156]. The 2014-2020 budget was subsequently topped up with over EUR 50 billion (current prices) from REACT-EU for cohesion policy action against coronavirus (COVID-19)[157].

Portugal received EUR 28.8 billion from the ESI Funds 2014-2020 to invest in job creation and a sustainable and healthy European economy and environment. The planned direct environmental investment amounted to EUR 2.5 billion with further EUR 1.3 billion identified as indirect environmental investment value, totalling to EUR 3.8 billion. Figure 40 shows an overview of (planned) individual ESI Funds earmarked for Portugal (EU amounts, without national amounts).

Figure 39: ESI Funds allocated to Portugal, including environmental investments, 2014-2020[158]

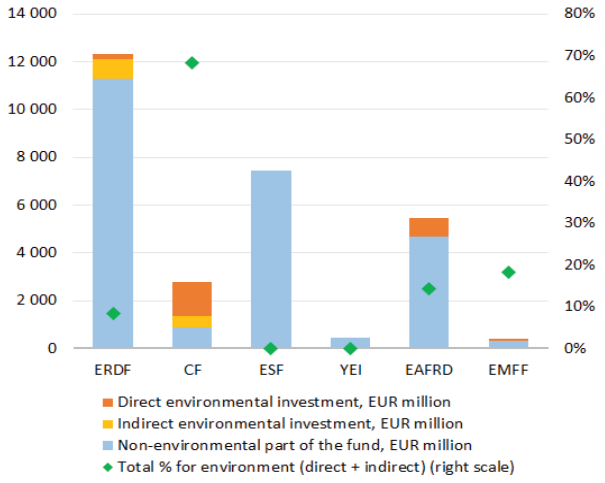


Table 2: Direct and indirect environmental investments under the ESI Funds in Portugal, 2014-2020[159]

Instrument	Allocations for the environment (EUR million)
Under Cohesion policy (ERDF + CF)	**2 938.4**
Direct environmental investments	1 643.7
water	616.0
waste	305.7
air quality	34.4
biodiversity and nature	44.6
land rehabilitation	162.6
climate and risk management	480.4
Indirect environmental investments	1 294.7
renewable energy	64.4
energy efficiency	150.4
sustainable transport	708.3
sustainable tourism	98.4
business development, R&I	273.2
Under EAFRD/rural development	**773.1**
Direct environmental investments	745.3
water	292.3
climate and risk management	453.0
Indirect environmental investments	27.7
renewable energy	10.3
energy efficiency	17.4
Under EMFF	**71.4**
Direct environmental investments	70.6
environment protection & resource efficiency	70.6
Indirect environmental investments	0.8
business development, R&I	0.8
Under ESI Funds total	**3 783.0**
Direct environmental investments	2 459.7
Indirect environmental investments	1 323.2

The main financing source for the environment is the Cohesion Fund, which is channelled trough a national Operational Programme dedicated to the environment: the OP 'Sustainability and Efficiency in the Use of Resources' (POSEUR). To complete the programming architecture, there are also two other national OPs: Competitiveness and Internationalisation, and Technical Assistance. In addition, there are seven regional OPs, which in this period are multi-funding, covering both ERDF and ESF, where environmental measures are also included.

[155] Council Regulation (EU, EURATOM) No 1311/2013.

[156] The European Structural and Investment (ESI) Funds include the European Regional Development Fund (ERDF), the Cohesion Fund (CF), and the European Social Fund (ESF) with the Youth Employment Initiative (YEI), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF).

[157] Regulation (EU) 2020/2221.

[158] European Commission, DG Environment analysis based on ESI Funds Open Data Portal Integration of environmental concerns in Cohesion Policy Funds (COWI, 2017), Regulation (EU) No 1303/2013, Regulation (EU) 2021/1060 and Implementing Regulation (EU) No 215/2014. Cut-off date for data: December 2021. Environmental investments here are captured via the combined use of intervention fields and coefficients under the Regulation (EU) No 1303/2013 and Regulation (EU) 2021/1060 allowing for a more precise identification and valuation of relevant environmental investments. N.B. Indirect environmental investments are valued using the Annex I environmental coefficients of Regulation (EU) 2021/1060 (as opposed to full value).

[159] European Commission, DG Environment - Data analysis. The values of environmental investments identified here in the specific environmental areas may differ from the tracking values at cohesiondata.ec.europa.eu, e.g. for clean air or biodiversity due to two factors: the set of environmental coefficients used and the range of funds assessed. DG Environment's analysis here covered the full range of ESI Funds. See also a previous footnote.

In addition, there are various ERDF OPs involving Portugal in transnational and cross-border cooperation (known as 'territorial cooperation') in which investment in the environment plays a major role.

The environmental integration has been ensured in the Partnership Agreement 2014-2020 and the different Operational Programmes for the five ESIF through the application of the Strategic Environmental Assessment (SEA) Directive and by other means.

Funding for the environment from the ESI Funds has been also supplemented by other EU funding programmes available to all Member States, such as, the LIFE programme, the Horizon 2020 or loans from the European Investment Bank (EIB), that add up to an estimated total of EUR 4.7 billion of EU environmental financing for Portugal in 2014-2020.

The LIFE programme[160] is entirely dedicated to environmental and climate objectives. It finances demonstration and best practice actions for green solutions to be deployed. In the 2014-2020 period, Portugal has received EU support for 20 LIFE projects (for nature and environment) with EUR 37.1 million from the LIFE programme (out of 1 028 EU27 LIFE projects with the total EU contribution of EUR 1.74 billion) [161].

Many outstanding LIFE projects can be found in Portugal. Among those selected in the last years, it can be mentioned the LIFE14 ENV/PT/000817, in this project partners created an alternative market for fruit and vegetables that were too small, too large or too ugly to sell in regular outlets. Their work has reduced food waste by more than 2 300 tonnes to date, a sum comparable to the annual amount of unused food from 13 000 people.

In 2014-2020, the Horizon 2020 allocated about EUR 54.1 million for Portugal, in particular, for circular economy, including raw materials, climate action, nature and resources, earth observation, water, research and innovation and cultural heritage) which is about 4.7% of Portugal's total allocation[162].

From the European Fund for Strategic Investments (EFSI), Portugal received EUR 523.2 million for direct environmental investments and EUR 22 million for indirect environmental investments (totalling to EUR 545.2 million) out of its total allocation (EUR 1.1 billion)[163].

From the European Investment Bank (EIB), Portugal received EUR 794.5 million for direct environmental investments (specifically, for water and sewerage and some for waste) out of the total EIB loans for Portugal (EUR 10.2 billion)[164]. The country ranks twelfth in the total amount of EIB lending.

In 2020, the EIB provided EUR 24.2 billion to fight climate change at EU level, 37% of its total financing and EUR 1.8 billion (3% of its financing) for the environment[165].

EU environmental funding 2021-2027

The 2020 European Green Deal investment plan calls upon EUR 1 trillion green investments (public and private) by 2030. The multiannual financial framework (MFF) 2021-2027 and the NextGenerationEU will mobilise EUR 2.018 trillion (in current prices) to support the COVID-19 recovery and the EU's long-term priorities, including environmental protection[166]. Following the EU Green Deal's[167] 'do no harm' pledge and the Interinstitutional Agreement on the 2021-2027 MFF[168], 30% of the EU budget will support climate efforts and 7.5% (as of 2024) and 10% (as of 2026) biodiversity that requires increased programming of financial resources for biodiversity, specifically under the 2021-2027 Cohesion policy and the 2023-2027 CAP to reach those targets.

Sustainable finance significantly increases transparency on environmental sustainability (a goal promoted by the EU Taxonomy)[169], strengthens non-financial reporting requirements, facilitates green bond issuance (by the EU green bond standard[170]). Reinforced by the Renewed Sustainable Finance Strategy (2020)[171] it will increase investment flows to climate and environment. In support of financing climate adaptation, the new strategy on adaptation to climate change[172] can facilitate to close the insurance protection gap from non-insured climate-related events[173]. The EIB will align 50% of its lending

[160] European Commission, LIFE Programme.
[161] Source: CINEA
[162] Source: EASME, https://sc5.easme-web.eu/.
[163] Approved and signed EFSI financing - EIB, 2015-2020: Source: https://www.eib.org/en/products/mandates-partnerships/efsi/index.htm.

[164] EIB loans in EU countries in 2014-2020. Source: EIB Open Data Portal.
[165] EIB 2021 Activity Report. The EIB Group jointly works with the European Commission in implementing several programs that finance environmental implementation: InvestEU, the successor of EFSI, Pillar II and III of the Just Transition Mechanism. The EIB Group stands as a key implementing partner for InvestEU with responsibility for managing 75% of the overall budgetary capacity of the mandate.
[166] European Commission, 2021-2027 long-term EU budget & NextGenerationEU.
[167] COM/2019/640 final.
[168] Interinstitutional Agreement, OJ L 433I.
[169] See EU Taxonomy for sustainable activities.
[170] EU Green Bond Standard - 2021/0191 (COD).
[171] COM (2021) 390 Final - European Commission, Strategy for Financing the Transition to a Sustainable Economy.
[172] COM (2021) 82 final.
[173] The strategy would support improved insurance gap coverage including through the natural catastrophe markets as reflected with the EIOPA (the Association for European Insurance and Occupational Pension Authorities) dashboard on insurance protection gap for natural

with climate and environment by 2025[174] with a EUR 250 billion contribution to the Green Deal Investment Plan by 2027.

Table 3 makes an overview of the EU funds earmarked specifically to Portugal for the 2021-2027 period. These funds are also supplemented by other EU funding programmes available to all Member States.

Table 3: Key EU funds allocated to Portugal (current prices), 2021-2027

Instrument	Country funding allocation (million EUR)
Cohesion policy ERDF CF ESF+ ETC (ERDF)	**Total: 22 755.3[175]** 11 496.7 3 399.3[176] 7 496.6 138.9
Just Transition Fund	223.8[177]
EAFRD/rural development under CAP Strategic Plans 2023-2027[178]	**2 702.8[179]**
European Maritime, Fisheries and Aquaculture Fund (EMFAF)	**378.6[180]**
Recovery and Resilience Facility (RRF) 2021 – 2026[181]	**13.907.3 (grants)** **2 699.0[182] (loans)**

In 2021-2027, EU Cohesion Policy will support long-term development objectives in Portugal by investing EUR 22.75 billion, including EUR 223.8 million from the new Just Transition Fund directed to alleviate the socio-economic impacts of the green transition in the most vulnerable regions.

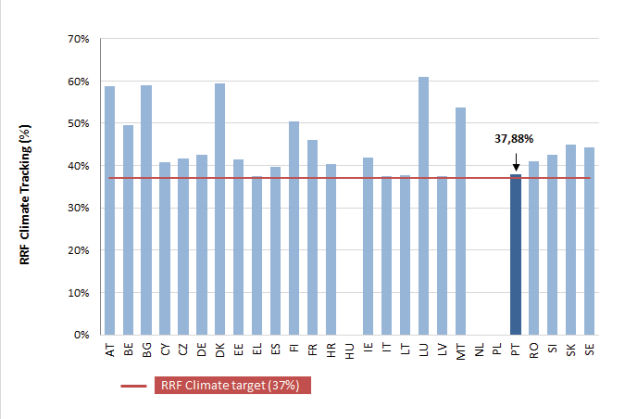
The Partnership Agreement with Portugal is under negotiation. A significant part of the Cohesion Fund and a relevant percentage of the ERDF will be devoted to environmental investments, taking into account the thematic concentration. Furthermore, other EU Funds will also contribute to support environmental projects in Portugal: EARDF, EMFAF, LIFE, Horizon Europe, etc.

It is worth recalling that the implementation of the ERDF 2021-2027 is linked to the fulfilment of the enabling conditions, including the three environmental ones. Portugal has already met the nature enabling condition, although further efforts are needed to comply with the waste and water enabling conditions.

Under NextGenerationEU, Portugal is set to receive EUR 16.6 billion in grants and loans from the Recovery and Resilience Facility (RRF). The Portuguese Recovery and Resilience Plan (RRP)[183] is based on three pillars: resilience, climate transition and digital transition. It is structured in 20 components. It includes 32 Reforms and 83 Investments.

The Portugal's RRP devotes 37.9% of its budget to climate change objectives. The components more relevant for environmental topics are: 8 on forests, 9 on water management, 12 on bio-economy and 5 on Sea.

Figure 40: Climate expenditure in RRP, 2021-2026[184]



Under NextGenerationEU, the Commission will issue up to EUR 250 billion of EU green bonds (1/3 of the NGEU) until 2026 that will comply with the general spirit of the DNSH principle, but will not be subject to the currently developed Delegated Acts related to the EU Taxonomy and will not fully align with the proposed EU Green Bond Standard.

Portugal should take advantage of the European Structural and Investment Funds and the Recovery and Resilience Facility to improve compliance with EU environmental law and policy and to use the potential of the green economy for competitiveness and job creation.

catastrophes. See: The pilot dashboard on insurance protection gap for natural catastrophes | Eiopa (europa.eu).

[174] EIB Climate Bank Roadmap 2021-2025, November 2020

[175] European Commission, 2021-2027 Cohesion policy EU budget allocations.

[176] The transfer to the Connecting Europe Facility (Transport) is not included.

[177] European Commission, 2021-2027 Cohesion policy EU budget allocations.

[178] European Commission, CAP strategic plans.

[179] Regulation (EU) 2021/2115, Annex XI.

[180] Regulation (EU) 2021/1139, Annex V.

[181] The actual reforms and investments under the RRF have to be implemented until 31 December 2026.

[182] Council Implementing Decision, FIN 512.

[183] European Commission – Portugal's recovery and resilience plan.

[184] European Commission. The contributions to climate objectives have been calculated using Annex VI of the RRF Regulation (EU) 2021/241.

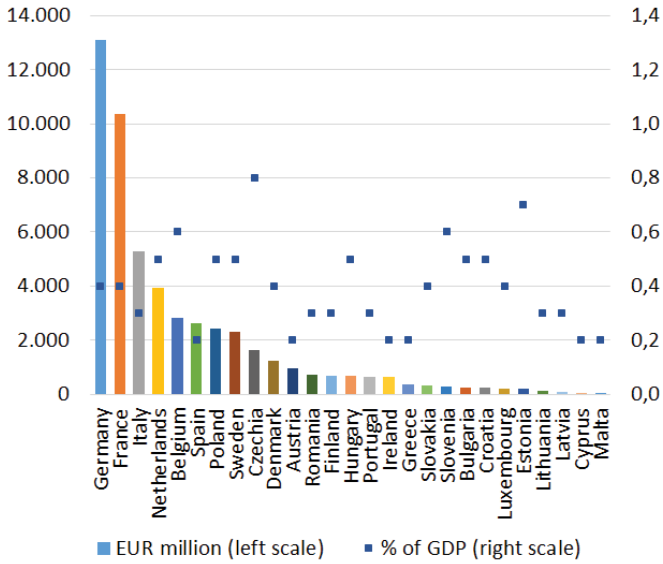
In addition to EU funds earmarked specifically for Portugal in the 2021-2027 period, there are also other funding programmes that can been accessed at the EU level and which are open to all Member States. These include, among others, the LIFE programme[185] (EUR 5.4 billion), Horizon Europe (EUR 95.5 billion)[186], the Connecting Europe Facility[187] (EUR 33.7 billion)[188] or the funds to be mobilised via the InvestEU[189]. They will also support the green transition, including research and innovation activities for environmental protection (Horizon Europe)[190], clean transport and energy (the Connecting Europe Facility[191]) or sustainable infrastructure (InvestEU)[192].

National environmental protection expenditure

Total national environmental protection expenditure (including all relevant current and capital expenditure)[193] in the EU-27 was EUR 272.6 billion in 2020, representing 2% of the common GDP being quite stable over time. While absolute expenditure is concentrated in a few countries, as a share of GDP, most countries spend between 1-2%, including Portugal with 1.4%.

Of the above total, the EU-27's capital expenditure (Capex) on environmental protection (i.e. investment) amounted to EUR 56.3 billion in 2018, lowering to EUR 54.5 billion in 2020, representing around 0.4% of GDP. Most Member States invested 0.2-0.5% of their GDP in environmental protection, including Portugal with 0.3%. During 2014-2020, this totalled to around EUR 376 billion of environmental investment in the EU27, and to EUR 4.2 billion for Portugal.

Figure 41: Environmental protection investments in the EU-27 (EUR million and % of GDP), 2018[194]



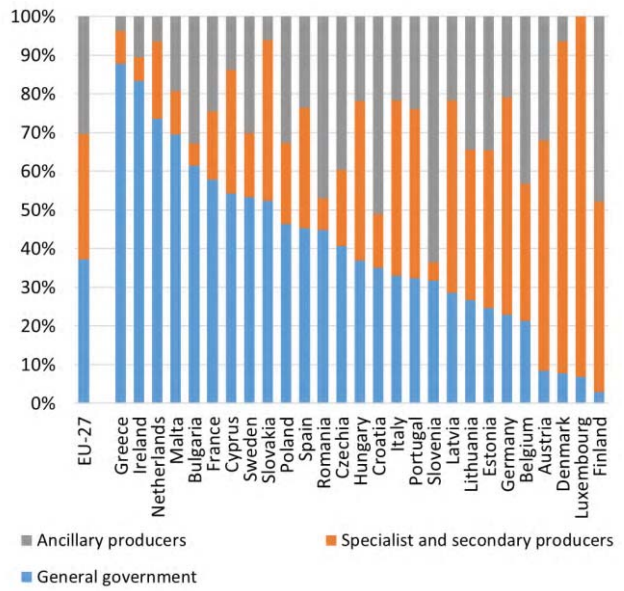
By institutional sector, around 32% of Portugal's environmental protection investments (capital expenditure) came from the general government, 44% from specialist producers (of environmental protection services, e.g. waste and water companies) and 24% from the classical industry (or business) sector that normally pursues environmental activities as ancillary to their main activities. At EU level, 37% comes from governments, 33% from specialist producers and 30% from industry (business).

It is worth to mention the Portuguese Environmental Fund[195], which is an autonomous fund under the tutelage of the governmental area of the Ministry for Environment and Climate Action. It is a financial instrument that supports entities, activities, or projects that implement sustainable development policies and contribute to the achievement of national and international objectives in the fields of climate action, waste and circular economy, as well as environmental education, recovery of environmental damage, nature conservation and water resources. In 2020 the total amount of expenses was around 570 million EUR.

[185] European Commission, LIFE Programme.
[186] European Commission, Multiannual financial framework 2021-2027 (in commitments) - Current prices.
[187] The CEF (Transport) includes also EUR 11.3 billion transferred from the Cohesion Fund. 30 % of the transferred amount will be made available, on a competitive basis, to all Member States eligible for the Cohesion Fund. The remaining 70% will respect the national envelopes until 31 December 2023. Any unspent amount, by that date, under national envelopes will support all Cohesion Fund's Member States.
[188] Regulation (EU) 2021/1153.
[189] The InvestEU Fund is foreseen to mobilise over EUR 372 billion of investment through an EU budget guarantee of EUR 26.2 billion to back the investment of financial partners such as the European Investment Bank (EIB) Group and others.
[190] European Commission, Horizon Europe.
[191] European Commission, Connecting Europe Facility.
[192] European Union, InvestEU.
[193] At economy level, including final consumption, intermediate consumption and capital expenditure of households, corporations and governments related to environmental protection goods and services. It excludes EU funds, while may include some international expenditure beyond domestic. Data source: Environmental Protection Expenditure Accounts (EPEA), Eurostat. EPEA accounts are based on the CEPA 2000 classification, excluding climate, energy and circular economy.

[194] Eurostat, Environmental Protection Expenditure Account, 2021.
[195] The "Fundo Ambiental" was created in 2016, replacing other existing Funds in the field of the environment.

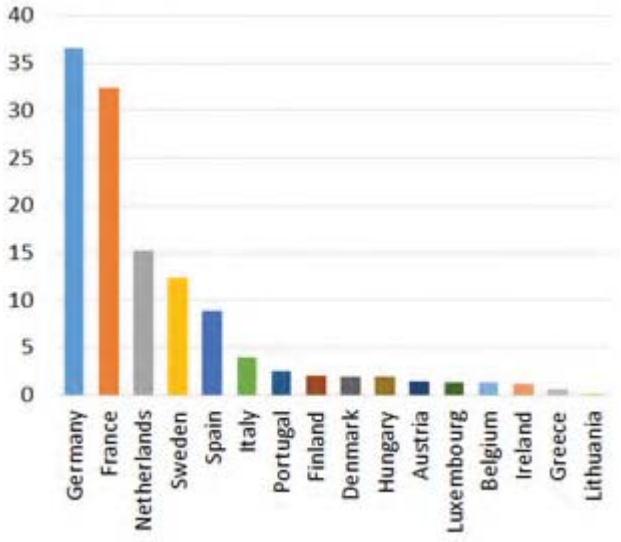
Figure 42: EU-27 Member States' environmental protection investments (Capex) by institutional sectors (Total economy = 100%), 2018[196]



Breakdown of investment by environmental topic is partially available, at the level of institutional sectors only (instead of economy level), due to different reporting patterns[197]. At Portugal's general government level, 35% of environmental protection investments went to wastewater, 30% to biodiversity and 27% to environmental R&D in 2018. In case of the country's specialist producers, around half of the relevant investments were received by waste management (52%) over a third by wastewater (36%), with further 5% by noise and 4% by biodiversity protection. For industry (business), the first priority was the protection of air (51%), followed by wastewater (23%) to name the most significant items.

The total annual European green bond issuance [198] in 2020 was USD 156 billion (EUR 137 billion[199]), growing from USD 117 billion (EUR 105 billion) in 2019, also including some non-EU European countries. By EU-27 Member States only, the 2020 annual green bond issuance was EUR 124 billion. 83% of the green bonds issued by European countries served energy, buildings or transport objectives between 2014-2020, 8% supported water and waste, with further 6% supporting land use – with links to ecosystem conservation & restoration, based on the Climate Bonds Taxonomy being broadly similar to the EU Taxonomy[200]. Portugal's contribution to the 2020 annual EU green bond issuance amounted to EUR 2 555.8 million.

Figure 43: Annual EU green bond issuance in 2020 (EUR billion)[201]



Green budget tools

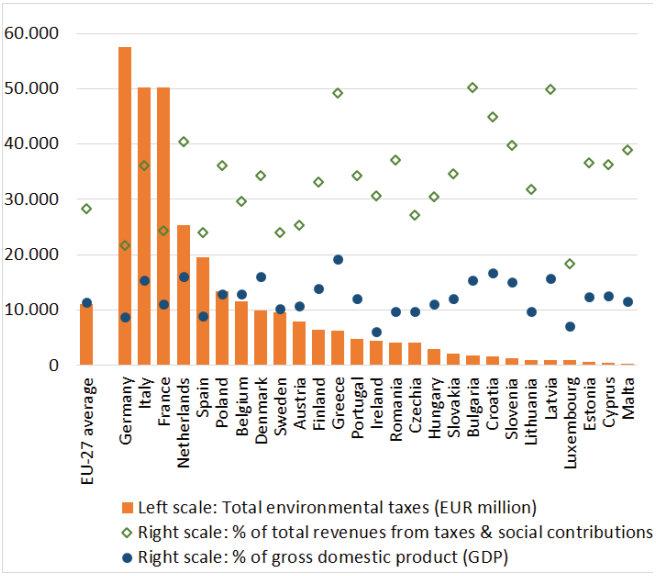
Green taxation and tax reform

Portugal's environmental taxes amounted to EUR 4.77 billion in 2020 (2.38% of GDP), being slightly above the EU average (2.24% of GDP). The distribution of environmental taxes was similar to that at EU level, while the share of pollution and resource taxes (0.77%) was significantly lower than the EU average (3.55%).

It is worth recalling that the Portuguese Government created a "Commission for a Green Tax Reform" in 2014, and its recommendations were partially followed in the subsequent reform of the Portuguese tax system that took place in 2015 in order to foster environmental taxation. The Portuguese authorities are currently working in a study on this matter in view of possible further measures in this direction.

[196] Eurostat, Environmental Protection Expenditure Accounts (env_epe).
[197] Data reporting is different for the 3 institutional sectors, leading to aggregation difficulties. Specialist companies provide comprehensive data across all environmental areas (CEPA 1-9), while this is less the case for general government and industry that often report (the non-obligatory) data in merged categories only (with difficulty to split) or not at all.
[198] Green bonds were created to fund projects that have positive environmental and/or climate benefits. The majority of green bonds issued are green "use of proceeds" or asset-linked bonds. The very first green bond was issued in 2007 with the AAA-rated issuance from multilateral institutions, the European Investment Bank (EIB) and the World Bank.
[199] At Eurostat's annual average EUR/USD exchange rates.
[200] Interactive Data Platform at www.climatebonds.net. Further information on Climate Bonds Taxonomy: https://www.climatebonds.net/standard/taxonomy
[201] Climate Bonds Initiative, 2022.

Figure 44: Environmental taxes in the EU-27, 2020[202]



The 2019 European Green Deal underlines that well-designed tax reforms can boost economic growth and resilience, foster a fairer society and a just transition, by sending the right price signals and incentives to economic actors. The Green Deal creates the context for broad-based tax reforms, fossil fuel subsidies removal, shifting the tax burden from labour to pollution, also accounting for social considerations[203]. The application of the 'polluter pays principle' (PPP)[204] stipulating that polluters should bear the cost of measures to prevent, control and remedy pollution; is facilitated by the EU Commission's TSI flagship[205] on greening taxes.

Environmentally-harmful subsidies

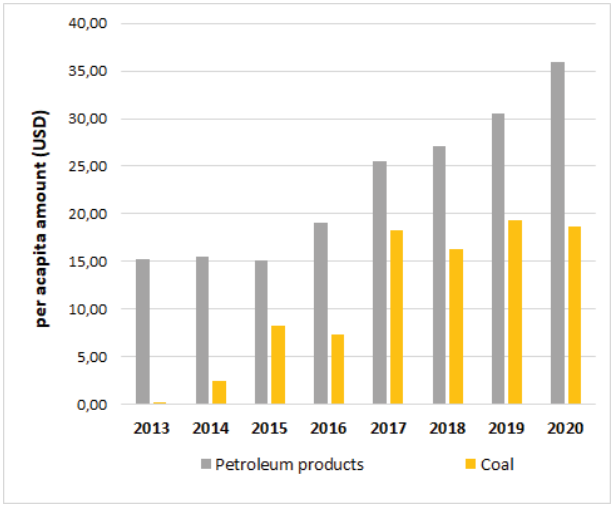
Addressing and removing environmentally harmful subsidies (EHS) is a further step towards wider fiscal reforms[206].

Fossil fuel subsidies are costly for public budgets and adversely impact the achievement of the Green Deal objectives. In many cases they also go against incentives for green investments, not contributing to levelling the playing field. Fossil fuel subsidies varied around EUR 55 billion in the EU since 2015. They rose by 4% between 2015 and 2019, however some countries, such as Latvia, Lithuania Sweden, Greece or Ireland, managed to decrease them. In the EU, subsidies on petroleum products, in sectors such as transport and agriculture, kept on growing over the period, while subsidies on coal and lignite decreased, due to the diminishing role of solid fuels in electricity generation.

As a share of GDP, fossil fuel subsidies ranged from 1.2% in Hungary to less than 0.1% in Malta in 2019 (being 0.4% on EU average). In Portugal, they amounted to EUR 0.9 billion (0.45% of the GDP) in 2019. In 2020, the EU27's total fossil fuel subsidies decreased to EUR 52 billion (due to falling consumption trends amid the COVID-19-related restrictions) which, without Member State actions, are likely to rebound as economic activity picks up from 2020[207].

A summarised assessment about the EHS in Portugal can be found in the 2019 EIR. The next figure also gives some interesting information in this respect.

Figure 45: Trends in petroleum products and coal subsidies in Portugal[208]



% GDP	2013	2014	2015	2016	2017	2018	2019	2020
Petroleum	0,07	0,07	0,08	0,10	0,12	0,11	0,13	0,16
Coal	0,00	0,01	0,04	0,04	0,09	0,07	0,08	0,08

Current green budgeting practices

Green budgeting encompasses various climate and environmental tagging and tracking practices in budgets and some EU Member states already use green budgeting elements[209]. Green budgeting helps identify

[202] Eurostat, Environmental taxes accounts (env_eta).
[203] European Commission, The European Green Deal, COM (2019/640 final), p.17
[204] Article 191(2) of the Treaty on the Functioning of the European Union: "Union policy on the environment (…) shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay".
[205] European Commission, Greening taxes- applying polluter pays principle in practice, green budgeting TSI participation.
[206] European Commission, Study on assessing the environmental fiscal reform potential for the EU28 . January 2016.
[207] State of the Energy Union report, COM(2021) 950 and Annex
[208] OECD, Fossil Fuel Subsidy Tracker.
[209] European Commission, Green Budgeting Practices in the EU: A First Review, 2021. and OECD, Public Governance Directorate, Climate

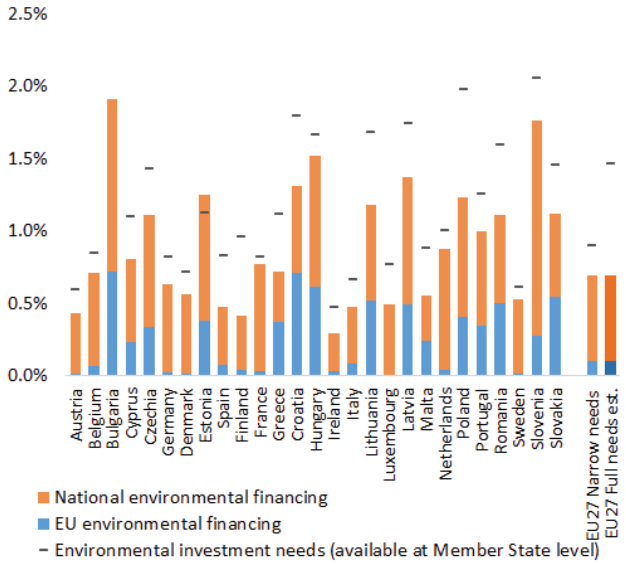
and track green expenditure and green revenues to increase transparency on the environmental implications of budgetary policies, improving policy coherence and supporting green policies (including climate and environmental objectives)[210].

EU climate proofing and sustainability proofing guidance have also been developed, as tools to assess project eligibility and compliance with environmental legislation and criteria[211]. The EU Commission established a green budgeting reference framework[212] and launched a technical support flagship (TSI) on green budgeting in 2021 to assist Member States in developing or further developing national green budgeting frameworks to reap the benefits for policy coherence and for the green transition. Portugal participates in the EU Commission's green budgeting flagship started in 2021.

Overall financing compared to the needs

The overall environmental financing for investments is estimated to have been 0. 0.6-0.7% of GDP in the 2014-2020 period in the European Union, taking into account major EU funds and national financing. This ranged from 0.3% (Ireland) to 1.91% (Bulgaria), linked to the level of environmental challenges in Member States. The overall EU environmental investment needs in the 2021-2027 period are estimated to range between 0.9-1.5% of the projected common GDP (2021-2027), suggesting an overall environmental financing gap (or 'additional financing need' over baseline financing) of 0.6-0.8% of GDP for the EU, assuming environmental financing levels similar to the past period[213].

Figure 46: Total environmental financing baseline (2014-2020) and estimated needs (2020-2030) in the EU27 (% of GDP) [214]



Portugal's environmental financing for investments came to an estimated 1% of GDP (EU average: 0.7%) in 2014-2020, in two-thirds relying on domestic sources. On the other hand, the country's environmental investment needs in the 2021-2027 period are found to reach over 1.26% of GDP (covering need broken down by Member State), suggesting an additional financing need (gap) of at least 0.26% of GDP – that is likely higher when also accounting for needs estimated currently at EU-level only (e.g. water protection, higher circularity, biodiversity strategy etc.).

2022 priority actions

- Devise an environmental financing strategy to maximise opportunities for closing environmental implementation gaps, bringing together all relevant administrative levels.
- Ensure an increased level of financing for the environment, including from private sources (currently accounting for a third of the total), to cover significant investment needs across the environmental objectives compared to past level of financing.

Change and Long-term Fiscal Sustainability, Working Paper, February 2021. Climate Change and Long-term Fiscal Sustainability

[210] European Commission, European Commission Green Budgeting Reference Framework.

[211] European Commission, Technical guidance on sustainability proofing for the InvestEU Fund.

[212] European Commission, Green Budgeting Reference Framework, based on the review of the OECD Paris Collaborative on Green Budgeting initiative, 2017.

[213] Source: DG Environment data analysis. EU financing sources covered: ESI Funds (ERDF, CF, ESF, YEI, EAFRD, EMFF), Horizon 2020, LIFE, EFSI (EU amount), EIB loans. National financing: total national environmental protection capital expenditure (investments) - source: Eurostat EPEA dataset. Cut-off date for data: end 2021. N.B. The total financing may be higher, in particular through further indirect investments, requiring further analysis in the future.

[214] European Commission, ESI Funds Open Data, 2021.

6. Environmental Governance

Information, public participation and access to justice

Citizens can more effectively protect the environment if they can rely on the three 'pillars' of the Aarhus Convention:
(i) access to information;
(ii) public participation in decision making;
(iii) access to justice in environmental matters.

It is of crucial importance to public authorities, the public and businesses that environmental information is shared efficiently and effectively[215]. Public participation allows authorities to make decisions that take public concerns into account. Access to justice is a set of guarantees that allows citizens and NGOs to use national courts to protect the environment[216]. It includes the right to bring legal challenges ('legal standing')[217].

Environmental information

This section focuses on Portugal's implementation of the INSPIRE Directive.

The INSPIRE Directive aims at establishing a European spatial data infrastructure for sharing environmental spatial information between public authorities across Europe, assisting in policy-making across boundaries and facilitating public access to this information. Geographic information is needed for good governance at all levels and should be readily and transparently available.

Portugal's performance could be better. It has been reviewed based on the 2021 country fiche[218]. Data identification and documentation have made good progress, and implementation levels are good. However, more efforts are needed to make the data more widely accessible.

Table 4: Country dashboard on the implementation of the INSPIRE Directive, 2016-2020[219]

	2016	2020
Effective coordination and data sharing		
Ensure effective coordination	■	■
Data sharing without obstacle	■	■
INSPIRE performance indicators		
i. Conformity of metadata	■	■
ii. Conformity of spatial data sets[220]	■	■
iii. Accessibility of spatial data sets through view and download services	■	■
iv. Conformity of network services	■	■

Legend

- ■ Implementation of this provision is well advanced or (nearly) completed. Outstanding issues are minor and can be addressed easily. Percentage: >89%
- ■ Implementation of this provision has started and made some or substantial progress but is still not close to be complete. Percentage: 31–89%
- ■ Implementation of this provision is falling significantly behind. Serious efforts are necessary to close implementation gap. Percentage: <31%

Public Participation

Portugal has, since 2015, made available an integrated online service[221] allowing citizens, NGOs, or businesses to participate in EIA and SEA processes; the "Participa" website makes available a full list of cases, with access to relevant documentation, and facilitates submission of evidence by the public. In addition, access to environmental information and associated administrative documents is guaranteed in law. However, information is not yet available on the extent to which the public makes use of the opportunity to participate in SEA and EIA

[215] The Aarhus Convention, the Access to Environmental Information Directive (Directive 2003/4/EC) and the INSPIRE Directive (Directive 2007/2/EC) together create a legal foundation for the sharing of environmental information between public authorities and with the public. This EIR focuses on the INSPIRE Directive's implementation.
[216] These guarantees are explained in the Commission Notice on access to justice in environmental matters, OJL 275, 18.8.2017 and a related Citizen's Guide.
[217] This EIR focuses on the means implemented by Member States to guarantee rights of access to justice, legal standing and to overcome other major barriers to bringing cases on nature and air pollution.
[218] INSPIRE in your country - Portugal

[219] INSPIRE Knowledge base, 2021.
[220] The deadlines for implementation of the spatial data interoperability were in 2016 still in the future: 23/11/2017 for Annex I data and 21/10/2020 for Annex II and III data. It must be also considered that this conformity indicator will in many cases never reach 100% conformity as majority of the countries provide as-is-data sets in addition to the INSPIRE harmonised data sets.
[221] See the Participa Website.

processes, and it is therefore not possible to identify if further action is needed by public authorities to encourage participation.

Access to justice

Portugal allows both individuals and environmental associations to bring legal actions on environmental matters. NGOs have legal standing to promote within the competent entities the administrative means of environmental protection and to initiate and intervene in administrative and in judicial procedures, regardless of any direct interest in the case. There are no additional legal requirements for recognising legal standing of NGOs, such as time of constitution, effective activity or number of associates. NGOs may intervene in administrative proceedings provided that they have an environmental scope in their statutory regulations also when challenging SEA decisions (either the plan or program or the environmental report or both) and also other plans and programmes. There is also a system of regular and substantive supervision of regulatory legally binding acts and it is accessible for the members of the public and NGOs.

As pointed out in the 2019 EIR, the main deterrent from legal challenges in Portugal appears to be the high judicial costs.

There is some information on access to justice, usually in the official language of the country only, maintained by the government, and it needs to be searched for. The main source of information is the APA website and the website of the Lisbon Office of the Attorney General, which includes notes regarding legal amendments and cross-references to other legislation.

The Commission has developed the e-Justice portal[222], which includes a section on access to justice in environmental matters, including also country specific information for each Member State[223].

In 2019, there was a priority action addressed to Portugal on access to justice, namely to better inform the public about their rights on access to justice. It is concluded that there has been limited progress made.

2022 priority actions

- Gather and publish annual information on public participation in SEA and EIA processes.
- Identify whether further action by public authorities is necessary to ensure that the impressive range of tools for public participation leads to improved public engagement in decision-making.
- Better inform the public, e.g. using the relevant Commission eJustice fact sheets, about their rights on access to justice in environmental matters.
- Some actions and monitoring need to be carried out to ensure that costs are not a hindrance to effective access to justice in environmental matters.

Compliance assurance

Environmental compliance assurance covers all the work undertaken by public authorities to ensure that industries, farmers and others fulfil their obligations to protect water, air and nature, and manage waste[224].
It includes support measures provided by the authorities such as:
(i) compliance promotion[225];
(ii) inspections and other checks that they carry out, i.e. compliance monitoring[226];
(iii)the steps that they take to stop breaches, impose sanctions and require damage to be remedied, i.e. enforcement[227].

Citizen science and complaints enable authorities to focus their efforts better. Environmental liability[228] ensures that the polluter pays to remedy any damage.

Compliance promotion and monitoring

The Portuguese authorities launched a website dedicated to information on the Natura 2000 network[229] in 2020, and already provides detailed information on the applicable legislation. However, the information is not easy for land managers and general users to navigate, and does not add significantly to compliance assurance. Similarly, detailed information on the requirements of the Nitrates Directive is provided, and a Code of Good Agricultural Practices[230] includes a range of measures designed to improve compliance but the code is not formulated in a way which makes it easy for land managers to interpret, or to identify which measures they should adopt. Further and more usable information is provided in some cases at regional level, although it is unclear how actively it is kept up to date or disseminated.

[222] See the Commission eJustice portal.
[223] See Access to justice in environmental matters in Portugal.
[224] The concept is explained in detail in the Communication on EU actions to improve environmental compliance and governance COM(2018)10 and the related Commission staff working document, SWD(2018)10.
[225] This EIR focuses on the help given to farmers to comply with nature and nitrates legislation.
[226] This EIR focuses on inspections of major industrial installations.
[227] This EIR focuses on the availability of enforcement data and co-ordination between authorities to tackle environmental crime.
[228] The Environmental Liability Directive, 2004/35, creates the framework.
[229] Portugal – geographical information on the Natura 2000 network.
[230] Code of Good Agricultural Practices, Nitrates Directive.

Despite the fact that EIR 2019 recommended Portugal to continue to make efforts to further reduce nitrates pollution from agriculture in ground water, no recent (2019-2021) relevant protection measure/tool and data were found. In addition, as a priority action, the 2019 EIR pointed out that more detailed online information to help farmers about how to comply with obligations on nature is required – currently, there is sufficient online information in that regard at a local, regional and national level. In any case, more promotion activities are required.

A good level of information is made public on environmental inspections, based on a clear and formally adopted Environmental Inspections Guide. Information on planned inspections is provided, as is information on inspections carried out, together with a regular annual report on complaints received and action taken in response. Detailed information on the inspections is available, and improvements have been made on the search ability of the data (presentation of the information by sector of activity). The 2019 EIR pointed out that public authorities shall publish inspection reports and that they are required to have inspection plans public authorities. Both these obligations were fulfilled in 2019 EIR and Portugal is still currently compliant.

Complaint handling and citizen science

Portugal has a clear and user-friendly system for citizens to make complaints about environmental issues; and as noted above, information is published annually on complaints received and the action taken in response. Further efforts are being made to improve this system, with IGAMAOT and a number of other public authorities cooperating in the establishment of a single platform for complaints on Agriculture, Sea and Environment (iFAMA), including Nature Conservation and Spatial Planning which is expected to be available from 2022, which will allow citizens to track the management of the case by the public authorities. The Republican National Guard also makes a separate form available on its website for the reporting of suspected environmental crimes.

While the complaint handling processes described above appear to provide a robust channel for citizens to register concerns or complaints about environmental issues, there is little evidence of further use of citizens' engagement, or citizen science activities.

Enforcement

Concerning a more effective enforcement, since, and including, the year 2017, Portugal has a National Plan for Environmental Inspection and Enforcement (PNFIA), an annual plan with national incidence, based on a digital platform coordinated by IGAMAOT, with the purpose of developing synergies resulting from the articulation, of the attributions of each of the entities with permitting, enforcement and inspection attributions in the governmental area of the environment. PNFIA platform allows accommodating and planning of enforcement in a coordinated manner, as well as maximizing resources and avoiding unjustified overlaps of action, with gains in efficiency in the activity of monitoring compliance with environmental legislation by the Administration. The entities that integrate PNFIA are IGAMAOT, the Commissions for Coordination and Regional Development (CCDR) of the North, Centre, Lisbon and Tagus Valley, Alentejo and Algarve, the Portuguese Environment Agency (APA) and, since 2020, the Directorate-General for Energy and Geology (DGEG). In addition to information on individual inspections, summary data is provided on overall levels of activity by the General Inspection of Agriculture, Sea, Environment and Spatial Planning (IGAMAOT). Statistics published by the Directorate-General for Justice Policy separately identify categories of environmental crimes.

Guidelines defined at national level for criminal justice policy[231] identify the investigation of environmental crimes as a priority. A document with a technical-scientific methodology for the identification of environmental "substantial damage" to water resources, which will also allow for the differentiation between environmental administrative offences and crimes is being prepared by several national authorities. IGAMAOT has adopted an information management system, which allows it to collect information on environmental crimes committed and criminal investigation processes delegated by the Public Prosecutor. IGAMAOT is also working on a computer platform with the registration of all national environmental sanctioning and preventive measures, and judicial decisions.

A formal agreement between the IGAMAOT and the Judiciary Police was signed in 2021[232], providing for collaboration in prevention, detection, and investigation of crimes; for exchange of information and knowledge; and also for joint training activities through the Judiciary Police School.

For a more effective articulation with IGAMAOT, the Portuguese Public Prosecution Service (PGR) issued the Instruction n.º 1/2019 that ensures articulation mechanisms, especially in procedures during judicial appeals of environmental contraventions. The Directive 1/2021 from PGR, underlines, concerning methodology, the need to concentrate the investigation within a nucleus of prosecutors to reach specialization; the core competences of IGAMAOT as the police authority with

[231] See the published Guidelines.
[232] See the cooperation agreement.

criminal competences to support investigations; the convenience of the constitution of mixed investigation teams; the convenience of internal articulation between different jurisdictions within the Public Prosecution Service; and the cooperation between police authorities.

Environmental Liability Directive

Anticipating the provisions of article 18 of Environmental Liability Directive (ELD), as amended by Regulation (EU) 2019/1010, of 5 June 2019, which determines the disclosure of information by Member States on the experience gained with the application of the ELD by 30 April of 2022, Portugal provided annual reports on cases under the ELD since 2019[233]. These occurrences were reported using a communication platform specifically developed for the purpose and made available on the APA website[234]. This National Communication System and the National Report on ELD Cases, published in 2020, were recognized as "*Environmental liability – Best practices*" by the European Commission[235i]. The reports provide a case-by-case annex detailing actions taken in response.

Regarding financial guarantees, the National Environmental Liability Legal Regime (Decree Law No. 147/2008) imposes their mandatory constitution since 2010 for all operators carrying out activities in Annex III. Furthermore, APA made available at its website a FAQ's document with guidance on this matter, among others related to environmental liability[236].

A country fiche providing an overview of the implementation of the ELD in Portugal was also made available by the European Commission[237].

2022 priority actions

- Providing more targeted information online to help farmers understand how to comply with obligations on nature protection.

Effectiveness of environmental administrations

Those involved in implementing environment legislation at Union, national, regional and local levels need to be equipped with the knowledge, tools and capacity to improve the delivery of benefits from that legislation, and the governance of the enforcement process.

[233] See 2019 report and 2020 report.
[234] APA Website, Environmental Liability, communication form.
[235] European Commission – DG ENV – Environmental liability – Best practices. Portuguese ELD Report 2020.
[236] APA – Environmental liability, FAQs.
[237] Implementation of the ELV- Fiche Portugal.

Administrative capacity and quality

Environmental policy developments in Portugal are mainly driven by EU Directives and Regulations, and the relevant EU rules are generally transposed in time. At present, the number of complaints and infringements in the environmental field can be considered below the EU average.

Overall, during the last decade an improvement in the implementation of EU environmental law in the different sectors can be observed. For instance, there has been progress regarding the implementation of the environmental assessments.

The Recovery and Resilience Plan (RRP) for Portugal includes a wide range of measures to improve the performance of the public administration and boost the digital transition. This improvement should also affect the environmental field.

Coordination and integration

As mentioned in the previous EIRs, the transposition of the revised EIA Directive[238] provides an opportunity to streamline the regulatory framework on environmental assessments. Despite a delay in full transposition in relation to the deadline (May 2017), Portugal has transposed the revised EIA Directive. The quality of the transposition has been assessed by the Commission services. Some gaps were detected and the Commission opened an infringement procedure, which is currently at reasoned opinion stage.

The Commission encourages the streamlining of the environmental assessments in order to reduce duplication and avoid overlaps in environmental assessments applicable to projects. Moreover, streamlining helps reducing unnecessary administrative burden and accelerates decision-making, without compromising the quality of the environmental assessment procedure[239]. Portugal has introduced the streamlining of environmental assessments under EIA and Habitats Directives already prior the revision of the EIA Directive. Coordinated procedures have been established for EIA, Water Framework Directive and Industrial Emission Directive.

It can be highlighted as a good practice the Single Environmental Permitting Platform that has been

[238] Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.
[239] The Commission issued a guidance document in 2016 regarding the setting up of coordinated and/or joint procedures that are simultaneously subject to assessments under the EIA Directive, Habitats Directive, Water Framework Directive, and the Industrial Emissions Directive, OJ C 273, 27.7.2016, p. 1.

developed to operationalize the Single Environmental Permitting Regime, which simplifies, harmonizes and articulates many environmental permits.

2022 priority actions

- Improve overall national environmental governance, in particular the administrative capacity and the coordination between the different levels of government.

Reforms through the Commission's Technical Support Instrument (TSI)

The Commission supports environmental implementation and the green transition, not only through the EU financing programs, but also granting technical assistance such as the TSI.

The Commission's TSI supported two projects in Portugal in 2019-2020 to promote the circular economy: "Circular Economy: Closing the loop – From waste to resource – The key for the success" and "Reduce-Reuse-Recycle: 3 Roads to a Circular Economy".

Under the 2021 call , three projects in the field of the environment are being supported: "Pilot implementation of the National Plan for Integrated Wildland Fire Management", "New green tax reform – resources and pollution", and "More effective, efficient and accountable environmental permits and inspections".

Under the TSI 2022, a selected project will address the development of decarbonisation, digitization and a sustainable blue economy for the maritime and fisheries sectors (including marine environment planning and sustainability).

TAIEX EIR peer to peer Projects

The Commission launched the TAIEX EIR peer to peer tool in 2017 to facilitating peer-to-peer learning between environmental authorities[240]. The EIR-P2P can support various types of peer exchange: expert missions, study visits and workshops in a very wide range of sectors covered by the EIR. This initiative has been welcomed by the Member States, at national, regional and local level.

During the last years, the EIR-P2P events have been logically affected by the pandemic, although they have continued in other formats. New activities are ongoing and the Commission will continue supporting this successful tool.

Portugal has been active in this respect and has already benefited from the EIR-P2P in the fields of waste management, air quality, forest management and sustainable urban development.

In particular, from 2019 these EIR-P2P events have counted with the participation of Portugal:

- Multi-country workshop on sustainable urban development that took placed in Belgium (2019).
- Expert Mission on Waste Management, organised in Portugal (2019).
- Multi-country Workshop on Ammonia reducing technology and measures: how to include the reduction effect in the national emission inventory and projections. This event was virtually organised by the Commission (2021).
- Multicounty TAIEX EIR Flagship Workshop: Towards Zero Pollution for Air, Water and Soil. This event was virtually organised by the Commission (2022).

[240] The TAIEX-EIR Peer-to-Peer (EIR-P2P).