

# Chapter 1. Towards sustainable development

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This chapter provides a brief overview of key environmental trends in Portugal and progress towards the Sustainable Development Goals and environmental targets. It assesses the environmental effectiveness and economic efficiency of the environmental policy mix, including regulatory, fiscal and economic instruments, and public and private investment in environment-related infrastructure. It examines the interaction between the environment and other policy areas with a view to highlighting the opportunities and barriers to enhance policy coherence for sustainable development.

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## Introduction

Portugal, the westernmost country of mainland Europe, is a unitary and centralised state (Box 1.1.). Thanks to its geographical location and geophysical conditions, mainland Portugal and the Azores and Madeira archipelagos host a high diversity of habitats and unique species. Agricultural areas and forests each cover about 40% of its mainland area. Population and economic activity are concentrated on the coastline. The country faces climate risks, including increased frequency and intensity of wildfires, heat waves, drought and extreme precipitation events, increased temperatures and susceptibility to desertification, sea-level rise and coastal erosion (APA, 2021a).

Over the last decade, Portugal's environment performance has been mixed. The shift in electricity generation from coal to natural gas and renewables has reduced emissions of greenhouse gas (GHG) and other major air pollutants. However, with the economic recovery over 2013-19, air emissions in some sectors (e.g. GHG and ammonia emissions from agriculture) and waste generation have increased. Portugal has improved the regulatory framework for environmental services. It has made progress in wastewater treatment. However, efforts are needed to better manage water and waste. Despite the recent designation of new marine protected areas, conservation measures need to be implemented to reverse the deterioration of habitats and species. The demographic decline in rural areas and the fragmentation of private land ownership hamper sustainable forest management, fire prevention and biodiversity protection.

### Box 1.1. Institutional framework for environmental governance

Portugal has two layers of government, with the exception of the two autonomous regions of Madeira and Azores, of which the 308 municipalities form the core of the local government.

The Ministry of the Environment and Climate Action (MAAC) drafts, implements and assesses environmental policies, including energy and climate, forestry and nature conservation and urban planning and mobility. MAAC also monitors inter-ministerial measures for implementation of the Portuguese government programme for climate action.

The minister is assisted by three secretaries (environment and energy; nature conservation and forests; and urban mobility). MAAC is supported by subordinated agencies, including the General Inspectorate for Agriculture, the Sea, Environment and Spatial Planning (IGAMAOT), the Portuguese Environment Agency (APA), the Environmental Fund, the Directorate-General for Energy and Geology (DGEG), the Institute for Nature Conservation and Forests (ICNF) and the Directorate-General for the Territory (DGT). The Water and Waste Services Regulation Authority (ERSAR) and the Energy Services Regulatory Authority (ERSE) are independent regulatory bodies.

Other ministries develop and implement policies affecting the environment: the Ministry of the Economy and Maritime Affairs; the Ministry of Agriculture and Food; the Ministry of Infrastructure and Housing, and the Minister of the Presidency, which shares oversight of the Development and Cohesion Agency (in charge of EU funds) with the Ministry of Territorial Cohesion.

Implementation of national policies at the sub-national level is supported by five regional development and co-ordinating committees (CCDRs). Municipalities play an important role in licensing, supervising and enforcing national regulations and land-use planning, as well as delivering public services to citizens and businesses (including water supply, sewerage and municipal waste management).

## 1.1. Addressing key environmental challenges

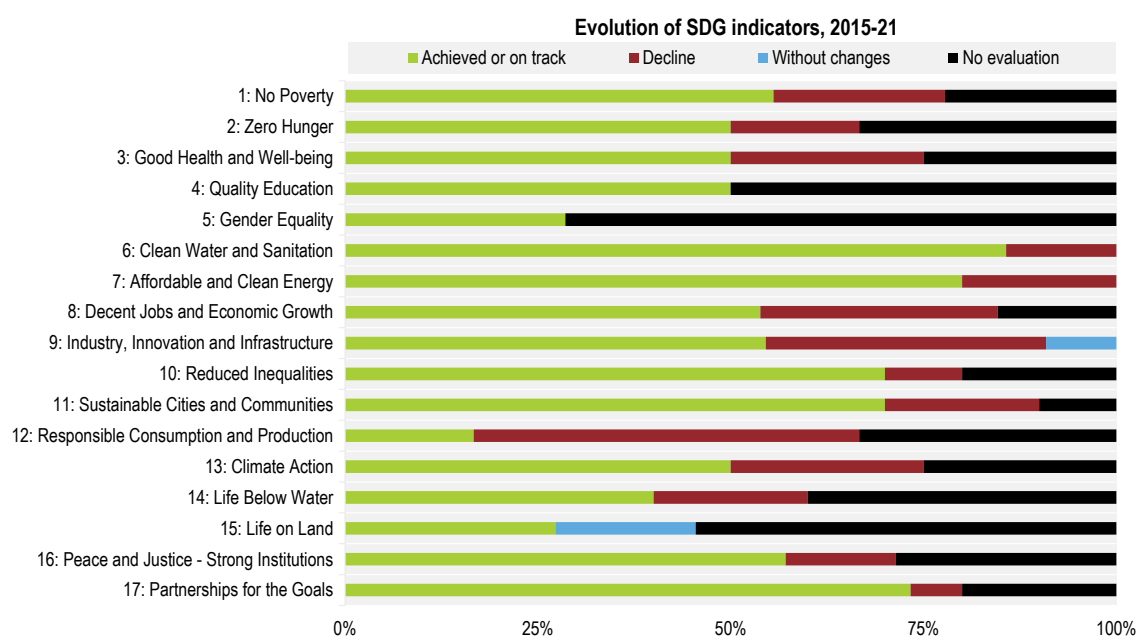
### 1.1.1. Portugal has made progress towards some Sustainable Development Goals

Portugal has a small, service-based economy that grew steadily between 2013 and 2019.<sup>1</sup> The country was among the OECD economies most strongly hit by the pandemic, but it has been recovering fast since mid-2021 (OECD, 2021a). Activity has been constantly supported by policy measures and rebounded markedly each time when diverse restrictive measures were lifted. Strong private consumption growth and a rebound in tourism supported gross domestic product (GDP) growth in early 2022 (OECD, 2022a). Yet the pace of the recovery is easing. While Portugal has few direct trade links with these countries, Russia's war against Ukraine is driving up energy and food prices, increasing uncertainty and weighing on activity.

Portugal's population density is similar to the OECD Europe average, with a higher proportion of people living in small and medium-sized cities (OECD, 2020a). Population density is higher along the western and south coastlines, as well as in the urban areas of Lisbon and Porto where it can exceed 1 000 inhabitants per square kilometre. According to the Better Life Index, Portugal ranks above the OECD average in housing, safety and air quality. It underperforms average in income, civic engagement and life satisfaction (OECD, 2022b).

Portugal has made progress towards Sustainable Development Goals (SDGs), especially to ensure clean water and sanitation (SDG 6) and affordable and clean energy (SDG 7) (Figure 1.1). Nevertheless, major challenges remain to ensure sustainable consumption and production patterns (SDG 12) and to protect, restore and promote sustainable use of marine and terrestrial ecosystems (SDGs 14 and 15).

Figure 1.1. Progress towards Sustainable Development Goals



Source: INE (2022), Sustainable Development Goals, 2030 Agenda, Indicators for Portugal 2015-2021.

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### 1.1.2. The economy is more carbon efficient

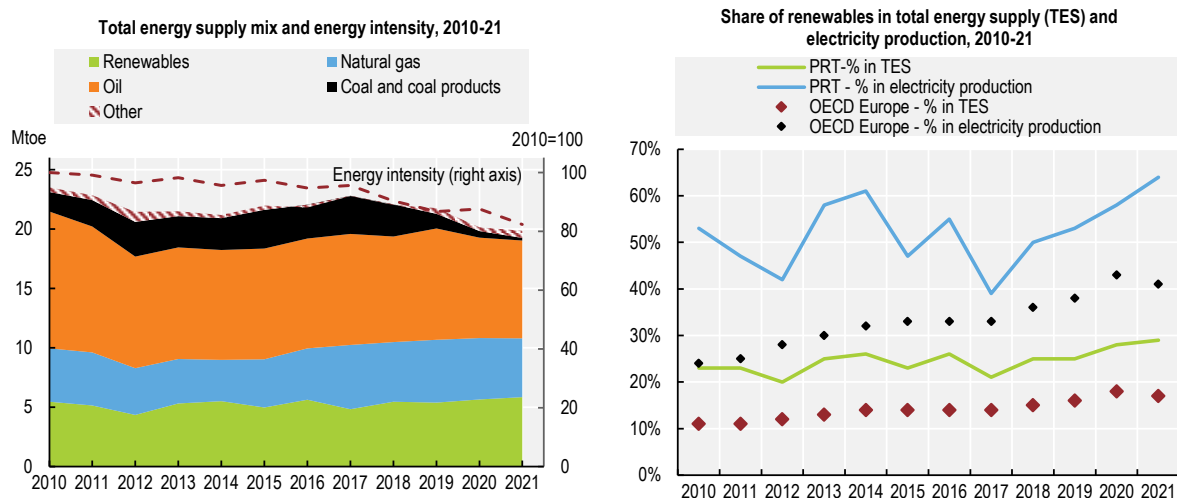
*The energy mix has shifted from oil and coal to natural gas and renewables*

In 2021, fossil fuels accounted for 68% of Portugal's total energy supply (TES), slightly below the OECD Europe average. The share of renewables (mostly biomass, wind and hydro) was higher than in most European countries. Oil is the largest energy source (42%), followed by renewables and waste (29%), natural gas (25%) and coal (1%) (Figure 1.2). Over the past decade, there has been a shift in the energy mix from oil and coal to natural gas and renewables. In 2021, the last two coal power plants were closed. Portugal relies entirely on imported fossil fuels. However, imports from the Russian Federation represent a relatively small share of its TES. Most gas imports come from long-term contracts with Nigeria and Algeria (IEA, 2021). Annual variations in hydropower generation have a notable impact on Portugal's domestic energy production and energy dependency.

With 34% of renewable energy in gross final energy consumption in 2020, Portugal overachieved its binding target of 31% set by the EU Renewable Energy Directive (Eurostat, 2022a), partly due to reduced energy consumption linked to the pandemic (APA, 2021a). The country was close to achieving its 2020 sub-targets for electricity (58.0% vs. 60.0%) and transport (9.7% vs. 10.0%). It met its sub-target for heating and cooling (41.5% vs. 41.0%) (Eurostat, 2022a). The National Energy and Climate Plan 2021-2030 (NECP 2030) aims to reach 47% of renewable energy in gross final energy consumption by 2030 (Government of Portugal, 2019). The European Commission suggests 48% for Portugal in its proposal for the revision of the directive to achieve climate neutrality in the European Union by 2050 (EC, 2021a).

Portugal's energy intensities per capita and per GDP are below the OECD Europe averages, reflecting its service-oriented economy. The 2008 financial crisis was followed by a significant drop in energy consumption in all sectors. With economic recovery, energy demand in the transport sector increased over 2013-19. This increase was offset by declining demand in industry<sup>2</sup> thanks to improved efficiency and a structural shift to less energy-intensive activities (IEA, 2021). As a result, total final consumption remained broadly stable. In 2019, transport and industry were the largest energy consumers (35% and 34%,<sup>3</sup> respectively) followed by the residential (16%) and service (11%) sectors. Restrictions linked to the COVID-19 pandemic resulted in reduced energy consumption in 2020. Portugal met its 2020 target on energy efficiency.

**Figure 1.2. Renewable energy has developed rapidly**



Note: 2021: provisional data.

Source: IEA (2022), IEA World Energy Statistics and Balances (database).

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### *Portugal overachieved its 2020 climate targets*

In the early 2010s, GHG emissions (excluding land use, land-use change and forestry) declined due to the reduction in energy demand following the 2008 crisis and increasing renewable electricity generation (Chapter 2). Portugal met its commitments under the first period of the Kyoto Protocol (2008-12). With the economic recovery, emissions rebounded in 2014-17, particularly in the transport sector. However, they have since fallen, driven by a strong shift away from coal-fired power generation. Overall, considering the impacts of the COVID-19 crisis, emissions have been reduced by one-third over 2005-20. Portugal overachieved the 2020 economy-wide objective of the 2015 National Programme for Climate Change and its 2020 target under the EU Effort Sharing Regulation (ESR).

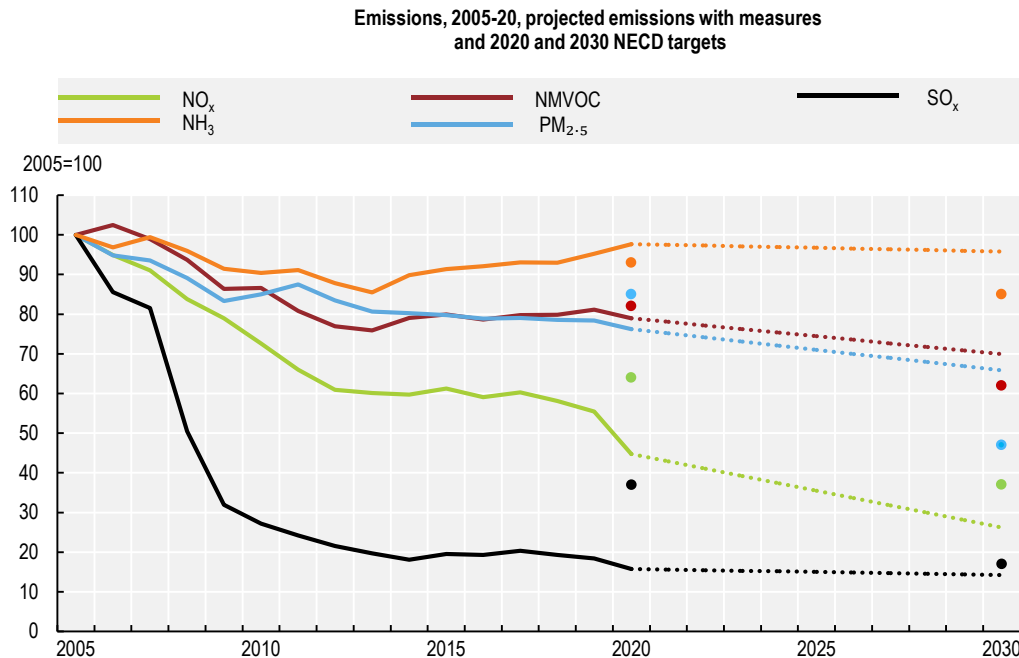
National projections indicate the country is on track to reach the 2030 ESR target proposed by the European Commission to meet its commitments under the Paris Agreement. Additional policies will be needed to reduce total emissions by at least 55% from 2005 levels by 2030 and by 90% by 2050, and to increase removals from land use, land-use change and forestry, as committed in the Portuguese 2021 Framework Climate Law.

### *Most of the 2020 air pollutant emission reduction targets have been met*

In the past decade, emissions of major air pollutants have decreased due to the shift in electricity production from coal to natural gas and renewable energy, the implementation of desulphurisation systems in large energy plants and stricter vehicle emissions standards (APA, 2022). However, the decline has slowed down in the years preceding the COVID-19 crisis and ammonia (NH<sub>3</sub>) emissions have grown with the number of poultry (Figure 1.3).

Portugal met its 2020 emission reduction objectives<sup>4</sup> for sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), non-methane volatile organic compounds (NMVOC) and fine particulate matter (PM<sub>2.5</sub>) but not for NH<sub>3</sub>. Additional measures will be needed to achieve the 2030 targets for all pollutants and particularly PM<sub>2.5</sub>, NMVOC and NH<sub>3</sub> (APA, 2022). Portugal needs to clarify how it will ensure compliance with its 2030 targets in the National Air Pollution Programme (due in 2022). The application of best available techniques and the publication of the national advisory code of good agricultural practice to control NH<sub>3</sub> emissions is expected to support progress in this area.

Figure 1.3. Portugal met its 2020 emission reduction targets except for ammonia



Note: Emissions exclude Madeira and Azores Autonomous Regions.

Source: APA (2022), National Emission Ceiling Directive (NECD) Submission 2022: 15 March (V2); APA (2021), NECD – Projected emissions With Measures.

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Combustion for domestic heating is a major source of PM<sub>2.5</sub> emissions, while combustion in manufacturing industries dominates SO<sub>x</sub> emissions. Road transport is the main emitter of NO<sub>x</sub> and NMVOC emissions mainly come from solvent use. Agricultural activity largely drives emissions of ammonia (NH<sub>3</sub>).

Overall, Portuguese people are less exposed to air pollution than in other OECD countries. However, air quality remains a concern with regard to concentrations of nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>) in urban areas and tropospheric ozone in rural areas. Annual NO<sub>2</sub> limit value has been persistently exceeded in Lisbon, Porto and Braga mostly due to diesel vehicle traffic. Portugal was referred to the Court of Justice of the European Union for failing to adopt appropriate measures (EC, 2021b). In 2020, with restrictions on mobility, no exceedances were recorded (APA, 2021a).

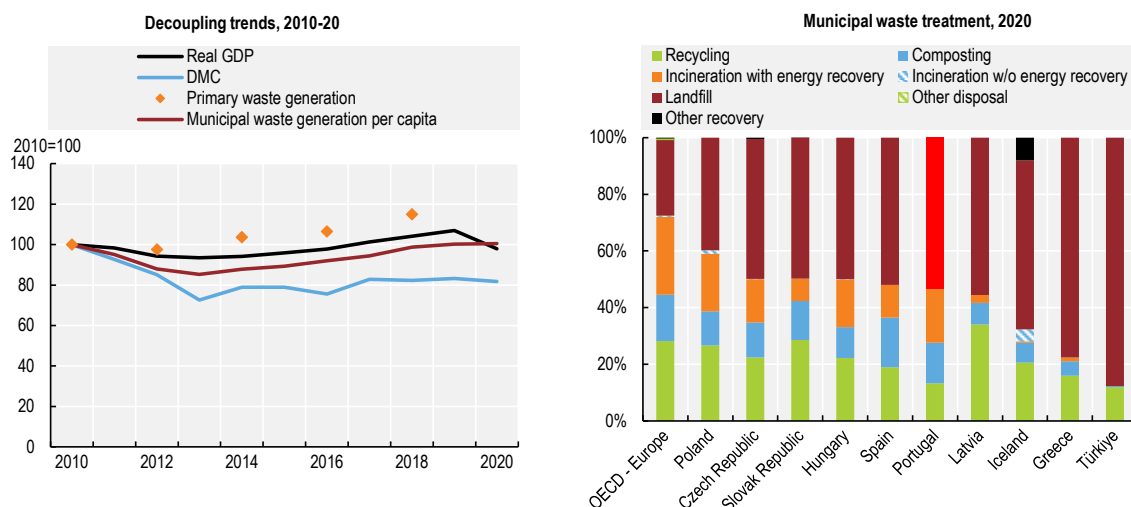
### 1.1.3. Portugal is lagging behind on the circular economy

Since 2013, municipal waste generation has grown at a faster rate than the economy until 2019 and remained constant in 2020 (Figure 1.4). With more than 510 kg of municipal waste generated per capita in 2020, Portugal exceeded the OECD European average of 500 kg. It was also among the countries with the highest landfilling rates. Portugal has improved its regulatory framework for waste management. This includes introducing a benchmarking system for waste management entities and provisions to vary tariffs according to the waste hierarchy (Section 1.2.4). It has also increased investment in treatment facilities (Section 1.2.3). Despite these measures, the country has not met its 2020 objectives (Table 1.1).

The Strategic Plan for Municipal Waste for 2030, under discussion, aims to improve waste prevention and increase preparation for reuse, recycling and other forms of recovery of municipal waste to reduce

consumption of primary raw materials. It seeks to ensure compliance with the EU Waste Framework Directive (under revision), which sets more ambitious targets for 2030.

**Figure 1.4. Waste generation has increased since 2013 and the landfilling rate is high**



Note: Left panel: Domestic material consumption (DMC) refers to the amount of materials directly used in the economy, or the apparent consumption of materials. DMC is computed as domestic extraction used minus exports plus imports. Right panel: top ten OECD Europe countries with the highest landfilling rates.

Source: OECD (2022), Environment Statistics (database).

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**Table 1.1. Portugal has missed most of its 2020 waste targets**

Progress towards selected targets on resource efficiency and waste management

Target	2020 target	2020	Achievement
Decouple GDP growth from material consumption from 2007-11 levels (EUR/kg)	0.98	1.11	Achieved
Decouple GDP growth from waste production from 2008-12 levels (t/kEUR)	0.082	0.089	Not achieved
Reduce waste generation from 2008-12 levels (%)	82%	99%	Not achieved
Reduce municipal waste generation per capita from 2012 levels (%)	90%	112%	Not achieved
Increase the share of municipal waste prepared for reuse and recycling (%)	50%	38%	Not achieved
Reduce biodegradable municipal waste in landfill from 1995 levels (%)	35%	53%	Not achieved
Increase separate collection for recycling (kg per capita)	52	50	Almost achieved
Recycling of overall packaging (%)	55%	63%	(2019) Achieved
Recycling of plastic packaging (%)	22.5%	36%	(2019) Achieved
Recycling of wooden packaging (%)	15%	91%	(2019) Achieved
Recycling of metal packaging (%)	50%	46%	(2019) Not achieved
Recycling of glass packaging (%)	60%	56%	(2019) Not achieved
Recycling of paper/cardboard packaging (%)	60%	71%	(2019) Achieved

Note: Selected targets of the National Waste Management Plan (PNGR 2020) and Strategic Plan for Municipal Waste (PERSU 2020).

Source: APA (2021), State of the Environment Report, 2020/21; national submission.

Portugal's material productivity is well below the OECD-Europe average. It improved until 2013 but has remained broadly constant since then, as domestic material consumption (DMC) has varied in line with GDP. Non-metallic minerals (mostly construction materials) make up the bulk of the materials mix. Compared to other OECD countries, fossil energy materials account for a smaller share of DMC as Portugal makes greater use of renewable energy. Circular material use rate under SDG 12 (responsible consumption and production) is almost six times lower than the EU average (2.2% vs. 12.8% in the European Union in 2020) (Eurostat, 2021). The National Waste Management Plan for 2030, under discussion, aims to prevent waste generation in terms of quantity and hazardousness; promote efficient use of resource and resource security; and reduce environmental impacts through integrated and sustainable waste management.

#### **1.1.4. Natural assets are deteriorating**

##### *Progress towards 2020 Aichi targets has been insufficient*

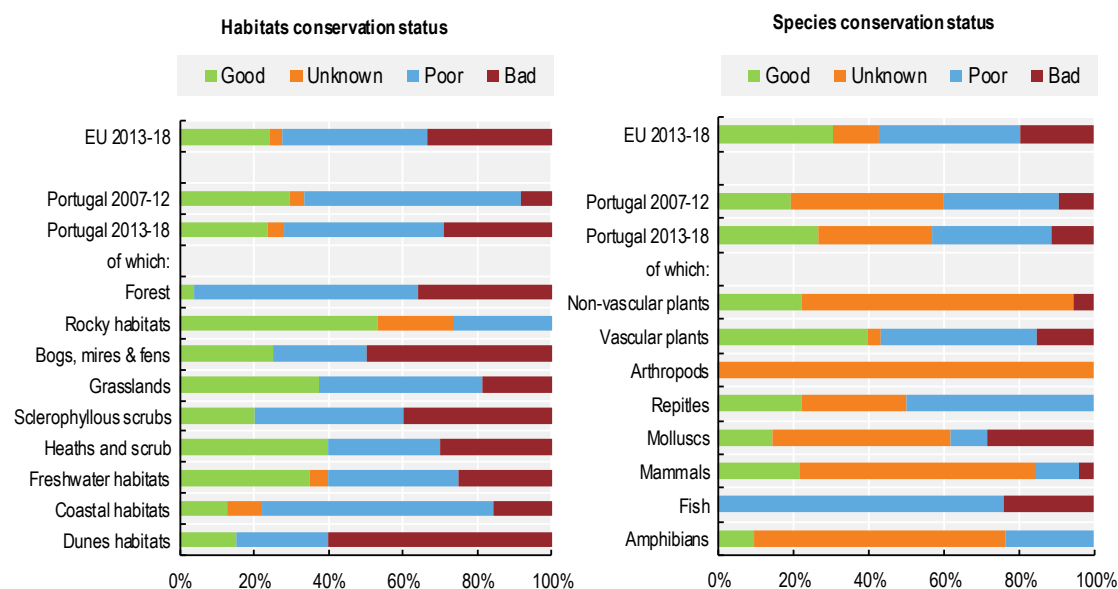
Portugal possesses a diverse natural heritage thanks to its geographical location and geophysical conditions (ICNF, 2020). The Azores and Madeira archipelagos, in the Macaronesia region, are home to unique habitats. On the mainland, the dune habitats, rocky cliffs, marshes in estuary and lagoon systems are all important as well. Numerous bird populations shelter in estuaries. The Madeira Archipelago hosts some of the most significant seabird colonies in the North Atlantic.

Over the past decade, the status of habitats and species has deteriorated (Figure 1.5). Agriculture, infrastructure development, invasive species, natural processes (such as erosion), climate change and fires are exerting major pressures on biodiversity (EEA, 2021; ICNF, 2020). About 30% of fish and birds and 20% of mammals and reptiles are threatened (OECD, 2022c).

In contrast to the previous decade, agricultural land has increased slightly since 2010; an increase in cropland has offset a decline in grassland (INE, 2020). Forest area remained stable, while artificial land continued to grow, albeit at a slower rate. The demographic decline in rural areas and the fragmentation of private land ownership hamper sustainable forest management, fire prevention and biodiversity protection.



Figure 1.5. The status of habitats and species has deteriorated



Note: Changes between 2007-12 and 2013-18 may reflect methodological variations or better data.

Source: EEA (2021), Conservation status of habitat types and species: datasets from Article 17, Habitats Directive 92/43/EEC reporting.

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In 2020, protected areas covered 25% of Portugal's territory and 8.9% of marine areas under its jurisdiction<sup>5</sup> (Tribunal de Contas, 2022). The country thus met the 2020 Aichi target of protecting at least 17% of land area but missed the target of protecting 10% of coastal and marine areas. In 2021, Portugal created Europe's largest marine protected area by extending the Selvagens Islands nature reserve (2 677 km<sup>2</sup>) in the waters of the Madeira Archipelago (Euractiv, 2021). This is a significant step towards the goal of protecting at least 30% of the sea area in the European Union by 2030. Non-governmental organisations (NGOs) also welcomed the decision to designate a wetland in Algarve (Lagoa dos Salgados) as a nature reserve, to protect it from tourist and residential infrastructure development (Birdguides, 2021).

Management plans have been developed only for a few Sites of Community Importance in the Natura 2000 network (ICNF, 2020). Some species and habitats, particularly in the marine environment, are not sufficiently protected (EC, 2021c). The European Commission has opened an infringement procedure against Portugal for failure to adopt management plans and conservation measures (EC, 2021d). Mainstreaming biodiversity in agriculture, forestry, fisheries, and urban and spatial planning sectors is a major challenge (ICNF, 2020). Overall, progress towards 2020 Aichi targets has been insufficient.

The National Strategy for the Conservation of Nature and Biodiversity (ENCNB 2030), adopted in 2018, aims to improve the conservation status of natural heritage; promote recognition of the value of natural heritage; and foster ownership of natural values and biodiversity by society. The ENCNB and Action Plan should be updated in 2023, in line with the EU Biodiversity Strategy 2030, and post-2020 Global Biodiversity.

### *More needs to be done to achieve good water status*

Portugal is more generously endowed with freshwater resources than other southern European countries, resulting in low water stress at the national level (OECD, 2022c). However, seasonal and spatial distribution of freshwater resources and use varies widely. In the last 20 years, water availability has decreased by about 20%. This trend is expected to continue with a further decrease of 10-25% by the end

of the century (Proença de Oliveira, 2022). Drought is structural and water scarcity is of serious concern in the Sado and Mira river basins (in the Alentejo region) and the Algarve river basins.

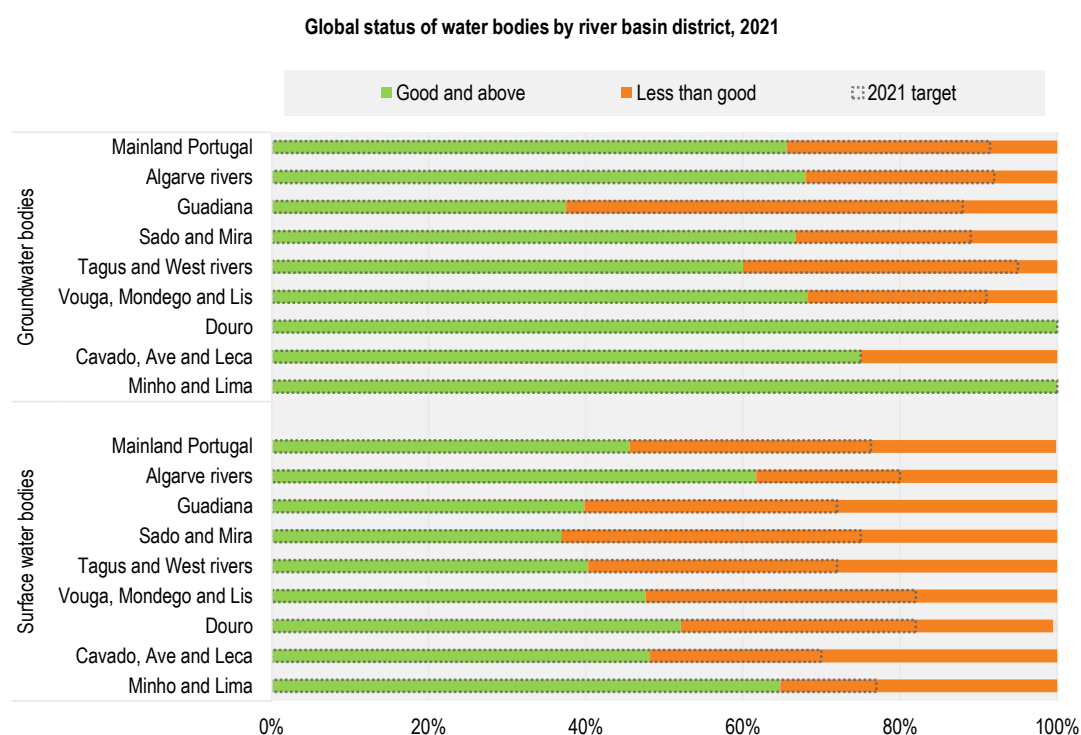
Agriculture accounts for 71% of freshwater abstractions, followed by public water supply (19%), production of electricity (cooling, 6%) and industry (4%) (OECD, 2022c). Estimates from the third River Basin Management Plans (RBMPs) show an increase of about 25% in agricultural water abstractions since the mid-2010s, particularly in the southern regions. Irrigated areas increased by 21% over 2009-19 reflecting modernisation investments in orchards, vineyards and olive groves (INE, 2021). However, investments focusing on irrigation efficiency, without policies regulating water demand, can increase water consumption or accelerate groundwater depletion (Grafton et al., 2018).

Beyond the third RBMPs, the new National Strategic Plan for Water Supply and Wastewater and Rainwater Management (PENSAARP 2030, to be adopted in 2022) aims at, among others, improving water-use efficiency for urban uses, especially in water-scarce areas.

More needs to be done to achieve the targets of good status for water bodies set in the EU Water Framework Directive. The third RBMPs show that in 2021, less than half of surface water bodies and two-thirds of groundwater bodies achieved good global status (Figure 1.6). The most significant pressures on these water bodies are diffuse agricultural sources (EC, 2019a). They are followed by other diffuse sources, point sources of pollution and alterations to the natural flow and morphology of water bodies. Compliance rates with Drinking Water Directive requirements are high. Most bathing waters are of excellent quality.

Portugal has made progress in wastewater treatment. In 2018, 92% of urban waste water (load generated) was treated according to the Urban Waste Water Treatment Directive (UWWTD) above the EU average of 76% and up from 71% in 2012 (EC/EEA ETC/ICM, 2021). The country was close to complying with the UWWTD in terms of collection (article 3) but not for treatment levels; 93% of wastewater collected underwent secondary treatment<sup>6</sup> (article 4) and 76% more stringent treatment<sup>7</sup> (article 5) (EC, 2022a). The number of small agglomerations with inadequate wastewater treatment has been drastically reduced from 77 in 2012 to 2 in 2020 (APA, 2021a).

Figure 1.6. Efforts are needed to use water efficiently and achieve good status of water bodies



Note: 2021 targets of the second RBMPs of the eight river basin districts of mainland Portugal. Global status covers ecological and chemical status of surface water bodies and quantitative and chemical status of groundwater bodies.

Source: APA (2022), Provisional version of the third RBMPs (2022-27).

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## 1.2. Enhancing policy coherence for sustainable development

### 1.2.1. Progress in inter-ministerial co-operation

Portugal 2030 Strategy, adopted in 2020, is the reference framework for public policies in the next decade. It aims to address the main structural challenges of the Portuguese economy and society through reforms and investment in several areas. These comprise institutional resilience, the business environment, the green and digital transition, fiscal structure and skills and competences (EC, 2021c). The strategy also has a strong focus on reducing social and territorial inequalities, increasing competitiveness and strengthening internal cohesion. It seeks to ensure coherence of measures financed through the Multiannual Financial Framework 2021-27, the Recovery and Resilience Plan (RRP), and other EU (REACT-EU, Fair Transition Fund) and national funds.

The country has made progress in integrating environmental issues into strategic documents and sectoral plans. Sustainable development, energy transition, sustainable land use and mobility, adaptation to climate change and circular economy feature prominently in the 2022 government's programme. The 2019 Roadmap for Carbon Neutrality and 2020 NECP seek to ensure coherence between the climate and

energy policies. Climate transition and sustainability are priorities of the 2021 Plan to Reactivate Tourism and Build the Future (OECD, 2022d).

Portugal has several mechanisms for horizontal co-operation including the Inter-ministerial Commission of the RRP, chaired by the Prime Minister, the Inter-ministerial Commission for Climate Action and the Inter-ministerial Commission for Water Coordination. However, Portugal's Strategic Plan under the common agricultural policy (CAP) 2023-27 is poorly aligned with environmental objectives (EC, 2022b). Its contribution to climate change adaptation is limited with regard to forest fire prevention, water management, water retention of the landscape, floods and drought prevention. The coherence between environmental and economic objectives is not always clear in the transport and tourism sectors (Tribunal de Contas, 2022).

Strategic environmental assessment (SEA) has been increasingly used, particularly in land-use planning (APA, 2021a). In other domains, SEA has been used for water resources and waste management. However, SEA has been less frequently used for sectoral plans and operational programmes for implementing EU funds. SEAs are generally developed in line with good practices and national guidance. However, the lack of alternatives considered often undermine identification of more sustainable development options.

### ***1.2.2. The Recovery and Resilience Plan promotes the green transition***

Portugal was among the OECD economies most strongly hit by the pandemic but has been recovering fast thanks to strong private consumption and the rebound in tourism in 2022 (OECD, 2022a). The pace of recovery has slowed as Russia's war against Ukraine, supply-chain disruptions, elevated energy prices and rising interest rates weigh on activity. Real GDP growth is projected to decline from 6.7% in 2022 to 1.0% in 2023 and 1.2% in 2024. Public investment boosted by EU funds will support growth. The COVID-19 crisis widened the fiscal deficit to 5.8% of GDP in 2020. Thanks to a stronger-than-expected economic recovery and the phasing out of pandemic-related measures, the deficit fell to 2.9% of GDP in 2021. It is expected to decline to 1.8% in 2022 and 0.6% in 2023 (OECD, 2022a). The outlook remains uncertain due to the geopolitical context.

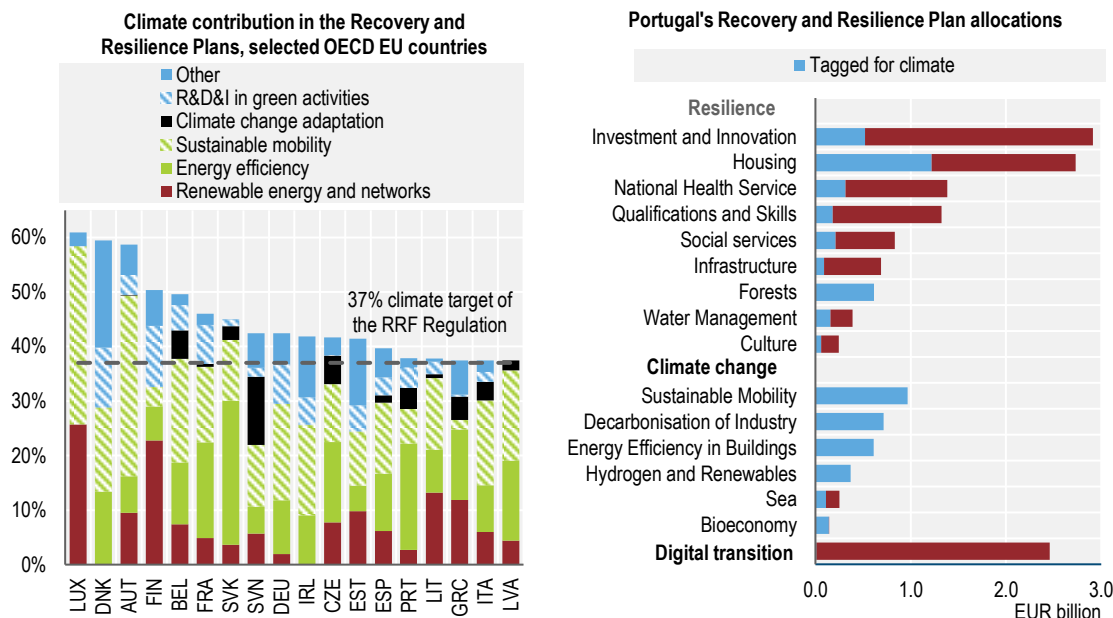
Portugal responded to the COVID-19 crisis with income continuity for workers and liquidity support to businesses in 2020 (OECD, 2021a). The government expanded or re-introduced these measures in early 2021 in the wake of a second national lockdown and in summer 2021 in response to the fourth wave. Measures to stimulate the recovery included extension of income support measures for vulnerable households and firms, an extraordinary tax credit for investment and new credit lines with state guarantees. Like other OECD countries, Portugal has granted rescue loans (equivalent to 0.6% of 2021 GDP) to national and regional airlines with no environmental conditions. Overall, measures related to COVID-19 support amounted to 2.1% of GDP in 2020 and 3.3% in 2021 (INE, 2022). They were planned to decrease to 0.9% of GDP in 2022 (Government of Portugal, 2022a).

In 2021, Portugal submitted its RRP to boost its economy with Next Generation EU funds. It consists of 83 investments and 32 reforms to be supported by EUR 13.9 billion in grants and EUR 2.7 billion in loans over 2021-26 (overall about 8% of 2020 GDP). The RRP could raise GDP by up to 2.4% by 2026 (including 0.4% spillover from other countries' plans) (EC, 2021c). Portugal devoted 38% of its RRP budget to the climate objectives (Figure 1.7). This is above the EU requirements (37%) but below the average of 40% of the 22 RRP's endorsed by the end of 2021.

Compared to other OECD EU countries, the climate part of Portugal's RRP focuses on energy efficiency (Figure 1.7). It supports renovation in residential and non-residential buildings and in social housing (EC, 2022c). This is positive to reduce GHG emissions, the dependence to fossil fuels and energy poverty. Sustainable mobility is promoted notably through the extension of metro networks in Lisbon and Porto but also by the acquisition of clean buses and their charging stations. The RRP also includes significant

investments to decarbonise industrial processes and boost the use and production of hydrogen. In addition, it includes measures to prevent and fight rural fires, improve water-use efficiency to adapt to the effects of climate change and promote sustainable bioeconomy.

**Figure 1.7. The climate part of the Recovery and Resilience Plan focuses on energy efficiency**



Note: Left panel: OECD EU countries with RRP approved by end 2021. RRF Regulation: Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility. R&D&I: Research and Development and Innovation. Right panel: countries assess the impact of the measures proposed in the RRP on climate objectives according to the tagging methodology of the RRF Regulation.

Source: European Commission (2021), Recovery and Resilience Scoreboard; Government of Portugal (2022), *Mais transparência*.

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The RRP was well-received by most stakeholders, but it was also criticised for its contradictions (Heilmann et al., 2021). Stakeholders took issue with how the RRP aimed to reduce emissions from transportation while expanding the road network. Other areas of concern included how it considered tourism as a key growth sector, and the tension between recognising the need for careful management of water resources while planning construction of new dams. Environmental NGOs have expressed concerns about the environmental impacts of RRP-supported dam construction and call for investments to be directed towards nature-based solutions (WWF, 2022). The European Commission also noted the limited number of measures to enhance biodiversity (EC, 2021c). The actual share of green measures will only be measurable once the plan is implemented. Portugal is committed to full environmental impact assessments of its measures to ensure compliance with the “do no significant harm” principle of the Regulation establishing the Recovery and Resilience Facility (RRF) (EU 2021/241).

### 1.2.3. Public investment in environmental and low-carbon infrastructure

*Public expenditure on environmental protection is below the EU average*

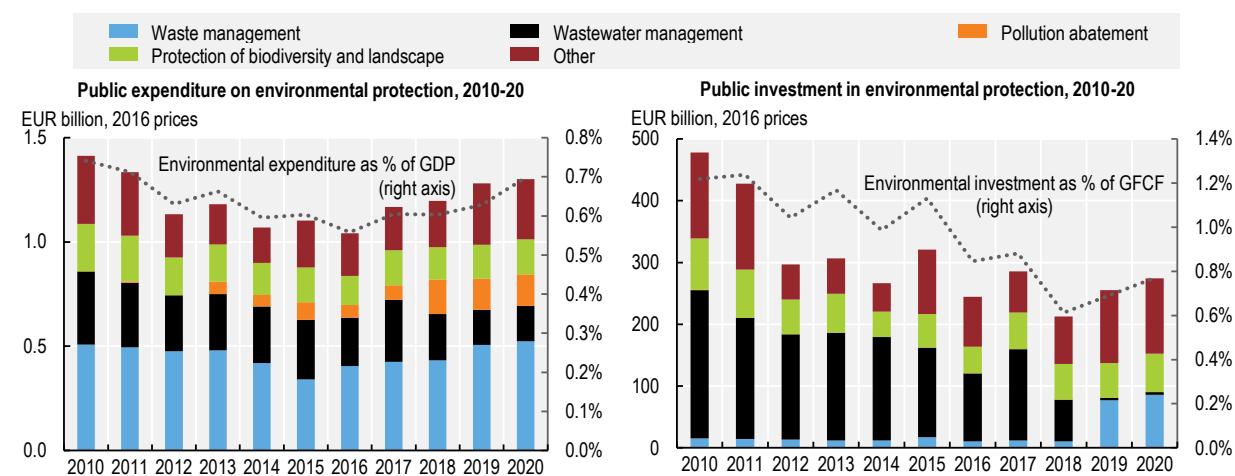
Public expenditure on environmental protection (current expenditure and investment) decreased until 2016 and has increased since then. It reached 0.7% of GDP in 2020 (Figure 1.8), below the EU average of 0.9% (Eurostat, 2022b). As in other OECD countries, waste management is the largest expenditure item. It has

driven the increase in public investment and spending on environmental protection in recent years. However, this trend is not reflected in the performance of the service provision (Section 1.1.3). Portugal needs to step up investment to meet the more ambitious targets set for 2030. Increasing waste treatment capacity and upgrading installations will require about EUR 335 million investment by 2030 (APA, 2021b). Recovering the costs of waste management service is a prerequisite for financing the sector and changing behaviour (Section 1.2.4). Decoupling environmental expenditure from EU funding as recommended in the previous Environmental Performance Review, would support this goal.

Public spending on biodiversity and landscape protection has increased since 2016 but accounted for only 0.1% of GDP in 2020, 25% less than in 2010.

Over the past decade, subdued public investment has been part of Portugal's fiscal consolidation strategy (OECD, 2021a). Despite an increase in response to the pandemic, public investment, at around 2% of GDP, was among the lowest in the OECD in 2019 and in 2020. Public investment in environmental protection also decreased until 2018 (Figure 1.8). The recent drop in investment in wastewater management can be explained by completion of the main infrastructure and by statistical factors (e.g. unclear allocation between the water and waste sectors). PENZAARP 2030 identified about EUR 5.5 billion in investment needs in the sector by 2030, half of which were for rehabilitation of existing assets (MAAC, 2022). The financing needs to comply with the Urban Waste Water Treatment Directive have been estimated at EUR 4.8 billion by 2030 (total cumulative additional expenditures for sanitation) (OECD, 2020b). Despite an apparent good cost recovery of wastewater services, there is scope to improve the ability of municipalities to assess these costs and to increase tariffs, particularly where they provide the service directly (ERSAR, 2022).

**Figure 1.8. Public investment in environmental protection has decreased until 2018**



Source: OECD (2022), OECD National Accounts Statistics (database).

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Part of the public expenditure on environmental protection is financed by the Environmental Fund (EF), under the Ministry of the Environment and Climate Action. The EF was created in 2017 from the merger of the Portuguese Carbon Fund, the Environmental Intervention Fund, the Water Resources Protection Fund and the Fund for the Conservation of Nature and Biodiversity. The government expected this merger to bring greater efficiency by raising its financial capability and flexibility. In 2021, the EF also incorporated the Permanent Forestry Fund, the Fund for Support for Innovation, the Energy Efficiency Fund and the Fund for Systemic Sustainability of the Energy Sector.

The EF's revenue comes mainly from the auctioning of allowances under the EU Emissions Trading System (ETS). To a lesser extent, it also earns income from partially earmarked receipts from environmentally related taxes. Its income increased sevenfold between 2017 and 2021. A large part of its spending has supported fare reductions to promote public transport and reverse the decline in demand resulting from the pandemic. In recent years, it has also subsidised the national electricity system. Non-governmental organisations have been criticising the EF for its lack of transparency, inconsistency with national priorities and low spending on nature restoration (ANP/WWF, 2022; ZERO, 2022). Some have proposed an active role for the National Council for Environment and Sustainable Development in advising on EF policy for allocation of financial resources and in evaluating its performance. As an intermediate beneficiary, the Fund also implements some RRP investments.

### *Investment in sustainable transport and energy needs scaling up*

About EUR 1 billion in additional annual investment is needed until 2030 and EUR 4 billion over 2030-40 to achieve carbon neutrality by 2050 (Table 1.2). Sustainable transport and buildings will attract most of this investment in the next decade. EU funds will be the main source of financing and, to a lesser extent, revenues from the auctioning of allowances under the EU ETS earmarked to the EF (EC, 2020a) (Chapter 2).

**Table 1.2. Investment needs to reach carbon neutrality are high**

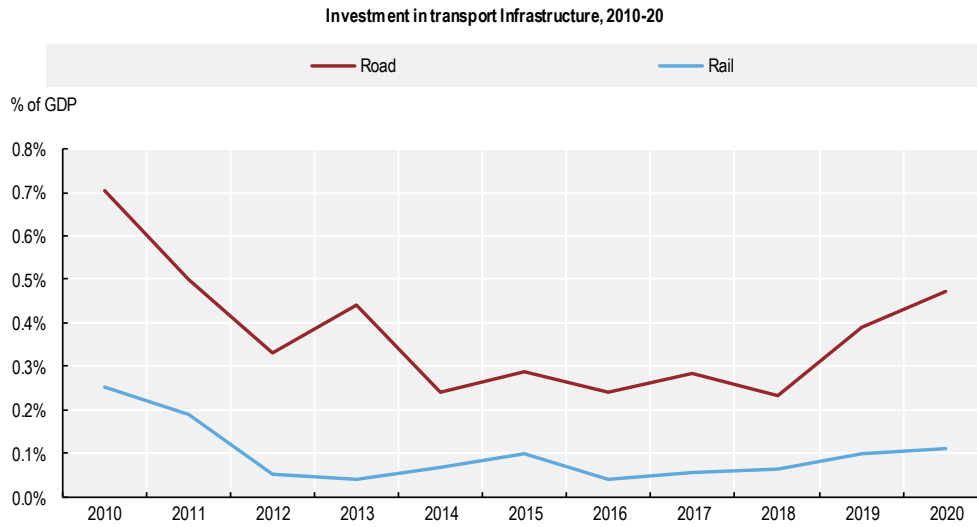
Investment needs to achieve carbon neutrality, 2016-40

	2016-30 (EUR billion)	2031-40 (EUR billion)
<b>Overall investment without neutrality</b>	<b>395.9 – 416.6</b>	<b>229.7 – 235.1</b>
Electricity	22.4 – 22.1	16.6 – 19.6
Transport	193.7 – 201.3	74.5 – 62.3
Buildings	165 – 176.4	124 – 138.3
Industry	14 – 16	14.4 – 14.7
Other	0.7 – 0.8	0.2 – 0.1
<b>Additional to achieve neutrality</b>	<b>10.8 – 14.7</b>	<b>33.7 – 37.9</b>
Electricity	1.2 – 2.2	9 – 11.3
Transport	5.1 – 6.2	17.3 – 17.6
Buildings	3.1 – 4.8	5.6 – 6.1
Industry	1 – 1.3	1.2 – 0.9
<b>Overall total</b>	<b>406.6 – 431.3</b>	<b>263.4 – 273</b>

Source: Government of Portugal (2019) National Energy and Climate Plan 2021-30.

Portugal's railway network density is below that of the European Union as is the modal share of passenger rail transport (Government of Portugal, 2022b). Safety levels are also below EU standards and the network is saturated near the two metropolitan areas, where rail traffic is concentrated. Portugal seeks to modernise and electrify the national railway network, enhance modal transfers in the most densely populated areas and build a high-speed train between Porto and Lisbon. Investment in rail infrastructure has increased in recent years. However, rail investment in 2020 was less than half its 2010 level and remained well below road investment (Figure 1.9). A shift in investment from road to rail will be needed to reduce the sector's GHG emissions by 40% by 2030.

**Figure 1.9. Investment in rail infrastructure has increased recently but remains well below road investment**



Note: Mainland Portugal.

Source: Ministry of the Economy (2022), Infrastructure Database.

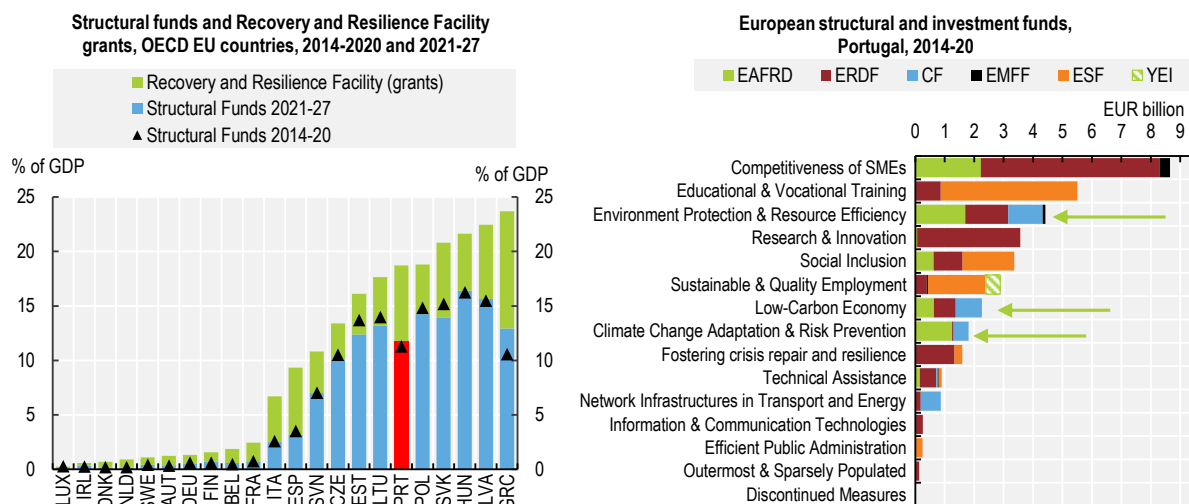
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### *European Funds are a key source of financing*

The cohesion policy has become the main source of public investment. The share of cohesion funds grew from 33% to nearly 60% of total public investment from the 2007-13 to the 2014-20 programming period (EC, 2022d). Portugal will receive EUR 52 billion<sup>8</sup> over 2021-27, largely from the RRF and the cohesion funds (Figure 1.10) (Government of Portugal, 2021). It should seize this opportunity to address the long-term environmental challenges.



Figure 1.10. Effective use of EU funds is key to boost green investment



Note: Left panel: Structural funds: European Regional Development Fund (ERDF), Cohesion Fund (CF) and European Social Fund (ESF). Data refer to total allocations (excluding national co-financing) in current prices as a percentage of 2020 GDP. Recovery and Resilience Facility refers to the maximum grant allocations over 2021-26, as a percentage of 2020 GDP. Right Panel: ERDF, CF, ESF, European Agricultural Fund for Rural Development (EAFRD), European Maritime and Fisheries Fund (EMFF) and Youth Employment Initiative (YEI), including national co-financing (EUR 7.6 billion of EUR 36.4 billion). Source: EC (2022), European Structural and Investment Funds (database).

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Overall, the country had a higher absorption rate of European Structural and Investment Funds than the EU average for 2014-20 (74% spent vs. 60% in the European Union) (EC, 2022e). This was true for those funds allocated to environmental protection and resource efficiency (62% vs. 57%), climate change adaptation and risk prevention (66% vs. 61%) but not for low-carbon economy (49% vs. 57%), and network infrastructure in transport and energy (48% vs. 71%). The significant increase in the amounts allocated for the next period is a challenge in terms of designing, approving and implementing programmes (OECD, 2021a). Portugal needs to develop administrative capacities to accelerate management of the funds. It should streamline processes in the public procurement system, while ensuring transparency and accountability to prevent the risks of fraud. At the same time, it should take sufficient account of the costs and benefits of investments.

Ensuring coherence between the RRP and operational programmes of the cohesion policy will be a key factor of success. Portugal has created a task force, under the Ministry of Planning,<sup>9</sup> to co-ordinate, monitor and report on RRP implementation. The task force will co-operate with the Development and Cohesion Agency (in charge of structural funds), and the Ministry of Finance (in charge of formal interactions with the European Commission) (OECD, 2021a).

The Operational Programme for Sustainability and Efficient Use of Resources was the main Portuguese programme focusing on the environment in 2014-20. It was allocated EUR 2.2 billion in cohesion funds to protect the environment and promote resource efficiency (45%), support the transition to a low-carbon economy (33%) and promote adaptation to climate change (19%). By the end of 2021, EUR 3.8 billion investment had been mobilised. Absorption rates were high in the water sector and for adaptation projects (fight against coastal erosion, identification of vulnerabilities and risks in Madeira) but low for improving energy efficiency, developing clean urban transport infrastructure and railways. This raises concern regarding the implementation capacity in this area.

More than EUR 3 billion, over half the Rural Development Programme (RDP) 2014-22 budget,<sup>10</sup> has been allocated to farmers for environment/climate-friendly land management practices (EC, 2022f). Despite increased areas under contract to preserve biodiversity, and improve water and soil management, the impact of agri-environmental measures could not be assessed due to lack of appropriate indicators (Tribunal de Contas, 2021). Support for the Natura 2000 network has been insufficient to cover the needs identified (EC, 2019b). Significant amounts of funding are linked to water use, but evidence of water savings is weak (Atthis Consulting, IESE, 2019). Like other EU countries, Portugal supports water-intensive crops in water stress areas through voluntary coupled support and market measures under Pillar 1 of the CAP (ECA, 2021). The new CAP 2023-27 is an opportunity to better mainstream environmental objectives in the agricultural policy.

#### **1.2.4. Greening the system of taxes and charges**

##### *Portugal is reviewing its green tax reform*

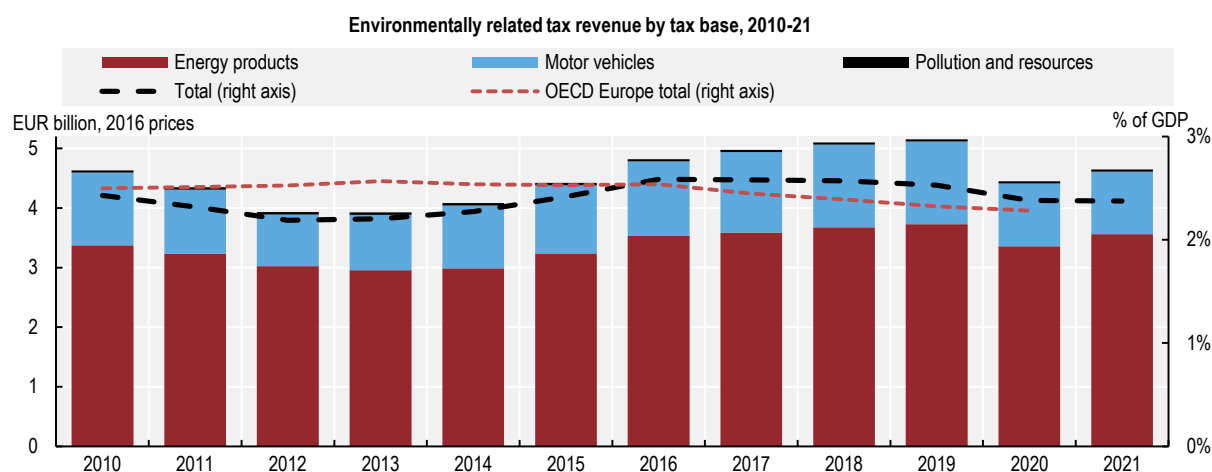
Following the recommendation of the 2011 Environmental Performance Review, Portugal implemented a green tax reform in 2014. This was part of a broader fiscal consolidation effort required by the EU economic adjustment programme. Law No. 82-D/2014 introduced a carbon tax in sectors outside the EU ETS, increased the CO<sub>2</sub> component of the registration tax, revised the taxation of water and waste management, granted property tax breaks for forest management and introduced a tax on single-use lightweight plastic bags.

Revenue from environmentally related taxes represented 2.5 % of GDP in 2019, above the OECD Europe average of 2.3% and up from 2.2% in 2012, the lowest value in the past decade (Figure 1.11). In real terms, this revenue decreased in the early 2010s with declining economic activity. It then rose over 2013-19 due to higher consumption and taxes on diesel. It fell again with the COVID-19 crisis, which led to a decline in the purchase and use of cars. Although the gap has narrowed in recent years, diesel is still taxed at lower rates than petrol. This differential remains despite the greater carbon content in diesel and the fact that diesel engines typically generate a higher local air pollution cost.

As in many countries, most receipts come from taxes on energy products and, to a lower extent, on motor vehicles' purchase and use. Taxes on pollution and resource management such as the tax on effluent discharges and fees for hunting and fishery licences raise little revenue (Figure 1.11).

The tax on single-use lightweight plastic bags has significantly reduced their use. However, the carbon tax and the taxes on water and waste management do not fully internalise environmental costs. The property tax exemption for forest management plans has unclear effects. The Portuguese tax system is complex and the many preferential tax treatments blur the price signals (Sections 1.2.4, 1.2.5). The Ministry of Finance and Ministry of Environment and Climate Action are evaluating the effects of the green tax reform. A renewed reform could have a positive impact on growth and jobs by 2030 with a slightly progressive effect on real incomes depending on revenue recycling options (Mottershead et al., 2021).

**Figure 1.11 Until 2019, revenue from environmentally related taxes increased with higher consumption and taxes on diesel**



Source: INE (2022), Environmentally related taxes and fees; OECD (2022), OECD Environment Statistics (database).

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### *Carbon prices vary by sector and fuels*

Energy and carbon taxes are levied within the framework of the EU Energy Tax Directive (OECD, 2019). There are four main taxes on energy use. First, the energy tax (ISP) applies to most forms of fossil fuel use. Second, the carbon tax applies to the same fuels subject to the energy tax at a nominal rate tied to the average EU ETS carbon price. This rate increased from EUR 5 per tonne of CO<sub>2</sub> in 2015 to EUR 23.9 per tonne in 2021. Third, the Road Service Tax applies to oil products used in road transport, in addition to the carbon and the energy tax. Finally, an electricity excise tax applies to most forms of electricity consumption. Portugal participates in the EU ETS; facilities covered by the ETS generally do not pay the carbon tax (or receive a full refund). End-2021, as ETS prices were exceeding EUR 60/tCO<sub>2e</sub>, the government suspended the carbon tax update.

Carbon prices vary by sector and fuels. In 2021, effective carbon rates (ECR) consisted of fuel excise taxes and to a smaller extent of permit prices from the EU-ETS and of carbon taxes. In 2021, Portugal priced about 74% of its GHG emissions. Of these, 28% were priced at an ECR above EUR 60 per tonne of CO<sub>2</sub>, the midpoint benchmark for carbon costs in 2020. Emissions priced at this level originated primarily from the road transport sector. Most unpriced emissions were non-CO<sub>2</sub> emissions (Chapter 2).

### *Vehicle taxes and road pricing could better support air quality improvement*

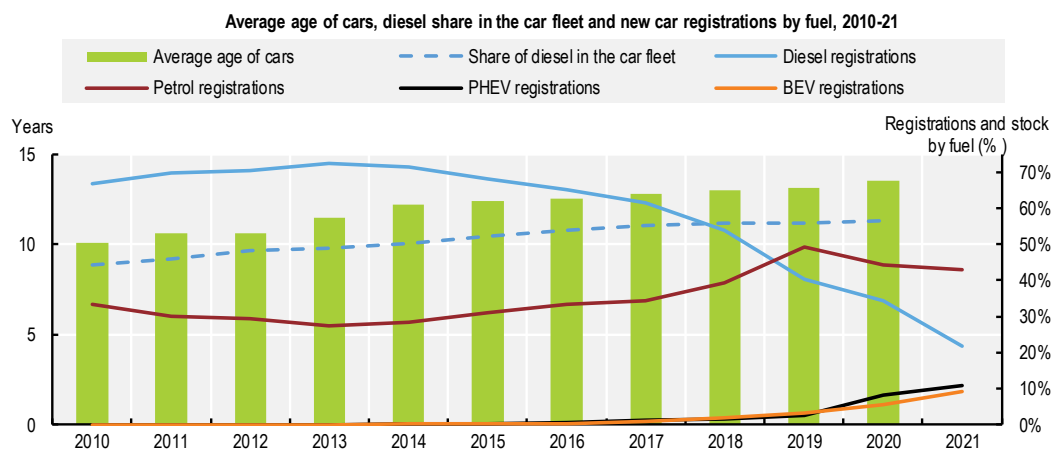
Portugal applies taxes on ownership and use of motor vehicles. The registration tax (*Imposto sobre os Veículos* – ISV) is based on cylinder capacity and CO<sub>2</sub> emissions (light passengers) or only on cylinder capacity (other light vehicles, and motorcycles) (ACEA, 2022). An additional flat tax is levied on diesel light vehicles without particulate filters. Electric vehicles (EVs) are exempt from ISV and discounts apply to hybrid vehicles.

The annual circulation tax (*Imposto Único de Circulação* – IUC) for light vehicles is tied to the cylinder capacity, CO<sub>2</sub> emissions and year of registration. Vehicles registered before 2007 pay a substantially lower IUC than those registered after that date. EVs are exempt from IUC but hybrid vehicles pay the normal rate. Tax expenditure related to the partial ISV exemption (light goods vehicles) and reduced IUC rates for old vehicles amounted to about EUR 700 million in 2021 (Government of Portugal, 2022a).

Combined with lower taxes on diesel and EU vehicle performance standards, vehicle taxation has resulted in lower average CO<sub>2</sub> emissions from new passenger cars. However, the share of diesel vehicles has steadily increased to almost 60% of passenger cars in 2020, one of the highest shares in the European Union, with adverse effects on local air pollution (Figure 1.12). Since the mid-2010s, new car registrations have shifted to petrol and, in recent years, to EVs. However, as car ownership has grown and the fleet has aged due to imports of used vehicles, GHG emissions from transport increased until 2019. Closing the tax gap between diesel and petrol, removing the preferential circulation tax treatment for older vehicles and introducing a NO<sub>x</sub> component in vehicle taxes, as was recently done by Ireland (OECD, 2021b), would help to rejuvenate the fleet and steer towards cleaner vehicles. In addition to vehicle tax exemption, Portugal promotes EVs through subsidies and investment in charging infrastructure. It offers subsidies of EUR 4 000 in 2022 for light passenger vehicles with purchasing price of up to EUR 62 500 including value added tax (VAT), and EUR 6 000 for light goods vehicles. In 2021, the share of EVs in new car registrations was above the EU average (Chapter 2).

While fuel taxes are effective to reduce carbon emissions, distance-based charges depending on vehicle emissions and the place of driving are the best option to address local air pollution (van Dender, 2019). The shift to taxes based on road use will also help offset the loss of revenue from fuel taxes as EVs become widespread. Portugal has an electronic toll system operating on the motorway network for all vehicle categories. Toll prices vary according to the distance travelled, the height and the number of axles of the vehicles but not their emissions. Since 2011, Lisbon has introduced a low emission zone (LEZ) banning the most polluting vehicles from the city centre during working hours. Despite air quality improvement, the LEZ has not reduced NO<sub>x</sub> and PM<sub>2.5</sub> concentrations significantly suggesting the need for stricter standards and stronger enforcement (Santos, Gómez-Losada and Pires, 2019).

**Figure 1.12. Diesel dominates the ageing car fleet, but EV registrations are increasing**



Note: BEV: battery electric vehicles; PHEV: plug-in hybrid electric vehicles. New car registrations fell by 35% in 2020 due to the COVID-19 crisis and increased only slightly in 2021.

Source: ACEA (2022), New passenger cars by fuel type in the EU; ICCT (2021), European Vehicle Market Statistics; INE (2022), Statistics on road vehicles stock.

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Since 2021, Portugal has been imposing a EUR 2 tax on passengers travelling by air and sea. The tax applies to passengers departing on domestic and international flights, except when flying from/to the Madeira and Azores Islands, or between the islands. However, its rate is low by EU standards (Ricardo, 2021). Furthermore, ticket taxes do not provide the same incentives as direct carbon prices to increase

fuel efficiency and passenger load factors (capacity utilisation), optimise flight routes or switch to fuels with a lower carbon content (Teusch and Ribanski, 2021). While the European Commission has proposed to remove fuel tax exemptions for the aviation and maritime sectors, Portugal may consider better reflecting the climate effects of the flights subject to its ticket tax by varying the rate with the distance travelled. It could also introduce frequent flyers and air miles levies, and tax short-haul flights when high-speed rail alternatives become available.

### *Taxes on pollution and resource use imperfectly reflects environmental costs*

Taxes on pollution and resources represented barely 1% of revenue from environmentally related taxes in 2020, a low rate compared with the OECD Europe average of 5%. Revenue from taxes on pollution mainly comes from the water resources tax (parts related to discharge on effluents and land occupation; other components are considered as environmental charges) and the tax on non-reusable beverage packaging. Fees for hunting and fishery licence make up the bulk of revenue from resources taxes.

#### **The water resource tax**

The water resource tax (*Taxa de recursos hídricos* – TRH), established in 2008 and regularly updated with inflation, has several cumulative components. They apply to: (component A) water abstraction of public water for private use by sector, including for energy production (m<sup>3</sup>); (E) discharge of effluents (kg of nitrogen or phosphorous); (I) extracted aggregates (sand, gravel, etc.) from the public water domain (m<sup>3</sup>); (O) land occupation of the public water resources (m<sup>2</sup>); (U) private use (abstraction, deviation or use) of water under public management that may cause significant impact (m<sup>3</sup>) (Rodrigues, 2016). A scarcity coefficient applies to abstraction rates (components A and U) according to specific water basin. Since 2017, an additional fee has been applied to the volume of water abstracted for public water supply to compensate for the higher costs incurred in low-density areas.

The TRH seems to have had a limited impact on changing behaviours (Rodrigues, 2016). A study found that with the economic recovery, revenue increased faster than rates, indicating more intense use and degradation of the water resource (Gomes de Gouveia, 2018). The water abstraction fee is significantly cheaper for agriculture and reductions apply to irrigation (ECA, 2021). In the past decade, irrigated areas and agricultural water abstractions increased significantly in the southern regions (Section 1.1.4). This suggests a need to better reflect the environmental costs of water use in the TRH. The ease of licensing new water abstractions in water stress areas, the limited capacity to monitor and fine illegal abstractions, and low water abstraction charges for non-potable uses have kept levels of water reuse low (about 1%) (Martins et al., 2021).

#### **Taxes and charges on waste**

Portugal introduced a tax on single-use lightweight plastic bags in 2014 (EUR 0.1 including VAT), which reduced their consumption by 98% in two years (Luís et al., 2018). The tax has led to an increase in the use of thicker, untaxed bags. However, overall plastic bag consumption was reduced by 70% over 2014-16, and the decline continued until 2020. Since 2021, Portugal has banned the free provision of carrier bags of any material (including paper bags) at the point of sale (EC, 2022g). An exemption applies for bags used to pack loose items or bulk products.

The green tax reform has differentiated the waste management tax (*Taxa de Gestão de Resíduo* – TGR) by type of treatment to promote the waste hierarchy. However, this has not proven effective: despite a doubling of the landfill tax between 2015 and 2020, the amounts of municipal waste generated and sent to landfills increased. Between 2020 and 2021, the tax was doubled to EUR 22 per tonne and will gradually increase to EUR 35 in 2025. This remains low compared to other European countries. In France and Spain, for example, landfill taxes were set at or above EUR 40 per tonne in 2022. The 2020 reform (Decree-Law

n° 102-D/2020) will tax municipalities that landfill recyclable materials more heavily and grant relief to those that separate and recycle bio-waste at source from 2022.

Experiences with pay-as-you-throw systems are limited (ERSAR, 2022), largely due to the charging system. Municipal waste charges are included in the water bill and linked to water consumption. Portugal has made little progress in passing on the waste management tax to households through waste charges as recommended in the 2011 Environmental Performance Review. In 2020, three quarters of municipalities did not fully recover the costs of waste service provision (ERSAR, 2022). Despite the welcome introduction of a cost accounting system for waste management, problems remain with its implementation by municipalities. As of 2026, in line with the 2020 reform, waste charges will no longer be indexed to water consumption but to the amounts of waste collected. Effective implementation of the user pays and polluter pays principles will be key to achieve more ambitious environmental targets in the sector.

### **Tax benefits for forest management**

The vast majority of forests in Portugal are owned by small private owners. The green tax reform exempted from property taxes those holdings that belong to Forest Intervention Areas (continuous forest areas managed by a single entity, ZIF) or that are subject to forest management plans. ZIF areas more than doubled between 2014 and 2021, but their uptake was lower in the northern and central regions, where small holdings are concentrated. Since 2017, tax benefits have been granted to two other types of associations (Forest Management Entities and Forest Management Units) to promote joint management of small forest holdings. By 2022, the Institute for Nature Conservation and Forests had recognised 13 such associations (ICNF, 2022). The development of these associative models is essential for sustainable forest management and fire protection. Their effectiveness in terms of biodiversity conservation remains to be assessed.

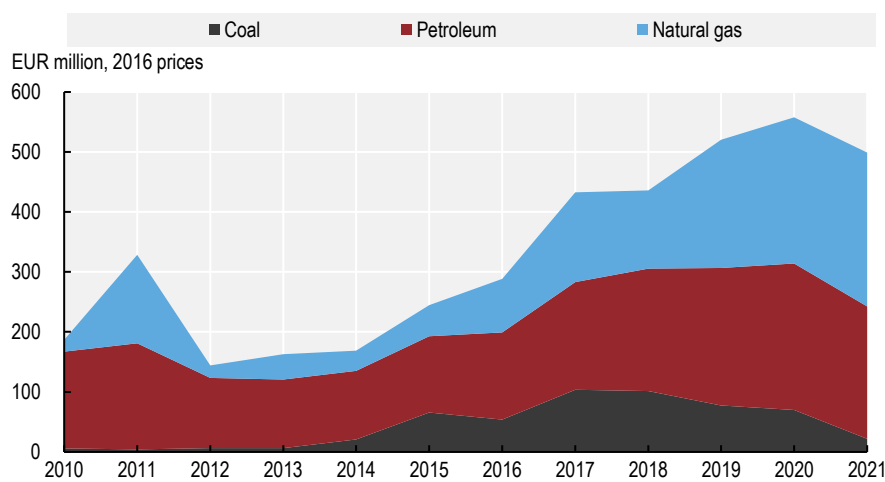
#### ***1.2.5. The phase-out of fossil fuel subsidies has stalled***

Portugal is among the few EU countries to have performed a comprehensive stocktake of fossil fuel subsidies in its NECP (EC, 2020b). This follows the work of a task force created in 2018 to identify and reform environmentally harmful subsidies. The NECP mentioned 2025 as an indicative deadline for removing fossil fuel subsidies and tax benefits. The 2021 Climate Law (Art. 28) provides for this phase-out by 2030. With support from the International Monetary Fund and the European Commission, Portugal is setting up a technical unit to regularly monitor and assess tax benefits. This aims to streamline the tax system, which is cumbersome and not transparent (EC, 2022c). The unit could also track progress in removing environmentally harmful subsidies.

Like other OECD countries, Portugal supports consumption of fossil fuels through tax expenditure, and oil and gas attract the bulk of government support (Figure 1.13). The largest amounts include reduced tax rates for coloured and marked diesel fuel used by agricultural equipment and, since 2017, partial refund of diesel taxes to freight companies. They also include tax exemptions on energy products used for electricity production and co-generation or by industrial installations under the ETS or an energy-efficiency agreement. Overall, this tax relief represented 0.3% of GDP in 2020-21. Since 2014, forgone revenue from tax relief has increased with consumption and taxes on diesel and natural gas. In 2018, Portugal started to gradually phase out some fuel and carbon tax exemptions, which helped phase out coal power in 2021.

**Figure 1.13. Forgone revenue from tax relief rose with consumption and taxes on diesel and natural gas, while support to coal fell**

Tax expenditure by fuel type, 2010-21.



Source: OECD (2022), OECD Inventory of Support Measures for Fossil Fuels (database); MoF (2022), State General Account 2021.

*StatLink* <https://stat.link/c0mhjq>

The 2022 Budget Law confirmed the gradual phase-out of energy and carbon tax exemptions for electricity production and co-generation and for industrial installations by 2025. However, at the same time Portugal introduced new measures supporting fuel consumption to address rising prices. This sends conflicting signals.

The government introduced a temporary subsidy on fuel consumption, a reduction in fuel tax, a reimbursement of the additional VAT raised on the higher fuel prices, and a freeze on the carbon tax (EC, 2022c). It also granted a subsidy for the passenger transport sector (buses and taxis), extended benefits under vehicle and fuel taxes for the road haulage sector, and reduced the corporate income tax for the whole transport sector. In September 2022, the plan to address rising prices (*Famílias Primeiro*) involved EUR 2.4 billion in addition to the EUR 1.6 billion already spent throughout the year to mitigate the impacts of inflation (Government of Portugal, 2022c). Overall, EUR 1.5 billion (0.7% of 2021 GDP) was spent in the form of untargeted fuel tax reliefs. Although energy price control and tax reductions are quick and simple to implement, Portugal should shift to targeted income support measures to protect vulnerable populations while encouraging energy savings and fuel switching (OECD, 2022e).

## Recommendations on sustainable development

### Addressing key environmental challenges

- Continue efforts to ensure sustainable financing of water services and infrastructure including by improving municipalities' cost accounting capacity and updating tariffs, particularly where they provide the service directly.
- Raise water abstraction charges for agriculture, strengthen capacity to monitor abstractions, enforce water licensing regulations and limit new abstraction permits in over-allocated basins.
- Accelerate the passing on of municipal waste management costs to households through dedicated identifiable charges uncoupled from the water bill, as part of wider awareness-raising campaigns to move up the waste hierarchy; develop separate collection of waste.
- Increase allocations to protected areas management under the new common agricultural policy 2023-27 and assess the environmental impact of measures implemented.

### Enhancing policy coherence for sustainable development

- Continue to improve SEA practices through appropriate consideration of alternatives and increased use of cost-benefit analysis.
- Carry on efforts to ensure the transparent and effective implementation of programmes financed with EU funds prioritising investments with the highest social return. Carefully assess the environmental impacts of RRP investments.
- Ensure that the expenditure of the Environmental Fund is aligned with Portugal's environmental and climate objectives, strengthen its links with the managing authorities of EU funds and monitor its performance.
- Complete the evaluation of the green tax reform with a view to applying the polluter pays principle more consistently and supporting a green and inclusive recovery; as part of the inventory of tax benefits, identify potentially environmentally damaging supports and phase out those not justified on economic, environmental or social grounds.
- Gradually close the tax gap between diesel and petrol, remove the preferential circulation tax treatment for older vehicles and consider introducing a NOx component in vehicle taxes to rejuvenate the fleet and steer towards cleaner vehicles.
- Vary toll prices with vehicle emissions; further develop low emission zones with strict standards in cities exceeding air quality limits and ensure their effective enforcement.



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## Notes

<sup>1</sup> During the Economic and Financial Assistance Programme (2011-14), Portugal received EUR 78 billion in loans from the European Union and the International Monetary Fund that were conditional on implementation of comprehensive reform programmes.

<sup>2</sup> Including non-energy use in the chemical and petrochemical sector (i.e. fuels used as raw materials and not consumed as a fuel or transformed into another fuel).

<sup>3</sup> Including non-energy use in the chemical and petrochemical sector (i.e. fuels used as raw materials and not consumed as a fuel or transformed into another fuel).

<sup>4</sup> Under EU Directive 2016/2284 on the reduction of national emissions of certain atmospheric pollutants.

<sup>5</sup> Exclusive economic zone and extended continental shelf.

<sup>6</sup> Out of 453 agglomerations, 15 were not considered in calculations of the compliance rate for Article 4 because they have a size of 2 000–10 000 p.e. and discharge into coastal water or less sensitive areas.

<sup>7</sup> Out of 453 agglomerations, 426 were not considered in the calculation of the compliance rate for Article 5 because they have a size <10 000 p.e. or >10 000 p.e. but discharge into normal or less sensitive area.

<sup>8</sup> From the cohesion and common agricultural policies, and Next Generation EU funds.

<sup>9</sup> Since 2022, the structure *Recuperar Portugal* is under the Minister of the Presidency, which shares oversight of the Development and Cohesion Agency with the Ministry of Territorial Cohesion (Decree-Law nº 32/2022).

<sup>10</sup> The RDP for Mainland, Portugal, was formally adopted by the European Commission on 12 December 2014 and modified on 25 January 2022. Its budget amounts to EUR 5.8 billion, comprising EUR 4.8 billion from the European Union and EUR 1 billion of national co-funding.





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