OECD Environmental Performance Reviews

Slovak Republic

HIGHLIGHTS

2024

OECD

BETTER POLICIES FOR BETTER LIVES

OECD Environmental Performance Reviews

THE OECD

The Organisation for Economic Co-operation and Development (OECD) provides its 38 member countries with a forum to work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to help governments respond to new developments and concerns. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

WHAT ARE EPRs?

OECD Environmental Performance Reviews (EPRs) provide evidence-based analysis and assessment of countries' progress towards their environmental policy objectives. They promote peer learning, enhance government accountability and provide targeted recommendations to help countries improve their environmental performance. They are supported by a broad range of economic and environmental data. Over the last 30 years, the OECD has conducted over 100 EPRs of OECD members and selected non-member countries.

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THE THIRD EPR OF THE SLOVAK REPUBLIC

This third Environmental Performance Review (EPR) of the Slovak Republic follows previous reviews published in 2011 and 2002. It reviews the country's environmental performance over the last decade. This includes the actions of the Ministry of Environment and central government, as well as those of other relevant government authorities, civil society and businesses. The process involved a constructive and mutually beneficial policy dialogue between Slovakia and the countries participating in the OECD Working Party on Environmental Performance (WPEP). The OECD is grateful to the two examining countries: Czechia and Estonia.

The EPR provides 29 recommendations, approved by the WPEP on 24 January 2024. They aim to help the Slovak Republic enhance policy coherence and progress towards its biodiversity, net-zero and sustainable development goals. Particular emphasis is placed on biodiversity and forests in the context of climate change.

KEY ENVIRONMENTAL INDICATORS 2022 (or latest available year)

Energy intensity – Total energy supply per GDP
92 toe per million USD 2015 PPPs (OECD average is 85)

Renewables (% of total energy supply)
13% (OECD average is 12)

GHG intensity – GHG emissions per capita
7.6 t CO_2 eq. per capita (OECD average is 10.8)

Mean population exposure to $PM_{2.5}$
19 µg/m^3 (OECD average is 14)

Municipal waste per capita
500 kg per capita (OECD average is 530)

Material recovery of municipal waste (% of composting and recycling in total treatment)
50% (OECD average is 35)

Material productivity (USD, 2015 PPPs/Domestic material consumption, kg)
2.9 USD/kg (OECD average is 2.5)

Wastewater treatment (% of population connected to tertiary treatment)
2% (OECD average n.a.)

Intensity of use of forest resources (harvest or fellings over annual productive capacity)
0.64 (OECD average n.a.)

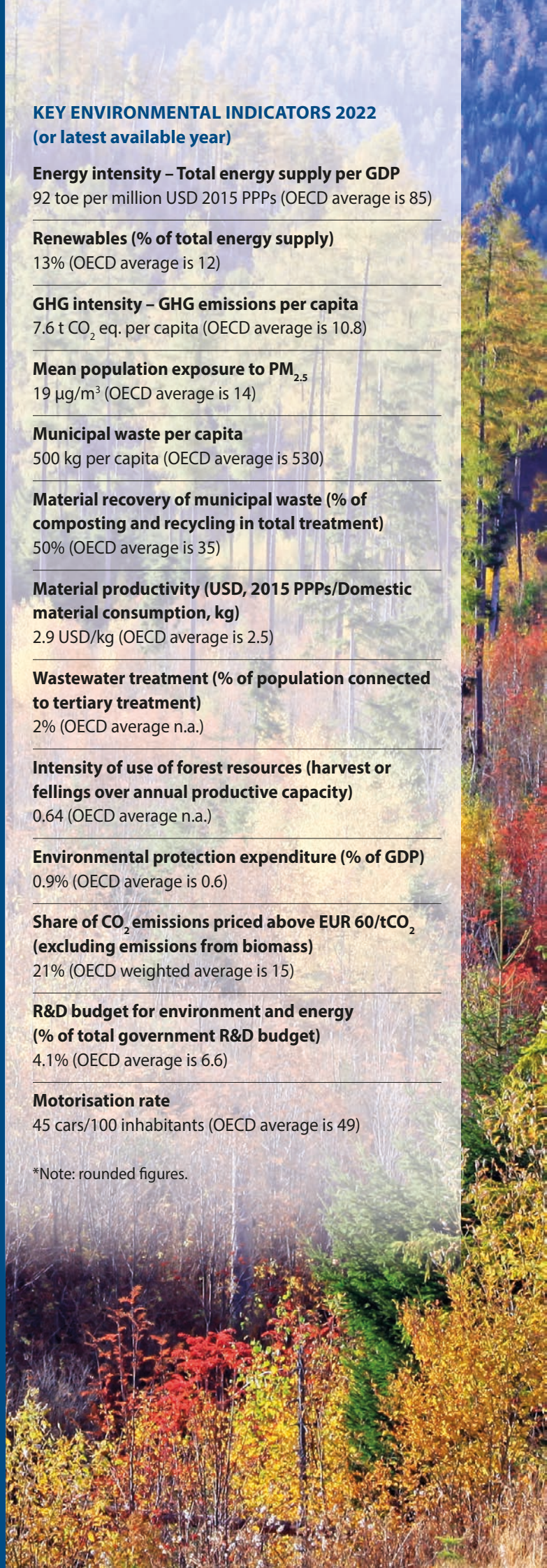
Environmental protection expenditure (% of GDP)
0.9% (OECD average is 0.6)

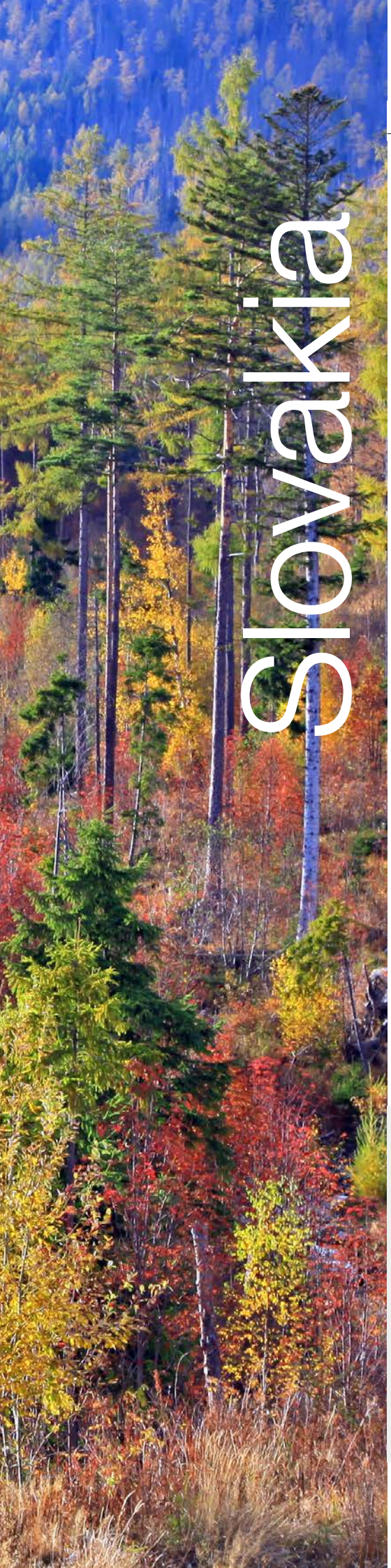
Share of CO_2 emissions priced above EUR 60/tCO_2 (excluding emissions from biomass)
21% (OECD weighted average is 15)

R&D budget for environment and energy (% of total government R&D budget)
4.1% (OECD average is 6.6)

Motorisation rate
45 cars/100 inhabitants (OECD average is 49)

*Note: rounded figures.





Overview

The Slovak Republic is a land-locked Central European country. Its small economy is more energy intensive than the OECD Europe average due to its larger industrial base. Gross domestic product (GDP) grew steadily between 2010 and 2019. After a deep contraction during the COVID-19 crisis, the economy rebounded in 2021 and has grown moderately since.

Over 2010-19, Slovakia reduced domestic material consumption, emissions of greenhouse gases (GHGs) and major air pollutants, and to a lesser extent, energy supply and freshwater abstractions. However, the country is not on a net-zero pathway. Air pollution remains a health concern and much municipal waste ends up in landfills. Expanding wastewater treatment coverage in the many small municipalities is another challenge. Slovakia will have to step up its ambition to achieve carbon neutrality by 2050.

Slovakia's biodiversity is threatened by unsustainable agricultural and forestry practices, infrastructure development, invasive alien species and other problematic species, and climate change. The update of the National Biodiversity Strategy and Action Plan (NBSAP) provides an opportunity to strengthen the country's ambition and promote a co-ordinated response to biodiversity loss. Completing national park zoning, with effective stakeholder participation, is a priority for strengthening the protected area (PA) system. Slovakia should also promote close-to-nature forestry, landscape diversity in agricultural land and other biodiversity-friendly farming practices. While looking for opportunities to increase carbon removals, it should seek synergies and manage potential trade-offs across biodiversity, climate mitigation and adaptation measures.

SLOVAK REPUBLIC 2022
(or latest available year)

Population: 5.4 million

GDP per capita: USD 40 600 (current purchasing power parities) (OECD average is 56 000)

Total area: 49 000 km^2

Population density: 111 inhabitants/km^2 (OECD average is 36)

Currency: Euro (EUR), in 2022, USD 1 = EUR 0.950

* Note: rounded figures.

Key recommendations

Towards sustainable development

ADDRESSING KEY ENVIRONMENTAL CHALLENGES

- Enshrine climate neutrality in national law with consistent sectoral pathways.
- Consolidate municipal water and waste services to improve operational efficiency and financial sustainability.
- Implement circular economy approaches in the construction sector, and in the food and bio-waste value chain.

IMPROVING ENVIRONMENTAL GOVERNANCE AND MANAGEMENT

- Enhance inter-ministerial co-ordination on sustainable development and strengthen vertical co-ordination in environmental policy making and implementation; build capacity of district offices and improve their environmental guidance.
- Ensure a high level of public participation in environmental impact assessment and permitting procedures as part of the reform of the construction law; reinforce the environmental aspect and public consultation in regulatory impact assessments; systematically use available analytical capacity in conducting assessments.
- Further promote compliance with environmental requirements; enhance risk-based planning of environmental inspections; increase sanctions and ensure fines have a real deterrent impact.
- Accelerate the clean-up of contaminated sites.

PROMOTING INVESTMENT AND ECONOMIC INSTRUMENTS FOR GREEN GROWTH

- Accelerate the absorption of EU funds to boost environmental investment; simplify and accelerate public procurement procedures, ensuring proper safeguards and transparency; strengthen project preparation capacity of recipients, particularly at local level.
- Systematically screen actual and proposed subsidies, including tax provisions, to identify and reform those that are not justified on economic, social and environmental grounds.
- Ensure the Environmental Fund's expenditure is aligned with Slovakia's environmental and climate objectives and needs.
- Pursue the green tax reform, planning a regular and transparent adjustment of rates with inflation; reflect the carbon content of fuels in energy taxes and pursue efforts to phase out fossil fuel subsidies (e.g. energy tax exemptions for households); further apply the polluter- and user-pays principles in the water and waste sector.
- Agree on a multi-dimensional and operational definition of energy poverty and gather the relevant data to target support to the most vulnerable, while encouraging energy saving.
- Limit car dependency: shift investment from road to rail; remove preferential tax treatment for company cars; link the annual motor vehicle tax to vehicle emissions and extend it to private cars; extend distance-based charges to passenger cars on motorways.

Biodiversity

STRATEGIC AND INSTITUTIONAL FRAMEWORK FOR BIODIVERSITY

- Adopt a National Biodiversity Strategy and Action Plan with a long-term vision, mission and specific and measurable targets aligned with the Kunming-Montreal Global Biodiversity Framework and the EU Biodiversity Strategy for 2030. Develop a national plan for restoring ecosystems that identifies priority sites and cost-effective restoration measures.
- Develop a national biodiversity finance plan to mobilise and promote efficient, cost-effective use of public and private resources. Enhance the capacity of

local, regional and central governments to develop, fundraise for and implement nature and biodiversity projects.

- Strengthen data and information on biodiversity and ecosystem services, and their use in decision making.

PROTECTED AREA REFORM

- Strengthen and simplify the protected area (PA) system in line with international good practice. Prioritise zoning of national parks, including the expansion and consolidation of areas under strict protection. Adopt and implement management plans for PAs.
- Enhance the capacity of national park administrations and the State Nature Conservancy to manage PAs effectively, support participatory approaches and communicate with local stakeholders.
- Establish development plans for national parks and adapt regional development plans to promote sustainable local economies that benefit from, and are consistent with, the biodiversity objectives of national parks.
- Resolve land ownership in PAs: revise the condition in the Nature Act requiring zoning to be approved before certain state lands are transferred to the Ministry of Environment; accelerate efforts to purchase, lease or exchange private land in PAs.
- Increase the volume and predictability of state funding for national parks and increase national parks' own revenues through appropriately priced entrance fees, payments for ecosystem services, tourism taxes and other tailored measures.

MAINSTREAMING BIODIVERSITY INTO SECTORAL POLICIES AND PRACTICES

- Adapt forestry practices to better support nature and adapt to climate change: require and guide integration of biodiversity, ecosystem services and climate change considerations into forest management plans and their appraisal; scale up close-to-nature forestry and measures to protect young trees from ungulates; strengthen economic incentives for land and forest owners/managers and promote forest certification.
- Increase agricultural landscape diversity, including by reducing field sizes, and adopt biodiversity-friendly farming practices: promote and support the uptake of the Eco-Scheme and agri-environmental-climate measures; leverage the Common Agricultural Policy (CAP) flexibility mechanism to increase funding of biodiversity measures; ensure conditionality is respected; leverage other policy options beyond CAP payments.
- Align the energy transition with biodiversity, water and climate objectives.
- Adopt an objective of no net loss or net gain for infrastructure projects, facilitated by biodiversity offsetting.

BIODIVERSITY AND CLIMATE LINKAGES

- Scale up efforts to increase net removals from land use, land-use change and forestry across all land-use categories in line with Slovakia's 2030 EU commitment. Harness synergies and manage potential trade-offs across biodiversity, climate mitigation and adaptation, and between short- and long-term mitigation action.
- Promote integrated landscape planning to improve water retention, carbon stocks and species' habitat through biological corridors, vegetation belts and other green/blue infrastructure.
- Monitor and enhance knowledge of climate change impacts on biodiversity and ecosystem services to better incorporate climate considerations and facilitate adaptive management, especially in protected areas, agriculture and forestry.

Towards sustainable development

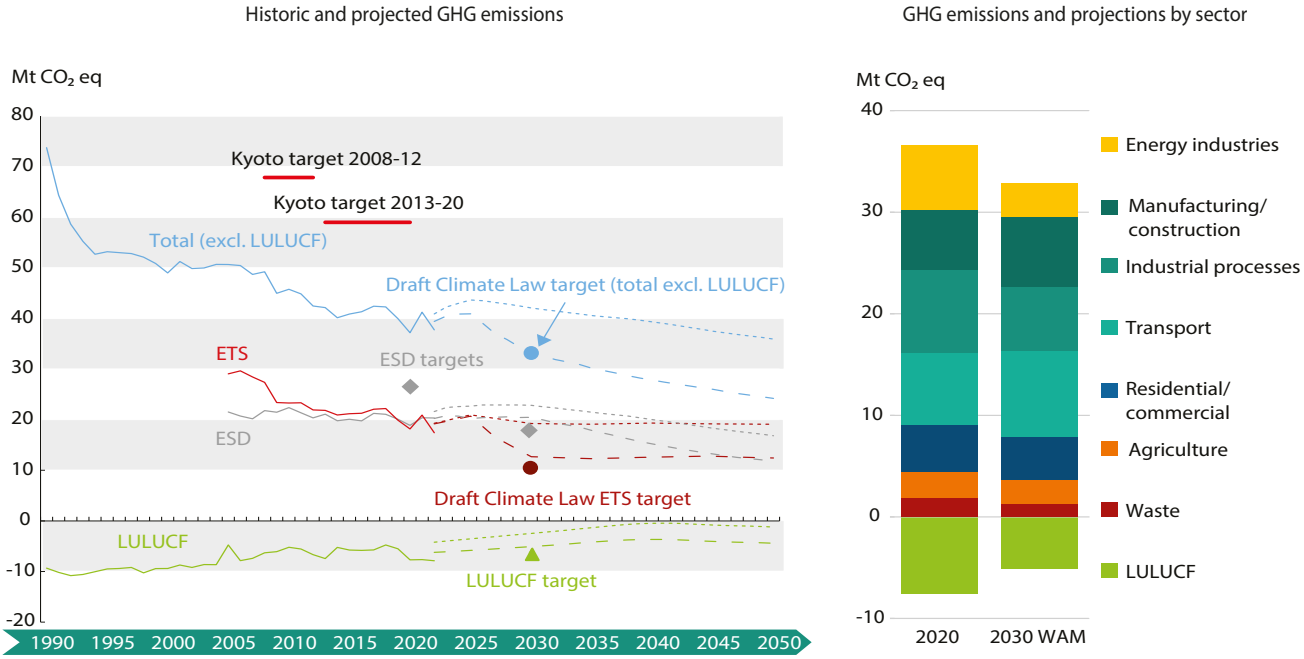
ENVIRONMENTAL PERFORMANCE: KEY TRENDS

Slovakia needs to step up its ambition to achieve carbon neutrality by 2050. Slovakia met its 2020 climate targets. However, national projections indicate it is not on a net-zero pathway (Figure 1). Most of the GHG emission reductions by 2030 are expected to come from energy industries, and to a lesser extent from industrial processes, which are covered by the EU Emissions Trading System (ETS). The projected increase in GHG emissions in some non-ETS sectors, especially transport, and the decline of net carbon removals from forests, put at risk the achievement of 2030 targets and the net-zero goal. Enshrining carbon neutrality in legislation, as proposed in 2023, would strengthen integrated strategic planning across political cycles. With consistent sectoral pathways, such a law would hold the line ministries accountable for progress.

Coal is being phased out and nuclear is set to increase further. Although predominant, fossil fuels represent a smaller share of Slovakia's energy supply than the OECD average (60% vs. 78% in the OECD in 2022) due to the importance of nuclear energy. The country is committed to phase out coal mining and coal-fired power generation by 2023 and is increasing its nuclear capacity (Figure 2). Over the past decade, the energy mix has shifted progressively from coal to renewables (mainly biofuels and waste), which still account for a moderate percentage of supply. Slovakia needs to raise its ambition to match the new renewable energy target of 42.5% for the whole European Union in 2030. The national target of 23% proposed by Slovakia is just enough to contribute to the previous EU target of 32%.

Air pollution remains a health concern. Despite significant improvements, average concentrations of fine particulates in Slovakia remain among the highest in OECD Europe (Figure 3). The country has faced several EU infringement proceedings for failing to meet limit value for PM_{10}. Solid fuel combustion for domestic heating, road transport and metal production are the main sources of this pollution. In 2022, exceedances of EU air quality standards were recorded for $PM_{2.5}$, PM_{10}, benzo[a]pyrene and tropospheric ozone. The 2023 Air Pollution Law, which strengthens competences of local authorities, including to introduce low-emission zones, is expected to improve air quality management.

Figure 1. Slovakia is not on a net-zero pathway



Note: LULUCF: land use, land-use change and forestry. Dotted lines: national projections with existing measures. Dashed lines: with additional measures (WAM). ESD: emissions not covered by the EU Emissions Trading System (ETS); 2022 data are estimates.
Source: MoE (2023), National Inventory Report 2022; EEA (2023), Member States' greenhouse gas (GHG) emission projections. 24 October.

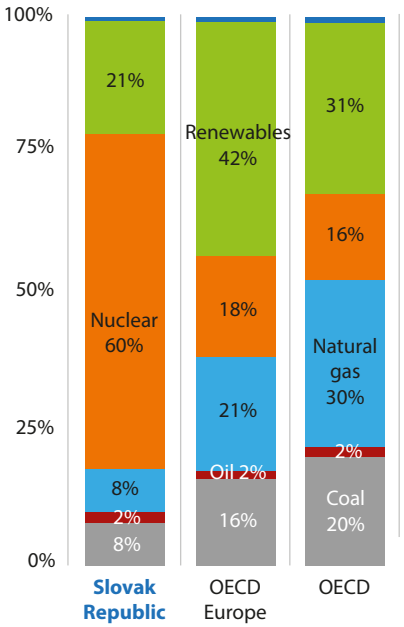
Expanding wastewater treatment coverage is a challenge. Slovakia generally experiences low water stress, but climate change puts the southwest region at severe risk of drought. Efforts are needed to achieve good water status. Agriculture, hydromorphological changes, untreated sewage, point sources of pollution and climate change are the most significant pressures on water bodies. Slovakia has improved wastewater treatment (from 59% to 70% between 2010-21), but its connection rate remains among the lowest in the OECD. The National Programme for Implementing the EU Urban Waste Water Treatment Directive relies heavily on EU funds. Yet almost half of its investment needs (nearly EUR 1.6 billion by 2027) are not financed. Tariffs for water services are too low to recover the costs of service provision, especially for small municipalities (28% of the population live in municipalities with fewer than 2 000 inhabitants).

Slovakia is lagging on waste management. Slovaks generate slightly less municipal waste per capita than the OECD Europe average (500 kg vs. 520 kg in 2021). Although separate collection has improved, municipal waste generation has grown faster than GDP in the last decade and 41% of this waste still ends up in landfills. Despite a relatively well-developed waste policy framework, Slovakia has missed most of its 2020 waste objectives and its apparent progress in recycling is questionable. The 2022 joint OECD-EC circular economy roadmap for the Slovak Republic recommended strengthening use of economic instruments, including by further raising the landfill tax for municipal waste and reforming the distribution of its proceeds; improving extended producer responsibility schemes; extending the mandatory use of green public procurement criteria; and expanding pay-as-you-throw systems (used by only 6% of municipalities in 2018).

Progress in cleaning up contaminated sites has been slow. More than EUR 1 billion is needed for remediation by 2027. The main obstacles include the difficulty for district authorities to identify polluters or liable entities; insufficient state budget allocations; lack of legislative deadline to decide which ministry will ensure remediation; and the length of public procurement processes.

Figure 2. Electricity generation is highly decarbonised

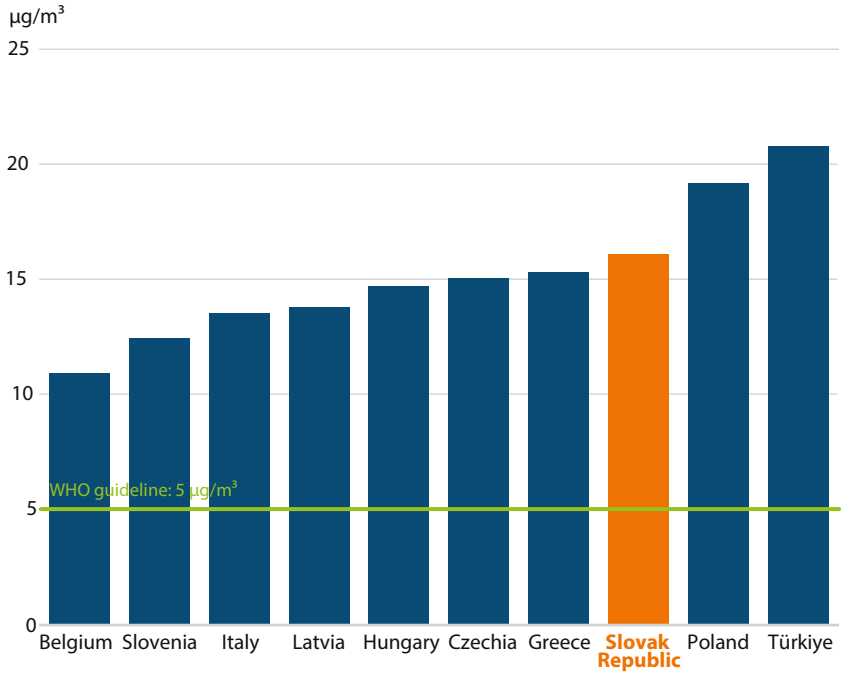
Electricity generation by source, 2022



Source: IEA (2023), World Energy Statistics and Balances (database).

Figure 3. Air pollution levels are high in Slovakia

$PM_{2.5}$ average concentrations, top ten OECD Europe countries, 2021



Source: EEA (2023), Europe's air quality status 2023.

Improving environmental governance and management

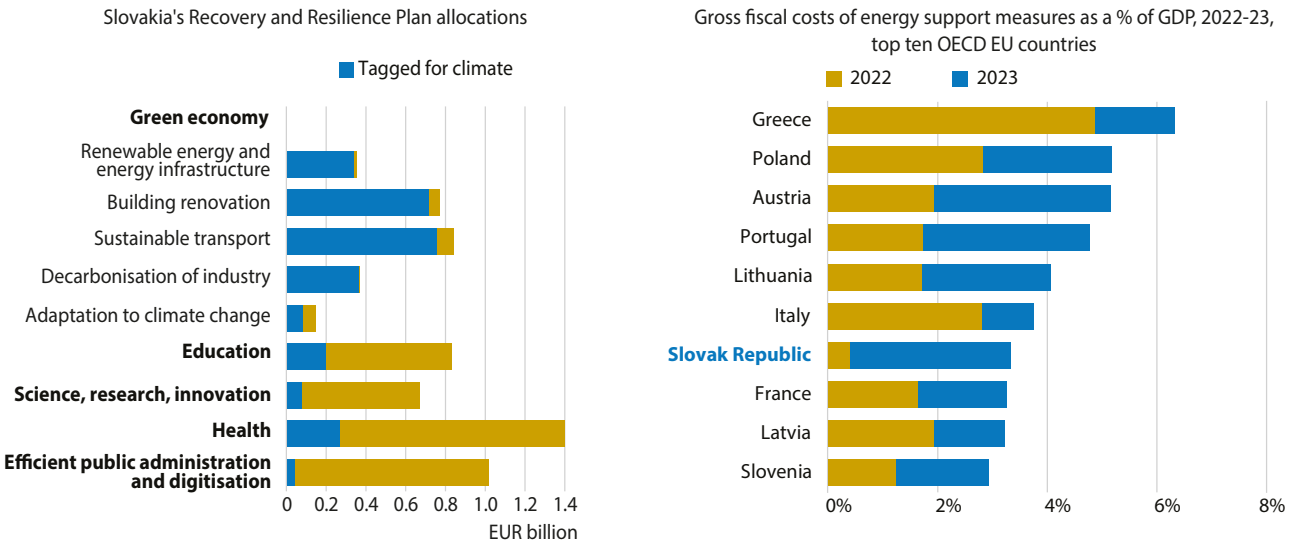
Environment-related responsibilities are fragmented. The Ministry of Environment (MoE) oversees climate protection but lacks powers over energy policy and forestry. These competences are carried out by the Ministry of Economy and Ministry of Agriculture and Rural Development, respectively. Energy efficiency in the buildings sector falls under the authority of the Ministry of Transport. Several inter-ministerial councils have been established, but co ordination should be enhanced. The district offices, which implement environmental policy at local level, are units of the Ministry of Interior but receive guidance from the MoE. Since 2013, they have received less support.

Non-compliance with environmental legislation remains high. The Slovak Environmental Inspectorate (SEI) and the district offices ensure compliance with national environmental legislation. In 2021, almost half of all SEI inspections found instances of non-compliance. Audit bodies have highlighted the insufficient capacity of the SEI. Fines are often imposed at the lower end of legislative ranges, with little deterrent effect. The threshold of damages that differentiates administrative infringements from criminal cases can create uncertainty as to which authority is competent to deal with the offence. Since 2022, Slovakia has been reinforcing the police unit specialised in fighting environmental crime.

Promoting investment and economic instruments for green growth

Climate is a priority of the recovery plan, but price support limits incentives to save energy. Slovakia's Recovery and Resilience Plan (RRP) is supported until 2026 by EU grants representing 6.4% of its 2021 GDP. The country has dedicated 45% of its RRP budget to climate objectives (Figure 4). Energy efficiency and sustainable transport are key priorities. This is positive, as the country needs to limit car dependency and shift investment from road to rail to cut transport emissions. Between 2022 and 2023, to mitigate the effects of the energy crisis, the government adopted measures amounting to 3.3% of GDP, a level above the EU average. However, they mainly consist of untargeted energy price support measures. From an environmental and fiscal point of view, it would be justified to keep the price signal and help the most vulnerable with support unrelated to energy consumption. This requires defining energy poverty and gathering the relevant data to target support while encouraging energy saving.

Figure 4. Climate is a priority of Slovakia's recovery plan, but price support limits incentives to save energy

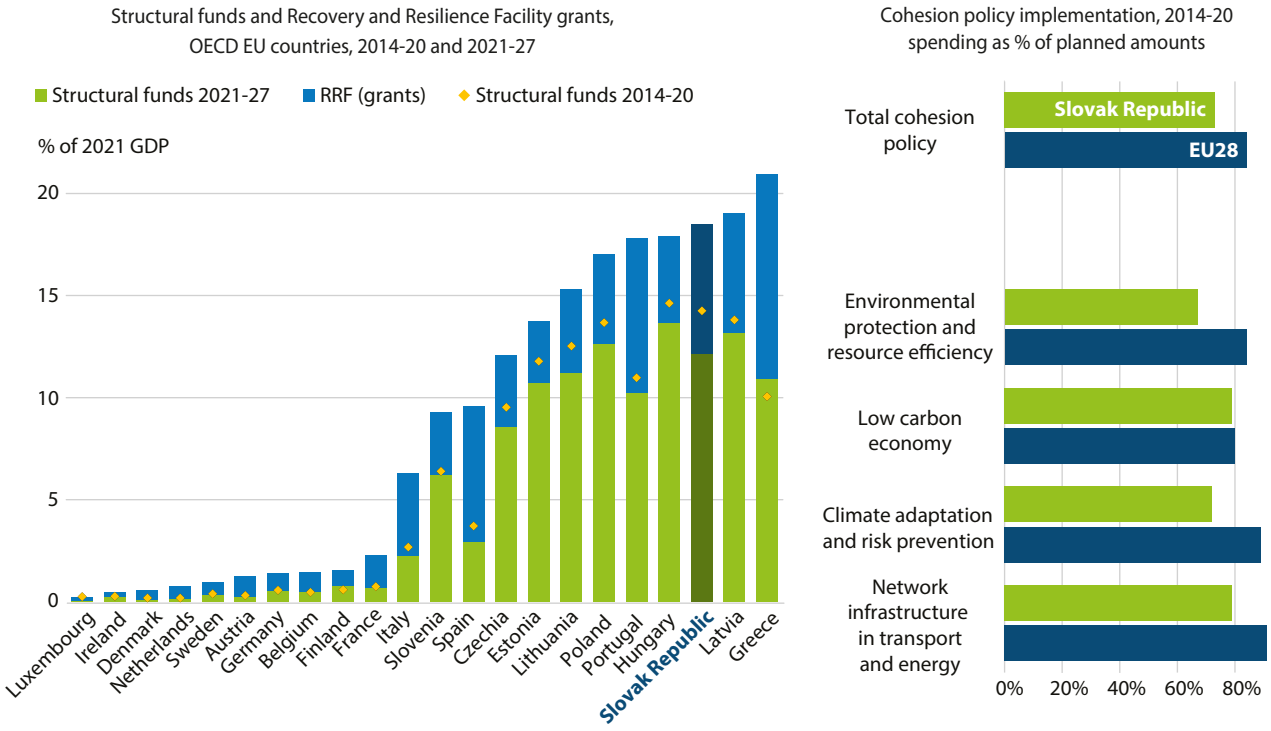


Source: EC (2023 and 2021), Analysis of the recovery and resilience plan of Slovakia; OECD (2023), OECD Energy Support Measures Tracker.

Effective use of EU funds is key for green investment. Spending on environmental protection is mainly financed by EU funds. However, over 2014-20, Slovakia had a low absorption rate of structural funds for environmental infrastructure and climate adaptation (Figure 5). This is partly explained by lengthy public procurement procedures and low capacity of recipients, particularly at local level. The Environmental Fund finances around 10% of public investment in the environment, particularly water. Its budget planning has been hampered by limits set by the Ministry of Finance on the use of proceeds from the auctioning of EU ETS allowances for environmental purposes. Only 22% of these revenues were spent on environmental action over 2015-22, well below the 50% required by the ETS Directive. A 2023 legislative update is expected to increase this share.

The green tax reform should be pursued. Slovakia has pledged for a fiscally neutral green tax reform. However, the tax burden has not shifted from labour to environmentally harmful activities. Carbon prices (from permit prices in the EU ETS and fuel excise taxes) are low compared to EU countries. They do not provide consistent incentives to cut GHG emissions across fuels and sectors. The tax on diesel is well below that on petrol, despite the higher carbon content of diesel and its local air pollution cost. Revenue from taxes on motor vehicles, and on pollution and resources, is also below the OECD Europe average. Slovakia can be praised for removing subsidies for electricity produced from domestic coal in 2023. This is essential for reducing GHG emissions and local air pollution. The country has mapped fossil fuel subsidies and should pursue efforts to phase them out.

Figure 5. Slovakia receives large amounts of EU funds, but their absorption is low



Note: Left panel: data refer to total allocations (excluding national co-financing) in current prices as a percentage of 2021 GDP. Structural funds: European Regional Development Fund, Cohesion Fund, European Social Fund; 2021-27: including Just Transition Fund; 2014-20: including Youth Employment Initiative. Recovery and Resilience Facility (RRF) grants: including REPowerEU grants.
Source: EC (2023), Cohesion Open Data Platform, period covered up to 30 June 2023; EC (2023), Consolidated Regulation (EU) 2021/241 establishing the Recovery and Resilience Facility, 28 February; EC (2022), RRF: Update of the maximum financial contribution, June.

In 2021, investment in rail infrastructure (0.2% of GDP) was well below road investment (1.1%).

Biodiversity and forests in the context of climate change

SCALING UP EFFORTS TO HALT AND REVERSE BIODIVERSITY LOSS

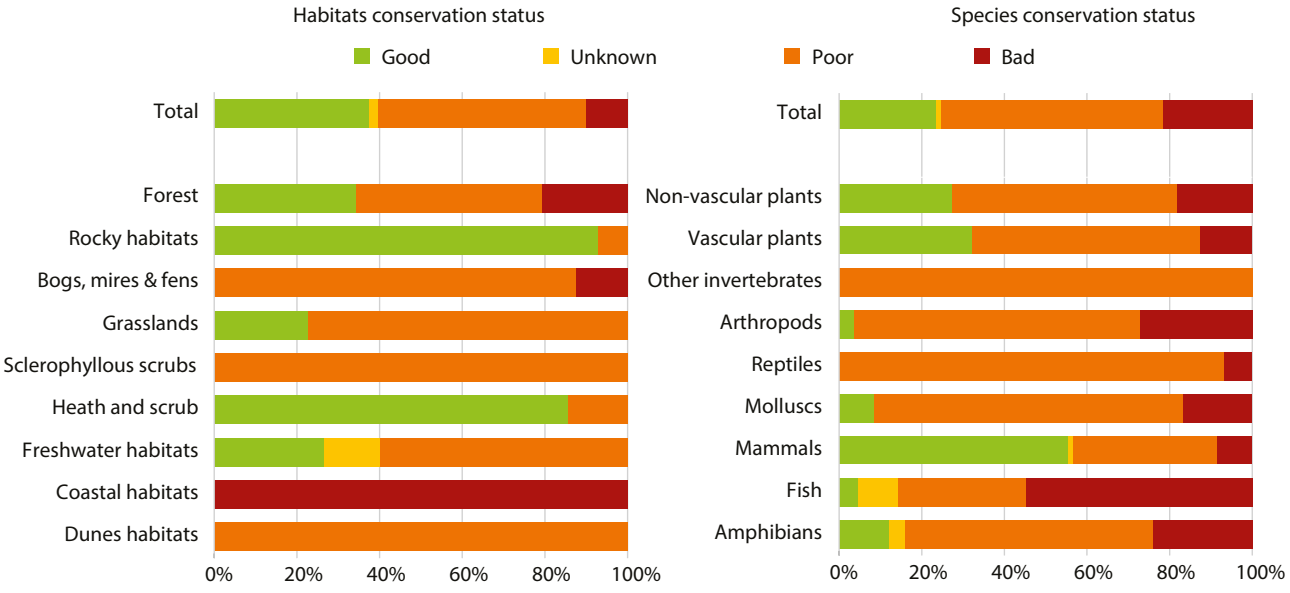
Slovakia's rich biodiversity is under threat. Approximately 75% of species and 60% of habitats are in an unfavourable state (Figure 6). This is due to pressures such as unsustainable agricultural practices, invasive alien species or other problematic species, forestry (e.g. the high volume of incidental logging in some areas) and infrastructure development. Slovakia's biodiversity is also expected to face increasing pressure from climate change. Data and knowledge on biodiversity have improved (Box 1), but gaps remain. This is particularly the case for freshwater biodiversity and species, and habitats not of European interest. Natural capital accounting and the integration of ecosystem service values into decision making are lacking.

In 2021, expenditure on biodiversity protection accounted for 0.22% of government spending.

The first economic evaluation of Slovakia's ecosystem services

The Value of Ecosystems and their Services in Slovakia mapped the country's ecosystems using geographic information systems and field surveys. The report examined the capacity of Slovak ecosystems to deliver 11 regulatory, 10 provisioning and 2 cultural services. The monetary value of each ecosystem service was ascertained using the value transfer methodology. The report estimates ecosystem service values to be at least EUR 187-225 billion/year (about twice Slovakia's GDP), with forests making a major contribution to these benefits. However, due to ecosystem degradation, Slovakia loses about EUR 20 billion per year in potential ecosystem service value.

Figure 6. A significant share of habitats and species in Slovakia are in an unfavourable state



Note: Sclerophyllous scrubs: Juniperus communis formations on heaths or calcareous grasslands; Coastal habitats: inland salt meadows and pannonic salt steppes and salt marshes; Dune habitats: pannonic inland dunes.
Source: EEA (2021), Conservation status of habitat types and species: datasets from Article 17, Habitats Directive 92/43/EEC reporting.

Updating the strategic framework for biodiversity. The country has strengthened legislation and integrated biodiversity objectives into its Vision and Development Strategy 2030 and Envirostrategy 2030. However, the NBSAP (2014-20) has expired. The NBSAP to 2030 should be swiftly finalised and adopted, with broad stakeholder participation. A plan for restoring Slovakia's degraded habitats would also be beneficial. Inadequate financing and low institutional capacity and co-ordination are obstacles to proper implementation.

COMPLETING NATIONAL PARK ZONING

The PA network is extensive but requires reform. With more than 37% of its territory designated for protection, Slovakia has surpassed the 2020 target for PA coverage of 17% (Aichi Target 11) and the 2030 target of 30% under the Kunming-Montreal Global Biodiversity Framework (Target 3) (Figure 7). However, less than 20% of the area of national parks is strictly protected, two-thirds of national parks are yet to be zoned and most PAs do not have valid management plans. Slovakia has launched a PA reform, strengthening the legal basis for zoning and establishing independent national park administrations. The reform requires strong participatory processes, effective communication and economic incentives to manage tensions with private landowners and conflicts between forestry and biodiversity interests. Increasing the volume and predictability of financial resources for national parks is also critical.

MAINSTREAMING OF BIODIVERSITY

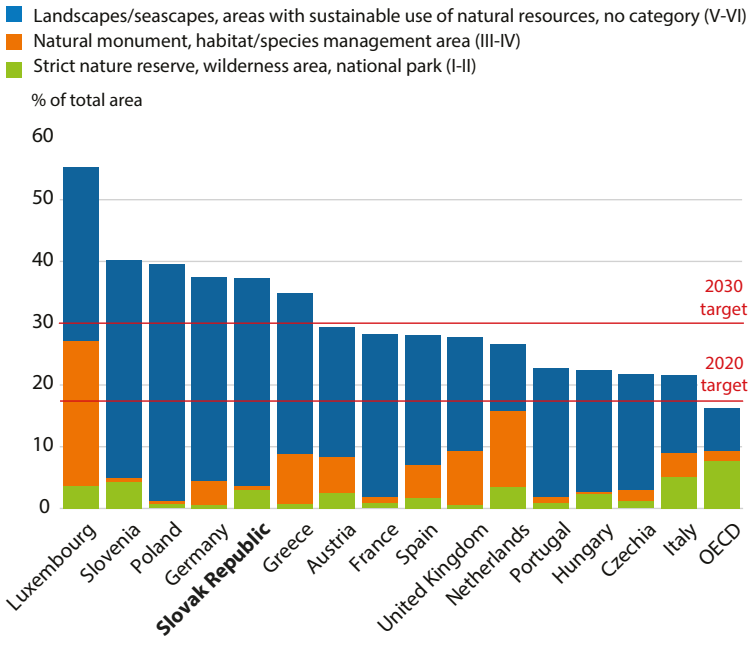
Slovakia has taken steps to align agriculture and forestry with biodiversity objectives. Past land-use decisions have resulted in large monoculture fields and the removal of landscape elements. This situation has persisted under the Common Agricultural Policy (CAP 2014-20) and biodiversity in agricultural land continues to decline. Slovakia's CAP 2023-27 Strategic Plan is better geared towards supporting biodiversity. If implemented effectively, it may help end the loss of biodiversity. While all of Slovakia's forests are under management plans, these do not always align with biodiversity objectives. Furthermore, a high intensity of salvage and sanitary logging in response to wind damage and bark beetle infestations has degraded critical habitat, contributing to the loss of western capercaillie (photo). Slovakia has taken steps to address these challenges (e.g. requiring environmental assessments of forest management plans) and should continue to promote close-to-nature forestry as the preferred forestry practice.

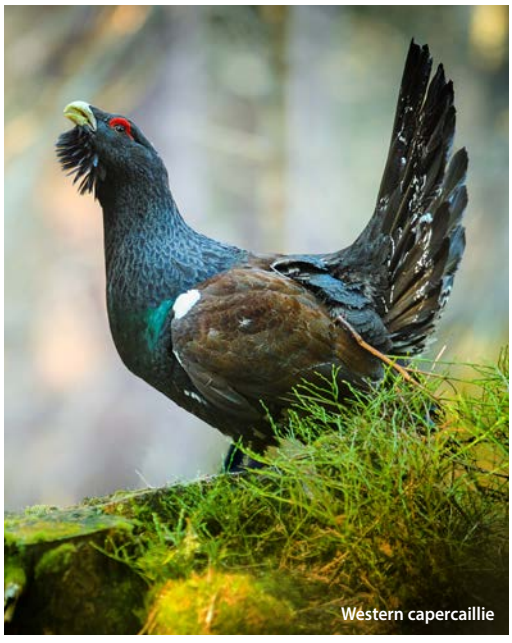
CLIMATE CHANGE MITIGATION, ADAPTATION AND BIODIVERSITY

Projections show Slovakia will fall short of its 2030 LULUCF target (Figure 1). The main reason is the declining GHG removals from forests resulting from the disproportionate share of mature tree stands. Slovakia must swiftly implement its planned measures and identify other opportunities to increase carbon removals. It should seek synergies across biodiversity, climate mitigation and adaptation action by, for example, scaling up close-to-nature forestry; restoring grasslands, wetlands and other ecosystems; and promoting landscape planning. Potential trade-offs across these objectives need to be carefully managed. For example, afforestation could in some contexts increase removals but compromise biodiversity. This, in turn, could undermine ecosystem resilience and long-term climate objectives.

Figure 7. The share of protected land is high in Slovakia

Terrestrial protected areas by IUCN category of protection, top 15 European countries of the OECD, 2022




Western capercaillie

Sources: OECD (2023), OECD Environment Statistics (database).

OECD Environmental Performance Review of the **Slovak Republic 2024**

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