

3. Towards green growth

This chapter reviews Belgium's efforts to mainstream environmental considerations into economic policy and to promote sustainable development and green growth. It analyses progress in using economic and tax policies to pursue environmental objectives, as well as steps taken to reform environmentally harmful subsidies. The chapter reviews efforts to scale up investment in environment-related and low-carbon infrastructure. It also examines the country's eco-innovation performance and opportunities for green industry.

3.1. Introduction

Belgium performs well in many economic and well-being dimensions. However, the high level of public debt and population ageing, rising skill shortages and low productivity growth create vulnerabilities (OECD, 2020a). Economic activity has been moderate but steady in the five years preceding the coronavirus outbreak. It was accompanied by strong employment growth. As of December 2020, it was expected that gross domestic product (GDP) would shrink by 7.5% in 2020, the sharpest contraction since the Second World War, before slowly recovering (4.7% in 2021 and 2.7% in 2022) (OECD, 2020b). The public debt (Maastricht definition) was anticipated to rise from 98% of GDP in 2019 to 116% in 2020, and the unemployment rate to grow from 5.4% to 5.7%.

In the past decade, Belgium has made progress in decoupling greenhouse gas (GHG) and air pollutant emissions, energy and material consumption, municipal waste generation and water abstractions from economic growth (Chapter 1). However, progress is not sufficient to reverse the depletion of natural capital stock, putting well-being's sustainability at risk. Land take, landscape fragmentation, intensive agricultural practices and road traffic are putting pressures on the environment and human health. As the COVID-19 emergency passes, recovery efforts should focus on putting the country back on track to meet the Sustainable Development Goals (SDGs).

3.2. Ensuring a strong, resilient and green economic recovery

Following the generalised lockdown in early 2020, the federal government introduced a fiscal package equal to 3.9% of GDP (OECD, 2020b). It consists mainly of deferrals of tax and social security payments, along with some direct income support measures that were effective in protecting jobs and businesses and in sustaining economic activity. The authorities made it possible to defer the repayment of credits and introduced a guarantee scheme for new credits and credit lines (which amounts to 10.7% of GDP). These measures, along with the European Central Bank's accommodative monetary policy and prudential policy easing by the National Bank of Belgium, have supported aggregate demand. With the economy on a recovery path, some measures were phased out progressively in early autumn. However, the federal government reintroduced emergency measures following the tightening of containment measures in early November. The recovery will be temporarily disrupted and is expected to continue being hampered by potential restrictions imposed in response to sporadic outbreaks of the pandemic until vaccination against the virus becomes general in late 2021. As Belgium gradually shifts from addressing the health emergency and large losses of income to recovery, governments could build on lessons learnt from the 2008 global financial crisis to design stimulus measures that support a more inclusive and resilient society (Box 3.1).

Green measures, mostly subsidies for energy efficiency investment, accounted for 10% of the 2009-11 recovery package (Pollit, 2011). The package was relatively small in scale, hence both economic and environmental impacts were modest. The new federal government has to co-ordinate with the regions to draw up a national recovery plan that would benefit from the "Next Generation EU" (which would allocate more than EUR 5 billion to the country). At least 37% of the plan's expenditure should contribute to climate objectives (EC, 2020a). Investing in low-carbon and natural infrastructure, promoting innovation and circular economy, strengthening carbon prices and phasing out environmentally harmful subsidies should be key components of the package to accelerate the green transition.

The federal and regional governments do not have a green growth strategy but have taken steps to promote a green and inclusive economy. Energy and mobility are priorities of the 2018 National Pact for Strategic Investment (NPSI) that aims at boosting productivity and innovation (Section 3.5.2). Monitoring progress in low-carbon investment in the pact would be useful for setting priorities in the recovery plan. While the Flemish government announced a EUR 4.3 billion recovery plan focusing on sustainable economy and digitalisation, a co-ordinated plan between the federal and regional governments would have

higher economic multiplier effect and climate impact. A wealth of regional initiatives promote investment, innovation and employment in energy efficiency, green chemistry and circular economy (Section 3.6.1). Co-ordinating efforts and improving synergies in these fields will be essential in pursuing a green recovery (Chapter 5).

Box 3.1. Lessons learnt from past green stimulus packages in OECD countries

- Investment support without long-term carbon price signals is not sufficient to achieve continued investment in low-carbon technologies. The removal of fossil fuel subsidies, as well as carbon pricing, can help align price signals with green stimulus packages.
- Feed-in tariffs and production tax credits have been relatively successful at supporting the development, diffusion and adoption of renewable energy. The post-2008 policy measures, together with declining prices, contributed to the increased share of renewable energy use.
- Investment in energy-efficient building and retrofitting can contribute to successfully maintaining jobs and economic activity in the construction sector, while contributing to reducing emissions.
- Governments need to take risks by providing financing to businesses working on emerging technologies further from the market, while minimising the risk of fraud.
- The design of policies needs to carefully consider countries' domestic settings (level of development, talents, skills, firms, infrastructure). Previous industrial policies adopted as part of green recovery packages paid more attention to the demand side than the supply side.
- Distributional impacts of green stimulus policies need to be carefully considered. Managing distributional outcomes is important to ensure a people-centred policy response and to achieve public buy-in for policies.
- Governments should build *ex ante* and *ex post* evaluations into green stimulus packages to improve programme monitoring and evaluation.

Source: OECD (2020), COVID-19 and the low-carbon transition, Impacts and possible policy responses.

3.3. Enhancing policy coherence for sustainable development

Belgium has a long-established strong institutional set-up for sustainable development. The 1997 law on the co-ordination of the federal policy on sustainable development defined periodic planning and reporting mechanisms. It created a consultative process supported by the Inter-departmental Commission for Sustainable Development. Belgium reinforced its commitment in 2007 through the Constitution: an article was added stating that every federal entity pursue the objectives of sustainable development in its social, economic and environmental dimensions, and consider solidarity between generations.

In 2016, the Inter-ministerial Conference on Sustainable Development, composed of representatives of all four levels of government, was mandated to follow up implementation of the 2030 Agenda. This included the preparation of the 2017 National Sustainable Development Strategy (Box 3.2). However, sustainable development is not a priority for inter-governmental co-operation and policy coherence needs to be enhanced to achieve the SDGs (FPB, 2019a). Inter-federal initiatives are not sufficiently supported, have limited ambition, and – as in the case of the National Energy and Climate Plan (NECP) – do not demonstrate an integrated systemic vision (CFDD, 2020).

Box 3.2. Reviving inter-governmental co-operation after the 2017 National Sustainable Development Strategy

The National Sustainable Development Strategy aims to create the basis for a coherent policy approach towards sustainable development. It consists of an overall framework text and the strategic documents of the various entities: the 2013 federal Long-term Vision to 2050 and the federal Sustainable Development Plan 2004-08; Vision 2050 – A long-term strategy for Flanders (the third Flemish Strategy, 2016); the second Walloon Strategy for Sustainable Development (2016); the Sustainable Development Plan of the Brussels-Capital Region (2018); and the second Regional Development Plan of the German-speaking Community (2014).

The text provides a common vision of the desired future of Belgium regarding SDG implementation. It lists six priorities for enhanced co-ordination: sustainable food, sustainable building and housing, sustainable public procurement, means of implementation, awareness raising and follow-up of the SDGs. However, several advisory councils have criticised it for lacking ambition. Mobility, circular economy, energy and air quality, which are major challenges for 2030, are not listed in co-ordination priorities.

According to the strategy, authorities have to report collectively on the implementation of the 2030 Agenda twice per government term and to engage in a broad public dialogue. Belgium presented the voluntary national review on implementation of the 2030 Agenda at the 2017 UN High-level Political Forum on Sustainable Development. However, there was no follow-up report issued.

Although Belgium has implemented policies related to the various dimensions of sustainable development, it needs to enhance policy coherence to achieve the SDGs by 2030. This includes a systematic assessment of the impact of regulations on sustainable development (Chapter 2). A number of commitments remain to be implemented: the federal Sustainable Development Plan should have been updated ten years ago and the SDGs could be better integrated into strategic and guidance documents. Co-operation within the Inter-ministerial Conference on Sustainable Development has come to a standstill since the end of 2017.

Source: FPB (2019), *Quelle priorité pour un développement durable?*, Rapport fédéral pour le développement durable 2019.

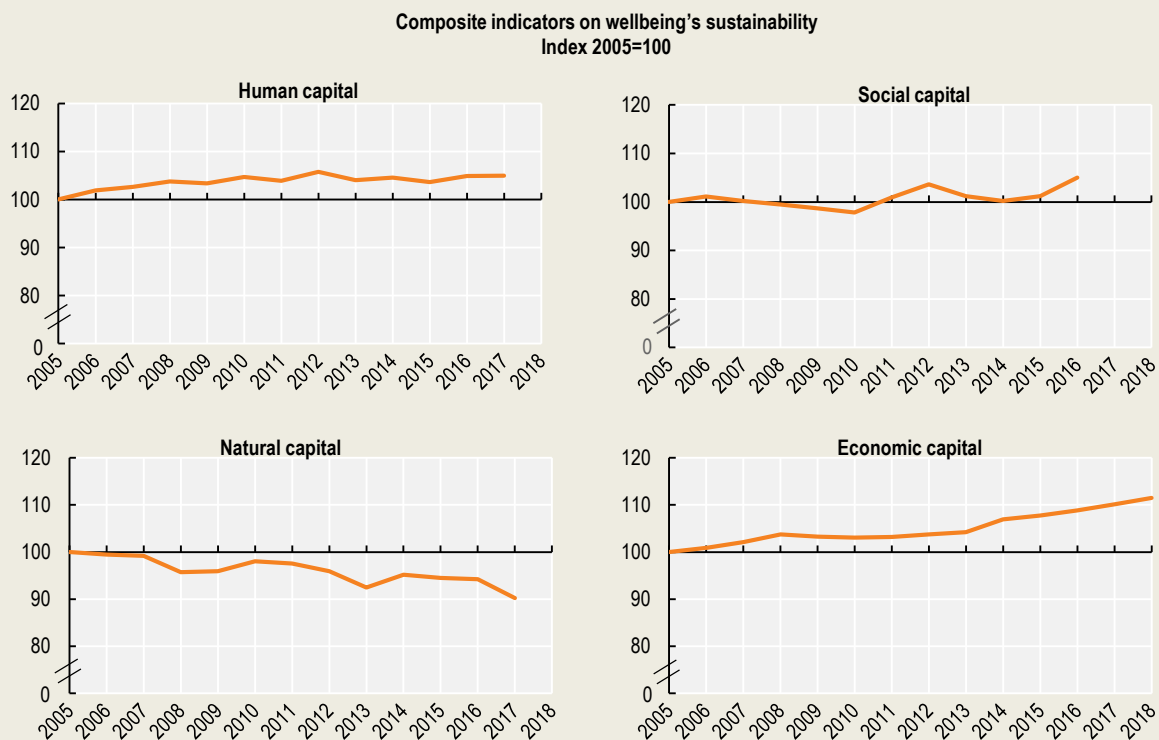
Belgium is not on track to achieve SDG targets by 2030 (Chapter 1). In 2019, less than one-third of the 51 SDG monitoring indicators were given a favourable evaluation and most have no quantitative targets (FPB, 2019a). Belgium is a frontrunner in developing “beyond GDP” indicators (Box 3.3). According to the Federal Planning Bureau, the depletion of natural capital threatens well-being’s sustainability.

Box 3.3. Belgium is a frontrunner in measuring well-being's sustainability

Since 2016, the Federal Planning Bureau (FPB) has been reporting on "beyond GDP" indicators annually in the framework of the 2014 law on complementary indicators. Every year, the FPB presents the results in a public meeting of the Chamber of Representatives. The National Bank of Belgium publishes a summary of results in its annual report.

To summarise the information, the FPB has developed composite indicators. These measure current well-being in Belgium (Here and Now); the well-being of future generations (Later); and the well-being of people living in other countries (Elsewhere). The Later dimension measures well-being's sustainability by using the stock of capital passed on to future generations. It monitors the trends in human, social, natural and economic capital (Figure 3.1).

Figure 3.1. Natural capital is deteriorating



Source: FPB (2020), Mesurer la soutenabilité du bien-être.

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The Later dimension shows the depletion of natural capital puts well-being's sustainability into question. Natural resource stocks (air, water, land and biodiversity) have been steadily declining. While many indicators have been improving (e.g. GHG emissions, pesticide use or municipal waste generation), their improvement is insufficient to reverse the changes in the natural capital stock (e.g. atmospheric carbon dioxide concentrations or biodiversity).

Source: FPB (2020), Indicateurs complémentaires au PIB.

3.4. Greening the tax system

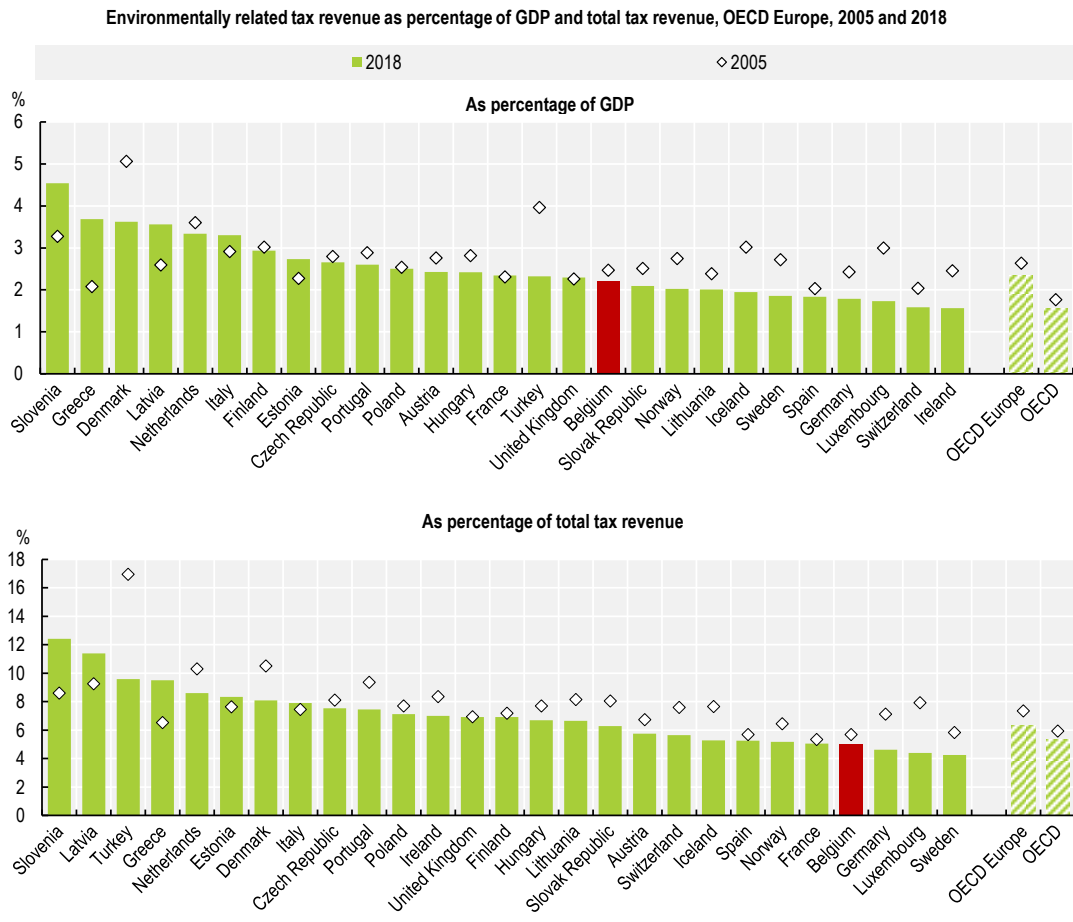
There is scope to make the tax system more growth- and environmentally-friendly as recommended in previous Environmental Performance Reviews and Economic Surveys. In 2018, Belgium's tax-to-GDP ratio was 44.8%, one of the highest in the OECD (OECD, 2019). The tax structure is skewed towards labour, which penalises growth and employment. The less distortive environmentally related taxes account for a small part of revenue. In addition, tax expenditures narrow the tax base and reduce incentives to save energy. In 2015, Belgium started a reform to reallocate taxes from labour to less distortive consumption and environmental taxes. However, further efforts are needed to boost employment and improve resource allocation (OECD, 2020a).

The National Debate on Carbon Pricing has identified options to implement a carbon tax in sectors not covered by the European Union Emissions Trading System (ETS). However, the carbon tax remains to be implemented, along with the plan to reform fossil fuel subsidies. Co-operation across governments will be key to align fiscal policies with environmental objectives and address potential adverse impacts on vulnerable households. A multi-stakeholders' mechanism to monitor and support a reform of environmentally related taxes and harmful subsidies could help move the reform forward.

3.4.1. Environmentally related taxes: An overview

In 2018, environmentally related tax revenue was below the OECD Europe average as both a share of GDP and of total tax revenue (Figure 3.2). These ratios were also below 2005 levels. In recent years, however, revenue from energy taxes has been rising. This has been due mostly to increased diesel taxation (Figure 3.3). Taxes on energy products represent a smaller part of environmentally related tax revenue than the OECD Europe average (65% vs. 75%). Taxes related to transport (excluding fuels) generate relatively high revenue (30% vs. 21% in OECD Europe). Taxes on pollution, including packaging, landfill and incineration taxes, generate the remaining revenue. The federal government collects energy taxes, while regions collect taxes on vehicles (since the 2014 reform of the state) and pollution.

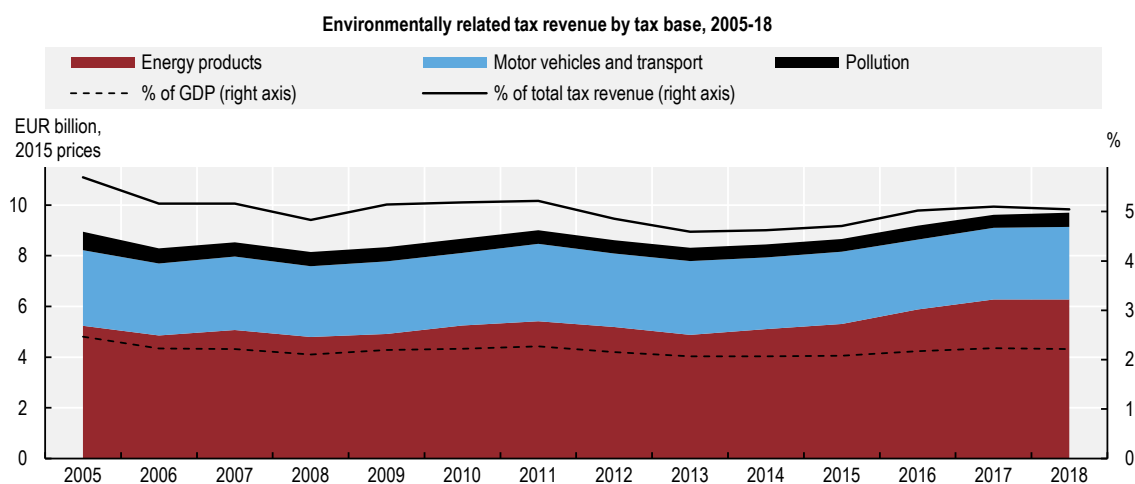
Figure 3.2. Environmentally related tax revenue is below the OECD Europe average



Source: OECD (2020), OECD Environment Statistics (database).

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Figure 3.3. Revenue from energy taxes has been increasing with diesel taxation



Sources: EC (2020), "Data on Taxation", National Tax List (database); OECD (2020), OECD Environment Statistics (database).

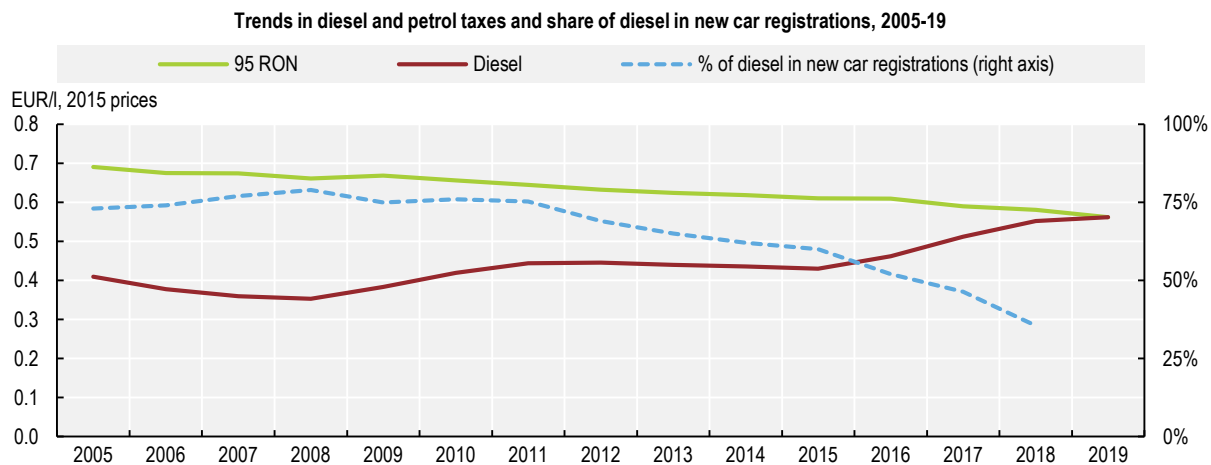
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3.4.2. Taxes on energy use and carbon pricing

Taxes on energy

Energy taxes are set in the framework of the EU Energy Taxation Directive. As in other OECD member countries, road fuels are taxed at higher rates than fuels used for other purposes (heating, industrial process, agriculture). This can be justified by higher external costs from road transport (OECD, 2018). Belgium significantly raised the tax rate on diesel over 2008-12 and 2015-19 so that it became one of the highest in the EU (Figure 3.4). At the same time, the tax on petrol remained steady, which means it decreased when adjusted for inflation. As a result, Belgium became one of the three OECD members (with Australia and the United Kingdom) to tax diesel and petrol at the same rates in 2019. This is welcome as diesel has higher carbon content than petrol and diesel engines generally generate higher local air pollution cost. The share of diesel in new car registrations decreased significantly.

Figure 3.4. Taxes on diesel and petrol were aligned in 2019

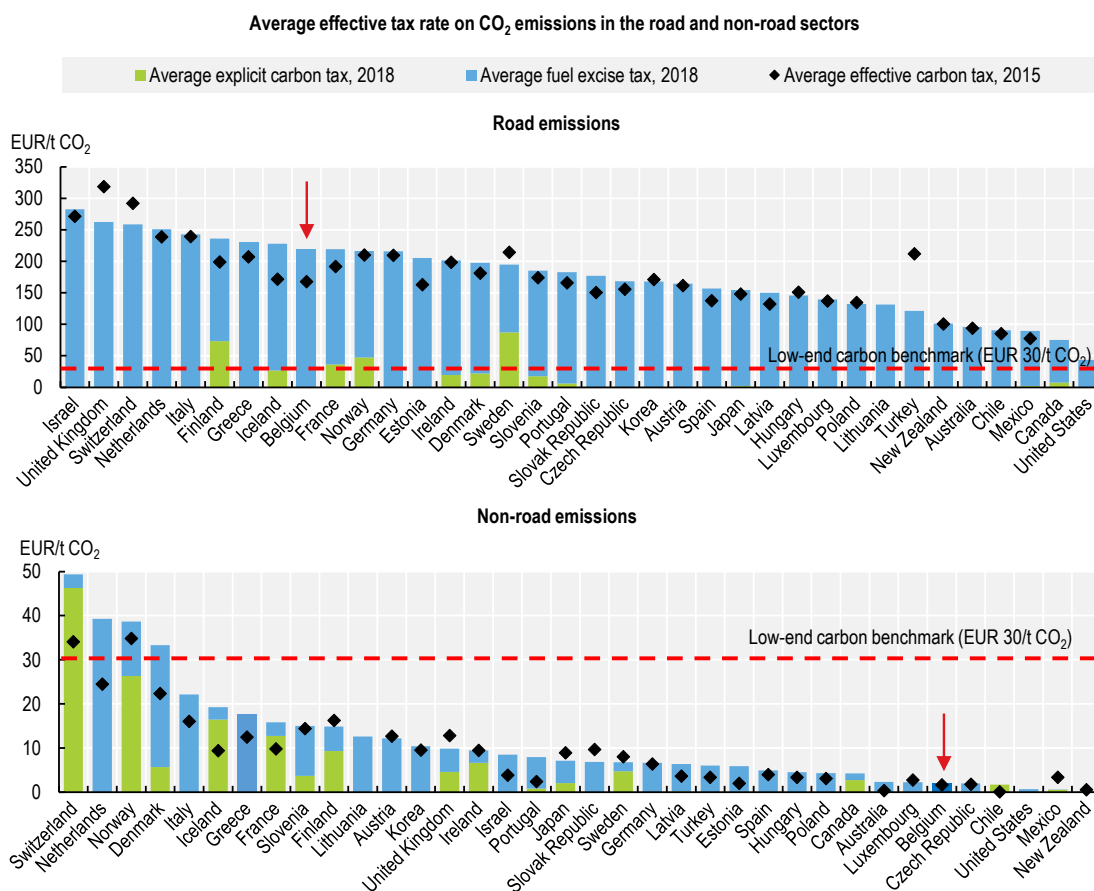


Sources: ICCT (2019), European Vehicle Market Statistics: Pocketbook 2019/20; IEA (2020), IEA Energy Prices and Taxes Statistics (database).

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However, taxes on energy products do not reflect the environmental cost of energy use. Effective tax rates¹ on carbon dioxide (CO₂) emissions from energy use are low, especially in non-road sectors (Figure 3.5). Several exemptions to energy taxes apply, such as a partial refund of tax on diesel for commercial use and reduced tax rates on heating fuels (gas oil, natural gas) (Section 3.4.3) (EC, 2020b). A reduced value-added tax (VAT) rate applies to the use of coal and coke. Energy use in the agriculture and fisheries sector is not taxed. Company car taxation also undermines carbon price signals in road transport (Section 3.4.4). The National Debate on Carbon Pricing identified options to implement a carbon tax in non-ETS sectors (Box 3.4). However, it remains to be implemented. The federal government noted the need for additional feasibility studies and announced a plan for 2021 (CONCERE-NCC, 2019).

Figure 3.5. Effective tax rates on CO₂ emissions are low, especially in non-road sectors



Notes: Tax rates as applicable on 1 July 2018. CO₂ emissions are calculated based on energy use data for 2016 from IEA (2018), World Energy Statistics and Balances. Emissions from the combustion of biofuels are included. The average effective carbon tax rate in 2015 is the sum of the average explicit carbon tax rate in 2015 and the average fuel excise tax rate in 2015.
 Source: OECD (2019), Taxing Energy Use: Using Taxes for Climate Action.

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Box 3.4. The National Debate has identified options for carbon pricing and should be followed up

In Belgium, only 37% of GHG emissions are priced via the EU ETS. The remaining emissions, mainly from transport and buildings, are not subject to any explicit carbon price. In 2017, the federal Minister of Energy, Sustainable Development and Environment launched a national debate on the potential modalities for implementing a carbon price in non-ETS sectors, a key move towards climate neutrality. The process was based on a thorough exchange among Belgian and foreign experts covering the public, private, academic, associative and trade union sectors. The approach was fact-based, fed by benchmarking analyses and was organised around a series of high-level events, technical workshops and bilateral meetings.

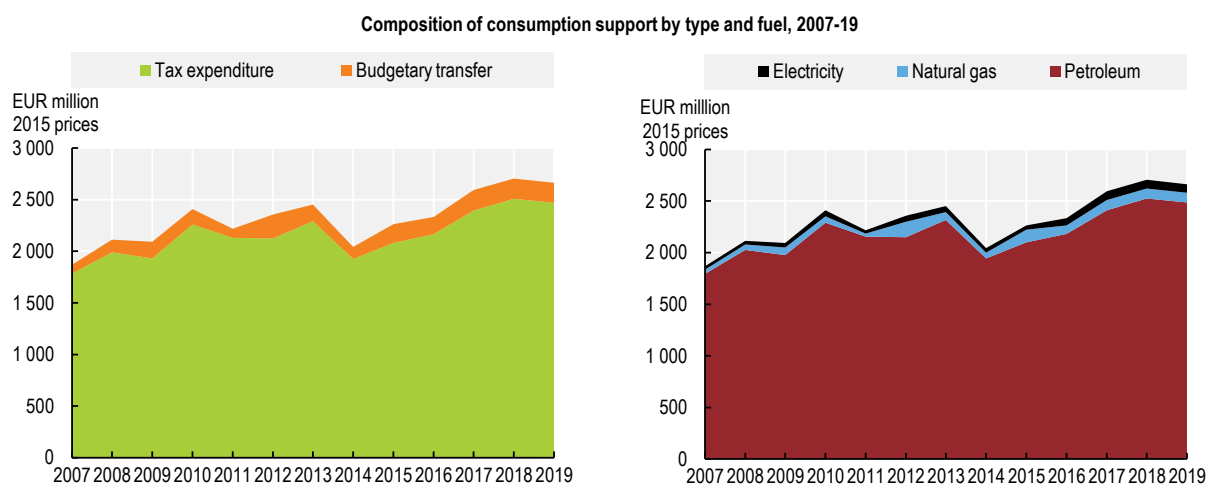
The debate was guided by the principles of budget neutrality, the long-term orientation of price signals and the concomitant implementation of a broad package of measures. Options considered to introduce an additional carbon component to excise duties with the possibility, in the transport sector, to shift to road pricing. Three price trajectories were assessed, starting from EUR 10/tCO₂ in 2020 to EUR 40, EUR 70 or EUR 100/tCO₂ in 2030. The analysis showed the impact of carbon pricing is manageable, especially when additional fiscal revenue (up to EUR 2.6 billion annually by 2030 at EUR 70/tCO₂) is used to compensate for potential adverse impacts and to finance complementary measures. Such a shift would have positive effects on employment and GDP. The debate highlighted the need to co-ordinate actions across governments and to align other policies such as fossil fuel subsidies. A public survey revealed potentially high support of the Belgian population for carbon pricing, provided compensatory measures are implemented.

Source: FPS Health (2018), Belgian National Debate on Carbon Pricing.

3.4.3. Removing environmentally harmful support to fossil fuel consumption

Support to fossil fuel consumption represented 40% of energy tax revenue in 2018, among the highest shares in the OECD. It is mostly made of tax preferences for the use of oil products, particularly lower taxation of heating oil and partial refund of excise duty on diesel for commercial use (Figure 3.6). Tax expenditure rose significantly in the past decade as forgone revenue from tax concessions increased with excise duties on diesel.

Figure 3.6. Support to fossil fuel consumption: Tax expenditure increased with diesel taxes



Notes: Data need to be interpreted with caution. Fossil fuel subsidy data may be partial and data record tax expenditure as an estimate of revenue that is foregone due to a particular feature of the tax system that reduces or postpones tax relative to a jurisdiction's benchmark tax system, to the benefit of fossil fuels. Hence, tax expenditure estimates could increase due either to greater concessions, relative to the benchmark treatment, or to a raise in the benchmark itself. It is important to note that definitions of tax expenditure, and the benchmarks used to estimate the size of the expenditure, are nationally determined and may hamper international comparisons; 2018-19 data include preliminary estimates.

Source: OECD (2020), OECD Inventory of Support Measures for Fossil Fuels (database).

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These tax preferences undermine the carbon price signal and discourage an efficient use of energy resources, as recognised in the National Debate on Carbon Pricing. Belgium has committed to rationalise inefficient fossil fuel subsidies as part of SDG 12, which calls for ensuring sustainable consumption and production patterns. Like other EU members, Belgium had to report on actions to phase out fossil fuel subsidies in the NECP. However, the NECP shows no progress and Belgium postponed its phase-out plan to 2021 (CONCERE-NCC, 2019).

Belgium should adopt a sequential approach to minimise the political backlash and risk of backtracking that often accompanies reforms of fossil fuel subsidies. First, it should identify and estimate support measures for fossil fuels and document their objectives. Second, it should measure the relative distortion of support measures and prioritise them for reform. Third, it should evaluate the distributional effects of reform. Finally, it should identify alternative policies that increase the efficiency and improve the distributional impact of government intervention (OECD, 2020c).

The country regularly monitors progress in this area through the list of tax expenditures attached to the annual federal budget bill. However, it lacks details and only partially covers regional tax expenditure. Belgium has not implemented the 2007 recommendation to establish a Green Tax Commission. The High Council of Finance envisages the reform of some environmentally related taxes and subsidies as part of its advice on the tax shift (HCF, 2020). However, all governments need to agree on recommendations. Establishing a multi-stakeholders' mechanism to monitor and support the reform of environmentally harmful subsidies, as was done in France, can help move the process forward (OECD, 2016).

3.4.4. Transport-related taxes and charges

Vehicle taxes

Since 2014, regions have set vehicle taxes. Registration taxes are based on cylinder capacity and age (Brussels-Capital Region [BCR]); fuel, age, emission standards and CO₂ emissions (Flanders); and cylinder capacity, age and CO₂-based bonus/malus scheme (Wallonia) (ACEA, 2020). The annual circulation tax provides the largest revenue from vehicle taxes. For passenger cars, the tax is based on cylinder capacity in all regions. In Flanders, it also varies with CO₂ emissions, fuel type and emission standards (vehicles registered since 2016; electric and hydrogen vehicles are exempted). For commercial vehicles, it is based on weight in the BCR and Wallonia, and on weight, CO₂ emissions, fuel type and emission standards in Flanders since 2017; vehicles submitted to the distance-based charge are exempted.

Combined with increased fuel taxation, vehicle taxes have helped reduce the share of diesel in the fleet and the reported average air pollutant emissions of new vehicles. However, the growing number of vehicles and the longer distances travelled resulted in GHG emissions from road transport increasing over 2013-18 (FPB, 2020a). Monitoring stations exposed to vehicle emissions in Antwerp and Brussels continue to exceed annual limit values for NO₂ concentrations. Vehicle taxes can steer towards cleaner vehicles, but setting appropriate rates is difficult. Experience suggests such taxes risk high abatement costs and high forgone revenue (van Dender, 2019).

Antwerp (2017), BCR (2018) and Ghent (2020) introduced low emission zones with stricter access conditions over time. In the BCR, diesel cars will be banned by 2030 and other petrol vehicles (including liquefied petroleum gas) by 2035. The three regions provide financial incentives to replace old vehicles and acquire electric, hybrid or fuel-cell road vehicles. In addition, the federal government provides personal income tax reduction (15% up to a maximum amount) on the purchase price of electric vehicles (ACEA, 2020). In 2019, electric and plug-in hybrid electric vehicles accounted for 3.4% of new car registrations, on par with the EU average (EAFO, 2020). The Energy Pact aims at reaching 20% in 2025 and 50% in 2030 with one public charging point for ten electric vehicles. The main barrier to adoption of electric cars is their expected autonomy, the availability of a charging infrastructure and delays in delivery rather than total cost of ownership (FPB, 2019b).

Road pricing

In 2016, Belgium abolished the Eurovignette and introduced distance charges for trucks (above 3.5 tonnes). All roads are toll roads; most of the local and regional roads are charged at a zero tariff; the main road network has a paying tariff. Rates increase with pollutant emissions (EURO standards) and weight, but do not vary with time. They are almost the same on Wallonia, Flanders and Brussels motorways, but are significantly higher on Brussels inner-city roads (ACEA, 2020). In Flanders and the BCR, the distance charge revenue goes to the general budget; in Wallonia, it is earmarked for funding road construction and maintenance (ITS, 2020). Truck traffic does not seem to have shifted to secondary roads (FPB, 2020a). However, the traffic of light duty vehicles increased significantly after introduction of the charge. This calls for expanding the system to other vehicles.

While fuel taxes are well-suited to reflect external costs from CO₂ emissions, distance-based charges depending on vehicle characteristics and the place of driving can help address air pollution (van Dender, 2019). Differentiated kilometre charge by time and place is the best option to address external costs of congestion. Belgium bears one of the highest congestion costs across EU members, equivalent to 2.4% of GDP in 2016² (EC, 2019a). For both passenger and freight transport, the country's tax system (including road fuel taxes, vehicle taxes and road charges for trucks) is not aligned with traffic concentration on some roads in Brussels and Antwerp agglomerations at peak hours (FPB, 2019c). Belgium would gain substantial time and environmental benefits by differentiating the distance charge by space and time for

truck and expanding the system to light duty vehicles and cars (FPB, 2020b). This would require a co-operation agreement between regions.

Tax treatment of company cars and commuting allowances

Belgium encourages the use of passenger cars through favourable company car tax taxation. This policy contributes to congestion, GHG emissions and air pollution. Moreover, it is costly to public finance. In 2016, forgone revenue was estimated at between EUR 2 billion and EUR 3.75 billion annually (or between 0.5% and 0.9% of GDP) (EC, 2017b; FPB, 2019a; May, Ermans and Hooftman, 2019).

For the employee, the taxable benefit of using a company car for private purposes is computed as a percentage of the price, CO₂ emissions, fuel type and age of the car (EC, 2017b). However, the imputation rate is low and does not vary with private mileage. Moreover, the employer often bears fuel costs, giving the employee incentive to drive more. In addition, the in-kind benefit is not subject to employee social security contribution (SSC). For the employer, the non-cash remuneration is also exempted from SSC. Instead, companies pay a solidarity charge, which varies with CO₂ emissions of the car and the type of fuel. However, it is lower than SSC and has no link with the mileage or overall remuneration level. Evidence shows the system particularly benefits men with high incomes (May, Ermans and Hooftman, 2019). Car expenses are deductible from corporate income tax. Financing costs are fully deductible and fuel costs are partially (75%) deductible. Meanwhile, the deductibility of other car expenses (insurance, repair and maintenance) depends on CO₂ emissions of the car and the type of fuel. Finally, companies can deduct the VAT charged on the purchase of a car or on the fee paid to a car leasing company.

In 2018 and 2019, Belgium introduced the “cash-for-car” and “mobility budget” to allow employees to choose alternative options such as additional net pay or more sustainable transport modes. However, they were not successful. Furthermore, the “cash-for-car” system has been ruled unconstitutional for favouring company car owners (EC, 2020c). Company car taxation continues to provide adverse incentives for road transport. The new federal government has committed for a full decarbonisation of the company car fleet by 2026. However, favourable company car taxation would continue to contribute to car use, congestion and non-exhaust air emissions (e.g. from tyres and brakes).

3.4.5. Taxes and charges on pollution

Pollution taxes account for 6% of environmentally related tax revenue, above the OECD Europe average (4%). They include taxes on packaging, landfill and incineration; on discharge of wastewater, and on water pollution. Landfill taxes have played a key role in promoting recycling and incineration, but incineration taxes seem too low to promote recycling (Chapter 5).

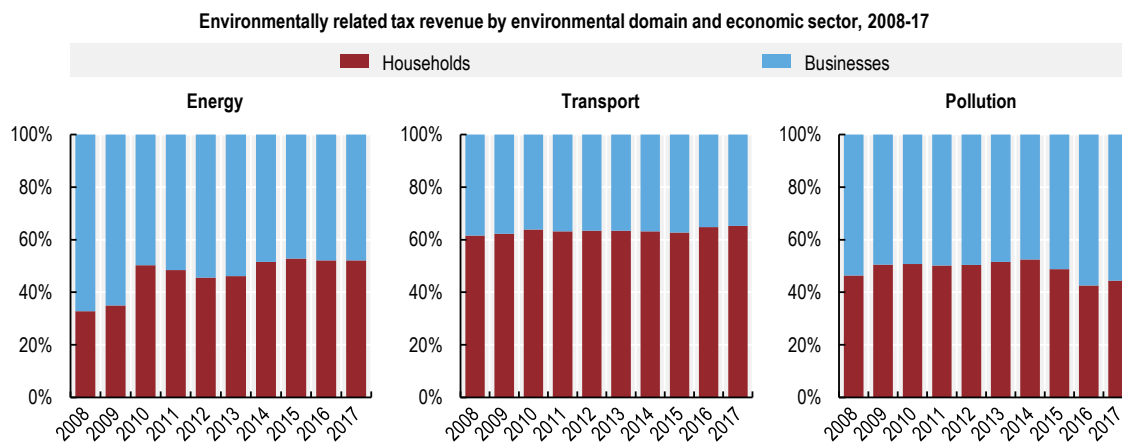
Regions have implemented economic instruments to address pollution from agriculture. Flanders has a system of tradable nutrient emission rights (Chapter 4). Agricultural enterprises are taxed based on the number of pollution units (depending on how the water is used) multiplied by a fixed rate independent of the water source (OECD, 2020d). Farmers abstracting more than 500 cubic metres of underground water each year pay an additional levy. Wallonia has a tax on the environmental load generated by farms. It is based on a nitrogen coefficient applied to the number of heads per livestock species and a coefficient applied to land-use type and area. The first component of the tax is rational to reduce livestock effluents. However, it is unclear how the second component can limit use of fertilisers and pesticides as the tax is also imposed on meadows and organic crops. Instead of basing the tax on pesticide use, the tax should reflect the risks of pesticides to health and the environment, as in Denmark (Chapter 4). The federal authority applies reduced VAT rates for fertilisers (6%) and pesticides (12%).

3.4.6. Distributional implications of environmentally related taxes

Belgium has an effective social redistribution system, but 20% of households were at risk of poverty or social exclusion in 2017. This rate was higher than that of neighbouring countries with similar levels of public social spending. Better targeting low-income households could improve the efficiency of spending (OECD, 2020a).

Attention should be paid to the potential adverse impact of tax increases and exemption removals on vulnerable households. Over the past decade, households have borne an increasing share of the burden of environmentally related taxes (Figure 3.7). In 2017, they contributed more than half of fuel tax revenue and nearly two-thirds of vehicle tax revenue but pay less in pollution taxes than businesses.

Figure 3.7. Households have contributed an increasing share of energy-related tax revenue



Source: FPB (2019), Environmental Taxes by Economic Activity.

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While there are no national indicators on energy poverty, an estimated 14% of Belgian households in 2018 faced challenges in affording energy³ – a rate that has remained stable since 2009 (KBF, 2020). The issue was more pronounced in Wallonia (21%) than in the BCR and Flanders (11%) due to higher gas prices, harsher climate, and generally larger and less energy-efficient dwellings. Water poverty⁴ affected about 14% of households with higher rates in the BCR (21%) and Wallonia (19%) than in Flanders (10%). About 9% of households faced both energy and water affordability issues.

Belgium has introduced measures to mitigate energy and water poverty: reduced tax rates on heating oil and social tariffs for electricity, natural gas and water. In 2019, around 9% of Belgian households benefited from the social electricity tariff and 9% of households connected to the natural gas network benefited from the social gas tariff (CREG, 2019). However, social tariffs often do not correctly target the most in need (Court of Audit, 2018; Brugel, 2020). They distort prices and do not encourage people to reduce energy and water use. They also reduce investment capacity in key infrastructure. Providing direct support to vulnerable households, decoupled from energy consumption, would better address environmental and equity issues.

3.5. Investing in the environment and low-carbon infrastructure to promote green growth

Belgium has made some progress in strengthening public finances since 2011. However, in 2019, total public expenditure remained among the highest in the euro area and was projected to increase due to population ageing (EC, 2020c). Support measures in response to the COVID-19 pandemic will contribute to fiscal sustainability risks. The public debt was anticipated to rise from just below 100% of GDP in 2019 to 116% in 2020.

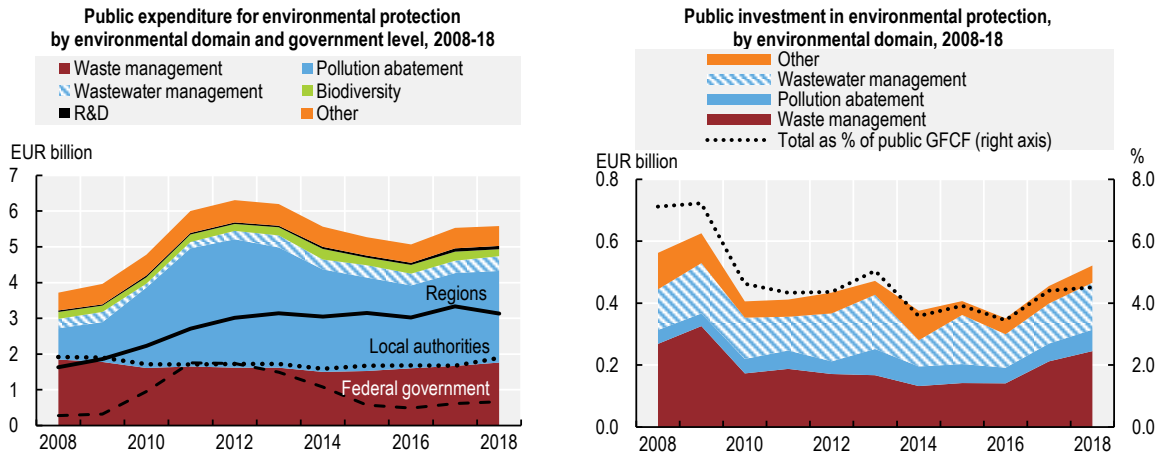
Despite good performance of private investment, low public investment has affected the quality of national infrastructure over the past decade (EC, 2020c). This is due to the fragmentation of competencies regarding investment between multiple layers of government combined with the need to pursue fiscal consolidation. Improving the composition and efficiency of public spending, notably through spending reviews and better co-ordinating fiscal policies by all levels of government could create room for increasing public investment.

3.5.1. Public expenditure for environmental protection

According to national accounts, federal government current expenditure on environmental protection increased significantly between 2009 and 2011-12. It has since decreased with the reduction of tax credits for energy-saving investments in personal income tax (insulation, green loans, etc.) (Figure 3.8). Regional government spending rose between 2007 and 2013 driven by generous green certificates systems⁵ (Section 3.5.2). In 2018, public expenditure on environmental protection accounted for 1.3% of GDP. This was well above the EU average of 0.8% due to the unusual predominance of pollution abatement, which mainly includes subsidies for renewables (Eurostat, 2020a). Public expenditure on waste (0.4% of GDP) and wastewater management (0.1% of GDP) are in line with EU averages while spending for biodiversity protection is lower (less than 0.1%).

Public investment in waste and wastewater management is mostly carried out by municipalities. Waste investment has varied with additional incineration capacity in Wallonia and the development of separate collection in the three regions (Chapter 5). Public investment in wastewater treatment is surprisingly stable, while Belgium has completed its sewerage system and improved wastewater treatment. Complying with the Urban Waste Water Treatment Directive and the new Drinking Water Directive and reducing distribution losses will require additional investment. According to OECD projections, Belgium needs to increase annual expenditures for water supply and sanitation by 36% by 2030 (OECD, 2020e). Revenues from tariffs essentially cover the costs of providing water services; the public budget subsidises less than 20%. Belgium should be able to continue relying on tariffs for financing. However, there is scope for greater transparency in water pricing policies, estimated investments and investment needs (EC, 2019b).

Figure 3.8. Public expenditure for environmental protection increased with support to sustainable energy

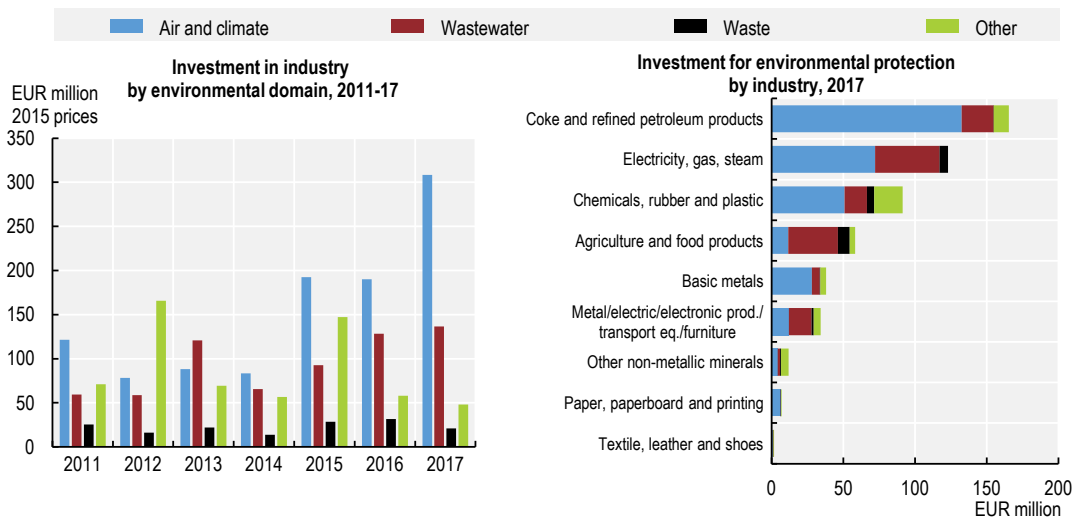


Notes: General government expenditure according to the Classification of the Function of Government and expressed at 2015 prices. The trend in regional expenditure is driven by support to green certificates (recorded under pollution abatement), but the systems are mostly financed by consumers via the electricity bill.
 Source: OECD (2020), OECD National Accounts (database).

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Industrial investment for environmental protection has increased significantly since 2011. Investment has focused on emission abatement and wastewater treatment to comply with emission limits under the Industrial Emissions Directive (Figure 3.9). Energy-related and chemical industry in the Flanders Region are the largest investors.

Figure 3.9. Industrial investment for environmental protection increased significantly



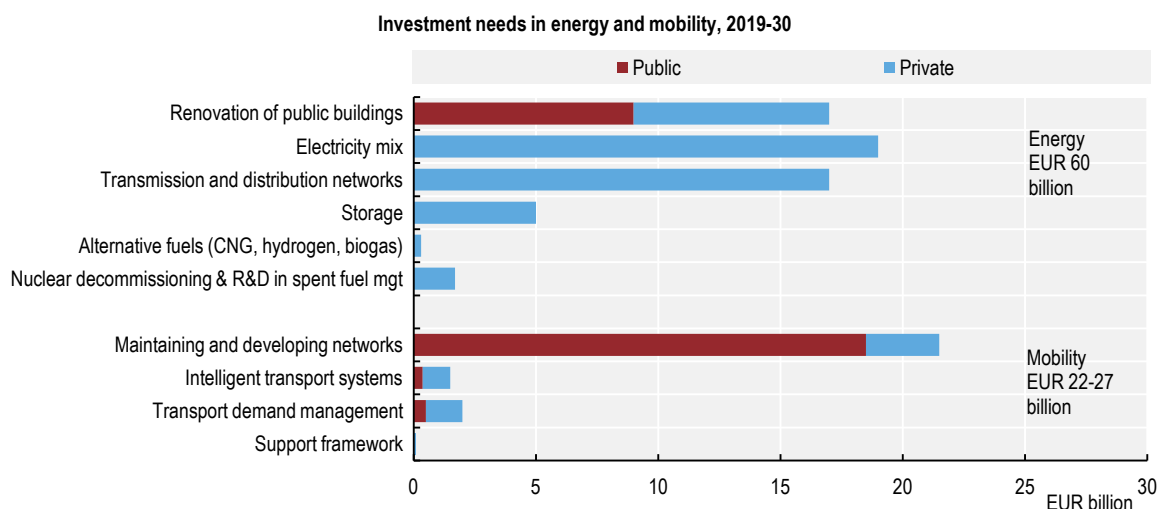
Note: Total industry including codes 5-35 of the Statistical classification of economic activities in the European Community (NACE Rev. 2).
 Source: Statbel (2019), Environmental Protection Expenditure of Enterprises.

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3.5.2. Promoting investment in sustainable energy and mobility

Investment needs in sustainable energy and mobility are significant (Figure 3.10). The commitment to phase out nuclear energy by 2025 involves major investments in power generation, cross-border interconnection capacity, smart grids, storage and demand response. Moving towards decarbonisation of buildings by 2050 demands large renovation works. Reducing congestion involves developing integrated infrastructures to improve access to Brussels and Antwerp, shifting from roads to rail and soft modes.

Figure 3.10. Investment needs in sustainable energy and mobility are high



Notes: The pact only considers public buildings. Total investment in building energy renovation is estimated at EUR 11 billion annually. Electricity mix, of which EUR 16 billion in renewables and EUR 2.9 billion in gas-fired power plants. Developing transport networks: EUR 13 billion, of which EUR 7 billion in rail and EUR 2 billion in waterways.

Source: Strategic Committee (2018), National Pact for Strategic Investment.

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Energy and mobility are among the six priorities⁶ of the NPSI that aims at boosting productivity and innovation (Strategic Committee, 2018a). Related investment needs over the next decade are estimated at almost 2% of 2018 GDP annually. However, no follow-up report has been published since 2018. In addition, the coherence between the NPSI and regional investment needs estimated in the NECP is unclear. With limited fiscal space, governments should co-ordinate efforts to set ambitious national long-term climate targets, develop a consistent mobility vision, improve synergies across federated entities and strengthen carbon prices to guide investors.

Renewables

Discussions continue on extending the operation of a limited number of nuclear power plants beyond 2025. Such a decision should be made soon to ensure nuclear safety and a more predictable energy investment environment (EC, 2020c). By 2021, Belgium intends to launch a capacity remuneration mechanism to support investment in alternative electricity capacity required by the nuclear phase-out and to ensure security of supply. The mechanism, which is under investigation by the European Commission, is planned to be technology-neutral. However, Belgium should ensure its design does not favour fossil fuel technology or reduce incentive for energy efficiency and demand management. Future investment in renewables will also depend on the ability of federated entities to agree on ambitious 2030 targets.

Belgium has made significant progress in developing renewable energy, especially wind and solar photovoltaic (PV). More than EUR 22 billion was invested in renewables excluding large hydro over 2010-19 (Frankfurt School-UNEP Centre/BNEF, 2020). However, in 2018, the share of renewables in gross final energy consumption (9.4%) was too low to reach the 13% target for 2020. Although the country has made progress on renewable electricity, it is unlikely to meet targets on heating and cooling, and transport (Chapter 1). Renewable energy is a regional matter, but the federal government is in charge of offshore wind, ocean energy, hydropower and biofuels standards and quotas.

Electricity generation from renewable sources is mainly promoted through a quota obligation on suppliers with tradable (or green) certificates complemented by investment support (IEA, 2016). Regional systems vary according to the quota obligation, the basis for granting green certificates, technology-specific support levels, calculation of minimum price levels, duration of support and tradability. Consumers finance the systems via the electricity bill. As in other OECD member countries, generous support systems combined with a drop in costs (especially for solar PV) led to overcompensation and excess demand for installations. This made Belgium a world leader in terms of residential solar PV capacity per capita (IEA, 2019). However, support costs for renewable electricity increased more than fourfold between 2008 and 2016 before stabilising around EUR 2 billion, with significant impact on electricity prices. In 2012-14, regions reduced support levels several times (with regular reviews to ensure a given rate of return on capacity investment instead of compensating for volumes generated). The federal level also reduced support. These changes have led to uncertainty for investors. New small solar PV installations have not received any direct subsidy from Flanders since June 2015. Wallonia replaced green certificates with an annual grant for five years to small solar PV installed between 2014 and 2018; It has stopped subsidies for units installed after this date. Small solar PV installations benefit from net metering in the three regions.

Belgium needs a clear and predictable support system to maintain investor confidence, while continuing to address the cost-effectiveness of its renewable energy policies (IEA, 2016). As technology costs decrease, regions should gradually integrate renewables into the electricity market to reduce support costs. Offshore wind is supported through a federal feed-in premium with variable price since 2014. A 2019 law introduced a competitive bidding process that should reduce support level. The Marine Spatial Plan 2020-26 established three new zones for renewable energy, bringing the area close to 15% of the Belgian part of the North Sea. The target is to double offshore wind capacity to 4 gigawatts in 2030 (CONCERE-NCC, 2019). Regional efforts to remove administrative barriers to new renewable energy projects should also continue.

There is room to further promote renewable heat and transport fuels. In the NECP, regions want to promote renewable heat pumps and expand district heating. However, Wallonia could clarify its targets and require minimum levels of energy from renewable sources in renovated buildings. Removing tax incentives for fossil fuel heating would encourage the uptake of renewable technology.

Energy efficiency in buildings

Energy efficiency measures in the residential and tertiary sectors are expected to have the largest climate change mitigation impact in non-ETS sectors by 2030 (CONCERE-NCC, 2019). Buildings are major energy consumers and GHG emitters (Chapter 1). The housing stock is old and among the least efficient in Europe (BPIE, 2017). Natural gas and oil (especially in Wallonia) are the main heating sources (SPF Économie, 2019). Regions have developed long-term renovation strategies and implemented a wide range of measures to promote energy-efficient buildings. These measures include energy performance standards, tax incentives and subsidies for renovation, as well as information tools. Residential and commercial energy consumption has decreased in the past decade thanks to energy efficiency improvement. However, progress is insufficient to reach an average energy performance factor under 100 kilowatt hour per square metre (kWh/m²) for residential building by 2050 (compared with more than 250 kWh/m² currently) and to make public buildings energy-neutral by 2040, as committed in the

Inter-federal Energy Pact. Additional measures are needed to raise the renovation rate of public buildings from the current level of less than 1% to the 3% required by the Energy Efficiency Directive (NBB, 2020).

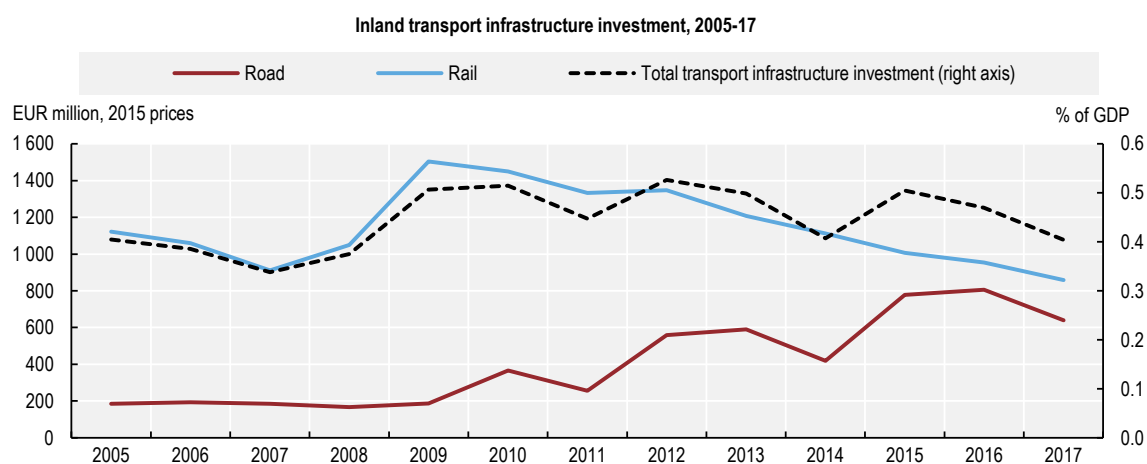
Reduced VAT (6%) applies to renovation of old residential buildings. The federal government is considering extending the measure to demolition and reconstruction of private dwellings (subject to European Commission approval), which is already the case in some cities (CONCERE-NCC, 2019). Reduced rates narrow the tax base and contribute to low efficiency in VAT collection (OECD, 2020a). In addition, lower VAT on construction is regressive as the well-off receive larger benefits (HCF, 2020). Extended to demolition and reconstruction, it could also increase construction waste and energy use from production and transport of construction materials. There is room to further encourage renovation investment. This could be done by reducing property taxes conditional upon energy efficiency improvement, as planned in the long-term renovation strategies (such discounts already apply in Flanders). Granting rental income tax deduction to maintenance and renovation costs could also help (EC, 2020c). Low natural gas and oil heating prices (Section 3.4.2) do not provide sufficient incentives to renovation projects. A major drop in global prices following the COVID-19 outbreak is an additional brake. Gradual introduction of carbon pricing would be more cost-effective in triggering energy efficiency investment.

Total investment cost for attaining a full energy-efficient housing stock by 2050 is estimated to range between EUR 140-200 billion for Flanders, at EUR 28.8 billion for Brussels and EUR 63 billion (residential buildings only) for Wallonia. The regional long-term strategies envisage developing private funding via energy service contracts, crowdfunding and EU funds. The Flemish Community issued a sustainable bond in 2018 (raising EUR 500 million) to build affordable homes and finance passive schools.

Sustainable transport and mobility

Since 2010, investment in transport has varied around 0.45% of GDP, a low rate by international standards that has affected the quality of road infrastructure and rail services. Over the past decade, investment in rail has shifted to road (Figure 3.11). Despite dense road and rail networks, infrastructure is insufficient to meet the growing demand for transport. Road transport is predominant, congestion is projected to rise and public transport is insufficient.

Figure 3.11. Investment in rail has shifted to road



Source: ITF (2019), ITF Transport Statistics (database).

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The NPSI aims at investing in multimodal mobility systems, strengthening and improving public transport, and encouraging the use of soft mobility. Regions have developed multiannual transport investment plans. The BCR plans to invest EUR 6 billion investment in public transport to 2028 and allocated EUR 0.5 billion from the 2020 initial budget (of which more than 70% for public transport) to the Good Move 2020-30 strategy. For its part, Wallonia plans to invest EUR 2 billion in the mobility and infrastructure plan 2020-26 (of which 20% for public transport and soft mobility). In 2020, Flanders was to allocate 17% of the EUR 2.2 billion investment in transport to cycling infrastructure, public transport, climate and noise. Investments in rail, a federal competence, remain to be defined in the context of the formation of the new federal government. However, major investment in the regional express train network around Brussels will continue until 2031 (EC, 2020c).

The 2007 recommendation to adopt a national transport plan and ensure the various (e.g. federal and regional) transport plans are consistent, mutually supportive and well implemented is still valid. The Executive Committee of Mobility Ministers has not managed to co-ordinate a consistent vision across the federated entities. While the BCR and Wallonia have long-term mobility plans, there is no national transport plan and transport-related plans are fragmented in Flanders (MORA, 2020). Flanders lacks a long-term vision on mobility integrated with spatial planning and climate plans.

Belgium should strengthen the Executive Committee of Mobility Ministers by, for example, setting up an independent project evaluation body to help assign priorities. Cost-benefit analysis of infrastructure projects are ad hoc (OECD, 2017a). Ministries or public entities at different levels apply their own practices, leading to lack of consistency and co-ordination (Strategic Committee, 2018b). Structures have limited resources and their opinions are optional.

Belgium should strengthen transport demand management through spatially and temporally differentiated road charges and removal of fiscal incentives for road use (Section 3.4.4). Increased revenue could help fund low-carbon transport infrastructure. Compared with similar railway companies in other countries, the Belgian SNCB has the lowest revenue and the highest subsidy rate per passenger kilometre. This puts pressure on the budget and the capacity of the public transport system in peak periods (OECD, 2020a). Using higher fares for peak times in public rail transport, together with targeted subsidies to lower income groups, could generate funds to help upgrade infrastructure.

3.6. Promoting eco-innovation and green markets

3.6.1. Eco-innovation policy and performance

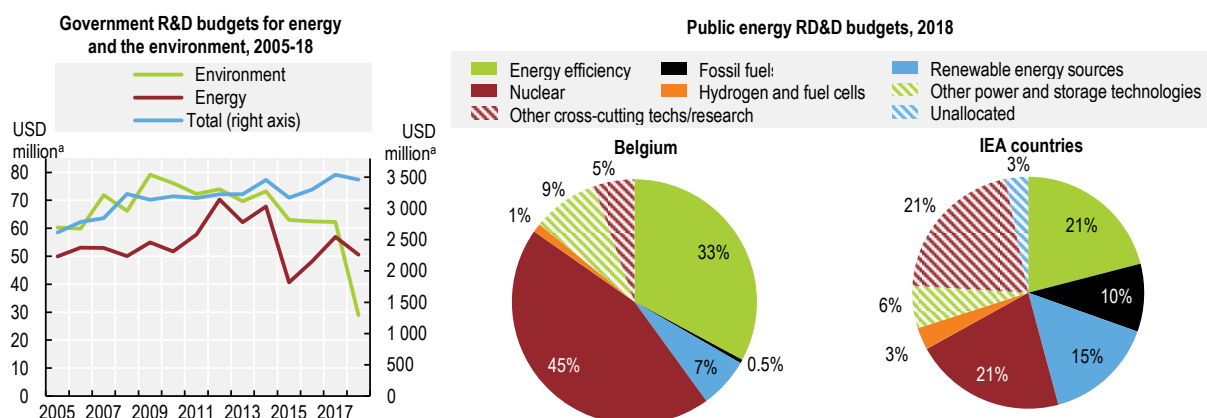
Belgium is a strong innovator. It has a highly skilled workforce, an attractive research system with a solid science base, strong universities and good public-private collaboration (EC, 2020c; Kelchtermans and Robledo-Bottcher, 2018). Research and development (R&D) intensity increased from 1.8% of GDP in 2005 to 2.8% in 2018. This was well above the OECD average of 2.4% and on track to meet the Europe 2020 target of 3%. Private businesses invest most of the R&D, which is concentrated in a few large companies, notably in the pharmaceutical and chemical sectors. Public funding of R&D (excluding tax incentives) is relatively low, as is the share of high-growth innovative enterprises in the economy. There is a shortage and mismatch of human resources for research and innovation (Kelchtermans and Robledo-Bottcher, 2018).

By contrast, Belgium's eco-innovation performance is modest, ranking in the bottom third of EU countries in 2018 (EC, 2018). It scores far below the EU average for eco-innovation activities due to a low number of ISO 14001 certified companies. However, it performs better on resource efficiency outcomes, especially material productivity. Belgium is gradually integrating sustainability goals into economic policies. It also has strong universities, research labs, well-trained human capital and a growing demand for green technology. However, eco-innovation initiatives are mostly limited to individual regions (EC, 2017a).

The BCR Innovation Plan 2016-20 focuses on energy efficiency, green chemistry, mobility and circular economy. Circular Flanders, a partnership involving government, local authorities, companies, civil society and researchers, promotes innovation through Green Deals on circular purchasing and circular construction (Chapter 5). The Walloon Region supports clusters such as GreenWin dedicated to collaborative innovation projects in green chemistry, building materials and processes, and the environment. However, regional best practices are not disseminated at national level and co-operation in this area is not a priority (EC, 2017a). Low carbon prices, skills shortage, limited control over the design of imported products and insufficient market for recycled products are other barriers to eco-innovation.

Government R&D budget on environment and energy decreased in recent years (Figure 3.12). However, in 2018, public budget on energy-related research, development and demonstration (RD&D) per unit of GDP was among the ten highest in the IEA. This was due to the high share of spending on nuclear power and, to a lower extent, on energy efficiency. Renewable energy sources accounted for a low share of spending compared with the IEA average. This share has decreased in recent years, while that of cross-cutting RD&D (e.g. energy system analysis) rose in 2018.

Figure 3.12. Government R&D budget on environment decreased, while energy RD&D budget targets mostly nuclear



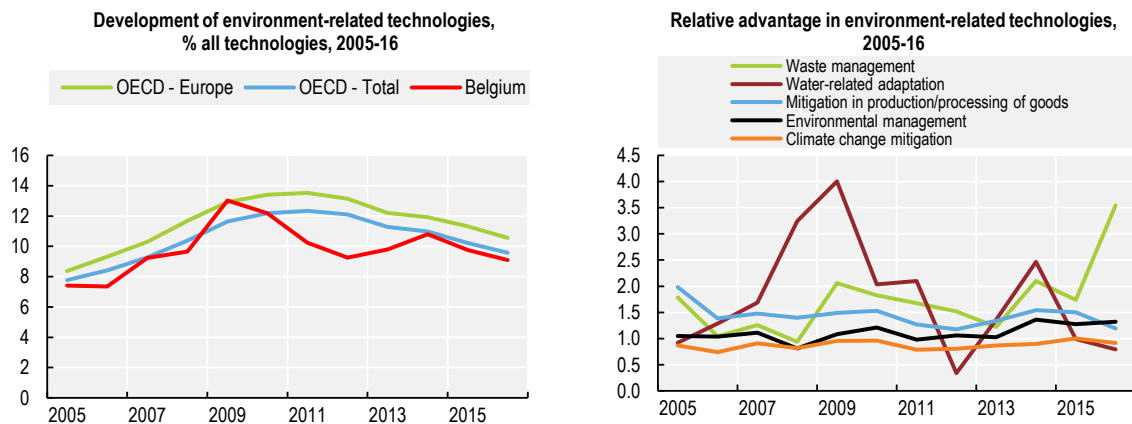
a) At 2015 prices and purchasing power parities.

Sources: IEA (2020), *Energy Technology RD&D Budgets* (database); OECD (2020), *OECD Science, Technology and R&D Statistics* (database).

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Patent applications for environment-related technology reflect the decrease in public R&D support (Figure 3.13). After a sharp increase over 2005-09, patent applications decreased more rapidly than in other OECD member countries. In recent years, the share of patent applications in all technologies was on par with the OECD average but below OECD Europe. Nevertheless, over the past decade, Belgium has specialised in environmental management technology, especially related to waste. The country has maintained a relative advantage in water-related adaptation technologies and climate change mitigation technologies in the production or processing of goods. However, overall Belgium is not specialised in climate change mitigation technologies. It should strengthen R&D and innovation to achieve climate neutrality.

Figure 3.13. Belgium has specialised in waste management technology



Notes: Patent statistics are taken from the Worldwide Patent Statistical Database of the European Patent Office, with algorithms developed by the OECD. Data refer to patent applications filed in the inventor's country of residence according to the priority date and apply solely to inventions of high potential commercial value for which protection has been sought in at least two jurisdictions. Environment-related technologies cover all the domains related to the aggregate categories: environmental management, water-related adaptation and climate change mitigation.

The relative advantage in environment-related technologies is an index of the specialisation in environmental innovation of a given country relative to the world average. An index equal to 1 means that a country innovates as much in "green" technologies as the world on average; an index above 1 indicates a relative technological advantage, or specialisation, in environment-related technologies compared to the world average.

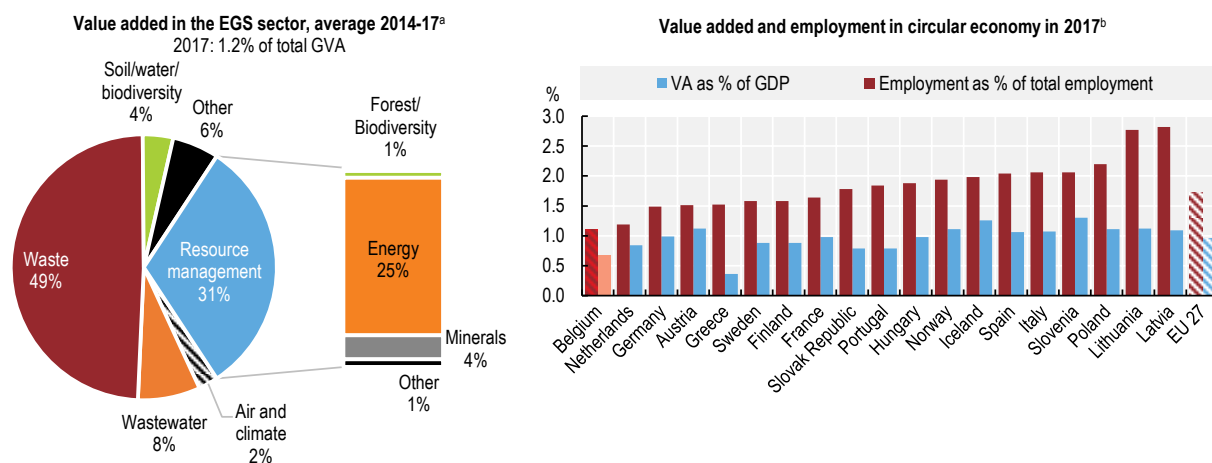
Source: OECD (2020), OECD Environment Statistics (database).

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3.6.2. Expanding environment-related markets and employment

The environmental goods and services (EGS) sector⁷ is small, accounting for 1% of employment and 1.2% of total value added in 2017, on par with the EU average (FPB, 2019d; Eurostat, 2020b) (Figure 3.14). Waste and energy resource management (production of renewable energy and energy-saving measures) dominate the sector. However, the sectors of recycling, repair and reuse, and rental and leasing seem to have room for development compared with other EU countries. Although figures vary with definitions, it was estimated that circular economy could create between 15 000 and 100 000 jobs by 2030 (PwC Belgium, 2016).

Figure 3.14. Waste management is an important sector, but circular economy has room for development



a) Gross value added in market activities of the environmental good and services (EGS) sector.

b) Recycling sector, repair and reuse sector and rental and leasing sector.

Sources: Eurostat (2019), Circular Economy Monitoring Framework (database); FPB (2019), Environmental Goods and Services Sector Accounts 2014-2017.

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Flanders has a wealth of initiatives such as Circular Flanders to gear up the employment and skills system needed to boost the transition towards a green and circular economy (OECD, 2017b). However, local initiatives are not always aware of each other and may lack the critical mass to make a significant impact. The multiplication of initiatives could also undermine business participation. The construction sector has been actively co-operating with training agencies and universities to adapt skills to stricter building energy performance standards. The chemicals industry faces a structural shortage of high technical skills. It has started collaborating with the education system to build a talent pipeline for sustainable chemistry. By contrast, the agro-food sector has limited awareness of the green economy transition.

Wallonia has been promoting employment-environment alliances to seize opportunities in the sustainable construction sector. The construction sector has created or maintained about 500 job positions annually over 2012-14 due to energy-saving support measures (IWEPS, 2017). In the BCR, the construction sector, trade unions and public authorities established the Professional Reference Centre for Construction to address skills shortages in renovation and retrofitting (IRENA, 2020). The three regions also provide subsidies to develop employment in social enterprises active in the circular economy (Chapter 5). For example, the Resource Reuse Observatory has recorded a doubling of jobs in Wallonia and the BCR since 2004, reaching more than 2 050 full-time equivalent jobs in 2018.

Recommendations on green growth

Enhancing policy coherence for sustainable development and green growth

- Reinvigorate inter-federal co-operation on sustainable development by regularly reporting on implementation of the national strategy, adopting a new Federal Sustainable Development Plan, translating SDGs into time-bound specific quantitative targets and systematically integrating SDGs into regulatory impact analysis and strategic and policy documents.
- Develop a recovery plan with ambitious climate and environmental targets, co-ordinated between the federal and regional governments, building on the assessment of progress and gaps in low-carbon investment in the National Pact for Strategic Investment and the National Energy and Climate Plan.

Greening the system of taxes and subsidies

- Establish a multi-stakeholders' mechanism to track and support the reform of environmentally related taxes and subsidies. Swiftly develop a plan to phase out fossil fuel and other environmentally harmful subsidies.
- Introduce a carbon tax for sectors not subject to the EU Emissions Trading System and develop compensatory measures for vulnerable households. Improve information on energy poverty.
- Vary the road distance charge by space and time for trucks and expand the system to light duty vehicles and cars. Abolish the favourable tax treatment of company cars.

Promoting low-carbon investment and eco-innovation

- Enhance inter-federal co-operation and develop a common vision of mobility laid out in a national mobility plan giving priority to sustainable mode, consistent with related plans at all levels of government.
- Systematically conduct cost-benefit analysis of public investment projects and ensure it is considered in decision making. Consider establishing an independent evaluation body to assess cross-regional projects and harmonise practices.
- Create a clear and predictable support system while gradually integrating renewables into the electricity market as technology costs decrease.
- Accelerate building renovation by developing private funding via energy service contracts, crowdfunding and EU funds. Consider making property and rental income tax reductions conditional upon energy efficiency improvement.
- Promote knowledge sharing and partnerships across regions to encourage eco-innovation.

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Notes

¹ Effective tax rates on energy use translate excise and carbon tax rates into rates per tonne of CO₂.

² Congestion costs in terms of delay costs.

³ Households in bottom five income deciles spending more than 11.7% of disposable income (net of housing costs) on gas and electricity bills.

⁴ Households in bottom five income deciles spending more than 2.6% of disposable income (net of housing costs) on water bill.

⁵ Reported as subsidies in National Accounts, but the green certificate systems are mostly financed by consumers via the electricity bill.

⁶ Along with digital transition, cyber security, education and health.

⁷ Employment and gross value added related to market output of the EGS.



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