

## 5. Waste, materials management and the circular economy

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Belgium's regions have used an effective mix of policy instruments to achieve high levels of recovery and recycling of municipal waste and other waste streams. However, further efforts will be needed to increase recycling and composting in coming years. Belgium has also undertaken pioneering initiatives for the transition to a circular economy, addressing key sectors including construction and food. This chapter gives an overview of trends in material use and waste generation and of related policies. It reviews the effectiveness of policy instruments for waste management and the circular economy, and it identifies opportunities for further progress towards a circular economy.

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## 5.1. Introduction

This chapter provides an overview of trends in material use and in waste generation and treatment. It presents each region's policy objectives and institutional settings. It then reviews the effectiveness of the policy instruments used to encourage waste prevention, reduction and recycling, as well as to manage the transition towards the circular economy.

The three regions of Belgium develop separate waste management and circular economy policies as part of their wider environmental competence. Their roles were strengthened over the evaluation period: in the most recent reform of federal and regional powers (2012-14), for example, the regions gained competence on waste shipments. In Flanders and Wallonia, municipalities and inter-municipal organisations collect and treat municipal solid waste.

Belgium has nearly eliminated landfilling of municipal solid waste. All three regions have policies and plans to reduce waste volumes, increase waste reuse and separate collection and recycling, and promote the transition to the circular economy.

Already in 2007, Belgium recycled or composted more than half of its municipal waste. The recycling rate has risen slightly, but the share of composting did not increase over the evaluation period. Belgium appears to have already met the 2020 recycling targets of the European Union (EU). However, recycling and composting will need to increase further to meet future domestic and EU goals.

Brussels-Capital and Flanders have been pioneers among OECD regions for their circular economy initiatives. Wallonia has addressed the circular economy in its recent waste and resources plan and other initiatives. A key challenge for all three regions will be to reduce the volumes of materials consumed and waste, including those generated by the construction sector.

The three regions and the federal government have established committees and platforms to exchange information and co-operate on waste and circular economy issues. In 2020, Belgium was considering new circular economy initiatives at both federal and regional levels.

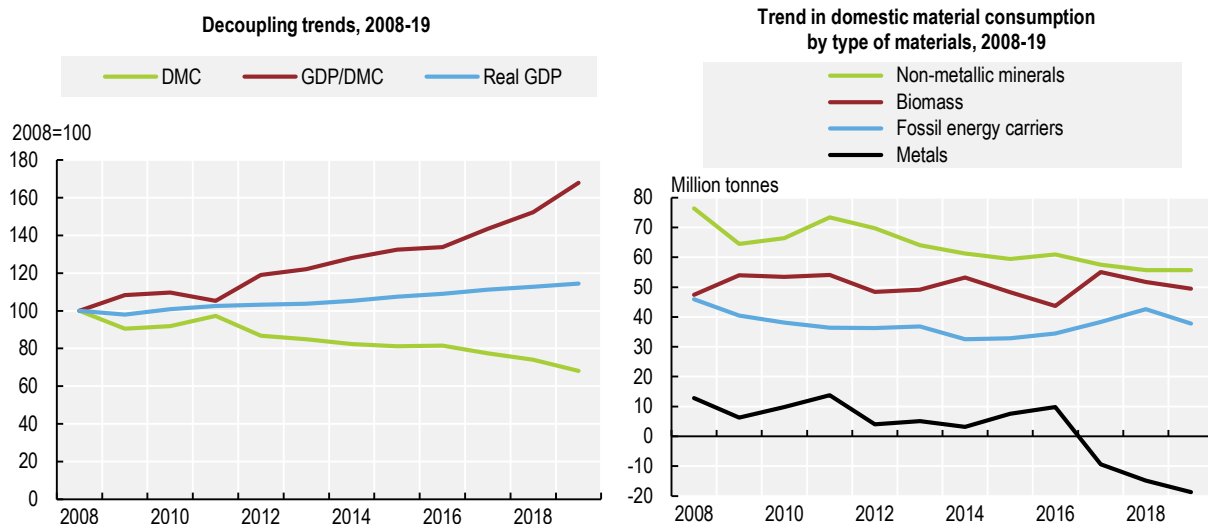
## 5.2. Trends in material consumption and waste management

### 5.2.1. Trends in material consumption

Belgium is a transit country with a major European port in Antwerp. It has a small economy, highly dependent on trade: imports account for more than 70% of material inputs. Non-metallic minerals (construction materials) and biomass are the only materials extracted in the country. Fossil energy materials and metals consumed are imported.

In 2019, non-metallic minerals made up the largest share (45%) of domestic material consumption (DMC),<sup>1</sup> followed by biomass (40%), fossil energy (30%) and metals (-15% as exports exceeded imports). Since 2011, DMC has declined. This drop was due to the combined effect of decreasing consumption of both construction materials and metals since 2016, the latter due to the renewal of a shipping company fleet<sup>2</sup> (FPB, 2019) (Figure 5.1). Consumption of fossil energy declined until 2014 and then increased because of rising gas imports. Overall, DMC was decoupled from gross domestic product (GDP) growth resulting in improved material productivity<sup>3</sup> (Figure 5.1). DMC is one of the few national sustainable development indicators moving in the right direction (Chapter 1): Belgium set a goal to reduce DMC but did not set a target value for this indicator.

Figure 5.1. Material productivity improved as consumption of construction materials declined



Note: Gross domestic product (GDP) at 2015 prices and purchasing power parities.  
 Source: OECD (2020), OECD Environment Statistics (database).

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Figure 5.2. Material productivity is above the OECD Europe average



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

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Belgium has a highly service-oriented economy, generating more economic value per unit of materials used than the OECD Europe average (Figure 5.2). The country consumed fewer materials per inhabitant

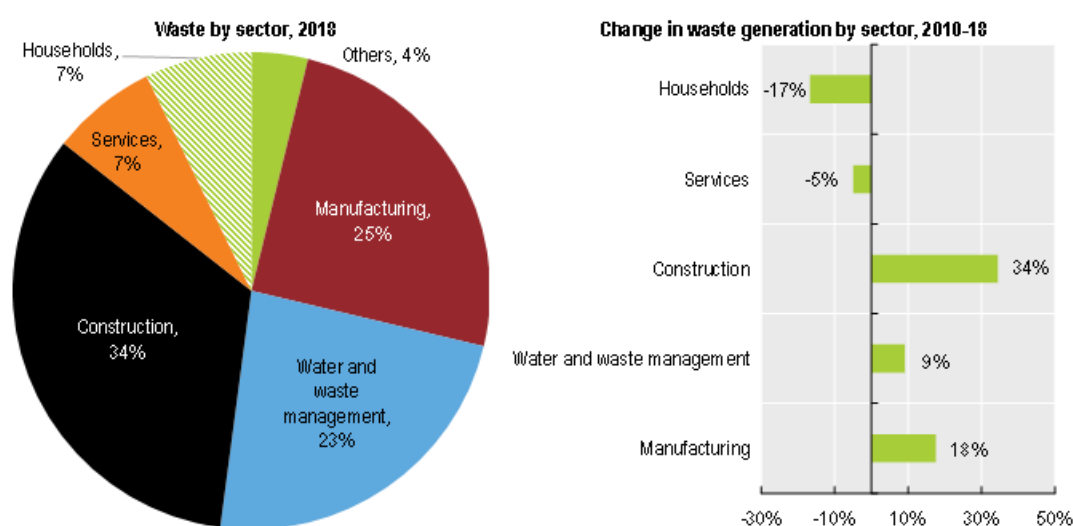
than the OECD Europe average (11 vs. 13 tonnes). However, its consumption is higher when considering materials extracted abroad to meet final demand (24 vs. 23 tonnes in the OECD Europe average).<sup>4</sup> Moreover, while DMC per capita fell over the evaluation period, the trend is flat when considering materials extracted and processed abroad.

## 5.2.2. Trends in waste generation and management

### Total waste

The generation of waste from all sources increased by 10% from 2010 and 2018. The construction sector is the largest source of total waste, followed by manufacturing; waste and water collection; households; and services (Figure 5.3).

**Figure 5.3. Construction generated one-third of total waste in 2018 and has grown since 2010**



Notes: "Others" category includes electricity, gas, steam and air conditioning supply; wholesale of waste and scrap; mining and quarrying; and agriculture, forestry and fishing.

Source: Eurostat (2020), "Generation of waste by waste category, hazardousness and NACE Rev. 2 activity".

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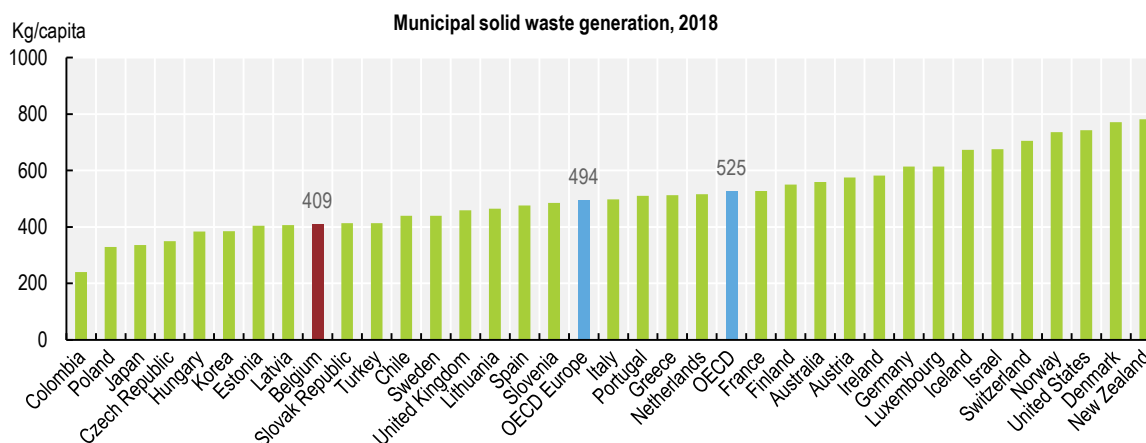
Over 2010 to 2018, construction and demolition waste increased (Figure 5.3); although building construction was flat in this period, civil engineering works increased (Eurostat, 2020a). Waste from waste and water collection, treatment and disposal also rose, influenced in part by Belgium's growing compliance with EU wastewater treatment requirements (Chapter 1). Manufacturing waste increased, while household and service sector waste fell. Among other waste streams, mining and quarrying waste (both minor shares of total primary waste already in 2010) fell significantly; one factor was a decrease in the extraction of sand and gravel (FPB, 2019). Among other sectors with small shares, agricultural waste rose, while waste from electricity general fell, the latter trend due in part to the reduction in fossil fuels in electricity production and the growth of renewables, particularly wind power (Chapter 1).

### Municipal waste

Belgium generates less municipal waste per capita than the OECD and OECD Europe averages; indeed, the levels reported are below those of other high-income OECD member countries in Europe such as

neighbouring France, Germany, Luxembourg and the Netherlands (Figure 5.4). However, comparability between the countries is not always straightforward. This is due to the differences in the definitions and the scope of municipal waste, as well as the methods for collecting data. In Belgium, data for municipal waste include household waste and waste from service sector enterprises contracting with public collection services; other enterprises, however, contract directly with private waste collection services and their waste is not included.

**Figure 5.4. Municipal waste generation is low**



Note: 2018 or most recent data available.

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

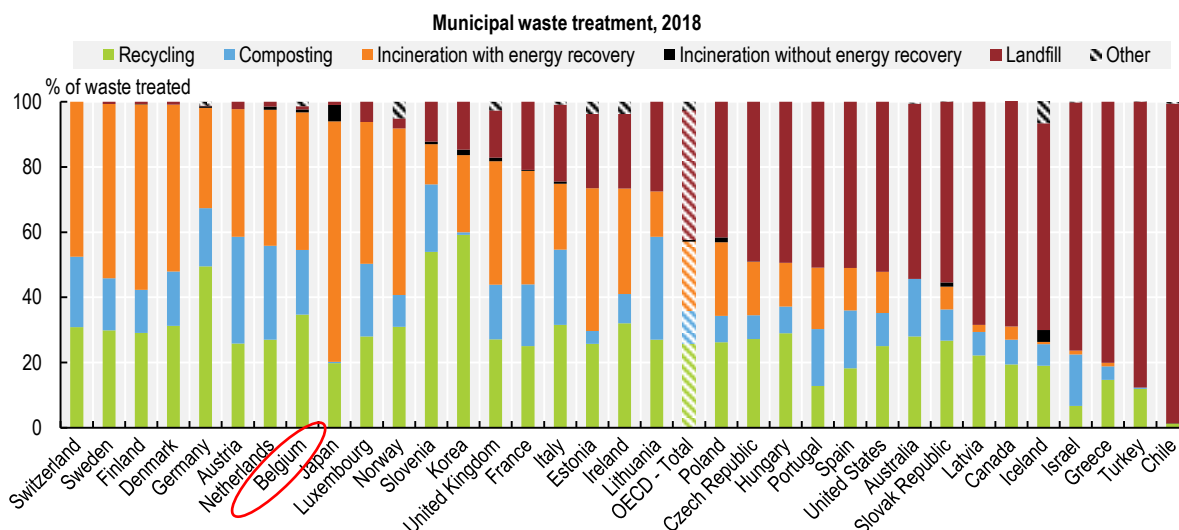
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The total quantity of municipal waste fell by 7% between 2005 and 2018. As Belgium's population increased in this period, municipal waste per capita fell by 15%. This decrease may be linked in part to waste reduction policies (Section 5.3); there was, however, a change in data methodology in 2014 that contributed to these reductions.

Direct landfilling of municipal waste, which already accounted for only about 10% of municipal waste treatment in 2005, fell to 1% by 2011 and has since fallen further, due to landfill bans and taxes (Section 5.4.1). This is one of the lowest rates of landfilling among OECD member countries (Figure 5.5). Belgium's levels of recycling and composting in 2018 – 35% and 20%, respectively – were significantly higher than the OECD averages of 26% and 10%, respectively. Belgium nonetheless is behind frontrunners such as Germany and Slovenia in recycling, and Austria and Lithuania in composting. Furthermore, the recycling share in Belgium has increased slowly since 2008, and the composting share has not changed. While recycling and composting levels vary across the three regions, municipal waste recycling is among the national sustainable development indicators that follow a positive trend (Chapter 1).

Since 2005, the share of incineration with energy recovery has increased from 34% to 42% of municipal waste treatment in 2018, twice the OECD average (21%); in Belgium, incineration without energy recovery largely ended over the evaluation period due to policy measures, including high taxes on this type of treatment (Section 5.4.1).

Figure 5.5. Belgium recovers, recycles and composts nearly all of its municipal waste



Notes: 2018 or most recent data available. For Belgium, the category “other” refers to mechanical biological treatment inputs.  
Source: OECD (2020), OECD Environment Statistics (database).

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### Industrial waste

From 2010, the volume of waste from the manufacturing sector increased by 18% (Figure 5.3) while the sector’s production index also grew. In the Flanders and Walloon regions, the locations of nearly all Belgium’s manufacturing, waste and production increased broadly in parallel after 2013 despite a relative decoupling in the first years of the decade.

In Flanders, two sectors accounted for 69% of total manufacturing waste generated in 2018: the production of basic metals and of fabricated metal products (46% of the regional total) and food processing (23%).

In Wallonia, three sectors accounted for 81% of total manufacturing waste volumes in 2017: food processing (37% of the regional total), wood products (28%) and metallurgy (16%). From 2007 to 2017, production in the first two sectors grew and their waste generation increased in step. Meanwhile, production and waste generation in metallurgy, once the largest source of manufacturing waste in Wallonia, declined sharply after the 2008 financial crisis (Wallonia Environment, 2017).

The share of industrial waste recycled and recovered increased in both regions. For example, it rose in Flanders from 58% of the total in 2007 to 68% in 2018 (OVAM, 2019).

### Hazardous waste

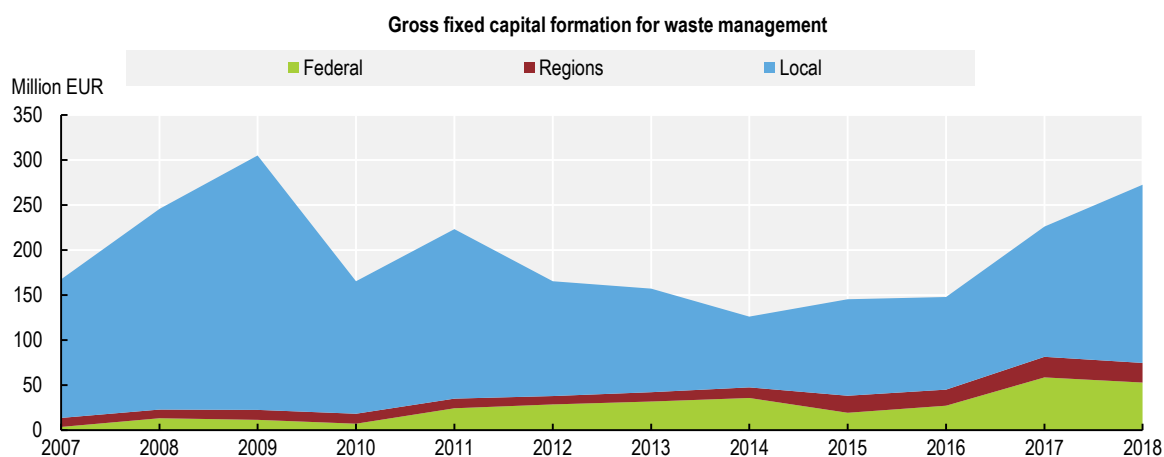
Hazardous waste accounted for 6% of total waste generated in 2016. The level of waste generation in 2016, close to 350 kilogrammes (kg) per capita, was higher than the EU average. Generation of hazardous waste has fluctuated since 2010 due in part to variations in contaminated soils excavated at construction sites, including large infrastructure projects. In Wallonia, for example, about 1.5% of excavated soils are contaminated. Belgium has included hazardous waste generation among its sustainable development indicators (Chapter 1), but a clear trend has not been seen.

Three sectors generated three-quarters of hazardous waste: manufacturing (33% of the total); waste collection, treatment and disposal activities, and materials recovery (27%), including hazardous waste from both wastewater treatment and solid waste incineration; and construction (15%). Soil is a large source of hazardous waste from construction. In 2016, 50% of all hazardous waste went to landfills; 33% was recycled and the remaining 17% was incinerated.

### *Waste expenditures and financing*

In 2018, 73% of public waste investments in Belgium were made at local level, including both municipalities and inter-municipal organisations (Figure 5.6). The inter-municipal organisations own many waste facilities, including most of Belgium's municipal waste incinerators.

**Figure 5.6. Public investment for waste management has fluctuated, but local governments have remained the main investors**



Source: Statbel (2020), "Government spending by functions and transactions", National Bank of Belgium Online Statistics (database).

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Households in Belgium spend less for waste management than those in neighbouring countries and in most other OECD Europe countries: about EUR 46 per capita in 2016 compared to, for example, EUR 78 per capita in Germany and EUR 78 per capita in France. In Flanders and Wallonia, household waste fees cover at least operational costs for collection and treatment. Public sector current and capital transfers for the sector, about EUR 13 per capita, are higher in Belgium than all other OECD Europe countries except Lithuania (OECD, 2020a).

In coming years, public investment in waste facilities is expected to continue to play an important role. The Walloon Region's investment plan for 2019 to 2024, for example, foresees EUR 75 million in spending for waste and resources projects (Walloon Government, 2019a).

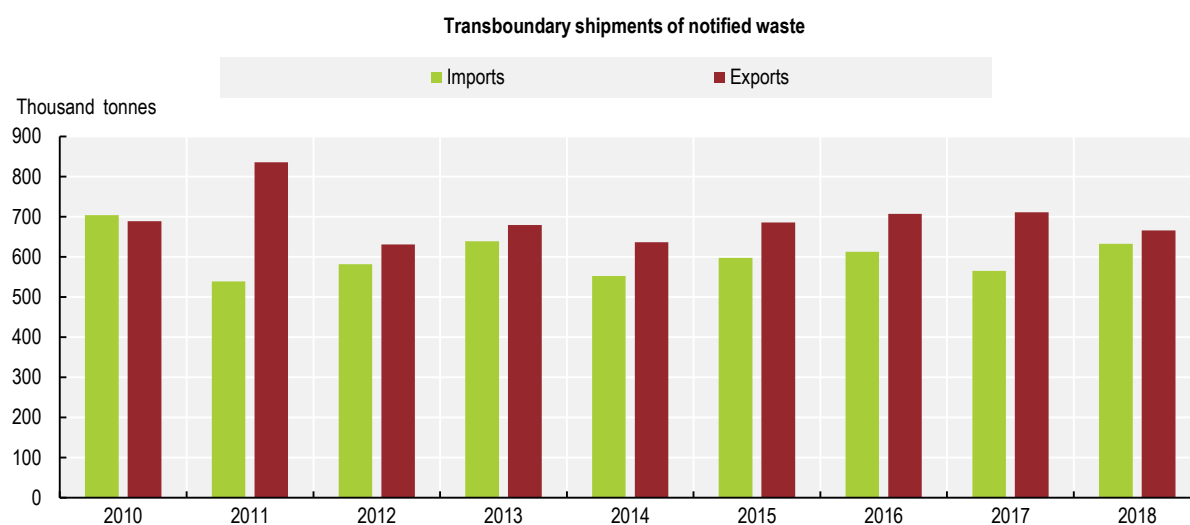
### *Waste shipments*

Since 2010, Belgium's exports of hazardous waste have been fairly stable, just above 700 000 tonnes, except for a peak in 2011 (Figure 5.7). Almost all hazardous waste exports recorded have gone to neighbouring France, Germany and the Netherlands: in 2018, these three countries took 96% of Belgium's

exports (Eurostat, 2020b). Illegal exports of hazardous and non-hazardous waste, in particular outside of the European Union, are a concern (Section 5.4.4).

Imports of hazardous waste declined slightly from 2010 to 2018. France, Germany and the Netherlands accounted for almost 70% of Belgium's imports in 2018. Most other hazardous waste imports arrived from other European countries, although Belgium also imports small quantities from Canada, Mexico and the United States, as well as a range of developing countries. Belgium's hazardous waste imports for treatment and disposal include, among others, solvents and other chemicals, oils and sludge, lead-acid batteries and hazardous waste from waste electrical and electronic equipment (WEEE): companies in Flanders have specialised in the treatment of these hazardous wastes (country submission).

**Figure 5.7. Both imports and exports of hazardous waste have remained fairly stable since 2010**



Source: Eurostat (2020b), Transboundary Shipments of Notified Waste by Partner, Hazardousness and Waste Management Operations (database).

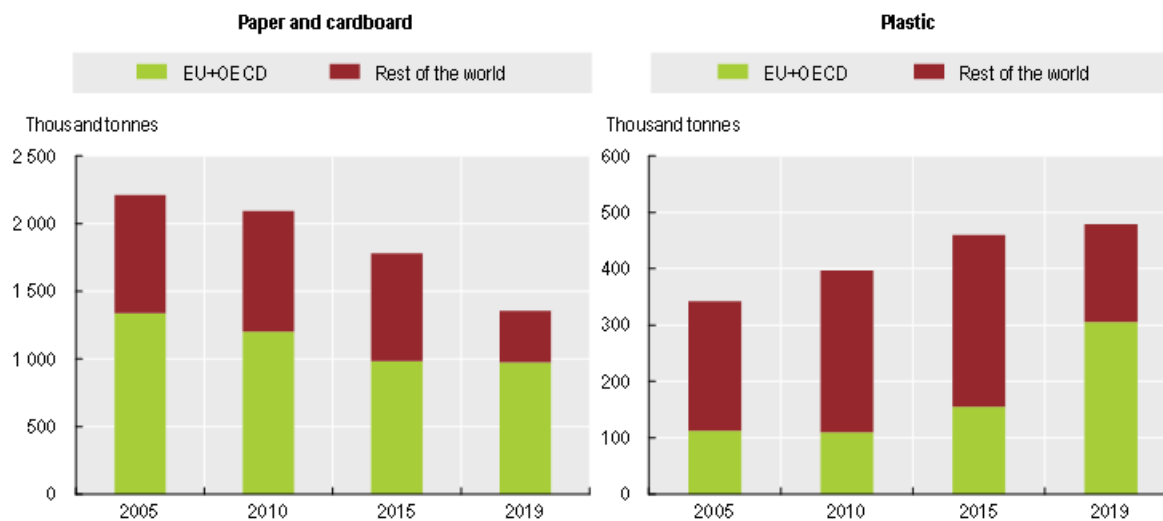
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Belgium also exports and imports several streams of *non-hazardous waste*. It sends low-value ferrous metals, for example, to Egypt and Turkey, while sending most of its non-ferrous metals to Germany and the Netherlands. Imports include ferrous and non-ferrous metals for recycling, wood waste for recycling and incineration, and refuse-derived fuel for incineration. Belgium's imports of ferrous and non-ferrous metal scrap both exceeded its exports in 2019.

In contrast, Belgium's exports of both paper and cardboard waste and plastic waste exceeded its imports in 2019. Moreover, until recently, Belgium sent a high share of its paper and cardboard waste exports, and especially of plastic scrap exports, to developing countries. Following waste import restrictions in the People's Republic of China, Belgium has exported less waste outside of the European Union and OECD member countries (Figure 5.8). Its exports of plastic scrap to Turkey, an OECD member country, have grown rapidly, for example. Exports to some developing countries have also grown. For example, Belgium increased exports of paper and cardboard waste to India and Thailand; it also sent more plastic scrap to Malaysia. Recent amendments to the Basel Convention on Transboundary Movements of Hazardous Waste broaden the range of plastic wastes classified as hazardous. Belgium will need to strengthen controls on these shipments.



Figure 5.8. Exports of paper and cardboard waste declined, but exports of plastic scrap grew



Source: Eurostat (2020c), EU trade since 1988 by HS2-HS4 (database).

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### 5.3. Objectives, policies and institutions for waste, materials management and the circular economy

#### 5.3.1. Policy framework and objectives

##### *Waste management policies and targets*

The three Belgian regions have developed separate waste management plans but share several common aims. These include reducing the generation of municipal solid waste in total and of key waste streams; increasing levels of waste recycling and reuse; and, especially in the most recent plans, supporting the transition to the circular economy by linking waste to resources.

The plans in the three regions set numerous targets for key waste streams and also seek to achieve EU targets (Table 5.1). With its high level of recycling and composting, Belgium as a whole appears to have met the EU's 2020 target for household recycling; however, levels vary across the three regions. Moreover, calculation methods are being updated: nonetheless, it appears that targets for municipal waste as a whole for 2025 and beyond had not yet been met in 2017 (latest data available).

The Brussels-Capital and Walloon regions have developed plans covering both waste and resources. The Waste Prevention and Management Plan for the Brussels-Capital Region (BCR) was in place from 2010 to 2017. Among its provisions, the plan called for reductions in household waste generation (Brussels Environment, 2010). Data were not found to indicate if the region met these goals. The region's next plan, for 2018 to 2023, sets further targets on waste reduction and reuse; calls for more sustainable and more circular consumption; and encourages enterprises to undertake circular economy actions (BCR, 2018). In Wallonia, the 2018 Waste-Resources Plan (Wallonia Environment, 2018a) contains targets and actions for 2025 for household and similar waste and for industrial waste. It followed the second regional waste plan (Wallonia Environment, 2010), which was adopted in 1998. This second plan had targets for 2010 that called for waste prevention, together with higher levels of waste reuse and recycling.

**Table 5.1. Belgium has met the EU's 2020 recycling targets, but performance on key regional targets has varied**

Waste stream	2010	2013	2020	Beyond 2020	Progress
<b>EU targets</b>					
Paper, metal, plastic, glass in household waste: preparing for reuse and recycling			50%		Achieved. In 2017: Brussels – 43% Flanders – 64% Wallonia – 43% Belgium as a whole – 56%
Municipal waste: preparing for reuse and recycling				2025: 55% 2030: 60% 2035: 65%	Under revised calculation methods and for 2017 data, these targets have not yet been met.
<b>Brussels-Capital Region</b>					
Reduction in household waste per capita (vs. 2017)				2023: 5% 2030: 20%	<i>Data not found</i>
Recycling rate for total household waste			50%		2017 level: 43%
Household waste reuse per capita				2023: 3 kg/cap, 2030: 6 kg/cap	2023 target was met in 2018
<b>Flanders</b>					
Max. generation of MSW				2022: 502 kg/cap	Met by 2018 (468.5 kg/cap)
Max. generation of residual waste (in MSW)	150 kg/cap (2007)			2022: 138 kg/cap differentiated by municipality 2030: 100 kg/cap	2007 target met in 2018 (146 kg/cap) In 2018, about one-third of municipalities met their 2022 targets
Household waste reuse				2022: 7 kg/cap	5.4 kg per capita (2018)
<b>Wallonia</b>					
Separate collection of household waste	65%				Target reached in 2008 2015 level: 70%
Recovery, recycling and reuse of household waste	54%				<i>No data found</i>
Max. household and similar waste generation per capita (not including inert, bulky and yard waste)	292 kg/year				Target met: 2010 level was 278 kg/cap
Max. household and similar waste generation per capita (including inert, bulky and yard waste)	445 kg/year			2025: 501 kg/year	2010 target not met 2018 level: 518 kg/cap
Reuse, recycling and recovery of industrial waste	85%				Target reached 2015 level: 96%
Household waste to landfill	6% (maximum)				Target met 2018 level: 1.7%

Sources: Brussels Environment (2010); BCR (2018); country submission; Flanders Government (2020a); OVAM (2017); Wallonia Environment (2020, 2018a, 2010).

Flanders established two plans for 2008 to 2015: the Implementation Plan for Environmentally Responsible Household Waste Management and the Plan on Separate Collection of Industrial Waste from Small Enterprises. These were followed by the Implementation Plan for Household Waste and Comparable Industrial Waste (2016-22), which sets targets by waste stream and for overall municipal solid waste generation (this target of 502 kg per inhabitant was reached in 2018).

### *Policies and targets for the circular economy*

Belgium has put in place ambitious plans and objectives for the circular economy; in all three regions, these plans have been linked to economic development plans.

The BCR adopted its Programme for the Circular Economy in 2016, encouraging economic activities for resource circularity. The Brussels Good Food Strategy, also from 2016, calls for reducing food waste and recovering unsold food. This plan also promotes urban farming in Brussels to reduce the distance from farms to consumers (Brussels Environment, 2016). The region's fifth Resources and Waste Management Plan (2018) supports the transition to the circular economy and includes targets relevant for this objective. For example, the plan states the volume of electric and electronic appliances repaired and reused should increase 50% by 2023, compared to the 2017 level.

In Flanders, the Materials Programme (2011) called for the long-term development of an economic model with closed material cycles. The region's Vision 2050, published in 2016, identifies the transition to a circular economy as one of its seven transition priorities: purchasing, urban actions and entrepreneurship are its three action areas for the circular economy. The Circular Flanders programme, launched in 2017, has put in place initiatives in the three areas identified by Vision 2050 (Circular Flanders, 2019). The Flemish Energy and Climate Plan 2021-2030 links climate and circular economy objectives and aims at a material footprint reduction of 30% by 2030.

In Wallonia, the Regional Development Plan for 2015-19 (also known as Marshall Plan 4.0) called for the development of a circular economy and improvement of resource efficiency among its priorities. The second Walloon Sustainable Development Strategy (Walloon Government, 2019b) identifies three priority areas – food, energy and resources – and calls for more sustainable production and consumption patterns. The Third Regional Waste and Resources Plan of 2018 includes the circular economy among its guiding principles. The government's Regional Policy Statement, adopted in September 2019, identifies the circular economy and zero waste among its broad objectives. It calls for greater recycling within the region along with new public procurement initiatives (Walloon Government, 2019c). In July 2020, the region presented a circular economy strategy, Circular Wallonia, for consultation, aiming for its adoption by the end of 2020.

At federal level, the environment and economy ministries published the Circular Economy Roadmap that featured 21 measures that focus on product policy and consumer protection, policy areas where the federal government rather than the regions has competence. While regional governments and stakeholders provided input to the roadmap, this policy initiative was separate from work at regional level. In October 2020, the programme of Belgium's new national government called for the development of a federal action plan for the circular economy, to be developed in agreement with the three regions.

### **5.3.2. Legal framework**

Each of the three regions sets legislation for waste management, and each transposes EU legislation into its legal framework. The regions have held informal contacts to co-ordinate their transposition of EU waste legislation. For packaging waste, formal co-ordination via the Inter-regional Packaging Commission (IRPC) (Section 5.3.3) has harmonised legislation through a co-operation agreement. Overall, however, as the regions transpose EU legislation separately and each develops its own legal framework, waste laws differ across the three regions. These differences increase costs for companies that operate across different regions (Box 5.1).

### Box 5.1. Regional differences for end-of-waste criteria hinder the circular economy

A study for the Flanders Region identified obstacles related to the “end-of-waste” criteria defining when to treat recycled or reused waste as a product or raw material. EU legislation provides the framework for this legal step. For a few types of metal scrap and glass, the European Commission’s Joint Research Centre has identified common EU criteria; for other types of waste, member states set criteria. In Belgium, the regions have set some criteria, as is the case for soil waste from construction and demolition activities. Differences, however, have limited inter-regional movements. The study recommended addressing the issue at EU level (as does the European Commission’s new Circular Economy Action Plan).

Sources: EC (2019); Vanheusden and Mouligneau (2019).

In the BCR, the principal legal basis is the Waste Ordinance (adopted in 2012 and since amended). This legislation transposes EU waste requirements and targets, providing the legal basis for extended producer responsibility (EPR) schemes. It also includes broad objectives to use resources more efficiently and reduce the impacts of resource use. A number of regulations and executive orders support the ordinance, notably the Waste Collection Regulation and Brudalex (i.e. Bruxelles/Brussel-Déchets-Afvalstoffen-LEX). These govern the separate collection of household and non-household waste, respectively.

The Flanders Decree on the Sustainable Management of Material Cycles and Waste (or the Materials Decree) of December 2011 replaced the previous Waste Decree. The 2011 legislation more strongly supports a shift towards sustainable resource use. The 2012 Flemish Regulation on the Sustainable Management of Material Cycles and Waste provides implementing rules for the Decree. Both the Decree and the Regulation have been amended regularly.

In Wallonia, the main waste legislation is the Decree of 27 June 1996 on waste. It has since been amended and supplemented by implementing measures.

### 5.3.3. Institutional framework and governance

The three regions have waste management authorities, while inter-regional bodies exchange information and support co-operation (Figure 5.9). In Flanders and Wallonia, the local level manages municipal waste.

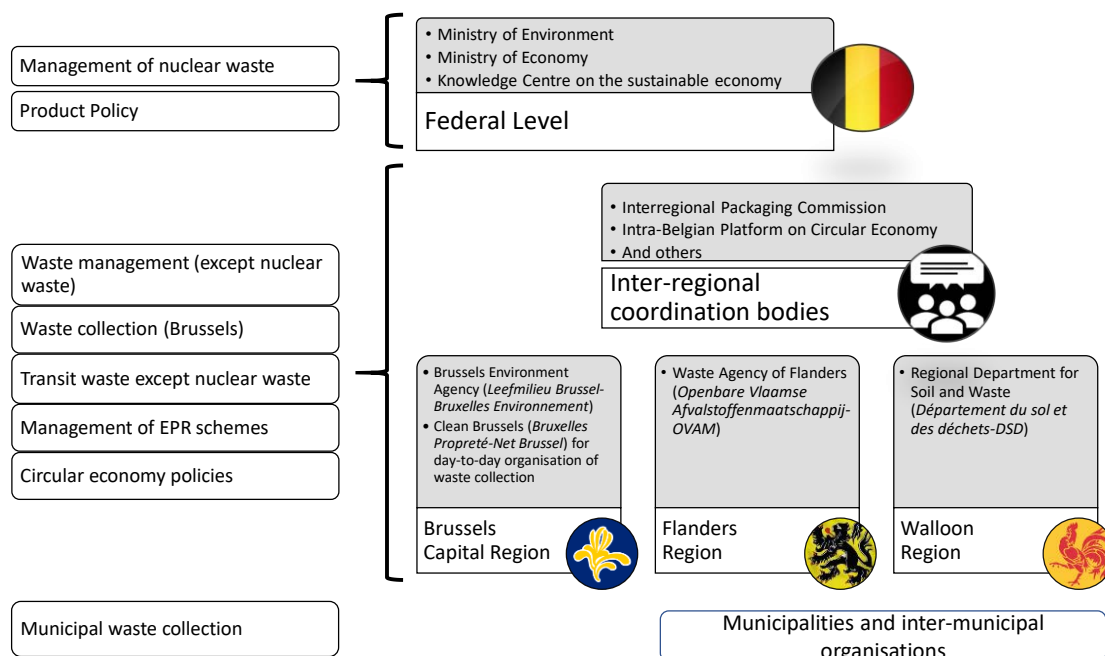
Brussels Environment is responsible for waste management, including implementation of policies and data gathering on waste streams. Another important actor is the Agence Bruxelles Propreté–Net Brussel (ABP), a regional agency responsible for the collection and treatment of municipal waste; the cleaning of regionally managed streets and other public spaces; and the ownership and operation of several waste treatment facilities, including an incinerator. The 19 local municipalities in Brussels clean smaller municipal streets and public spaces. They work with ABP on certain waste collection activities such as the removal of bulky waste.

In Flanders, waste management, soil remediation and the transition towards the circular economy is the responsibility of the Public Waste Agency of Flanders (OVAM). This independent agency leads policies, initiatives and projects for waste management and soil remediation. With the entry into force of the 2011 Materials Decree, OVAM has also led on the transition to the circular economy. The Flemish Compost Organisation has promoted composting in households, as well as facilities for bio-waste composting and anaerobic digestion. Among other key institutions, the Flemish Institute for Technological Research focuses on circular economy strategies, waste recovery methods, and product and process innovations.

In the Walloon Region, the Soils and Waste Department of the regional Directorate-General of Agriculture, Natural Resources and the Environment leads the development and implementation of policies for waste, resources and soils, and it issues permits for waste management companies. The Sustainable Development Unit and the Economic Policy Unit co-ordinate circular economy policy and its implementation.

In Flanders and Wallonia, municipalities and inter-municipal organisations collect and treat household waste and related municipal waste; some outsource to private companies, in particular for collection. In Flanders, the inter-municipal organisations handle most municipal waste collection; a few cities, including Antwerp, organise collection by themselves. In Wallonia, seven inter-municipal organisations organise municipal waste collection. In both regions, the inter-municipal organisations own municipal waste treatment facilities, such as, for example, eight of the nine incinerators in Flanders.

**Figure 5.9. Responsibilities for waste management and the circular economy across federal, regional and local levels**



Source: Based on country submissions.

The regions co-operate on EU and international waste policy and on EU circular economy policy via the Co-ordination Committee for International Environmental Policy. The IRPC works to ensure harmonised management of packaging waste across the regions. It was established under a 2008 Co-operation Agreement on the prevention and management of packaging waste. The agreement applies to all regions and partly transposes the EU Directive on packaging waste. There are ongoing discussions to strengthen co-operation on other EPR waste streams.

In 2015, the responsibilities of the IRPC were expanded to cover the management of transit waste. It now handles waste shipments that do not originate in and will not be processed in the country, including shipments travelling through one of the regions only. (Regional agencies are responsible for waste shipments originating in Belgium or processed and treated within the country).

The intra-Belgian Platform on Circular Economy, created in 2018, brings together officials from regional bodies and the federal government twice a year to exchange information and identify possible common

actions. The platform was created as the division of competences across different levels had been identified as an obstacle for the circular economy (OECD Working Party on Urban Policy, 2019).

#### **5.3.4. Monitoring and information systems**

The three Belgian regions each have their own information system on waste, collecting data from waste operators, inter-municipal organisations, producer responsibility organisations (PROs) and other sources. The regions report to the federal government, which seeks to ensure harmonisation among data collection methods, as do regional co-operation mechanisms. The IRPC is responsible for reporting on the production and treatment of packaging waste. Brussels Environment, OVAM in Flanders and the Walloon government have together established BeWeee, a common reporting platform for PROs and individual actors managing WEEE. Co-operation between the regions has brought a common monitoring system for reusable packaging and regular information sharing on data collection for waste shipments via the IRPC. Efforts to harmonise data across the three regions continue; these include, for example, calculation methods for EU targets on recycling (Section 5.3.1).

The regions have addressed gaps in some areas of waste data. The BCR, for example, has been updating its waste information system to gather more accurate and more detailed data from enterprises and institutions, particularly on industrial waste and on construction and demolition waste.

#### **5.3.5. International co-operation and outreach**

Belgium's federal government has supported work by international organisations on waste and resources management, as well as pursued its own technical assistance projects. For example, the Belgian Development Agency helped improve waste collection in the city of Sikasso, Mali, from 2002 to 2017; another project supported better waste management in the city of Saint-Louis in Senegal from 2003 to 2013. Moreover, the federal government's 2014 Strategic note on environment in development co-operation identified waste management as a key area for support.

All three regions of Belgium can participate in international co-operation on their own terms. Brussels is one of five pilot cities – together with Cape Town, Dongguan, Recife and Sorsogon City – in the United Nations Environment Programme's Global Initiative for Resource Efficient Cities, a platform launched in 2012 to share knowledge and tools. Belgium has been a member of the Steering Committee of the UN International Resource Panel since 2012: Flanders has paid the yearly financial contribution. In addition, the regions and some local governments participate in EU projects and networks.

### **5.4. Promoting waste reduction and recycling**

#### **5.4.1. Reducing and recycling municipal waste**

##### *Waste reduction*

The national decrease in municipal waste generation per capita (Section 5.2.2) has been reflected in regional trends.

In Brussels, the total volume of municipal waste has remained fairly stable over the evaluation period, while the region's population has increased (Brussels Environment, 2020a). In Flanders, household waste per capita fell by 7% from 2013 to 2018; this followed an estimated 6% decrease from 2007 to 2013, based on a different methodology. The region met its objective of decoupling between household budgets and waste generation (OVAM, 2020). In Wallonia, household and similar waste per capita fell from 2009 to 2018 by about 5% (to 518 kg per capita) (Wallonia Environment, 2018a). The region met its 2010 target to reduce household and similar waste – not including inert, bulky and yard waste. However, the region did not meet

a separate 2010 target that included these three waste fractions (Table 5.1); trends suggest the Walloon Region should reach its less stringent 2025 target for household and similar waste including the three fractions.

The three regions have applied a combination of actions to encourage waste reduction, including raising awareness and using economic instruments, such as pay-as-you-throw (PAYT) mechanisms (described below). All three have taken actions to reduce food waste (Section 5.5.4). As part of raising awareness, the BCR has promoted zero waste initiatives (Box 5.2), and from 2017 to 2019, the Walloon Region supported 20 municipalities in testing zero waste actions.

### Box 5.2. The Brussels-Capital Region encourages zero waste lifestyles

In 2018 and 2019, Brussels organised Zero Waste Fairs for businesses and members of the general public who wish to learn about opportunities, exchange information and develop new initiatives. The fair attracted about 10 000 visitors each year.

The Zero Waste Challenge targets households and provides coaching for a transition to a zero waste lifestyle. In 2019, 50 households participated in the challenge: this trial showed it was possible to reduce household waste by 75%. Organisers planned to expand the challenge to 180 households in 2020. A regional website encourages other households to adopt zero waste goals. While municipal waste per capita has fallen in Brussels, the small scale of these initiatives suggests they have not had a major impact on overall trends.

Source: Brussels Environment (2020b).

### *Waste collection*

All three regions have established separate collection for recyclable waste streams such as paper, metal, plastic and glass, supporting high levels of recycling of municipal solid waste (Section 5.2).

Since 2010, households in Brussels were required to separate paper, plastic and cartons, glass and garden waste; small enterprises and institutions had to do so from 2013. The region provides door-to-door collection of these waste streams, except glass, as well as residual waste and yard waste. Glass, textiles and used cooking oils are collected via local containers. In 2017, the region introduced door-to-door collection of food waste from households and other establishments on a voluntary basis. As a result of separate collection, the recycling rate for household waste has increased significantly – from 25% in 2005 to 43% in 2017 (although most of the improvement occurred in the years to 2012).

Brussels, however, has lacked sufficient collection points for bulky waste, WEEE and hazardous waste (Merta and Vuorinen, 2016). It has only two permanent sites, although municipalities within the region organise temporary collection points. Moreover, the BCR has not used fee systems that provide incentives to reduce waste generation or encourage separate recycling.

In Flanders, municipalities and inter-municipal organisations have organised door-to-door collection of recyclable paper and cardboard, plastic and metal packaging, and cartons plus residual waste. Many locations also collect glass, yard and organic kitchen waste door-to-door. In many parts of Flanders, both inhabitants and businesses using public waste collection must buy specially designated bags; a higher price per bag for residual waste (up to two euros) encourages waste separation. In other parts of Flanders, waste is weighed. About half of household waste charges reflect a PAYT element, with the other half fixed (Card and Schweitzer, 2016). Some municipalities seek to offset the costs for low-income residents or families with new-born children, for example by providing set numbers of free bags per year.

The region has a network of collection points for bulky waste, WEEE and hazardous waste from households. It is expanding this network with smaller sites, aiming for all residents to have a collection point within 5 kilometres of their homes (EEA, 2019). In Flanders, separate collection covered 69% of municipal waste in 2017 and nearly all (about 64%) was recycled or composted. Recent studies suggest that separate collection can be further increased; some recyclable waste has been found in samples of household residual waste bags.

Parts of Wallonia also use the system of different coloured bags for waste separation and door-to-door collection. However, some municipalities use containers that are activated by a chip card and that weigh bags of waste. Each municipality sets household fees under a regional, two-part system with a fixed charge plus a variable charge. They collect the variable charge either via the price of waste bags, a requirement for stamps on waste bags or the weighing containers. Moreover, the regional government has required municipalities to recover between 95% and 110% of the operational costs for collection and treatment since 2012 (Wallonia Environment, 2018b).

Wallonia significantly increased separate collection and recycling under its second waste plan, meeting its 2010 target for separate collection already in 2008 (Table 5.1). It accomplished this goal in part due to the expansion of the network of container parks, as well as joint efforts with EPR schemes and increased landfill taxes (see below). Municipalities can receive regional subsidies to finance investments for separate collection, such as building container parks and introducing weight-based payment schemes. Moreover, municipalities must pay the region a sanction if the amount of residual waste per capita exceeds a threshold; the thresholds were lowered from 2008 to 2011, and since 2010 municipalities have almost always reached their thresholds. In total, the share of separate collection of household and similar municipal waste increased by 31% between 2000 and 2015 (Wallonia Environment, 2017). In turn, the quantity of residual waste from households and similar sources fell from 174 kg to 145 kg per capita between 2007 and 2016 (IWEPS, 2020).

Incineration is the leading method of waste treatment – and recycling will need to increase further.

In all three regions, government entities have owned most waste treatment facilities. This includes incinerators, which take the largest share of Belgium's municipal waste and almost all residual waste. The BCR operates a waste incinerator, a bio-methane facility (located outside the region) for food waste and a composting facility for garden waste. The region also sends municipal waste to Flemish facilities for treatment. In the Flanders Region, inter-municipal organisations operate eight incinerators, as well as other treatment facilities. One privately operated incinerator in the region takes both municipal waste and some streams of industrial waste. In Wallonia, inter-municipal organisations own incinerators.

Taxes, together with landfill bans, have played a key role in reducing landfilling; moreover, Wallonia used taxes to support a shift to incineration with energy recovery (Box 5.3).



### Box 5.3. Taxes have almost eliminated landfilling but have not led to a shift from incineration to recycling

Landfill taxes have provided incentives for the shift from landfilling to incineration, together with bans on landfilling of certain waste streams. Flanders had a landfill tax in place before the evaluation period; the 2018 tax rate was EUR 57 per tonne for residual household waste that cannot be incinerated (Table 5.2). Flanders had raised these taxes by 50% in 2015 for budgetary reasons, increasing yearly revenue to EUR 4.5 million. Flanders applies these taxes to waste exported for landfilling; however, any taxes paid in the recipient country can be deducted from the tax paid in Flanders (a similar system is used for waste exported for incineration).

**Table 5.2. Incineration and landfill taxes for municipal solid waste in Belgium, France and the Netherlands**

Tax	Rate (EUR/t)
<b>Incineration taxes (for incineration with energy recovery)</b>	
BE-Brussels (2020)	6.53
BE-Flanders	
General waste	8.18
Recycling residues	2.34
BE-Wallonia (2018)	11.76
France (2015)	14
Netherlands	13
<b>Landfill taxes</b>	
BE-Flanders (2018)	57.21
BE-Wallonia (combustible waste, 2018)	115.40
BE-Wallonia (non-combustible waste, 2018)	63.47
France (2015)	32-40
Netherlands	17

Note: Depending on the region or country, these tax rates may also cover other non-hazardous waste.

Sources: OECD (2020c); OECD (2020), PINE (database); Fiscalité Bruxelles (n.d.); Paleari (2016); country submission.

Wallonia introduced a landfill tax for non-hazardous household waste of EUR 20 per tonne in 2008, raising it to EUR 78 per tonne in 2015 and then, from 2017, setting different rates for combustible and non-combustible waste (Table 5.2). This increase had a major influence in reducing municipal waste sent to landfill in the region. The rate is significantly higher than landfill taxes in France and the Netherlands. In Flanders, the rate is lower; here (as in the Netherlands), a ban on landfilling most types of municipal waste has supported a low rate of landfilling.

Both Flanders and Wallonia have incineration taxes, ranging from EUR 2.3-11.8 per tonne, depending on region and waste stream (Table 5.2). Wallonia, for example, introduced incineration taxes for non-hazardous waste in 2008 at EUR 3 per tonne, doubling them in 2010. They have risen steadily since. Brussels also recently established an incineration tax. Wallonia has applied a much higher rate to incineration without energy recovery (EUR 25 per tonne in 2010 rising to EUR 65.43 per tonne in 2018). This tax played a key role in shifting incineration to include energy recovery. However, taxes on incineration have not led to a shift from incineration to recycling; the share of municipal waste incinerated increased (Section 5.2.2). The rates are close to those in neighbouring France and the Netherlands.

Sources: Country submission; OECD (2015).

While 2017 data show that Belgium as a whole was on track to meeting the EU's 2020 recycling targets, the Brussels and Walloon regions still had some distance to go. Regional policies call for increased separate collection and recycling: for example, all three regions are seeking to reduce food waste and will strengthen requirements for its separation (Section 5.5.4); the regions also plan to boost separate collection of other waste streams such as textiles. Brussels and Wallonia both plan to increase the number of container parks to collect waste that can be recycled and reused, and to further support social enterprises preparing furniture and other bulky waste for reuse (Section 5.5.5); they are working with PROs to increase separate collection under EPR schemes, including for packaging waste (Section 5.4.2). Further enforcement is being planned: in Brussels, for example, waste separation in enterprises that use private waste collection is a concern.

Brussels could also consider introducing PAYT tariffs, for example, by increasing the cost of bags for residual waste; Wallonia might further develop municipal PAYT systems to increase incentives. Increases in incineration taxes should also be considered.

Further growth in recycling and composting is likely to reduce waste incineration. The Flanders Region has estimated the potential decrease in energy and carbon emissions from its incinerators to 2030 and beyond, due to the planned fall in waste generation and an increase in recycling. The Brussels and Walloon regions are studying the likely reduction in demand for incineration. This work will be valuable to inform policies and avoid excess incineration capacity in coming years; moreover, reductions in incineration can support policy goals to cut greenhouse gas emissions.

#### *Raising public awareness to address littering*

All three regions have tackled ongoing littering problems and illegal dumping. The BCR has organised awareness-raising campaigns against littering and illegal dumping. The region encourages residents to organise “clean-up days” together with street sweepers around World Clean-Up Day (19 September in 2020). It also supports non-governmental organisations (NGOs) raising awareness among primary and secondary school students for the cleanliness of public spaces. The *Mooimakers* (Beauty Makers) campaign in Flanders supports local actions by schools, citizen groups, companies and local authorities. Surveys suggest that littering fell slightly from 2014 to 2018 in Flanders. The region has set a goal of achieving a 20% reduction by 2024, compared to 2014 figures (OVAM, 2020). Further efforts will likely be required to achieve this target.

In Wallonia, a non-profit organisation, *Wallonie Plus Propre* (Cleaner Wallonia), has aimed to raise awareness of littering and promotes better cleanliness of public spaces. Its social media and TV campaigns have targeted littering in the streets, empty drink cans in natural areas and textile waste around containers to collect used textiles. For instance, a pilot project for cans rewarded EUR 5 per 100 cans collected, collecting 1.2 million cans in 15 months. To 2019, the amount of litter collected during “Spring Cleaning” days has been decreasing over the years, which is considered a sign of improvement (BeWaPP, 2018).

#### *Waste management during the COVID-19 pandemic*

The pandemic created difficulties for waste management. In Brussels, for example, fewer personnel were available for waste collection and ABP temporarily collected plastic and paper waste together with residual waste. Inhabitants were asked to ensure that waste bags were properly closed and only three-quarters full to avoid breakage. In Flanders and Wallonia, recycling parks closed for several weeks. During this period, there were reports of increased littering in some locations. In Flanders, household waste increased as people stayed home, though company waste fell. An increase in the use of one-way packaging was noted, while the fall in oil prices made recycled plastic less competitive. Stockpiles of used textiles grew as local sales and exports for reuse fell. Public authorities also took steps to anticipate potential problems: Flanders, for example, expanded storage capacity for medical waste. At national level, guidelines for the disinfection of single-use face masks were developed to allow reuse. The BCR launched an information

campaign on how to dispose of face masks and plastic gloves used for protection from COVID-19, as this was identified as a growing problem. Throughout the country, regular waste collection continued.

In sum, waste management in Belgium responded to the pandemic. Reflecting OECD analysis that called for effective waste management (OECD, 2020b), the country's response included actions to address increased medical waste. Temporary measures reduced separate collection and recycling. This may affect Belgium's waste results in 2020.

#### **5.4.2. Extended producer responsibility**

Belgium has established EPR for batteries, end-of-life vehicles (ELVs), mineral oils, photovoltaic (PV) panels, packaging, tyres and WEEE. Belgium thus goes beyond EU requirements, which do not include EPR for oils or tyres. Across all these schemes, producers and importers can choose between ensuring waste collection and recovery themselves or establishing a joint non-profit PRO to fulfil the obligations. Members of a PRO pay fees to fund the collection, treatment, recycling and administrative responsibilities of their waste stream.

The EPR schemes are implemented via regional legislative frameworks – along with the inter-regional accords for packaging – but most PROs are national. Regional authorities establish permits for the PROs and conclude agreements with them, usually for five to six years. All PRO agreements were renewed in 2019. The regions monitor the EPR schemes, except for packaging waste, which is managed at inter-regional level by the IRPC. The PROs report to the regional authorities annually, providing information about their operations. Since 2019, vehicle producers and PV panel producers must submit waste management plans to the regional authorities for approval.

##### *Packaging waste*

More than 5 000 companies are members of Fost Plus, the PRO for *packaging waste*. In addition, 124 companies reported fulfilling EPR for packaging themselves. Beverage producers, supermarkets and other retailers operate a deposit-return system on some glass bottles, principally those for beer. Consumers pay an extra charge for glass bottles that are part of the system, to be paid back upon return. There are no official figures regarding the results of the deposit-return scheme, although overall Belgium reports that glass packaging recycled is equal to the volume placed on the market.

Fost Plus helps promote door-to-door collection of paper, glass, metal and plastic packaging from households. For example, it co-organises awareness-raising campaigns with municipalities and inter-municipal organisations. Together with OVAM and local authorities, Fost Plus also supports the *Mooimakers* programme to tackle littering (Section 5.4.1).

By 2017, Belgium had met the EU's 2030 targets for recycling glass, paper and cardboard, metal and wood packaging (Table 5.3). Room for improvement remains, in particular for plastic packaging.

**Table 5.3. Belgium has already met many of the EU's 2025 and 2030 targets for packaging waste recycling**

Type of packaging waste	Belgium: National recycling rate 2017	EU target (2008)	EU target (2025)	EU target (2030)
Glass	100%	60%	70%	75%
Plastic	44.5%	22.5%	50%	55%
Paper and cardboard	92.9%	60%	75%	85%
Metal	98.5%	50%	70% ferrous 50% aluminium	80% ferrous 60% aluminium
Wood	98.3%	15%	25%	30%
Other	6.2%			
Total	83.8%	55%	65%	70%

Sources: Eurostat (2020d), Recycling rates for packaging waste by type of packaging; EU Directive 94/62/EC as amended.

The Co-operation Agreement among the regions on packaging waste is being renewed and would propose new targets for 2021. These targets are more ambitious than the EU's 2030 targets. However, some have already been achieved: the proposed overall recycling rate, for example, is 80%, just below the level achieved in 2017 (Table 5.3).

#### *Other waste streams*

The PRO for automobile batteries is Febelauto, and Bebat is the organisation for portable batteries. Belgium has met its 2018 target level for the collection of portable batteries (Table 5.4).

Febelauto is also the PRO for ELVs. It has met the EU target of 95% for the recovery, recycling and reuse of ELVs collected, together with the EU target of 85% for reuse and recycling (Febelauto, n.d.).

A key problem, however, is the low collection rate for ELVs. The number of ELVs sent to licensed centres has fallen. This is partly explained by the longer life cycles of vehicles (the average age of ELVs was just above 16 years in 2018). In addition, unlicensed operators are not reporting ELVs. Traceability of vehicles is a challenge for this EPR scheme. In Belgium, license plates are linked to the owner, not the vehicle. This makes it more difficult to trace vehicles across their lifespans, particularly in cases of resale; the high number of actors involved in recycling vehicles, both authorised and unauthorised, also make it difficult to track ELVs (country submission). Many EU member states have low ELV collection rates, and the upcoming evaluation and revision of the EU Directive is expected to address this issue. Nonetheless, Belgium's rates appear lower than the EU average. Belgium should urgently consider reforms based on good practices in other European countries (Box 5.4).

#### Box 5.4. Belgium can consider European good practices to address problems with ELV collection

As ELVs contain metals and other materials with a resale value, many European countries face problems with vehicles escaping EPR. A study for the European Commission estimates that in 2014, about 4.7 million vehicles exited the vehicle stock for unknown whereabouts; many were discarded or dismantled improperly. Another 6.1 million vehicles entered approved ELV schemes. The study highlights several potential avenues to address the problem.

- Raising public awareness of ELV requirements and the steps owners should take (an example of good practice is the *elves.ie* website in Ireland).
- Ensuring effective tracking of vehicles and their ownership: Germany and the Netherlands are cited for their systems to ensure full tracking.
- Strengthening inspection and enforcement: among good practice examples, France established a national action plan against illegal ELV sites and activities in 2013, including co-ordination across ministries and enforcement bodies.

Economic incentives can also play a valuable role: in Denmark, owners receive payments for consigning an ELV to an authorised facility; a tax on vehicle liability insurance covers these payments.

Source: Mehlhart et al. (2018).

As new capacity and expertise will be needed, an upcoming challenge will be the collection and recovery of batteries and engines from electric and hybrid vehicles. This waste stream is expected to gain importance from 2025 (Wallonia Environment, 2018a), when larger numbers of electric and hybrid automobiles start to be retired.

With respect to mineral oils, Belgium has a high collection rate, 101% of oil estimated as collectable (as over one-third of mineral oils are estimated to be consumed during use). The total volumes collected have not changed significantly over the evaluation period. For Belgium as a whole, 90% of oil collected was recycled and 4% was incinerated for energy recovery (Valorlub, 2019).

The EPR for PV panels covers conventional panels, as well as those integrated into buildings. Some regions are advancing faster than others regarding this EPR scheme. In Flanders, it has been in place since 2016, whereas it started in Brussels in 2019. Although the PRO, PV-Cycle, submits annual reports to the regional authorities, there are few data available yet; PV panels have a long lifespan, usually about 30 years. Consequently, the only panels collected to date are faulty ones and those damaged by weather.

The EPR scheme for used tyres covers all tyres except those part of ELVs (see above) and bicycle tyres. In 2018, the volume of used tyres collected was higher than that of new tyres placed on the market. Total recycling and reuse has increased steadily since 2009, reaching 96% in 2018, though reuse has fallen from a high of 14.6% in 2011 (Recytyre, 2019).

In 2018, the collection rate of WEEE was just below the EU target for 2016-18 and significantly below the target of 65% for 2019. Collection rates were lower in Brussels than in Flanders or Wallonia. Significant effort will be needed to increase collection in all regions. In Brussels, it may be difficult to meet an ambitious regional target to double the volume of WEEE collected per capita in 2023, compared to 2017 levels. Table 5.4 provides an overview of EPR targets and results.

**Table 5.4. Belgium has met EU collection rate targets for several key waste streams**

Waste stream	Placed on the market	Collection rate 2018	EU target rate
ELVs	200 000 tonnes	10%	
Mineral oils	3 335 tonnes	101%	65%
Portable batteries	5 000 tonnes	67%	50%
Tyres	75 tonnes	115%	85%
WEEE	240 000 tonnes	44%	45% (2016-18)

Sources: FebelAuto (2019); Recyctyre (2019); Valoriub (2019); Eurostat (2020e), Waste electrical and electronic equipment (WEEE) by waste management operations.

While the PROs are national, the schemes are managed regionally. When it comes to implementation of EPR schemes, regions may have additional measures and varying performance.

The regional approach allows the regions to develop solutions for their context. In Brussels, the 2018 Waste-Resources Plan proposes establishing extended responsibility for furniture, mattresses, textiles and packaging containing hazardous waste. In Flanders, an EPR scheme for mattresses is planned for 2021, and other EPR schemes – such as for textiles – are under consideration. Flanders also plans to promote greater recycling of plastic waste – as a feedstock in the chemical industry, for example. Regional management, however, increases costs; moreover, the approach hinders solutions to problems such as the low collection rate of ELVs, as vehicle registration is handled at national level while the EPR scheme is managed at regional level. The BCR has faced challenges. It has had a lower level of collection for several EPR waste streams – including WEEE, mineral oils, ELVs and tyres – compared to the other two regions (BCR, 2018). Its administration has also lacked capacity for stronger governance and enforcement of EPR schemes.

### **5.4.3. Managing contaminated sites and old landfills**

All three regions have comprehensive approaches to identify, investigate and plan the remediation of contaminated sites and provide information on potentially contaminated sites via online maps (see also Chapter 2 on financing for site clean-up).

The BCR identifies potential contamination issues when a site is sold; when an economic activity in a risk category starts or ceases; or after contamination is known (e.g. after an accident). The region maintains an inventory of potentially contaminated sites, together with those cleaned up and those assessed as clean: key information can be consulted via an online map. Between 2005 and 2018, 6 662 potentially contaminated sites were the subject of an exploratory analysis. This led to 2 780 detailed studies where contamination appeared likely and, finally, 863 remediation and risk management projects. As a result, 608 ha of land were remediated; this work has accelerated in recent years, and 44% of remediation was carried out after 2014. Activities related to metal degreasing and dry cleaning were most frequently identified as sources of pollution. Across all sites needing clean-up, the most commonly used remediation technique has been removal of contaminated soil for off-site treatment. However, on-site remediation methods have also been used, including draining and treating underground water, bio-remediation and vapour extraction (Brussels Environment, 2018a).

A large share of sites – 79% of those assessed from 2010 to 2016 – has been categorised as “orphan”, requiring public funds for clean-up. The BCR has a goal to manage all its orphan contaminated sites by 2029 (Payá Pérez and Rodríguez Eugenio, 2018): the region expected to meet this goal, as long as public funding continues (country submission). The region is considering expanding soil policy to protect soil health and increase its multifunctional benefits (Box 5.5).

### Box 5.5. The Brussels Good Soil Strategy addresses soil sealing and soil health

The Brussels-Capital Region is developing a Good Soil Strategy to protect and manage soil resources as a climate sink, a basis for urban agriculture (Section 5.5.4) and a foundation for biodiversity (Chapter 4). Current work includes developing a map of soil quality across the region and preparing a policy plan that could be launched in 2024, possibly to be followed by legislation.

The plan may propose a regional goal to stop soil sealing (about half of the region's land is already sealed). The region is also considering the inclusion of a mechanism by which any new soil sealing is compensated by improving other areas. The plan may provide financial support for brownfield redevelopment and for actions to address soil compaction, organic matter loss, erosion and other types of soil damage. It may also propose information activities for private owners and associations to improve soil condition, including via composting, which can also address food waste (already in 2016, the region published a soil guide with suggestions for private gardens and activities).

Source: Country submission.

Flanders has identified several types of sites as potentially contaminated. Former industrial areas such as four metal smelters have left heavy metal contamination both on site and in their surroundings. Manufacturing plants, such as chemical and petrochemical plants, may contaminate the soil. In service stations, hydrocarbons may have leaked from underground storage tanks and above-ground operations to the soil. Finally, many small, historical manufacturing sites may have left contaminants. The total number of sites that need or might need remediation fell from 36 468 in 2011 to 18 591 in 2016. Most sites were removed from the list when investigations did not identify contamination issues; nonetheless, the number of sites where clean-up actions had been completed rose from 2 187 to 3 509 over the same period.

Flanders has set soil quality standards for contamination since 1995; it uses risk assessment techniques for older contamination. About half of contaminated soils are remediated on the site. Most of the rest are sent to soil treatment plants in Flanders that use biological, physical, chemical and physical-chemical techniques. The plants also treat soil imported from other regions of Belgium and from nearby countries, including France and the United Kingdom.

The region aims to start remediation on all historical contaminated sites by 2036 (Payá Pérez and Rodríguez Eugenio, 2018). Where possible, OVAM requires that site owners finance clean-up. However, public financing is provided for sites where this is not possible; current levels of public financing have been estimated to be insufficient to meet the 2036 goal (Chapter 2).

In a related issue, Flanders Region has a legacy of about 3 300 former landfills to manage. These include sites containing inert waste, such as construction and demolition waste; former municipal landfills, many of them small; and some sites that contain hazardous waste. Where serious soil contamination problems are suspected, former landfills are included in the list of contaminated sites. Nonetheless, other issues, such as leaching of organic matter into groundwater, are not given high priority. This is partly because a high share of groundwater in Flanders is assessed to be in poor status due to agricultural chemicals and other pressures. OVAM has developed several decision-support tools to assess their contamination risks. It has investigated the potential to extract resources for recovery via “landfill mining”. This work, in turn, has led to methods for “dynamic landfill management” that can support better placement of waste in landfills. As yet, landfill mining itself has not been proven commercially viable (country submission).

Flanders has launched an initiative to identify and remove asbestos in buildings (Box 5.6), which can have direct impacts on human health. The rest of Belgium has similar concerns due to the prominent use of asbestos in construction in the second half of the 20th century (it was banned in 2001). Some other

countries and regions in Europe, such as Poland, have put in place asbestos inventories and removal programmes. However, few have set targets or timelines for clean-up as in Flanders.

#### **Box 5.6. Flanders has set targets to remove high-risk asbestos in buildings**

Prior to 2001, Flanders had a major asbestos industry with 20 processing sites. Moreover, OVAM estimates at least a 70% to 90% chance that asbestos is present in buildings from before 2001, including homes, schools, companies and agricultural buildings. This estimate is based in part on samples across different building categories. In 2018, Flanders launched an Asbestos Reduction Action Plan with the aim to be “asbestos-safe” by 2040. The plan requires owners to make an inventory of asbestos in buildings sold by 2022 and in all buildings by 2032. By 2034, the highest-risk asbestos applications must be removed from buildings and homes, particularly asbestos in outer shells of buildings. By 2040, all other asbestos in poor condition must be removed. Besides new regulations, the plan includes several instruments to encourage owners in the removal of asbestos. In 2019, the asbestos reduction policy was linked to the Flemish building renovation and climate strategies (2030-50) as a win-win approach to combine asbestos removal with energy efficiency measures in buildings.

Source: Country submission.

As one of the first regions for the Industrial Revolution, Wallonia contains a large number of former industrial sites. It estimated in 2014 that up to 18 000 sites were potentially polluted. These included brownfield sites, historical industrial areas and former landfills, as well as currently operating industrial plants and retail service stations. Information on soils and on current and former activities that create risks of contamination are inventoried on an online database accessible to the public. The database also tracks major movements of excavated soils. Wallonia’s revised Soil Decree, in force from January 2019, sets out five types of triggers for site investigation. Since then, the most common types of triggers have been voluntary requests and closures of potentially polluting activities (these two triggers were not included in the previous 2008 Soil Decree). The other types of triggers are requests for urban permits for land identified on the online database, environmental damage and decisions of authorities in case of major threats. Wallonia’s Soil Decree sets screening values, which were updated in 2018, and remediation is carried out based on risk assessment.<sup>5</sup> By March 2017, 1 682 sites had been cleaned up (Wallonia Environment, 2017). Wallonia has a target to complete remediation for priority sites handled by SPAQuE, a regionally owned company, by 2022 (Payá Pérez and Rodríguez Eugenio, 2018); information on progress to this target was not found, however.

#### **5.4.4. Enforcement and inspection of waste shipments**

OECD’s 2007 Environmental Performance Review of Belgium identified environmental enforcement as an area for attention in the country. Illegal shipments of hazardous waste continue to be a concern, especially for waste exports via Belgium’s ports. Between 2013 and 2015, Belgium accounted for almost a quarter of all illegal shipments reported in the European Union (644 cases). Belgium, which has one of Europe’s largest ports, also has one of the most severe penalties for illegal shipments (EC, 2018). Limitations to staff and budgets have been identified as obstacles to better management and inspection of hazardous waste exports (EFFACE, 2016).

Belgium’s three regions have taken steps to fight against illegal shipment of waste. Brussels, for example, integrated a waste shipment inspection plan into its framework of annual environmental inspections in 2017. It focused inspections on the two areas with the most infractions: the illegal export (and occasionally import) of WEEE and ELVs without notification (e.g. claimed as second-hand goods) and shipments of construction waste (Brussels Environment, 2018b). The region has increased administrative fines from



around EUR 1 250 to EUR 5 000 on average for greater deterrence. The Walloon Region has also increased its inspection efforts. For instance, it trained an additional 25 inspectors to focus on illegal shipments via road (country submission).

In Flanders, two separate teams carry out port and road inspections. Road inspections mainly deal with administrative infractions. Port inspections, however, regularly identify a range of illegal exports. It remains a challenge to provide adequate enforcement and inspection, particularly in the large Port of Antwerp (Box 5.7).

### Box 5.7. Resource constraints limit inspections in the Port of Antwerp

Belgium has two main seaports: Antwerp, the second busiest in the European Union, and Zeebrugge. In 2019, the waste shipment inspection team carried out 642 inspections of exports. Illegal shipments identified at Antwerp have included WEEE for Africa and plastic scrap to both Asian countries and Turkey. Other illegal shipments have ranged from ELVs and lead batteries to metal scrap for export. About 75% of illegal shipments came from outside Belgium, most from neighbouring EU member states. Moreover, some shipments classified as Belgian originated outside the country but were stored in Belgium before export. Inspectors found violations in about 35% of both Belgian and external shipments.

Personnel constraints have limited inspection of exports. The Flanders Region has 4.5 waste inspectors for the two ports (these inspectors also co-operate with federal maritime police on joint inspections and with federal customs for imports). The Port of Antwerp is open, meaning that vehicles are free to enter. Furthermore, competition with other EU ports leads to rapid processing of shipments to attract business. As a result, it is difficult to identify potentially illegal shipments.

About 95% of the violations identified are sanctioned with an administrative fine; the Flanders Region, however, has a backlog in processing these fines. The remaining cases are dealt with in criminal court. When companies in other EU member states are responsible for violations, Belgium needs to co-ordinate with those countries' authorities. In most cases, co-operation is good; it is weaker with some member states, including neighbouring France. Moreover, individuals rather than companies are listed as owners of some illegal shipments and tracing them has been difficult in cases.

Source: Country submission.

The three regions co-operate via a committee on waste shipment (Section 5.3.3), as well as informally. The regions work with inspectors in other EU member states via the EU Network for the Implementation and Enforcement of Environmental Law.

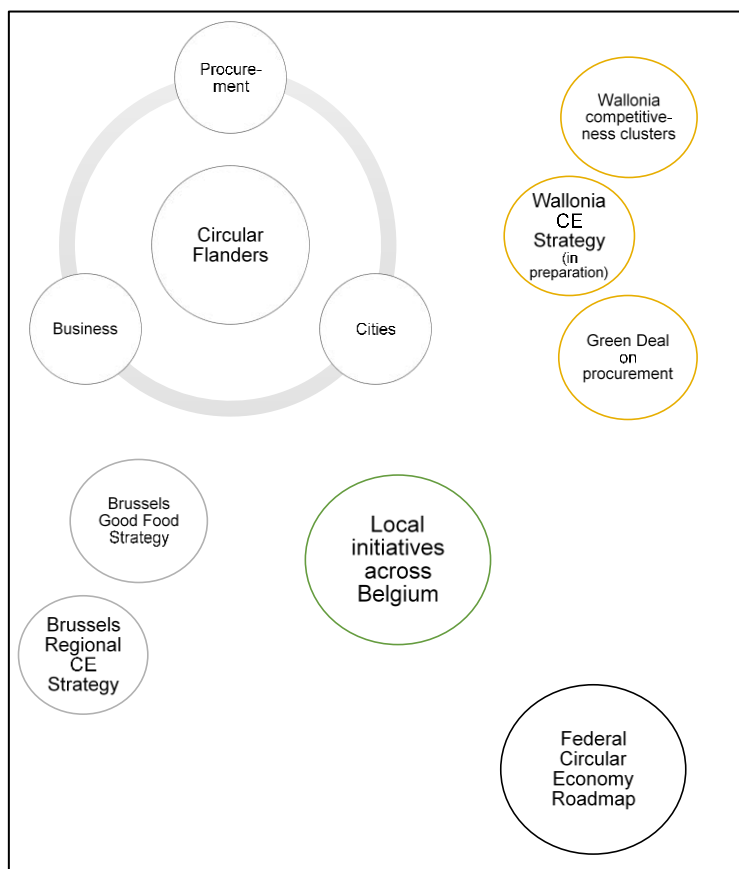
Consequently, while Belgium has made some progress in the enforcement of waste shipments, it has not fully implemented the recommendation of the 2007 Review in the area of waste exports via its ports. Further efforts are needed to match enforcement efforts with the level of illegal shipments.

## 5.5. Promoting the circular economy

### 5.5.1. Circular economy initiatives

All three regions, as well as the federal government, have launched a range of programmes and policies to support the transition to the circular economy (Figure 5.10).

**Figure 5.10. Belgium's different levels of government have launched a range of circular economy initiatives**



Source: Based on key initiatives discussed in the text.

The Brussels Regional Programme for a Circular Economy (BRPCE) builds on the region's 2025 strategy for the economy (Be Circular, 2016). This strategy, initiated in 2015, calls for a transformation of the linear economy into the circular economy. The programme has three concrete overall goals:

- Environment: transform environmental objectives into economic opportunities.
- Economy: encourage economic activities within Brussels boundaries to maximise resource circularity, while boosting entrepreneurship.
- Social: create new employment opportunities in Brussels.

The programme's 111 actions include regional financing for projects, advice to companies, support for employment in social enterprises and co-operation with sectoral organisations. The BCR has brought together 91 public and private organisations in partnership for its implementation.

By 2018, more than 200 enterprises, mainly in the building sector, had received technical advice on the circular economy. The programme had established strong co-operation among key actors in government bodies and the private sector but was dispersed across many activities. Moreover, the regional scale limited work. In response, the region introduced thematic co-ordinators in 2019 to provide a clearer focus. The update sought to strengthen synergies with other initiatives such as the region's Good Food Strategy (Section 5.5.4) and its work on urban renewal and the regional waste management plan. In 2020, Brussels started preparing a new economic plan for 2030, incorporating objectives of the BRPCE (country submission).

In Flanders, OVAM established the Flanders Materials Programme in 2011 with three main areas of action: a circular economy hub (Plan C) to develop a long-term vision; scientific research, led by the Policy Research Centre for Sustainable Materials Management; and a set of 45 projects involving public and private organisations. Of these projects, 10 were led by OVAM itself, 20 by industry associations and 15 by other bodies, including government departments, research organisations and an NGO. Key areas of focus were construction, bio-economy, plastics and critical materials (Ellen MacArthur Foundation, 2016). A review found the programme provided a “unique meeting place for policy makers, researchers and entrepreneurs” working on the circular economy, with high-level representation and a focus on short-term projects. In practice, however, engaging stakeholders beyond their core business and interests was difficult. While the programme carried out many actions, work was fragmented and results were not shared to develop common understanding (Courtois, 2017).

In 2017, Circular Flanders took over the work of the Materials Programme (Circular Flanders, 2019). Circular Flanders brings together regional government bodies – including OVAM, the Department of Environment and the Department of Economy, Science & Innovation – as well as universities, research organisations and industry associations. In 2017 and 2018, Circular Flanders undertook 200 circular economy actions; as of March 2019, 135 projects financed by this programme were underway (Vlaams Parlement, 2019).

Its first two-year workplan was structured around three strategic themes: circular procurement, circular cities and circular businesses (Circular Flanders, 2019). The centrepiece of work in the first area was the Green Deal Circular Purchasing project (Section 5.5.2). For circular cities, the programme researched urban material flows in a study that included the BCR. It also supported projects on the reuse of buildings to reduce new construction, as well as forums to exchange information (Section 5.5.2). The work on circular business has included funding for start-ups from a public investment company (Flemish Environmental Holding), work on eco-design at OVAM and promotion of “spearhead clusters”. These clusters bring together enterprises, research institutions and government bodies working on sectors including agri-food. In addition, OVAM has developed information technology (IT) tools for the circular economy (Box 5.8).

#### **Box 5.8. Flanders has developed IT tools to reduce waste and support circularity**

In Flanders, OVAM has developed a series of tools for companies to better manage their waste streams, including from manufacturing processes. These tools include three online platforms. Cirkeltips provides tailored feedback on waste and resources management (in Dutch). Ecolizer is an eco-design tool (in Dutch, English, French and German). Finally, Circulator provides information on circular strategies for the raw materials industry and on the potential reuse of materials (in English). By early 2020, 600 users had explored the Circulator tool in depth. An overview of the results of these tools, such as the business uptake of new methods, was not available.

Source: Country submission.

The Walloon Region has integrated the circular economy into its initiatives for economic development. For example, the region has set up competitiveness clusters to generate synergies in innovative projects, with the circular economy as a cross-cutting priority. Each cluster brings together companies, training centres and research bodies. Examples include metal recycling technology (NEXT Programme–Circular Economy), plastics circularity (PEPIT), marketability of products using spelt (Wallep), bio-based chemistry (Le Coq Vert). In July 2020, the Walloon government released a preliminary version of the regional strategy for the circular economy, Circular Wallonia. The strategy addresses key sectors, including construction, plastics, the food chain, transportation, water management, textiles and metallurgy.

The federal government's Circular Economy Roadmap (2016) covers 21 measures, focusing on product policy, where the federal government leads. These measures have included, among others, studies on opportunities for reusing government products and waste, on options to promote extended product lifecycles and on criteria for product repairability. The work also included new product guidance sheets for public purchases relating to circular economy, and social and ethical issues, among others (Section 5.5.2). Knowledge gained has supported EU-level discussions on circular economy and the work of the European Committee for Standardization. There have been some voluntary agreements with industry, for example, to end the use of microplastic beads in certain cosmetic products, reducing their impact in waste and as litter. An overview of the uptake of the studies and methodologies developed, however, is not available.

Several inter-regional and inter-departmental bodies support work on the circular economy. An inter-regional platform has exchanged information and established working groups on indicators, on requirements for recycled content in products, and on legal barriers to circular initiatives.

Other bodies have contributed to national policy development for the circular economy. The Federal Council for Sustainable Development, for example, has organised working groups on product norms, innovative economic models and strategies for sustainable development. It has also provided inputs to the Circular Economy Roadmap. In 2014, the Central Economic Council created a resource efficiency platform to encourage recycling and bring together authorities at regional and federal levels.

At local level, city governments have launched circular economy initiatives. Antwerp, for example, is developing a circular economy strategy and has focused on using artificial intelligence to identify actions in the energy and building sectors (OECD Working Party on Urban Policy, 2019). Mechelen has refurbished an old industrial site, De Potterij, for circular economy businesses. It also participates in an EU project, CECl, to support citizen involvement in the circular economy.

In sum, Belgium has undertaken a range of circular economy initiatives. Brussels and Flanders have been "pioneers" in this field (OECD Working Party on Urban Policy, 2019). Poor co-ordination across different levels of government and among the regions, however, has been a weakness. The recently created inter-regional platform provides an opportunity for greater communication and co-ordination (CCE, 2020). The federal government that took office in October 2020 has proposed to develop, together with the regions, a national action plan for the circular economy: this could strengthen co-ordination and also develop common, national policy goals in the key areas of the European Commission's new Circular Economy Action Plan. This initiative could consider targets, including for the reduction on material consumption and material footprint: a key challenge for the next phase of circular economy actions in Belgium will be to demonstrate results towards such long-term environmental targets.

### ***5.5.2. Public procurement for the circular economy***

Public procurement represents about 15% of Belgium's GDP, and thus could play a key role in promoting the circular economy. All three regions and the federal government have initiatives for green public procurement (Chapter 2). Between 2011 and 2016, almost one-fifth of more than 140 000 federal and region public procurement notices had environmental requirements. However, in any one year fewer than 10% referred to circular economy criteria (Grandia and Kruyen, 2017).

More recently, the three regions have developed actions to use public procurement as a stronger lever for the circular economy. In Flanders, a key initiative for both public and private procurement is the voluntary Green Deal on Circular Procurement (Box 5.9). The Walloon Region launched a Green Deal on Circular Procurement in 2019 based on the Flemish and Dutch models. By June 2020, over 150 public and private organisations had signed up to this voluntary agreement, which calls on each participant to undertake two new actions supporting circular procurement.

### Box 5.9. Flanders has promoted circular purchasing in both enterprises and government

The implementation of the Flanders Materials Programme identified a lack of attention to circular criteria in public procurement as an obstacle. Its follow-up, Circular Flanders, launched a Green Deal Circular Purchasing Project in 2017. This brought together 101 procuring organisations (including government bodies and businesses) plus 52 “facilitators” to support the work, such as business federations. Each participating organisation pledged to undertake two circular purchasing projects that reduce materials, extend the life of products and promote their reusability and recyclability.

By 2019, 115 projects were underway with 165 participants. Circular Flanders can finance up to half of project costs. In 2017 and 2018, Circular Flanders financed 15 of 27 projects that requested funding. A review of this and other Green Deals in Flanders found strong collaborations among participants; however, an overview of outcomes in terms of project results or overall material reduction was not available.

Sources: Ellen MacArthur Foundation (2016); VPO (2019).

These initiatives provide a basis for further work. There is significant scope across levels of government in Belgium to implement circular public procurement, including via further awareness raising and training for procurement officers. The programme of the new federal government (October 2020) addresses this opportunity, as it calls for integrating circular economy principles throughout public procurement.

#### **5.5.3. Promoting the circular economy in the construction sector**

Construction and demolition waste represents over one-third of all waste in Belgium (Section 5.2.2). While a high share is recovered (95% in 2016 for Belgium as a whole), most construction and demolition waste is recycled as low-value products. Stony waste, for example, is used to make aggregate for road foundations. All three regions have addressed construction and demolition waste in their circular economy programmes. Their targeted initiatives seek to reduce this waste stream and promote greater reuse and higher value recycling.

In Brussels, the dense building stock and urban infrastructure networks makes construction and demolition waste management more difficult. Most construction and demolition activity occurs on small parcels, often via the renovation of existing buildings. However, public works are also an important waste source. Most waste is sorted on site. About 90% of the region’s construction and demolition waste is recycled, with around 80% of this used in road foundations (Brussels Environment, 2017).

The region’s 2018 Waste-Resources Plan identifies the construction sector as a key area for the transition to the circular economy. Among its main action points are extending the lifespan of buildings; developing eco-design to make buildings adaptable; and encouraging practices of selective deconstruction, reuse and recycling. Other initiatives include a regional platform for the reuse of building elements. This brings together actors involved in construction, facilitates exchange of information, organises working groups and raises awareness. It also provides information on offers and requests for reusing construction materials. In addition, the region has provided support for construction enterprises that adopt circular practices (Brussels Environment, 2017). The region, together with stakeholders, prepared a roadmap that was launched in 2019. It calls for further voluntary measures to 2025 and introduction of regulations on waste recycling and reuse for the public sector buildings in 2030 and for private buildings in 2040 (Be Circular, 2019).

In Flanders, a 2014-20 programme for the construction sector sets out several ambitions. It seeks to minimise use of primary materials; use materials efficiently; eliminate or reduce dangerous substances;

lower building footprints; and promote more modular and adaptable construction. In 2014-16, the action plan for this programme included the preparation of a framework for monitoring demolition, developed by OVAM and the Flemish Confederation for Construction. A pre-demolition audit became part of the application for a building permit.

The second action plan (2017-18) launched a web-based calculation tool for the environmental impact of materials called TOTEM ([www.totem-building.be](http://www.totem-building.be)). This tool, developed with programmes in Brussels and Wallonia, is intended to help architects, designers and builders choose materials with lower resource impacts (OECD Working Party on Urban Policy, 2019). The tool, which counts over 3 000 registered users, is being refined to improve the precision of results and broaden coverage of materials. Additionally, an initiative called TWOL has proposed 24 “Design for change” guidelines and developed a catalogue of circular construction elements for architects.

The third action plan (2019-20) was integrated with the Circular Building initiative under the Circular Flanders Programme. This included an agreement on a Green Deal on Circular Construction in 2019. It will be implemented through early 2023 by manufacturers, architects, property developers, building federations and government bodies, among others. A “living lab” will support projects. The Flemish Environmental Holding has provided finance. In addition, the Flemish Agency for Innovation and Entrepreneurship has supported circular economy activities, starting with six projects for clusters that bring together private companies, research institutes and government bodies.

These policy initiatives appear to have yielded some results. The recovery of construction and demolition waste in Flanders increased slightly, from 96.4% to 96.9% over 2010-16. Production of aggregates from the stony fraction of demolition waste has increased further. However, there has been limited progress in terms of waste streams such as sheet glass, gypsum and cellular concrete, which are not as easily recycled. However, use of alternatives for primary materials in construction rose by 22% between 2010 and 2015. Meanwhile, landfilling of inert waste fell by 88% between 2012 and 2018 (OVAM, 2020).

The Walloon Region’s 2018 Waste and Resources Plan calls for more recycling of construction and demolition waste and awareness raising of sustainable practices for the construction sector. Its actions include, among others, measures for the sorting of construction and demolition waste and its traceability, and guidelines for professionals, as well as digital tools to promote waste reduction and waste reuse (Wallonia Environment, 2018a). Within the region’s Development Plan (2015-16), an Employment-Environment Alliance includes objectives for construction and actions to promote reuse and recycling of construction materials (SPW, 2020).

Like other OECD member countries, Belgium faces challenges to improve higher value recycling and reuse of construction and demolition waste. Regular evaluation of initiatives underway together with exchanges across Belgium and within the European Union and OECD would help identify and disseminate successful approaches.

#### **5.5.4. Reducing food waste and food loss**

Food loss and food waste are a concern for all three regions. The Brussels regional government estimated in 2015 that households, food service providers, markets and food wholesalers discarded about 134 000 tonnes of food each year. Moreover, most of this food waste could still have been used (Fermault, 2015). In Flanders, households throw away 88 kg of food each year, representing about 8% of their food purchases and equivalent to 140 kg of carbon dioxide emissions per household (Flanders Government, 2018).

The three regions have encouraged the separate collection of food waste. In the early 1990s, Flanders began promoting home composting for fruit, vegetable and garden waste; by 2015, about half of the population was engaged in composting (Merta and Vuorinen, 2016). All municipalities collect garden waste and many also separately collect fruit and vegetable food waste. As a result of these measures, bio-waste

in household residual waste fell by 80% between 1995-96 and 2013-14 (OVAM, 2020). Businesses have been required to separate garden waste and used cooking oils.

All three regions have established ambitious programmes to reduce food waste overall and to further increase its separate collection. Moreover, they support the achievement of target 12.3 of the Sustainable Development Goals, to cut retail and consumer food waste by half and reduce food losses along production and supply chains.

In its Good Food Strategy (2016), the BCR set targets to reduce food waste by 30% overall and by 40% from households and in public canteens by 2020 (Fermault, 2015). Through voluntary agreements under the strategy, distribution of unsold food from supermarkets to food aid operators nearly tripled over 2015-18 – from 4 000 tonnes to almost 12 000 tonnes (country submission). Moreover, more than 100 jobs were created under the strategy. The enVie project, for example, uses fresh vegetables that are not accepted for wholesale distribution to prepare soups for sale in local supermarkets. The project hires long-term unemployed.

The Good Food Strategy also calls for producing locally 30% of the fruits and vegetables consumed in the region by 2035. The strategy has promoted local food production; about 1 000 citizens participated in 50 projects. The BCR acknowledges its local production target is ambitious given its highly urbanised character. Mostly small plots are available, although the target also permits fruit and vegetables produced nearby (e.g. in Flanders). A mid-term review of the strategy found the plan's high ambitions were not matched by resources; gaps were seen in the integration across the region's administrative departments and in co-ordination among projects launched (Brussels Environment, 2019). Based on preliminary estimates, moreover, household food waste has not changed significantly.

Flanders has continued to expand separate collection of food waste: from 2019, animal by-products could be collected along with fruit and vegetable waste. From 2021, restaurants, as well as institutions such as schools, hospitals and prisons, will have to separate their food waste. Flanders will seek to extend the collection of bio-waste to all sectors by the end of 2023. The region is also considering a shift from the use of bags for food waste to reusable containers, which seem to have greater household acceptance.

The region's Food Supply Chain Roadmap on Food Loss 2020, published in 2015, seeks to reduce food loss in regional supply chains from farms to final consumers. Specifically, it aims to reduce the approximately 3.5 million tonnes of food wasted in 2015 by 15% by 2020 and by 30% by 2030. Actions include reducing food loss on farms, ensuring that fruit and vegetables below cosmetic standards are not discarded, and increasing unsold food distributed to vulnerable groups. Data collected in 2017 did not provide clear indications on trends, partly because methodologies had changed since 2015. Difficulties were found in co-operation with stakeholders and in reproducing good practice examples (Vlaams Ketenplatform Voedselverlies, 2017). A new study was scheduled for 2021, while a new action plan covering 2021-25 was under development.

In Wallonia, 150 of 262 municipalities separated collection of food waste by 2015. Since 2014, large food retailers (greater than 2 500 m<sup>2</sup> surface area) have had to establish plans to manage their unsold food. Wallonia's Sustainable Food Strategy, adopted in 2015, addresses food loss and food waste among its actions. It seeks to raise awareness; engage stakeholders; act, support and train actors; measure progress; and acquire better knowledge. The Plan REGAL for the reduction of food loss and food waste has implemented many of these actions. The plan sets a target to reduce food waste by 30% in Wallonia across the supply chain between 2015-25. The plan was updated in 2018, maintaining the 30% reduction target. The updated plan reports that farmers, food industry enterprises, restaurants and canteens had started actions in 2015; it sets out further actions to achieve the 30% target, including initiatives to raise awareness, engage stakeholders, support activities and measure results (Wallonia Environment, 2018b). Moreover, the 5<sup>th</sup> Walloon Plan for Waste-Resources (2018) identifies food waste and food loss as a key area for attention. It sets further goals to extend the separate collection of household food waste to all

municipalities, nearly doubling amounts collected from 2013 to 2020, as well as increasing home composting (Wallonia Environment, 2018a).

A recent study estimated a 19% reduction in household food waste in 2017 and 2018 compared to levels in 2009 and 2010. An assessment of progress towards the 2025 reduction target for the whole supply chain was, however, not available (Wallonia Environment, 2019).

In sum, all three regions have made progress in increasing the separate collection of food waste. Other results include increasing the collection and distribution of unsold food from retailers. The BCR encountered difficulties, however, in reducing household food waste. Across all three regions, further progress will contribute to achieving the sustainable development goal in this area as well as EU and regional goals. While the three regions are at different stages, further awareness-raising efforts and greater separate collection of food waste, including from retailers, restaurants and other enterprises, will be valuable. The regions should pay attention to reducing waste and loss along food production and distribution chains. Further regional co-operation will be valuable as these chains are intertwined among the three regions.

### **5.5.5. Supporting social enterprises**

All three regions have promoted citizen groups and social enterprises in their circular economy initiatives, in particular to help reach their objectives for the reuse of municipal waste (Table 5.1).

The Resource Reuse Observatory is a network of 61 social enterprises for waste reuse, recovery and upcycling in Brussels and Wallonia. These include second-hand shops, repair points and sorting centres. Members contributed to the collection of 165 400 tonnes of material in 2018 (double the amount in 2005), of which 28% was reused and 62% recycled (Ressources, 2020). Quality schemes seek to encourage consumers to trust refurbished articles: electroRev provides a label and a one-year warranty for refurbished household electronics; and Rec'up, an enterprise standard, had been granted to 21 social enterprises working at 44 sites.

The Flemish government set up a supporting facility for social economy enterprises, including management advice, support for innovative projects and tailored financing. Many of these enterprises work on circular economy initiatives. For example, social enterprises play an important role in maintaining the extensive network of second-hand shops and in managing “toy libraries” that lend to children. About 24 000 people have such “sustainable jobs” in Flanders (Flanders Government, 2020b).

These initiatives have had a small but positive impact on employment. For example, the Brussels Good Food Strategy supported the creation of 100 new jobs between 2015 and 2018 (Brussels Environment, 2019). New social enterprises for waste recycling and reuse in Brussels and Wallonia employed 2 050 people (full-time equivalent) in 2018, double the number in 2004 (Ressources, 2020). One concern, however, is that many social initiatives remain dependent on direct government support.

### **5.5.6. Monitoring and assessing circular economy results**

Many of the circular economy indicators used so far in Belgium have focused on programme results. For example, the BRPCE contains 15 proposed indicators to monitor its results. These indicators focus on actions undertaken, such as the number of enterprises receiving financial support, unemployed persons trained and legislative barriers reformed. Indicators on underlying waste and resource trends are not included (BRC, 2016).

More recent work has looked at broader economic indicators. Under Circular Flanders, OVAM and the Flemish Circular Economy Policy Research Centre (CE Centre) are developing a monitoring approach for the transition to the circular economy (Circular Flanders, 2020). It has structured indicators of waste levels and materials consumption along four key societal needs: housing, nutrition, consumer goods and mobility;



a report using the initial set of indicators was published in June 2020 (OVAM, 2020). This approach thus focuses on the consumption rather than the production side of the circular economy. In this way, it is oriented to the region's open economy with a high level of imports of products and materials. The CE Centre was preparing a full monitoring study on the circular economy progress for 2021. The Flanders Region was also working on methods and statistics to assess interactions between circular economy actions and climate change impacts. In addition, it was studying ways to measure the loss of materials from the economy via landfilling and incineration and to strengthen tracking of waste exports.

At national level, the Intra-Belgian Circular Economy Platform has a working group on indicators to establish a common understanding of the circular economy. It is identifying indicators to assess progress and identify data and information available from different institutions to populate these indicators. The first set of proposed indicators was to be finalised by the end of 2021 (country submission). The platform has thus started information exchange and common work on indicators. To that end, it will be valuable to harmonise key indicators for the circular economy, taking into account work on indicators underway at EU level for the new Circular Economy Action Plan.

Indicators can support further evaluation of circular economy initiatives. Belgium has undertaken pioneering work for the transition to a circular economy, and evaluations of recent initiatives, also drawing on indicator work, can strengthen further actions within the country. Moreover, such evaluations will be valuable for other OECD member countries: the OECD Working Party on Resource Productivity and Waste and the OECD Roundtable on the Circular Economy in Cities and Regions provide forums for sharing such information. A key challenge for Belgium will be to build on the initiatives undertaken so far and show long-term results in terms of material consumption and footprints.

## Recommendations on waste, materials management and the circular economy

### Policy instruments

- Increase regional incineration taxes to create further incentives for waste recycling.
- Continue efforts to increase separate collection and recycling of household waste, particularly in Brussels and Wallonia. Follow through with plans in all three regions to increase the separate collection of food waste, and increase stakeholder engagement and public awareness raising to reduce food loss and food waste.
- Strengthen measures to reduce the number of end-of-life vehicles dismantled outside the extended producer responsibility scheme, for example by improving the traceability of motor vehicles, strengthening public awareness and government enforcement in this area and introducing economic incentives.
- Strengthen inspection and enforcement of waste exports, in particular at the Port of Antwerp, to address the level of illegal shipments.
- Explore opportunities across government levels to broaden the mix of regulatory and economic instruments for moving further up the waste hierarchy and for promoting the transition to a circular economy, including taxes on raw materials and differential value-added tax rates for recycled and reused materials. Take further steps to integrate circular economy criteria into green public procurement standards and to promote their use across all levels of government.

### Planning and co-ordination

- Strengthen regional co-ordination on common challenges for extended producer responsibility schemes.
- Strengthen co-ordination on waste and circular economy policies, and knowledge sharing in challenging areas such as the reuse of construction and demolition waste. Develop common national policy goals for the circular economy in the national action plan in preparation, in key areas of the EU's 2020 Circular Economy Action Plan. Consider setting headline targets for the reductions in material consumption and footprints.

### Monitoring and assessment

- Continue to improve the comparability of data on waste management and the circular economy across regions to support performance assessment. Further develop monitoring and analysis of materials and circular economy trends across Belgium. Carry out regular evaluations of the outcomes and costs of circular policy initiatives to identify the most effective approaches and the lessons learnt, to further improve actions within Belgium and to inform initiatives in other OECD member countries, including via the OECD Working Party on Resource Productivity and Waste and the OECD Roundtable on the Circular Economy in Cities and Regions.

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## Notes

<sup>1</sup> This refers to the amount of materials directly used in an economy, or the apparent consumption of materials. DMC is computed as domestic extraction used plus imports (i.e. material inputs) minus exports.

<sup>2</sup> The company sold part of its fleet and invested in new vessels. As a result, imports of metal-based products increased and exports increased even more (FPB, 2019).

<sup>3</sup> Material productivity designates the amount of GDP generated per unit of materials used (GDP/DMC). A rise in material productivity is equivalent to a decline in material intensity (DMC/GDP).

<sup>4</sup> This measure, material footprint per capita, refers to raw materials extracted globally to meet the final demand of the economy, including materials processed abroad for intermediate and final products.

<sup>5</sup> Risk assessment is carried out based on regional guidelines: the *Code Wallon de Bonnes Pratiques* and the *Compendium Wallon pour l'Echantillonnage et l'Analyse*.



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