Country profile

Early warning assessment related to the 2025 targets for municipal waste and packaging waste

Hungary

June 2022

European Environment Agency

Contents

Acknowledgements

This draft assessment was prepared by the ETC/WMGE and the successive ETC/CE under guidance of the European Environment Agency and with inputs from a consortium led by Rambøll Group under contract with the European Commission. It builds to a large extent on the answers provided by the Hungarian Ministry for Innovation and Technology in April 2021 to a questionnaire developed by the EEA and ETC/WMGE. The EEA and ETC/CE would like to thank the Hungarian authorities for the information provided as well as for the kind review of drafts of this assessment in 2021 and April 2022.

1 Introduction

1.1 Background and purpose

The Waste Framework Directive 2008/98/EC (as amended by Directive (EU) 2018/851) includes a target to recycle and prepare for reuse, by 2025, 55 % of municipal waste generated. The Packaging and Packaging Waste Directive (94/62/EC as amended by Directive (EU) 2018/852) includes targets for the recycling of packaging waste, both in total and by material, to be achieved by 2025. The Landfill Directive (1999/31/EC as amended by Directive (EU) 2018/850) requires to limit the landfilling of municipal waste to 10 % of the generated municipal waste by 2035. The Directives also foresee that the European Commission, in cooperation with the European Environment Agency, publishes early warning reports on the Member States' progress towards the attainment of the targets, including a list of Member States at risk of not attaining the targets within the respective deadlines, three years ahead of the target dates. This assessment is a contribution from the EEA to the early warning reports according to Article 11b Waste Framework Directive and Art. 6b Packaging and Packaging Waste directive.

This document is an early warning assessment for Hungary. The document is based on the analysis of a number of factors affecting recycling performance (success and risk factors). The assessment aims at concluding whether Hungary is at risk of missing the targets for municipal waste and packaging waste set in EU legislation for 2025. In addition, it provides a preliminary assessment of the prospects for meeting the 2035 target for landfilling of municipal waste.

The assessment takes into account information that was available before 10 May 2022.

1.2 Approach

The assessment follows a methodology developed by the EEA and ETC/WMGE and consulted with the Eionet in 2020 (ETC/WMGE, 2021), which was adjusted in 2021 taking into account experiences with applying the methodology in 2021 (ETC/CE & ETC/WMGE, 2022). This methodology uses a set of quantitative and qualitative success and risk factors that have been identified to affect the recycling performance. The assessment is to a large extent based on the information provided by the Member State in the reply to an EEA-ETC/WMGE questionnaire as well as on available data and information from Eurostat and other relevant sources. In addition, a consortium under contract with the European Commission (led by Rambøll Group) has conducted a critical review of the draft assessment in Q4/2021 and provided further information.

More specifically, chapter 2.1 assesses the likelihood for Hungary to achieve the target to prepare for reuse and recycle at least 55 % of municipal solid waste (MSW) for 2025. Chapter 2.2 assesses the likelihood for Hungary to achieve the overall packaging waste and specific packaging materials' recycling targets for 2025. Chapter 2.3 examines the prospects for Hungary to landfill less than 10 % of the generated municipal solid waste by 2035. The official early warning assessment for the landfilling target is only due in 2032 and accordingly, the assessment contained in Chapter 2.3 is only preliminary.

1.3 Member State profile – context parameters

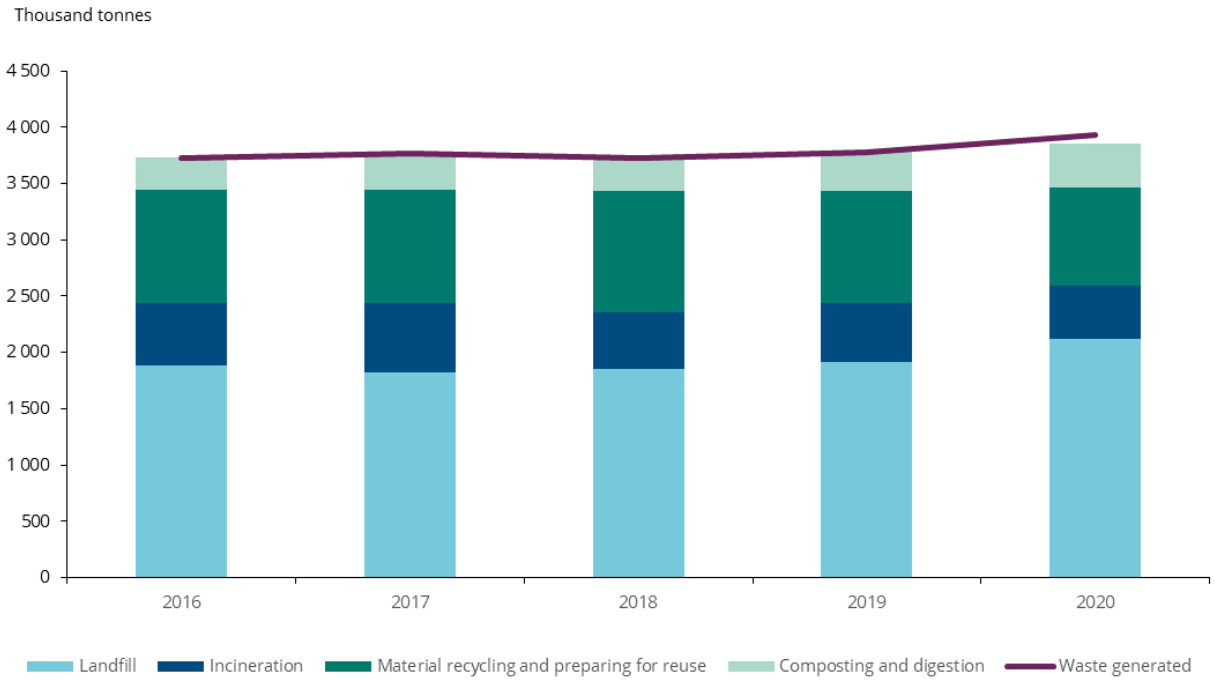
Municipal waste generation and treatment

Hungary generated nearly 3.8 million tonnes of municipal waste annually in the period 2016 – 2019 and increased to 3.9 million tonnes in 2020 (Figure 1.1). This corresponds to 403 kg/cap in 2020, which is well below the (estimated) EU average of 505 kg/cap. The country relies strongly on landfilling; its share has remained around 50 % during the period 2016 – 2019, increasing to 54.0 % in 2020. In addition, the shares of other treatment methods have remained constant during the period 2016 – 2019. In 2020 however we see some changes with 11.9 % of the waste being energetically recovered, 22.2 % recycled as material, and 9.8 % composted or digested (Eurostat, 2022a). The share of composting/digestion refers to the amount of recycled green (garden) waste (Ministry for Innovation and Technology, 2021). In 2016, 2018 and 2019, Hungary treated more waste than it generated in the same year, whereas in 2017 and 2020 the situation was opposite. However, the annual difference between treated and generated waste is small. The differences between generated and treated amounts could result from temporary storage or losses (e.g. evaporation, gas production) during the pre-treatment processes (Hungarian Central Statistical Office, 2020). In addition, waste imports and exports may also have an effect on the treated amounts (Ministry for Innovation and Technology, 2021).

According to OECD (2018), Hungary has one municipal waste incineration plant with energy recovery located in Budapest, with an annual capacity of 420 000 tonnes of municipal waste. Additional capacity, including regional incineration plants, is however under consideration in Hungary to be able to decrease landfilling by 2030. In addition, Hungary has several mechanical-biological treatment (MBT) facilities. In 2019, there were 28 plants with an annual capacity of almost 1.7 million tonnes (Ministry for Innovation and Technology, 2022). The available capacity for treating residual municipal waste thus amounts to 2.12 million tonnes, more than half of the municipal waste generated. This capacity represents a slight overcapacity compared to the amount of residual municipal waste to be treated in the future.

Municipal waste generation data in Hungary are based on electronic data transmission. The amount of waste generated refers to the amount of MSW collected, and the data are provided by the public service companies. The reported municipal waste data do not include packaging waste from households and similar sources (i.e. codes under category 15 in List of Waste) (Hungarian Central Statistical Office, 2020).

Figure 1.1 Municipal waste generation and treatment in Hungary 2016 and 2020, in thousand tonnes



Source: Eurostat (2022a)

Legal Framework

The Hungarian waste legislation follows mostly the EU waste legislation. The legislative framework regulating public waste management service in Hungary is very broad (NHKV, 2022).

The most relevant regulation for this assessment concerning waste and packaging are:

- Act. No. CLXXXV of 2012 on Waste (Amended in 2021) (Government of Hungary, 2021a);
- Act No. LXXXV of 2011 on Environmental Product Fee (Government of Hungary, 2011);
- Government Decree No. 124/2021 (III.12.) on the designation of the waste management authority (Government of Hungary, 2016);
- Government Decree No. 69/2016 (III.31.) on the designation, scope of duties, method of data management and detailed rules of data provision obligations of an organisation established for the performance of a public waste management public task (Government of Hungary, 2016);
- Government Decree No. 271/2001. (XII. 21.) on the amount of the waste management fine and the method of imposing and setting it (Government of Hungary, 2001);
- Government Decree 439/2012 (XII. 29.) on the registration and official licensing of waste management activities (Government of Hungary, 2012);
- Government Decree No. 385/2014 (XII. 31.) on the conditions for the provision of public waste management services (Government of Hungary, 2014);
- Government Decree 442/2012. (XII. 29.) on packaging and waste management activities related to packaging waste (Amended in 2021) (Government of Hungary, 2021b).

Major waste sector reforms have been implemented in Hungary in the past years. Since 2016, a state-controlled company National Waste Management Coordination and Asset Management Company Plc. (NHKV Plc.) has been coordinating local level waste services and supervising their delivery. The duties of NHKV are further described in Section 2.1.2. In 2013, Hungary adopted a

National Waste Management Plan (NWMP) for 2014-2020, but the plan has been under revision since 2017. In addition, National Waste Management Service Plans complement the NWMP for waste streams that are dealt with by public service providers. The minimum standards for service providers were introduced in the 2017 version of the plan: obligations for public service providers include e.g. minimum collection frequencies for residual waste, green waste and separately collected packaging, separate collection of green waste from apartment blocks of flats, and requirements for pre-treatment of several waste types (EC, 2018a; EC, 2019b). However, door-to-door separate collection of all recyclables is not required in the minimum service standards (NHKV Plc., 2016b). The minimum recycling targets to be met by service operators are also defined in the Plan (EC, 2018a). In addition, the share of pre-treated municipal waste deposited to landfills shall not exceed 55 % of the total amount of waste landfilled. The introduction of the new service standards has decreased the amount of Hungary's waste service delivery companies from around 140 to 25. In addition, carrying out waste collection services is allowed only to a company of which at least 51 % is owned by the state or a municipality. These measures, as well as the development of the state company, have decreased the role of the private service operators in Hungary. (EC, 2018a; EC, 2019b)

Hungary has set a service fee to cover the costs resulting from the waste collection. The service providers receive an extra payment when exceeding the minimum standards, and on the contrary, their fee is reduced if they cannot achieve the standards set. However, the separate collection of dry recyclables exceeding the minimum standards seem to result only to around 20 % increase in income from fees. Lower income than the standard fees results e.g. from missed collections, or other deviations (that are not clearly defined in the Plan) from the minimum standards (EC, 2018a; EC, 2019b).

The new National Waste Management Public Service Plan in which the minimum standards are laid down is adopted and published by the ITM Ministerial Decree 1/2022. (I. 7.) on the National Public Waste Management Plan 2022.

The new system is still being put into operation at local level (EC, 2018a, 2019b), and the abovementioned changes have not yet reflected the waste treatment data, as can be seen in Figure 1.1. The EC assumes that the targets for service providers do not probably provide an adequate incentive to increased door-to-door collection or recycling rates. The EC even forecasts that recycling in Hungary is likely to decrease in the future due to lack of financial incentives (e.g. PAYT scheme) or restrictions on the convenience of residual waste collection (EC, 2018a; EC, 2019b).

According to the Ministry for Innovation and Technology (2021), in the Climate and Nature Protection Action Plan published in February 2020, the government set a goal to achieve a clean, waste-free environment. A renewal of the waste management system was prepared by the government to increase the efficiency of the performance of public service tasks in parallel to the transition of the circular economy (CE) requirements laid down in the EU directives. The amended waste legislation adopted in February 2021 is established to implement the CE principles, to transpose obligations for waste management, and to renew the waste management sector. In addition, penalties for illegal dumping are reinforced. The legislation creates a new concession model for waste management coordination and management. To be able to ensure the environmental protection at the constitutional level and to enhance the performance of public service tasks, Hungary aims to carry out a certain waste management activity by concession of private operators. The establishment of the concession right means that the subject of the concession (the public service and institutional waste management) is a public task of the state and

its exclusive economic activity. The amended legislation includes the following Acts and Decrees (Ministry for Innovation and Technology, 2021):

- Act II of 2021 on the Amendment of Certain Energy and Waste Management Acts;
- Government Decree 124/2021 (III. 12.) on the designation of the waste management authority;
- Government Decree 158/2021 (III. 31.) amending certain government decrees to transpose certain provisions of the circular economy directive package into regulations;
- ITM Decree 16/2021 (IV. 9.) amending certain ministerial decrees as necessary to ensure the transition to the circular economy.

Waste management plan(s)

The National Waste Management Plan (NWMP) 2021-2027 (Országos Hulladékgazdálkodási Terv 2021-2027) prepared by the Hungarian Ministry for Innovation and Technology was adopted with Government Decision 1704/2021 in October 2021 (Innovációs és Technológiai Minisztérium, 2022). The NWMP refers to the entire territory of the Republic of Hungary and will be reviewed every two years. No regional plans are available for the period 2021-2027.

The NWMP covers all waste streams with dedicated chapters on targeted waste streams. The medium-term strategic objective of the NWMP is to make the Hungarian waste management sector a model of the circular economy in Europe. To increase Hungary's competitiveness, it is aimed to encourage innovation and developing new systems for quality waste collection and processing, while ensuring a high level of environmental protection through progressing towards prevention, re-use and recycling. The plan includes an action programme with objectives, measures and indicators, both general and specific per waste stream. As regards separate collection of municipal waste, the NWMP includes several measures to be implemented to improve it, such as the establishment of separate collection systems for biodegradable waste and household hazardous waste by 2023, the implementation of a deposit return system for certain packaging and the extension of the range of accepted packaging waste.

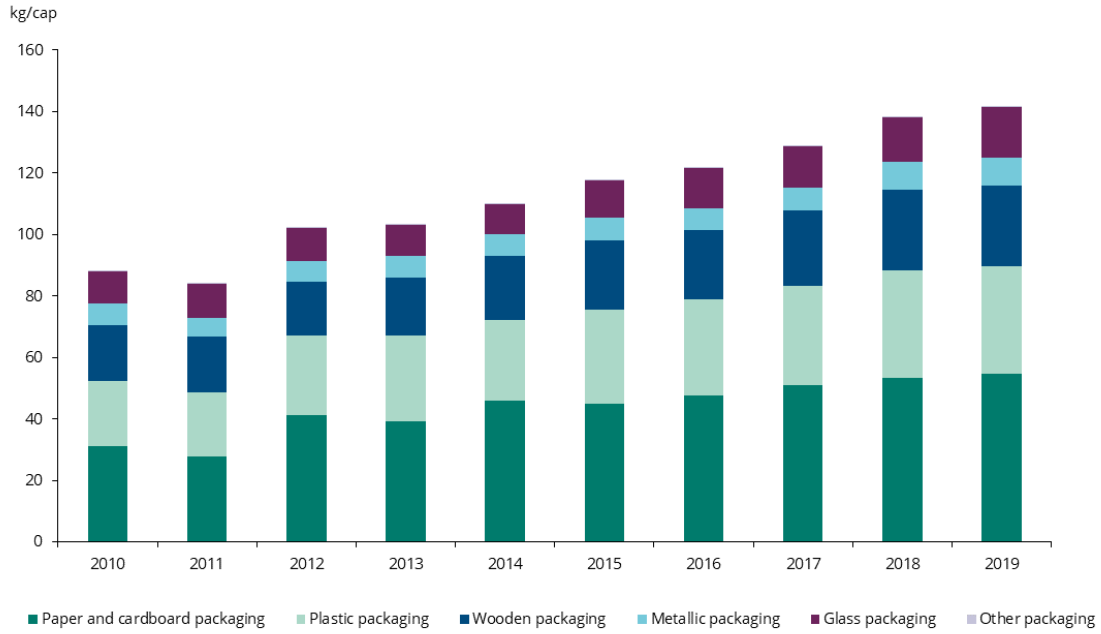
Implementation of previous early warning recommendations

Hungary had been considered of being at risk of missing the 2020 target of 50 % preparation for re-use / recycling for municipal waste by the European Commission (EC, 2018b), and it received a set of policy recommendations (EC, 2018a). Annex 1 lists the recommendations and a self-assessment of Hungary on the status of taking them into account.

Packaging waste generation and treatment

In Hungary, 1.39 million tonnes (142 kg/cap) of packaging waste were generated in 2018 (Figure 1.2), which is below the EU average of 177 kg/cap. Packaging waste generation per capita has increased by more than 60 % since 2010. The waste generation in different packaging waste categories has also increased between 2010 and 2019; for paper and cardboard packaging from 31 kg/cap to 55 kg/cap, for plastic packaging from 21 kg/cap to 35 kg/cap, for wooden packaging from 18 kg/cap to 26 kg/cap and for metallic packaging from 7 to 9 kg/cap. In addition, the amount of glass packaging waste increased from 10 kg/cap in 2010 to 17 kg/cap 2019. The overall recycling rate for packaging waste remained rather stable at 50 % in Hungary between 2015 and 2017, but in 2018 the recycling rate decreased by 3.6 percentage points to 46.1 % and has only increased to 47.3 % in 2019 (Eurostat, 2022b).

Figure 1.2 Packaging waste generation in Hungary between 2010 and 2019, in kg per capita



Source: Eurostat (2022b)

Capture rates for recyclables

The capture rate is a good performance indicator of the effectiveness of the separate collection system. The capture rate is calculated by dividing the separately collected weight of a certain material for recycling by the weight of the material in total municipal waste. For Hungary, the calculated capture rates for different waste fractions in 2018 are presented in Table 1.1.

Table 1.1 Capture rates for different waste fractions in Hungary

	Residual waste composition (%)([b])	Residual waste composition (tonnes)([a])	Separately collected amounts (tonnes)([b])	Materials in total MSW (tonnes)	Capture rates (%)
Reference year	2018	2018	2018		
Mixed municipal waste, total		2 400 000			
Paper and cardboard	12.66 %	303 840	90 000	393 840	23 %
Metals	3.33 %	79 920	44 000	123 920	36 %
Glass	3.8 %	91 200	71 000	162 200	44 %
Plastic	14.99 %	359 760	50 000	409 760	12 %
Bio-waste	17.15 %	411 600([b])	360 000([a])	771 600([b])	47 %
Textiles	3.52 %	84 480	7 265	91 745	8 %
Wood	-	-	-	-	-

([a]) Note: Share of material in residual waste (household waste only) multiplied with the amount of residual waste in 2018 as reported in the questionnaire by Ministry for Innovation and Technology (2021). Separately collected bio-waste refers to garden waste only.

([b]) Source: As reported in the EEA-ETC/WMGE questionnaire by Ministry for Innovation and Technology (2021) and additionally in (2022)

This indicates that there is room for improvement to capture higher amounts of all generated recyclables.

2 Success and risk factors likely to influence future performance

2.1 Target for preparing for reuse and recycling of municipal waste

This chapter aims at assessing the prospects of Hungary to achieve the **55 % preparing for reuse and recycling target** for municipal waste in 2025. For a detailed description of the methodology followed, the development of success/risk factors and their impact on recycling, please consult the methodology report (ETC/CE & ETC/WMGE, 2022).

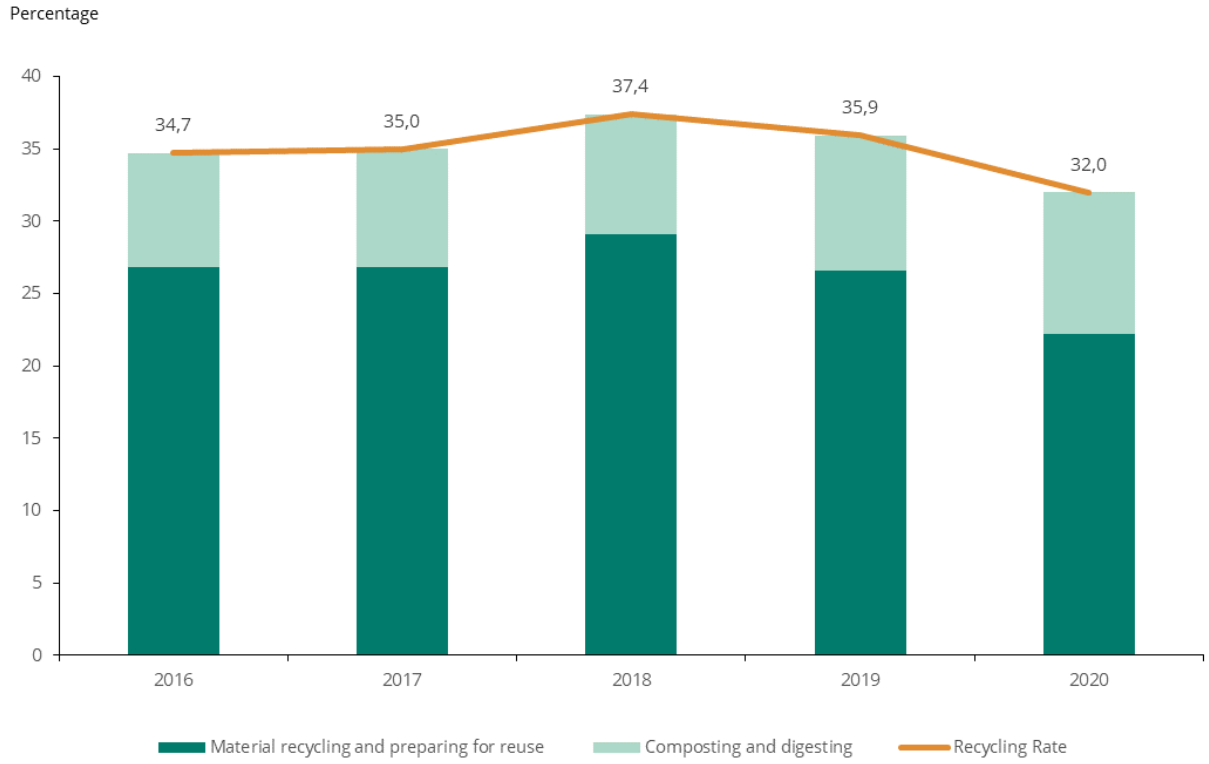
2.1.1 Current situation and past trends

SRF MSWR-1.1: Distance to target

The overall recycling rate of Hungary has decreased from 34.7 % in 2016 to 32.0 % in 2020 (Figure 2.1).

In this analysis the recycling rate is calculated by dividing the summed amounts of recycling of materials and of composting and digestion by the total generated amounts. The data source used is the Eurostat data set *Municipal waste by waste management operations [env_wasmun]* (following the OECD/Eurostat Joint Questionnaire); Data reported by Member States according to Article 10.2(a) of the Waste Framework Directive are not used for this assessment as the reporting methods differ by Member State, resulting in a lack of comparability between Member States. The data source used here is assumed to be the best available proxy, given that data in accordance with the rules on the calculation of the attainment of the targets as defined in Article 11a are not yet available.

Figure 2.1 Recycling rate in Hungary between 2016 and 2020, in percentage



Source: Eurostat (2022a).

The actual distance to the target for the most recent data point is a key factor determining the likelihood of meeting/not meeting the target. The closer the Member State is to the target already, the more likely it becomes that the target will be met. For Hungary, the recycling rate is 32 % in 2020, which is 23 percentage points below the 2025 target of 55 %. Meeting the target will require an average increase of more than four percentage points annually in the period between 2020 and 2025, requiring a significant stepping up in pace compared to the development in the previous five year period (2016-2020).

However, the data used for this analysis are based on a different methodology than the calculation rules for the target. The impact of the application of the new calculation rules to the recycling rate has not been quantified yet in Hungary. A few Member States have provided quantified estimates indicating how the application of the new reporting rules would influence the recycling rate (compared to the data reported to Eurostat under the Joint Eurostat/OECD questionnaire), resulting in reductions between 3.8 and 13 percentage points, and on average 5.5-6.7 percentage points. While the effect depends on how Hungary currently reports the data, an effect of a reduction with 5 percentage points is therefore assumed for this assessment. However, this will not result in a lower assessment for this SRF.

Summary result

Distance to target > 15 percentage points	Based on currently available data, Hungary's recycling rate was 32 % in 2020, 23 percentage points below the 2025 target. Considering, however, the impact of the new calculation rules, we assume a reduction with 5 percentage points for this assessment, resulting in an estimated recycling rate of 27 %, still well below the target.
Robustness of the underlying information	The currently available data do not yet reflect the calculation rules applicable to the target. Hungary has not yet assessed the influence of the new calculation rules on the recycling rate. However, a recycling rate which would 5 percentage points below the currently reported one, would not change the assessment for this SRF.

SRF MSWR-1.2: Past trend in municipal solid waste recycling rate

The recycling rate over the last five years shows a small decrease from 34.7 % in 2016 to 32 % in 2020 (Figure 2.1). This indicates that the efforts made over the last years to increase recycling in Hungary have not been effective enough.

Summary result

RR < 45 % and increase in last 5 years < 10 percentage points	The recycling rate has decreased 2.7 percentage points between 2016 and 2020. For Hungary, the application of the new calculation rules would result in an estimated recycling rate of 27 %.
Robustness of the underlying information	There are no breaks in the time series data. The currently available data do not yet reflect the calculation rules applicable to the target.

2.1.2 Legal instruments

SRF MSWR-2.1: Timely transposition of the revised Waste Framework Directive into national law

Timely transposition of the Waste Framework Directive as amended by Directive 2018/851 into national law within the foreseen period is key for a waste management system in line with EU requirements.

Hungary has transposed the amended Waste Framework Directive into national law on 17 May 2021, nine months after the deadline of 5 July 2020 (Ministry for Innovation and Technology, 2021).

The Articles 8 and 8a of the WFD were enforced via the amendment of Act on Waste (Law No. 185 in 2012) by the Act II of 2021 on the Amendment of Certain Energy and Waste Management Acts. The Hungarian EPR scheme is under revision and its details are planned to be elaborated in 2022. The environmental product fee regulation will also be modified during the process (Ministry for Innovation and Technology, 2021).

Summary result

Transposition with delay of < 12 months	Hungary has transposed the amended WFD into national law with a delay of less than 12 months.
Robustness of the underlying information	Credible information provided by the Ministry for Innovation and Technology, and confirmed by the information received from the European Commission (status as of 12 November 2021).

SRF MSWR-2.2: Responsibilities for meeting the targets, and support and enforcement mechanisms, e.g. tools, fines etc.

Clearly defined responsibilities, enforcement and support mechanisms for meeting the targets across different entities and governance levels are important for achieving high recycling rates. The clearer the responsibilities for meeting the targets and the accountability for failing the targets are, the higher the chance that the targets will be met.

According to the Ministry for Innovation and Technology (2021), the recycling policy for MSW is the responsibility of the following authorities:

- Ministry for Innovation and Technology;
- Waste Management Authority;
- National Coordination of Waste Management and Asset Management Plc (NHKV Plc);
- Hungarian Energy and Public Utility Regulatory Authority (HEA).

The main responsibilities of different authorities are defined in the legislation. Since mid-2018, waste management has been under the responsibility of the Ministry for Innovation and Technology (EC, 2019b). The Ministry is responsible for the professional management and legislative tasks considering waste management, and it supervises the waste management authority system (Ministry for Innovation and Technology, 2021). In February 2020, the Government approved the Climate and Nature Protection Action Plan, consisting of eight action points. The elimination of illegal waste dumping was one of the action points defined, and in March 2021 the Waste Management Authority was established, whose duties, in addition to stopping illegal dumping, includes monitoring of the waste management sector, imposing penalties, and obligating property owners to remove waste in collaboration with the municipalities (Ministry for Innovation and Technology, 2020). The Waste Management Authority is responsible for the implementation of official waste management tasks and the waste legislation related to waste management and CE (Ministry for Innovation and Technology, 2021).

A state-controlled company, National Waste Management Coordination and Asset Management Company Plc (NHKV Plc.) has been coordinating local level waste services (waste management public service system) and supervising their delivery since 2016. The Waste Management Authority is responsible for legislative enforcement and monitoring while NHKV is mainly focusing on coordination of assisting and implementing measures. The duties of the NHKV include, among other things, setting up waste management targets at national level, determining the direction of the waste management development actions, providing co-ordination between municipalities and also on the regional level, collecting the public service fee from the households and users and paying the service fee for the public service operators, cooperation in preparing the National Waste Management Public Service Plan and establishing that the development of the waste management public service system element follows the Plan, as well as developing a system aiming for the optimal use of the infrastructure resources in order to achieve the national goals and development directions of waste management (NHKV Plc., 2016a). It also performs monitoring tasks (Ministry for Innovation and Technology, 2021).

The Hungarian Energy and Public Utility Regulatory Authority (HEA) supervises the compliance of the public waste management service providers and subcontractors with the provisions of the National Waste Management Public Service Plan. Furthermore, it approves public service providers' contracts and commitments concerning the performance of the public waste management services, and recommends the amount of the public waste management fee yearly to the responsible Minister. The HEA performs the tasks related to the preparation of the tariff regulation of the waste

management public service system, whereas the Waste Management Authority performs general official tasks (Ministry for Innovation and Technology, 2021).

In Hungary, national and local legislation define the minimum service requirements and responsibilities of the different stakeholders. Waste management activities can only be carried out by licensed (and registered) public service operators. Municipalities are responsible for contracting public waste management services with these certified operators. Waste collection is mainly carried out by private companies. NHKV Plc. is responsible for waste under the public service (i.e. co-mingled collection of packaging waste and other municipal non-packaging waste). Producers are responsible for other packaging. Local governments may set targets for their area and include waste streams in the responsibility of others in the targets (Ministry for Innovation and Technology, 2021).

According to the Act on Waste, the waste management authority has certain tools to secure compliance with the provisions of the waste legislation and other relevant legislation. The performance of the public service is regulated via the service fee, which is used to cover the costs resulting from the waste collection and treatment.

The Hungarian authorities have introduced several measures to support recycling. For example, Hungary aims to supervise the waste management and transition to the circular economy through the Waste Management Authority aiming to enhance the coordination of the work of public authorities, and thus enable their more efficient performance. The Ministry for Innovation and Technology has ensured the provision of necessary national and EU resources to enable the implementation of these planned measures (Ministry for Innovation and Technology, 2021).

Hungary is planning to introduce a new model for waste management as of 2023, where certain waste management activities will be carried out by concession of private operators. The waste infrastructure will also be developed to make waste management services accessible to everyone and to make sure that waste fractions affected by the domestic and EU level targets can be recycled. Hungary planned and requested an EU fund from the Recovery and Resilience Instrument (RRF) for the development of waste management infrastructure. In addition, within the Environment and Energy Efficiency Operational Program (EEEOP) a framework for waste management has been planned for the development of separate collection systems for municipal waste, waste pre-treatment, sorting and treatment technologies, as well as landfill reclamation (Ministry for Innovation and Technology, 2021).

Summary result

Unclear responsibilities but clearly defined enforcement mechanisms and a good set of support tools for meeting the recycling targets	Responsibilities for reaching the recycling targets are fragmented between different authorities. Support mechanisms are in place, focussing on coordination between municipalities and on the regional level, optimizing the use of infrastructure and resources and provision of economic support for waste management infrastructure. Enforcement mechanisms are in place with a focus on compliance with the minimum service requirements.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

2.1.3 Economic instruments

SRF MSW-3.1: Taxes/levies and/or ban for landfilling residual- or biodegradable waste

Bans and taxes on landfilling of residual municipal waste can help to discourage strong reliance on residual waste treatment and thus support recycling.

In 2019, 51 % of municipal waste generated in Hungary was landfilled. Hungary has been collecting a landfill levy since 2013. The levy started at HUF 3 000 per tonne in 2013 (equivalent to EUR 7.56 per tonne in June 2022), and was planned to increase by HUF 3 000 per year to reach HUF 12 000 per tonne in 2016 (equivalent to EUR 30.25 per tonne in June 2022), but the levy has been frozen since 2014 at HUF 6 000 per tonne. There are certain exemptions from the levy described in the Waste Act, but these do not apply to municipal solid waste, except for the part that no tax is payable on the dumping of non-hazardous waste (slag, ash, etc.) from incineration. According to the Ministry of Innovation and Technology (2021), no changes in taxation or bans are planned at present.

Summary result

Ban in place for landfilling residual or biodegradable waste	Ban on landfilling untreated municipal waste since 2002, a partial ban on organic wastes since 2003. Hungary has a landfill tax since 2014 of HUF 6 000 per tonne (EUR 15.13 in June 2022 corresponding to 22.8 EUR/t rescaled based on purchasing power parities([a]) without an escalator.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

([a]) Note: Rescaled based on purchasing power parities Eurostat (2020a)

SRF MSWR-3.2: Taxes on municipal waste incineration

Taxes on incineration of mixed municipal waste can help to discourage strong reliance on waste incineration and thus support recycling.

Hungary incinerated 13.5 % of the municipal waste generated in 2019 in the municipal waste incineration plant located in Budapest. Hungary has no incineration tax in place and there is no tax on waste exported for incineration. No additional taxation changes are planned on incineration either. To be able to drastically decrease the landfill rate and achieve the landfill target, Hungary plans to increase the energy recovery of residual municipal waste (Ministry for Innovation and Technology, 2021, 2022).

Summary result

No incineration taxes	Hungary has no tax on waste incineration.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

SRF MSWR-3.3: Pay-as-you-throw (PAYT) system in place

PAYT systems are designed to incentivize citizens to make a bigger effort in separating their waste at source. However, a PAYT system should be designed with the appropriate level of source separation encouragement to ensure that citizens do not misplace waste in recycling bins in order to avoid residual waste charges. Overall, PAYT usually has a positive effect on source separation and thus recycling rates through direct involvement of citizens.

National waste legislation describes the functioning of PAYT schemes but these are not mandatory. According to the Ministry for Innovation and Technology (2021), a PAYT system is not used as a separate system but it is generally part of its waste management. Within the public service system the container size, collection frequency and the amount of payment reflect the pay as you throw principle. The requirements for collection frequency and container size are described in Decrees on public waste management service. Based on this information, it is assumed that more than 80 % of

the population is covered by this type of PAYT system. This system can be characterised as a weak PAYT scheme as the economic incentive to sort waste at source is not very visible to citizens compared to weight-based or sack-based schemes.

Summary result

PAYT scheme fully rolled out (to at least 80% of the population)	PAYT is integrated in the waste management services throughout the country
Robustness of the underlying information	There are some uncertainties regarding the incentives created by the residual waste fee and if the incentives can be categories as a PAYT system. The Hungarian system that is based on container size and collection frequency is considered a weak PAYT.

2.1.4 Separate collection system

SRF MSWR-4.1: Convenience and coverage of separate collection systems for the different household waste fractions

Separate collection systems are a key enabler for high recycling rates and for collecting recyclables at adequate quality. Generally, the more convenient and accessible these systems are for their users, the better results they deliver. The assessment methodology categorises different types of collection systems (door-to-door, bring points with a density of > 5 per km^2, bring points with a density of < 5 per km^2, civic amenity site) for assessing the degree of convenience, and differentiates between cities (densely populated), towns and suburbs (intermediate densely populated) and rural (thinly populated areas). It then calculates which share of the population is served by which type of system. The assessment is done on a material basis and takes into account the different materials according to their average share in municipal waste. This is described in more detail in the methodology (ETC/CE & ETC/WMGE, 2022).

For Hungary, according to the most recent data, the percentage of households living in cities is 34 %, in towns and suburbs 22 % and in rural areas 44 % (Eurostat, 2021a).

In 2018, around 3 million tonnes of municipal waste was collected by the public service (of which 586 000 tonnes were separately collected and 2.4 million tonnes of residual waste), the rest of the total of 3.8 million tonnes being e.g. non-public service (i.e. non-household) packaging waste. Collection of non-household waste is not covered by the public service and is mostly collected by private contractors (Ministry for Innovation and Technology, 2021).

Regarding the separate collection of waste, the following mandatory minimum public service criteria are in place:

- A separate collection of at least paper, plastic, glass, metals, tires, green waste, batteries, WEEE and other hazardous waste in a waste yard or on a collection island;
- A separate door-to-door collection of at least paper, metal and plastic waste streams. Separate collection shall be carried out on in the entire public service area (Ministry for Innovation and Technology, 2021).

The separate collection system does not distinguish between packaging waste and non-packaging waste. The separate collection of recyclables originating from non-household sources is mandatory for paper and cardboard, metals, glass, plastics, wood, and green waste (i.e. garden or horticultural waste). According to the Act on Waste private companies shall ensure the treatment of waste collected separately as part of household waste in accordance with the waste holders' general

obligations. The waste generated in production shall also be collected separately (Ministry for Innovation and Technology, 2021). Table 2.1 gives an overview of the collection system in Hungary.

Table 2.1 Characterisation of the household collection system in Hungary

	Cities (densely populated areas)					**Towns and suburbs** (intermediate density areas)					**Rural areas** (thinly populated areas)			
	Door-to-door - separate	Door-to-door - co-mingled	Bring point (>5 per km²)	Bring point (<5 per km²)	Civic amenity site	Door-to-door - separate	Door-to-door - co-mingled	Bring point (>5 per km²)	Bring point (<5 per km²)	Civic amenity site	Door-to-door - separate	Door-to-door - co-mingled	Bring point	Civic amenity site
Residual waste	xx					xx					xx			
Paper and Cardboard	xx		x		x	xx		x	x	x	xx		x	x
Ferrous metals		x	x		x		x	x	x	x		x	x	x
Aluminium		x	x		x		x	x	x	x		x	x	x
Glass	x		x	xx	x	x		x	xx	x	x		x	x
Plastic	xx		x		x	xx		x	x	x	xx		x	x
Bio-waste														
food														
garden	xx				x	xx				x	xx			x
Textiles			x	x	x			x	x	x			x	x
Wood					x					x				x
WEEE			x	x	x			x	x	x			x	x
Composite packaging		x	x		x		x	x	x	x		x	x	x

Note: xx: dominant system; x: other significant systems. Grey cells indicate high convenience collection systems.

Source: Ministry for Innovation and Technology (2021)

According to the Ministry for Innovation and Technology (2021), door-to-door collection of paper, plastic and metal exist in around 90 % of the municipalities. In the municipalities not covered by door-to-door collection, bring points and civic amenity sites are in use to collect these waste streams. Household metal packaging waste is collected co-mingled with plastic packaging almost in the whole country, mostly door-to-door. Other metal waste is collected at civic amenity sites, and one to two times per year through door-to-door bulky waste collection. Bring points and civic amenity site collection are also used to collect glass, textiles and WEEE. For WEEE and glass waste collection also retailer take back systems are in place. Composite packaging wastes and waste beverage packaging are mostly collected co-mingled with plastic and metal packaging. Taking this into account, high convenience collection is the dominant system for household paper and cardboard, plastics, glass, and mixed municipal waste in Hungary. For garden waste, door-to-door collection is the dominant system throughout the country, but separate collection of food waste does not exist. For all other fractions, both high convenience and lower service level systems are in place, but there is no dominant system. In addition, there is no door-to-door collection systems in place for these fractions, except for metals, which are door-to-door collected co-mingled as described above (Ministry for Innovation and Technology, 2021).

Examining capture rates gives an overview of the effectiveness of the whole collection system for the different materials (See Table 1.1). The modest capture rates for all waste fractions (between 8-45 %) clearly show that its separate collection is not efficient enough. For example, paper and cardboard and plastics are reported to be dominantly collected by door-to-door separate collection, but its capture rates are only 23 % for paper and cardboard, and 12 % for plastics. However, based on a sensitivity analysis, downgrading the scoring from 'green' to 'yellow' based on the low capture rates would not change the result of the overall assessment.

Summary result

Paper and cardboard	A high share of the population is covered by high convenience collection services	Door-to-door or high convenience collection points are the dominant systems in cities, towns and suburbs, and rural areas.
Metals	A medium share of the population is covered by high convenience collection services	Metal packaging waste is collected co-mingled with plastic packaging almost in the whole country, mostly door-to-door. However, other metal waste is collected using lower service level systems.
Plastics	A high share of the population is covered by high convenience collection services	Door-to-door or high convenience collection points are the dominant systems in cities, towns and suburbs, and rural areas.
Glass	A high share of the population is covered by high convenience collection services	High convenience collection points are the dominant systems in cities, and towns and suburbs. In rural areas, both high convenience and lower service level systems are in place.
Bio-waste	A low share of the population is covered by high convenience collection services	For food waste, no separate collection exists. For garden waste, door-to-door collection is the dominant system in cities, towns and suburbs, and rural areas. However, the share of garden waste is low compared to food waste, and the lack of separate collection for food waste results in low convenience level.
Wood	A low share of the population is covered by high convenience collection services	Only lower service level collection points are in place.
Textiles	A low share of the population is covered by high convenience collection services	Both high convenience and lower service level systems are in place, but there is no dominant system. The coverage of high convenience collection points does not exceed half of the population.
WEEE	Medium convenience collection services dominate	Bring systems, including take back at retailers and civic amenity sites dominate the collection system.
Robustness of the underlying information		Door-to-door separate collection is the dominant collection system for paper and cardboard and plastics. However, the low capture rates for these fractions (23 % for paper and cardboard, and 12 % for plastics) show that the collection system is not efficient. The collection systems in Table 2.1 are applicable for household waste only.

SRF MSWR-4.2: Firm plans to improve the convenience and coverage of separate collection for the different household waste fractions

The Ministry for Innovation and Technology (2021) states that to achieve increased recycling rates, it is important to enhance the separate collection of recyclables. The following development actions are highlighted by the authorities:

- Separate collection of bio-waste (kitchen waste), assisted with the possibility for home composting;
- Setting up a waste yard in every residential area if possible;
- Unified disposal system, in which a uniformly high-quality service system for waste management is available to the whole population;
- Separate collection of textile waste;
- Deposit return system (DRS);
- Collection system for household frying oil (primarily in the redemption system. See Section 2.2.3 for more information).

Based on these actions, further developments regarding pre-treatment and material recovery of waste could be made, e.g. the development of optical sorting plants from the current MBT facilities. The development of current pre-treatment technologies or/and building new ones to increase the treatment capacity could be supported by a real-time central monitoring system able to link the interests of investors, waste producers, and recyclers together and enhance the effectiveness of official controls. In addition, the development of industrial processing or recovery capacities for certain fractions are needed (Ministry for Innovation and Technology, 2021).

The Hungarian government is planning a deposit return system (DRS) for single-use plastic and glass beverage bottles and metal beverage cans. The return of refillable and single-use beverage packaging will be also included in the system. The detailed rules of the DRS will be created during 2022 and the system will be implemented from 1 July 2023 on a pilot basis and then nationwide from 1 January 2024.

Other packaging waste will be collected and treated under the EPR system (see section 2.1.5 below). The separate collection of bio-waste and textile waste will be implemented according to the requirements laid down in the WFD. In addition, separate collection of hazardous waste in waste collection yards and bring points will be implemented as laid down in the WFD. However, firm plans to implement these changes are not available yet (Ministry for Innovation and Technology, 2021).

Summary result

Paper and cardboard	N/A (for countries in which a high share of the population is already covered by high convenience collection services)	A high share of the population is already covered by high convenience collection points.
Metals	There are plans to improve the collection service but unclear plan for implementation	A DRS for metal beverage cans planned and expected to be implemented in 2024. However, these plans are not yet finalised and therefore cannot be considered as firm plans.
Plastics	N/A (for countries in which a high share of the population is already covered by high convenience collection services)	A high share of the population is already covered by high convenience collection points.

Glass	N/A (for countries in which a high share of the population is already covered by high convenience collection services)	A high share of the population is already covered by high convenience collection points. A DRS for glass beverage bottles planned and expected to be implemented in 2024.
Bio-waste	No firm plans to improve the convenience and coverage	Although there is an intention to further develop the separate collection, firm plans, i.e. plans that have clear responsible entities and defined targets and timeline, are not yet in place.
Wood	No firm plans to improve the convenience and coverage	No changes planned.
Textiles	No firm plans to improve the convenience and coverage	Although there is an intention to further develop the separate collection, no firm plans, i.e. plans that have clear responsible entities and defined targets and timeline, are not yet in place.
WEEE	No firm plans to improve the convenience and coverage	No changes planned.
Robustness of the underlying information		Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

2.1.5 Extended producer responsibility (EPR) and similar schemes

SRF MSWR-5.1: Fee modulation in EPR schemes for packaging

Within EPR schemes, fee modulation (or eco-modulation) is a system with different fees for different types of packaging material and designs. While basic fee modulation, i.e. different fees for the main material groups, are common, advanced fee modulation can create stronger incentives for packaging producers to design for recycling and thus create favourable conditions for higher recycling rates. The level of advancement of the fee modulation is assessed against four criteria that have been selected as benchmarks for a well-designed eco-modulated fee system:

- recyclability, for example differentiating between PET and PS, between different colours of PET, or between 100 % cardboard boxes and laminated beverage cartons;
- sortability and disruptors, for example a malus for labels/caps/sleeves made of other materials, which are not fitted for the recycling technologies of the main packaging;
- recycled content; and
- if there is a transparent compliance check by the Producer Responsibility Organisation (PRO) that producers report correctly.

In Hungary, EPR applies to both household and non-household packaging. The governance of EPR schemes was changed in Hungary in 2012. Since then, producers have been able to choose between a central co-ordination system run by the government including an environmental product fee to be paid into state budget, or self-compliance with a discounted fee (OECD, 2018; Ministry for Innovation and Technology, 2021). According to the Ministry for Innovation and Technology (2021), the environmental product fee is used to build a financial base for waste collection and treatment. On the other hand it also reduces a demand for environmentally unfriendly packaging, as the fee is based on packaging weight and in certain cases (i.e. plastic carrier bags), the fee exceeds the waste treatment costs substantially, and no fee is set for reusable packaging. The product fee regulation needs to be completely modified by 2023 due to provisions of the WFD. This is included in the

modification of the Hungarian EPR scheme. The National Tax and Customs Administration is responsible for collecting and controlling of the fee. There is no advanced fee-modulation in place.

The OECD (2018) reported, that the introduction of the government-run system has increased the reliability of the waste management data and improved recycling in the short term. However, concerns have been raised that fees charged from the producers will be directed to other than EPR purposes, leading to increased costs for the system in the long-term, while incentives for eco-design stay limited.

Summary result

No advanced fee modulation	There is no advanced fee modulation based on the four assessment criteria presented above.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

2.1.6 Treatment capacity for bio-waste

SRF MSWR-6.1: Capacity for the treatment of bio-waste

Bio-waste is the largest single waste fraction in municipal waste, and adequate treatment capacity needs to be made available.

As reported by the Hungarian authorities, the country's separately collected bio-waste (green waste) amounted to 360 000 tonnes in 2018 (Ministry for Innovation and Technology, 2021), the volume of recycled bio-waste as reported to Eurostat was 309 000 tonnes in that same year (Eurostat, 2022a). The total generation of bio-waste within total municipal waste, including separately collected bio-waste and bio-waste present in the residual waste fraction, was 771 600 tonnes (Table 1.1). As reported by the authorities (Ministry for Innovation and Technology, 2021, 2022), the country's current total green waste treatment capacity amounts to around 660 000 tonnes and the capacity for bio-waste (excluding the capacity for green waste treatment) to around 1.1 million tonnes, so in total around 1.7-1.8 million tonnes. However, it is not clear what the dedicated capacity for separately collected bio-waste is in the country (Ministry for Innovation and Technology, 2021). Home composting is not included in the estimated capacity (Ministry for Innovation and Technology, 2021) and not in the statistics on waste generation and waste treatment (Hungarian Central Statistical Office, 2020).

Using these estimates on bio-waste generation (0.77–1.2 million tonnes) and treatment capacity (1.7–1.8 million tonnes), indicates that nominally, the available treatment capacity should be able to absorb all generated municipal bio-waste. However, there is no information about the current use of the existing capacities and how much of the existing capacity will actually be available for the treatment of separately collected bio-waste after the introduction of separate bio-waste collection as of 31 December 2023.

Summary result

Enough bio-waste treatment capacity for 80% of generated municipal bio-waste	The figures on bio-waste generation and treatment capacity indicate an available treatment capacity of more than 80 % of generated bio-waste.
Robustness of the underlying information	The available treatment capacity is not dedicated to municipal bio-waste treatment only, and therefore it is highly uncertain if the currently existing capacity will be sufficient to treat the generated municipal bio-waste once

	separate collection is introduced.

SRF MSWR-6.2: Legally binding national standards and Quality Management System for compost/digestate

To create a market for compost and digestate, compost should be of a good quality for use as a soil improver or fertilizer. Legally binding standards provide guarantees regarding the quality of the compost/digestate produced. A quality management system aims at addressing different elements of a production process to ensure a stable and high-quality output (product) which helps toward reaching a defined quality for the product.

Hungary has a separate collection system for bio-waste currently under development. There are no standards for compost quality in place, however, technical requirements for preparing compost exist which can determine the compost quality (Ministry for Innovation and Technology, 2021). The implementation of a quality management system for the production of compost from bio-waste has not yet started (EEA, 2020).

Summary result

No national standards or quality management system, or still under development	There is no quality standard for compost and the implementation of a quality management system for the production of compost from bio-waste has not yet started.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

2.2 Target for the recycling of packaging waste

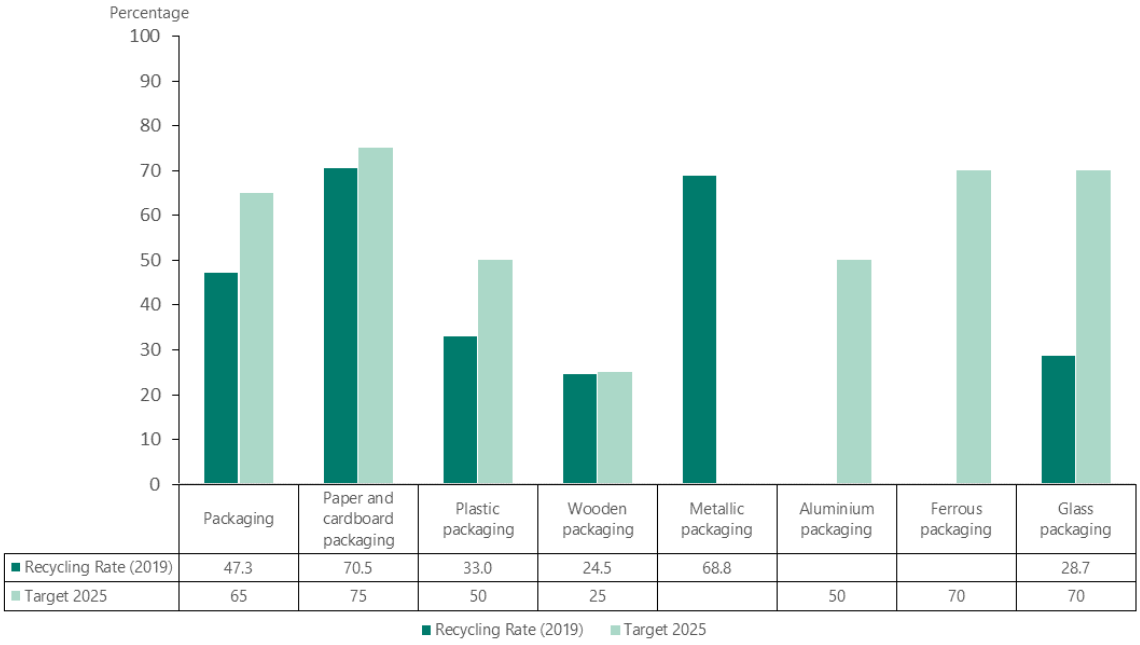
This chapter aims at assessing the prospects of Hungary to achieve the **65 % recycling target for packaging waste** in 2025 as well as the **material specific packaging waste recycling targets** (50 % of plastic; 25 % of wood; 70 % of ferrous metals; 50 % of aluminium; 70 % of glass; 75 % of paper and cardboard). In order to conclude on this likelihood, the analysis takes stock of the status of several factors that are proven to influence the levels of recycling in a country. For a detailed description of the methodology followed, the development of success/risk factors and their impact on recycling, please consult the methodology report (ETC/CE & ETC/WMGE, 2022).

2.2.1 Current situation and past trends

SRF P-1.1 Distance to target

The actual distance to the target for the most recent data point is a key factor determining the likelihood of meeting or not meeting the target. This analysis is based on data reported by Hungary to Eurostat in accordance with Commission Decision 2005/270/EC as last amended by the Commission Implementing Decision 2019/665 (EC, 2019a), published in the dataset *Recycling rates of packaging waste for monitoring compliance with policy targets, by type of packaging [env_waspacr].* The latest available data refer to 2019. The performance of Hungary for 2019 is illustrated in Figure 2.2.

Figure 2.2 Packaging recycling rates for Hungary in 2019, in percentage



	Packaging	Paper and cardboard packaging	Plastic packaging	Wooden packaging	Metallic packaging	Aluminium packaging	Ferrous packaging	Glass packaging
Recycling Rate (2019)	47.3	70.5	33.0	24.5	68.8			28.7
Target 2025	65	75	50	25		50	70	70

Note: No data available for ferrous metals and aluminium, only for total metallic packaging. Estimated amount for metallic packaging.

Source: Eurostat (2022c), EU (2018)

For Hungary the reported total recycling rate for packaging waste is 17.7 percentage points below the 2025 target of 65 %. Almost none of the individual packaging waste streams reach the 2025 targets. For glass, the distance to target is 41.3 percentage points, for plastics 17.0 percentage points, for paper and cardboard 4.5 percentage points, and for wood, 0.5 percentage points. Hungary does not distinguish between aluminium and ferrous packaging and only presents a

recycling rate for metallic packaging, which is 68.8 %. If this recycling rate is equally applied for ferrous metals and aluminium packaging waste, the recycling target for aluminium packaging is already exceeded by 18.8 percentage points. For ferrous metals the recycling rate is 1.2 percentage points below the recycling target.

In alignment with the Commission Implementing Decision 2019/665 and the herein defined new calculation rules for recycling rates, Hungary appears to already account for both sorting losses and recycling losses. Thereof, The Ministry for Innovation and Technology (2021) does not expect significant differences to occur in the recycling rates, once the Commission Implementing Decision 2019/665 comes into effect. Hungary reports packaging data based on EPR put on the market (POM) data from environmental product fee reports and by data requests from producers. It should be noted that this method of estimation of generated packaging waste might miss on quantities generated through online sales, de minimis rule and free riders. As a result, the generated quantities might in fact be higher than reported, which also affects the recycling rates.

Summary result

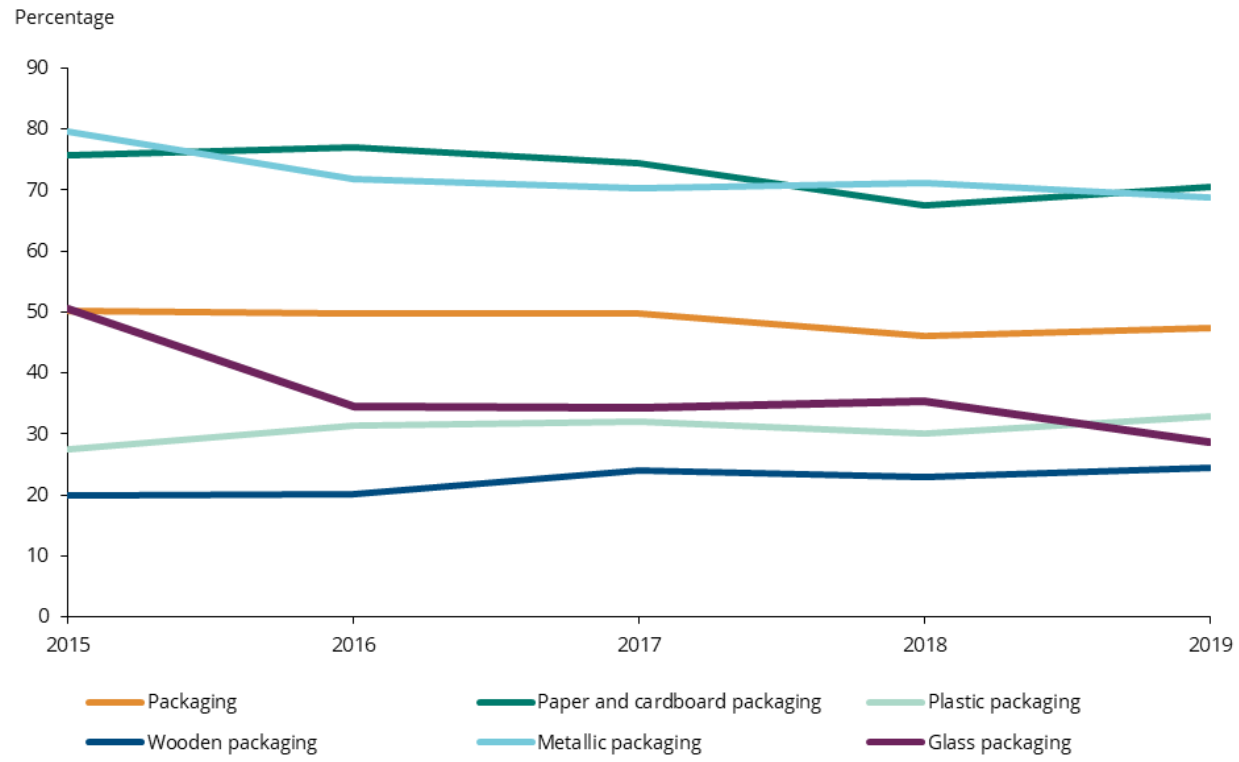
<table>
<tr><td>Total packaging</td><td>> 15 percentage points below target</td><td>Hungary reports a recycling rate of 47.3 %, 17.7 percentage points below the target.</td></tr>
<tr><td>Paper and cardboard packaging</td><td>< 5 percentage points below target</td><td>Hungary reports a recycling rate of 70.5 %, 4.5 percentage points below the recycling target.</td></tr>
<tr><td>Ferrous metals packaging</td><td>< 5 percentage points below target</td><td rowspan="2">Hungary reports a recycling rate of 68.8 % for metallic packaging. This suggests that the recycling rate is 1.2 percentage point below the recycling target for ferrous metals and is 18.8 percentage points above the recycling target for aluminium.</td></tr>
<tr><td>Aluminium packaging</td><td>Target exceeded</td></tr>
<tr><td>Glass packaging</td><td>> 15 percentage points below target</td><td>Hungary reports a recycling rate of 28.7 %, 41.3 percentage points below the recycling target.</td></tr>
<tr><td>Plastics packaging</td><td>> 15 percentage points below target</td><td>Hungary reports a recycling rate of 33 %, 17.0 percentage points below the recycling target.</td></tr>
<tr><td>Wooden packaging</td><td>< 5 percentage points below target</td><td>Hungary reports a recycling rate of 24.5 %, 0.5 percentage point below the recycling target.</td></tr>
<tr><td>Robustness of the underlying information</td><td colspan="2">Distance to the target assessment for ferrous metals an aluminium packaging is estimated.
Although the data reported to Eurostat are corrected for recycling losses and sorting losses, the assessment is still limited by the fact that the recycling rates for 2019 reported by Hungary to Eurostat may not completely reflect the new calculation rules.
The Ministry for Innovation and Technology (2021) states that the waste generation is currently calculated from the quantity POM reported by producers. However, the cross-checking with data calculated from MSW waste analysis is obliged in the EU legislation. Preliminary calculations show significant differences in plastics, metal and paper packaging generation between POM and waste analysis data. Due to this, the above figures cannot yet be qualified as reliable. A preliminary multiple simplified estimation can be given for changes because of cross-checking by taking the middle of POM and data from waste analysis:
Paper and cardboard packaging: increase from 67.5 % to 70 %
Plastic packaging: decrease from 30 % to 25.2 %
Metal packaging: decrease from 71.2 % to 57.6 %
Glass packaging: decrease from 35.3 % to 34.8 %
Wooden packaging: no change. (Ministry for Innovation and Technology, 2021)
In this assessment, the official figures reported to Eurostat have been used. However, when the results of the Hungarian efforts to improve the quality of the data are final and</td></tr>
</table>

	reported to Eurostat, the assessment might change. Eurostat (2020) notes that the data on packaging waste generated originates mostly from EPR POM reporting and by data requests from producers. This may cause uncertainty with regards to the recycling rates, as generated waste from free-riding, de minimis exceptions and online sales are probably not taken into account.

SRF P-1.2: Past trend in Packaging Waste Recycling

The development of the historical trend in the recycling rate indicates previous efforts towards packaging waste recycling. In this analysis the recycling rate reported in the Eurostat dataset *Recycling rates of packaging waste for monitoring compliance with policy targets, by type of packaging [env_waspacr]* (latest data year: 2019) is used. The recycling trends for packaging waste by material in Hungary are illustrated in Figure 2.3.

Figure 2.3 Trend in packaging waste recycling rates in Hungary between 2015 and 2019, in percentage



Note : Estimated amount for metallic packaging in 2019.

Source: Eurostat (2022c)

Between 2015 and 2017, the overall packaging recycling rate remained rather stable at 50 %, but in 2018 the recycling rate decreased by 3.6 percentage points to 46.1 % and has only increased to 47.3 % in 2019. Since 2015 the recycling rates for most fractions have decreased, with an exception of plastics and wooden packaging, whose recycling rates increased by 5.6 and 4.6 percentage points, respectively. Hungary states that the state coordination body NHKV had an enlarged financing in 2019 in comparison to 2018 (Eurostat, 2021b).

The recycling rate for paper and cardboard packaging has been fluctuating from around 67 and 77 % between 2015 and 2019, but shows an overall decreasing trend with 5.3 percentage points between 2015 and 2019. The recycling rate for metallic packaging has decreased since 2015 by 10.9

percentage points. According to the Ministry for Innovation and Technology (2021), a study on the treatment of waste aluminium beverage cans was conducted in 2016. The study showed that the recycling rate of metal beverage cans is substantially smaller (< 40 %) than the overall rate for metal packaging. This result was built in into the calculation method of metal packaging waste recycling, which modified the figures. This might have caused the decrease.

The recycling rate for glass packaging has significantly decreased between 2015 and 2016, remaining at around 35 % since and has further decreased in 2019 to 28.7 %. According to Eurostat (2020), the increase in 2015 was caused by one treatment facility that collected and stored a remarkable amount of waste in 2014 and then recycled these stocks in 2015.

Eurostat (2020) notes that the data on generated packaging waste originates mostly from an EPR scheme. In addition, specific questionnaires and statistics on waste are applied. Furthermore, estimates are used to improve the data on packaging waste generated (Eurostat, 2020b), which may cause uncertainty also with regard to the recycling rates, as generated waste from free-riding, de minimis exceptions and online sales are probably not taken into account.

Summary result

Total packaging	RR < 55% and increase in last 5 years < 10 percentage points	The recycling rate decreased by 2.8 percentage points over the past five years and is reported to be 47.3 %
Paper and cardboard packaging	RR > 70% and increase in last 5 years < 5 percentage points	The recycling rate decreased by 5.3 percentage points over the past five years and is reported to be 70.5 %.
Ferrous metals packaging	RR > 65% and increase in last 5 years < 5 percentage points	The recycling rate decreased by 10.9 percentage points over the past five years and is reported to be 68.8 %
Aluminium packaging	RR > 50%	
Glass packaging	RR < 60% and increase in last 5 years < 10 percentage points	The recycling rate decreased by 21.8 percentage points over the past five years and is reported to be 28.7 %.
Plastics packaging	RR < 40% and increase in last 5 years <10 percentage points	The recycling rate increased by 5.6 percentage points over the past five years and is reported to be 33 %
Wooden packaging	RR > 20% and increase in last 5 years < 5 percentage points	The recycling rate increased by 4.6 percentage points over the past five years and is reported to be 24.5 %.
Robustness of the underlying information		No information is available for separate trends for ferrous metal and aluminium packaging. The data on packaging waste generated originates from EPR POM reporting and by data requests from producers (Eurostat, 2021b). This may cause uncertainty with regards to the recycling rates, as generated waste from free-riding, de minimis exceptions and online sales are probably not taken into account.

2.2.2 Legal instruments

SRF P-2.1: Timely transposition of the revised Packaging and Packaging Waste Directive into national law

Timely transposition of the Packaging and Packaging Waste Directive as amended by Directive 2018/852, into national law within the foreseen period is key for a waste management system in line with EU requirements.

Hungary has transposed the amended PPWD into national law, eight months after the deadline of 5 July 2020. The PPWD has been transposed into national law by the amendment of Government Regulation 442/2012. (XII. 29.) about packaging and packaging waste management activities through Government Regulation 158/2021. (III. 31.) about amendments of certain government regulations to promote the transition to a circular economy (Ministry for Innovation and Technology, 2021).

Summary result

Transposition with delay of < 12 months	Hungary has transposed the amended Packaging and Packaging Waste Directive into national law with a delay of less than 12 months
Robustness of the underlying information	Reliable information provided by the Ministry for Innovation and Technology, and confirmed by the information received from the European Commission (status as of 12 November 2021)

SRF P-2.2: Responsibilities for meeting the targets, and enforcement mechanisms, e.g. fines etc.

In Hungary, the Ministry for Innovation and Technology, Waste Management Authority, National Coordination of Waste Management and Asset Management Plc (NHKV Plc), intermediary state waste management organization, and National Tax and Customs Administration are responsible authorities for meeting the packaging waste recycling targets (Ministry for Innovation and Technology, 2021).

The state waste management intermediary organization organises the collection and management of waste that falls under the product fee system. In addition, its duties include the preparation and implementation of the National Collection and Recovery Plan, monitoring and assessing the waste management processes related to the scope of its activities, monitoring and supervising the performance of the contractors, beneficiaries of tenders and service orders connected to the waste subjected to the product fee system, supervising the obligations in accordance with the decree issued for the implementation of the law, participating in the control of the obligors in accordance with the decree implementing the Act, and supporting the development of waste management for products related to its scope. In addition, it contributes to the tasks related to environmental education. The National Tax and Customs Administration is responsible for collecting and controlling of the environmental product fee (Ministry for Innovation and Technology, 2021).

The responsibilities of the other authorities and support and enforcement mechanisms in place are further described in Section 2.1.2.

Summary result

Unclear responsibilities, weak/no enforcement mechanisms and lack of support tools for meeting the recycling targets.	Responsibilities to reach the target are not cascaded and the responsibilities are fragmented. Support tools and enforcement mechanisms seem not to support improved performance of packaging recycling, but target MSW performance.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

2.2.3 Economic instruments

SRF P-3.1: Taxes and/or ban for landfilling residual- or biodegradable waste

Bans and taxes on landfilling of residual waste can help to discourage landfilling and thus support recycling, also of packaging waste.

As described in Section 2.1.3 in more detail, Hungary has a landfill tax in place, and it has banned the landfilling of untreated wastes, and partially organic wastes.

Summary result

Ban in place for landfilling residual or biodegradable waste	Ban on landfilling untreated municipal waste since 2002, a partial ban on organic wastes since 2003. Hungary has a landfill tax since 2014 of HUF 6 000 per tonne (EUR 15.13 in June 2022 corresponding to 22.8 EUR/t rescaled based on purchasing power parities([a]) without an escalator.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

([a]) Note: Rescaled based on purchasing power parities Eurostat (2020a)

SRF P-3.2: Taxes on municipal waste incineration

Taxes on incineration of residual waste can help to discourage strong reliance on residual waste treatment and thus support recycling. As described in Section 2.1.3 in more detail, Hungary does not have a waste incineration tax.

Summary result

No incineration taxes	In Hungary, there is no tax on municipal waste incineration.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

SRF P-3.3: Packaging taxes

Packaging taxes can support the aim to reduce packaging waste generation and/or to influence the choice of packaging materials and encourage recyclability and eco-design.

According to the information available, the Act on Environmental Product Fee defines the product fees for different packaging materials. The current fees for different categories are (Ministry for Innovation and Technology, 2021):

- Plastics packaging (except plastic shopping bag): HUF 57 per kg;
- Plastic shopping bag (except shopping bag made of biodegradable plastic): HUF 1 900 per kg;
- Plastic shopping bag made of biodegradable plastic: HUF 500 per kg;
- Combined materials packaging: HUF 57 per kg;
- Layered beverage packaging: HUF 19 per kg;

- Metal beverage packaging: HUF 57 per kg;
- Other metal packaging: HUF 19 per kg;
- Paper, wood and natural-based packaging: HUF 19 per kg;
- Glass packaging: HUF 19 per kg;
- Other packaging materials: HUF 57 per kg.

To be able to achieve the minimum requirements for extended producer responsibility as laid down in the Waste Framework Directive, the Environmental Product Fee Regulation needs to be completely modified by 5 January 2023. The modification process is currently ongoing and the elaboration of its details is scheduled for 2022 (Ministry for Innovation and Technology, 2021).

Summary result

Packaging taxes in place	Product fees for different packaging materials.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

SRF P-3.4: Pay-as-you-throw (PAYT) system in place

As a large share of packaging waste is generated in households, incentivising households to separate packaging waste at source, e.g. by applying PAYT systems, is relevant for meeting the recycling targets for packaging waste.

The assessment is the same as described in Section 2.1.3.

Summary result

PAYT scheme fully rolled out (to at least 80% of the population)	PAYT is integrated in the waste management services throughout the country.
Robustness of the underlying information	There are some uncertainties regarding the incentives created by the residual waste fee and if the incentives can be categories as a PAYT system. The Hungarian system that is based on container size and collection frequency is considered a weak PAYT.

SRF P-3.5: Deposit return systems

Deposit Return Systems (DRS) generate high capture rates for packaging covered by the system and thus contribute to increased recycling rates.

Currently, the DRS is only used for some refillable beverage packaging, wooden and plastic transport packaging by producers or distributors on a voluntary basis. In these cases the refillable packaging is exempted from the product fee (Ministry for Innovation and Technology, 2021).

However, the government is currently planning a deposit return system for single-use plastic and glass beverage bottles, and metal beverage cans. The return of refillable and single-use beverage packaging will be also included in the system. The detailed rules of the DRS will be created during 2022 and the system will be implemented from 1 July 2023 on a pilot basis and then nationwide from 1 January 2024. It is also considered to include additional waste streams into the system, to be able to contribute more efficiently to the CE. After the system is being implemented in 2023, it is planned to be expanded in two phases, by adding the DRS of beverage cartons and used frying oil (Ministry for Innovation and Technology, 2021).

Summary result

Aluminium drink cans	No DRS for aluminium drink cans	No DRS in place for aluminium drink cans.
Plastic bottles	Voluntary DRS for some drink bottles	Voluntary DRS for some plastic drink bottles.
Plastic crates	No DRS for plastic crates	No DRS in place for plastic crates.
Glass bottles	Voluntary DRS for some drink bottles	Voluntary DRS for some glass drink bottles.
Wooden packaging	Voluntary DRS for some wooden packaging	Voluntary DRS for some wooden packaging.
Robustness of the underlying information		Credible information received from the Hungarian authorities in response to the questionnaire by the EEA and ETC/WMGE.

2.2.4 Separate collection system

SRF P-4.1: Convenience and coverage of separate collection for different packaging waste fractions

As a large part of packaging waste comes from households, separate collection systems for households and similar sources are a key condition for achieving high recycling rates of packaging waste and for collecting recyclables at adequate quality. Such systems generally deliver better results the more convenient and accessible they are for their users, also compared to the collection of residual waste. The material specific assessment considers packaging waste from both household and non-household sources. The general methodology assumes that these sources are of similar size, but as Hungary provided information on the shares of household/non-household packaging waste generation, this information was used to modify the weighting factors.

For assessing the convenience and coverage of separate collection systems for households, the same methodology is used here as described in section 2.1.4.

In Hungary, the separate collection system does not distinguish between packaging waste and non-packaging waste. According to Table 2.1 high convenience collection points are the dominant systems for paper and cardboard, glass, and plastics waste generated at households. For metals, both high convenience and lower service level systems are in place, but there is no dominant system. However, the Ministry for Innovation and Technology (2021) states that metal packaging waste is collected co-mingled with plastic packaging almost in the whole country, mostly door-to-door.

The separate collection of recyclables originating from non-household sources is mandatory for paper and cardboard, metals, glass and plastics (Ministry for Innovation and Technology, 2021).

Summary result

Paper and cardboard packaging	**1. Packaging waste from households** A high share of the population is covered by high convenience collection service	Door-to-door or high convenience collection points are the dominant systems.
	2. Packaging waste from non-household sources Separation at source is mandatory for non-household paper and cardboard packaging waste	Separate collection is mandatory for households and non-households.
Ferrous metals packaging	**1. Packaging waste from households** A medium share of the population is covered by high convenience collection service	Metal packaging waste is collected co-mingled with plastic packaging almost in the whole country, mostly door-to-door.
	2. Packaging waste from non-household sources Separation at source is mandatory for non-household ferrous metals packaging waste	Separate collection is mandatory for households and non-households.
Aluminium packaging	**Packaging waste from households** A medium share of the population is covered by high convenience collection service	Metal packaging waste is collected co-mingled with plastic packaging almost in the whole country, mostly door-to-door. Hungary has no DRS for aluminium drink cans.
Glass packaging	**1. Packaging waste from households** A high share of the population is covered by high convenience collection service	High convenience collection points are the dominant systems in cities, and towns and suburbs. In rural areas, both high convenience and lower service level systems are in place. Hungary has a voluntary DRS for glass drink bottles.
	2. Packaging waste from non-household sources Separation at source is mandatory for non-household glass packaging waste	Separate collection is mandatory for households and non-households.
Plastics packaging	**1. Packaging waste from households** A high share of the population is covered by high convenience collection service	Door-to-door or high convenience collection points are the dominant systems. Hungary has no DRS for plastic drink bottles.
	2. Packaging waste from non-household sources Separation at source is mandatory for non-household plastic packaging waste	Separate collection is mandatory for households and non-households.
Wooden packaging	**Packaging waste from non-household sources** Separation at source is not mandatory for non-household wooden packaging waste	Separate collection is not mandatory for non-households.
Robustness of the underlying information		The Hungarian authorities did not mark any dominant collection systems for metals, and wood, and therefore all marked systems are assumed to be equally important for these fractions. The collection systems marked in Table 2.1 are valid for household waste only.

Note: The main source for aluminium packaging waste is drink cans from households, therefore the assessment does not consider aluminium non-household waste.

SRF P-4.2: Firm plans to improve the convenience and coverage of separate collection for different packaging waste fractions

Concrete plans are needed to improve the type and coverage of separate collection. This SRF is only relevant for MS and materials that do not score 'green' in SRF P-4.1. The assessment is done on a material basis, and summing up the scores of the different materials according to their average share in packaging waste[1]. Again, the material specific assessment considers packaging waste from both household and non-household sources.

The Ministry for Innovation and Technology (2021) reports that the government is planning a deposit return system for single-use plastic and glass beverage bottles and metal beverage cans. The return of refillable and single use beverage packaging will be also included in the system. The detailed rules of the DRS will be created during 2021 and the system will be implemented from 1 July 2023 on a pilot basis and then nationwide from 1 January 2024. Other packaging waste will be collected and treated under the EPR system (Ministry for Innovation and Technology, 2021).

Summary result

Paper and cardboard packaging	**1. Packaging waste from households** N/A (for countries in which a high share of the population is already covered by high convenience collection services	A high share of the population is already covered by high convenience collection points.
	2. Packaging waste from non-household sources N/A (for countries already having mandatory separation at source)	Separate collection is mandatory for households and non-households.
Ferrous metals packaging	**1. Packaging waste from households** No firm plans to improve the convenience and coverage	Plans to improve metal packaging recycling focuses on aluminium beverage cans only.
	2. Packaging waste from non-household sources N/A (for countries already having mandatory separation at source)	Separate collection is mandatory for households and non-households.
Aluminium packaging	**Packaging waste from households** Firm plans to improve the separate collection system, with clear responsible entities and defined targets and timeline	A DRS for metal beverage cans planned and expected to be implemented in 2024.
Glass packaging	**1. Packaging waste from households** N/A (for countries in which a high share of the population is already covered by high convenience collection services	A high share of the population is already covered by high convenience collection points. A DRS for glass beverage bottles planned and expected to be implemented in 2024.
	2. Packaging waste from non-household sources N/A (for countries already having mandatory separation at source)	Separate collection is mandatory for households and non-households.

[1] Based on data from Eurostat on the share of packaging materials in total packaging generated in 2018.

Plastics packaging	**1. Packaging waste from households** N/A (for countries in which a high share of the population is already covered by high convenience collection services	A high share of the population is already covered by high convenience collection points.
	2. Packaging waste from non-household sources N/A (for countries already having mandatory separation at source)	Separate collection is mandatory for households and non-households.
Wooden packaging	**Packaging waste from non-household sources** No firm plans to introduce mandatory separation at source for non-household wooden packaging waste	No changes planned.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.	

2.2.5 Extended producer responsibility (EPR) and similar schemes

SRF P-5.1: Coverage of EPR schemes

In Hungary, EPR applies to both household and non-household packaging. The governance of EPR schemes was changed in Hungary in 2012. Since then, producers have been able to choose between a central co-ordination system run by the government including an environmental product fee to be paid into state budget, or self-compliance with a discounted fee (OECD, 2018; Ministry for Innovation and Technology, 2021).

Summary result

All main packaging fractions([a]) are covered by EPR schemes, covering household and non-household packaging	Hungary has EPR schemes in place covering household, and non-household packaging for all packaging fractions.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

([a]) **Note:** Paper and cardboard, Ferrous metals, Aluminium, Glass, Plastic

SRF P-5.2: Fee modulation in EPR schemes for packaging

As explained in Section 2.1.5, fee modulation (or eco-modulation) is a system with different fees for different types of packaging material and designs. The assessment is the same as described in Section 2.1.5

Summary result

No advanced fee modulation	There is no advanced fee modulation based on the four assessment criteria presented in Section 2.1.5.
Robustness of the underlying information	Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

SRF P-5.3 Material specific EPR assessment

The material specific assessment is based on a combination of the coverage of the material-specific EPR schemes and the use of fee modulation for the specific packaging material. The assessment takes the different situations for different types of materials into account: Plastics packaging is the

packaging material that is the most difficult to recycle out of the packaging materials targeted by the Packaging and Packaging Waste Directive. Fee modulation therefore plays a larger role for plastic packaging than for the other materials and is therefore rated differently from paper/cardboard, ferrous metals, aluminium and glass. The methodology foresees a green score for plastics packaging only if all four fee modulation assessment criteria mentioned above are met. On the other hand, wooden packaging is mainly generated by commercial and industrial sources and fee modulation is less relevant, therefore the methodology only relies on EPR schemes for wooden packaging from commercial and industrial sources.

Summary result

SRF P-5.3.1 EPR scheme for Paper and cardboard packaging waste	EPR scheme covering household and non-household packaging	Hungary has an EPR scheme in place covering household and non-household packaging for paper and cardboard packaging waste.
SRF P-5.3.2 EPR scheme for Ferrous metals packaging waste	EPR scheme covering household and non-household packaging	Hungary has an EPR scheme in place covering household and non-household packaging for ferrous metals packaging waste.
SRF P-5.3.3 EPR scheme for Aluminium packaging waste	EPR scheme covering household and non-household packaging	Hungary has an EPR scheme in place covering household and non-household packaging for aluminium packaging waste.
SRF P-5.3.4 EPR scheme for Glass packaging waste	EPR scheme covering household and non-household packaging	Hungary has an EPR scheme in place covering household and non-household packaging for glass packaging waste.
SRF P-5.3.5 EPR scheme for Plastic packaging waste	EPR scheme but without advanced fee modulation	Hungary has an EPR scheme in place covering household and non-household packaging for plastic packaging waste.
SRF P-5.3.6 EPR scheme for Wooden packaging waste	EPR scheme covering all non-household packaging	Hungary has an EPR scheme in place covering household and non-household packaging for wood packaging waste.
Robustness of the underlying information		Credible information received from the Hungarian authorities through to the EEA and ETC/WMGE questionnaire.

2.3 Target on landfill of municipal waste

2.3.1 Current situation and past trends

SRF LF-1.1: Distance to target

The Landfill directive (1999/31/EC), as amended by Directive (EU) 2018/850, sets a target to reduce, by 2035, the amount of municipal waste landfilled to 10 % or less of the total amount of municipal waste generated (by weight).

Data to show the current rate of landfilling in line with the reporting rules will only be reported by mid-2022. Therefore, this analysis calculates the landfilling rate based on the current Eurostat dataset *Municipal waste by waste management operations [env_wasmun]*; by dividing the amount of landfilled waste by the total amount of waste generated. The overall landfilling rate of Hungary was 54.0 % in 2020 (calculated based on Eurostat (2022a).

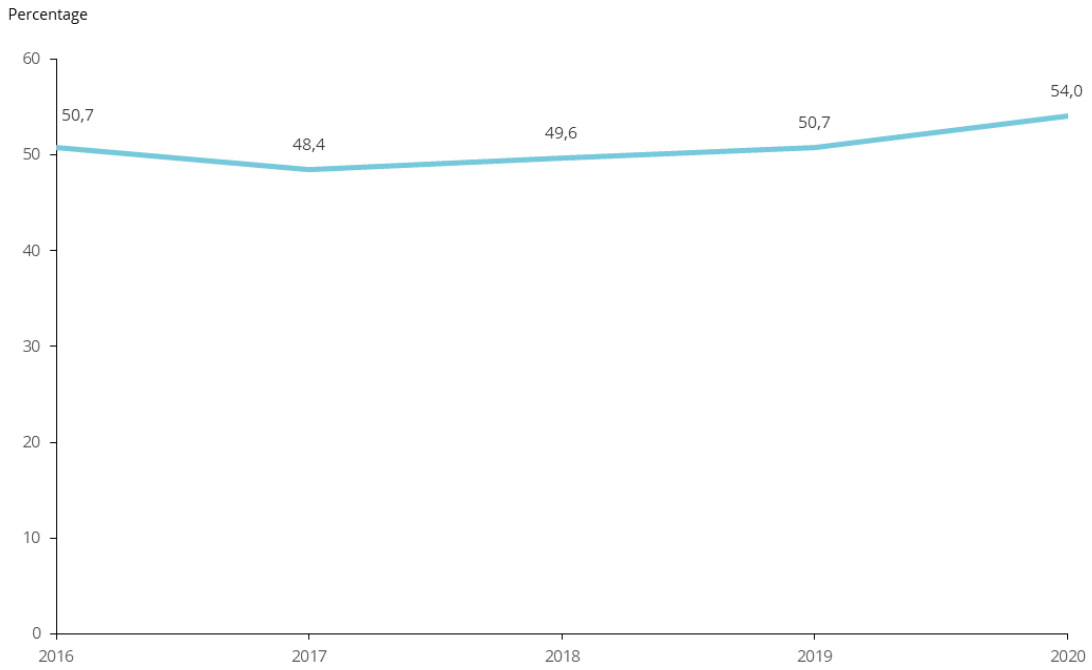
Summary result

Distance to target > 20 percentage points	Hungary has a landfill rate of 54.0 %, 44.0 percentage points above the target.
Robustness of the underlying information	The data are derived from Eurostat and are considered to be rather robust. The reported landfill rate might increase once the new calculation rules laid down in the Commission Implementing Decision (EU) 2019/1885 will be applied. Based on the available information, it is currently not possible to quantify the impact of the new calculation rules on the landfill rate.

SRF LF-1.2: Past trend in municipal solid waste landfill rate

Over the past five years, the overall landfilling rate of Hungary has increased by 3.3 percentage points, from 50.7 % to 54.0 % (Figure 2.4). The distance to target is very big, with 44.0 percentage points. To meet the target Hungary has to speed up the pace of reducing landfilling.

Figure 2.4 Landfilling in Hungary between 2016 and 2020, in percentage



Source: Eurostat (2022a)

Summary result

Landfill rate in 2020 > 25 % and decrease in last 5 years < 15 percentage points	The landfill rate has increased with 3.3 percentage points over the last five years and stands at 54.0 %.
Robustness of the underlying information	The data is derived from Eurostat and is considered to be rather robust. There are no breaks in the time series data.

SRF LF-1.3: Diversion of biodegradable municipal waste from landfill

According to Art. 5(2c) of the EU Landfill Directive, Member States had to ensure that by 2016, biodegradable municipal waste going to landfills is reduced to 35 % of the total amount (by weight) of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available.

In 2016, 2017 and 2018 Hungary landfilled 27 % of the total amount (by weight) of biodegradable municipal waste produced in 1995. In 2019, this was 28 % (EC, 2022).

Summary result

Target for reducing the amount of biodegradable municipal waste (BMW) landfilled to 35 % of BMW generated in 1995 has been achieved in 2016 or in the year specified in the derogation where applicable	Hungary has reported 28 % biodegradable waste landfilled (of the total amount of biodegradable municipal waste produced in 1995) for 2019 and has reached the target, with 27 % in 2016..
Robustness of the underlying information	Based on officially reported data which is well in line with otherwise reported statistical data on landfilling of municipal waste.

3 Conclusion

This risk assessment indicates whether Hungary is at risk of not meeting the targets. The 'total risk' categorization is the result of the sum of the individual scores of each SRF as described in the previous chapter, where the assessment of each SRF results in a score of **2 points (green), 1 point (amber) or 0 points (red)**, depending on the assessment of the SRF. As some SRFs are considered to have a higher impact on meeting the target, the score of the SRF is multiplied by the defined weight of the SRF. As some SRFs might not be applicable to Hungary, only the SRFs relevant to Hungary are taken into account to define the maximum score. Hungary is considered to be 'not at risk' if its score is 50 % or more of this maximum score, and 'at risk' if its score is less than 50 % of this maximum score.

3.1 Prospects for meeting the recycling target for municipal solid waste

30 % **of maximum score**	Based on the provided information and the analysis done, it is concluded that Hungary is **at risk for not meeting the MSW recycling target in 2025**.
Current situation and past trends:	The recycling rate was 32 % in 2020, which is 23 percentage points below the 2025 target. Considering however the impact of the new calculation rules, we assume a reduction with 5 percentage points for this assessment, resulting in an estimated recycling rate of 27 %, still well below the target. The recycling rate has decreased by 2.7 percentage points over the last five years.
Legal instruments:	The amended WFD has been transposed into national law with a delay of less than 12 months. Responsibilities for reaching the recycling targets are not cascaded and also fragmented between different authorities. Support mechanisms are in place, and there is a possibility to decrease the service fee paid to the service providers in case of deviations from the minimum standards occur. The minimum recycling targets to be met by service operators are also defined.
Economic instruments:	Hungary has a landfill tax in place since 2013. Ban on landfilling untreated municipal waste since 2002, the disposal of hazardous wastes since 2003, and a partial ban on organic wastes. No incineration tax is in place. PAYT is integrated in the waste management services throughout the country.

Separate collection systems:	A high share of the population is covered by high convenience collection services for household paper and cardboard, glass, and plastic waste. Metal packaging waste is collected co-mingled with plastic packaging almost in the whole country, mostly door-to-door. However, other metal waste is collected using lower service level systems. A low share of the population is covered by high convenience collection services for wood, and textiles. For WEEE bring systems, including take back at retailers, civic amenity sites and bring points dominate the collection system. For food waste, no separate collection exists. For garden waste, door-to-door collection is the dominant system. However, the share of garden waste is low compared to food waste, and the lack of separate collection for food waste results in low convenience level. There are plans and intentions to improve the collection service for metals, bio-waste and textiles, but no firm plans yet available. No plans exist to improve the type and coverage of wood and WEEE separate collection.
Extended producer responsibility:	EPR schemes are in place for all packaging materials from households and non-households. There is currently no advanced fee modulation applied to incentivise design for recycling.
Bio-waste treatment capacity and quality management:	Nominally, the available treatment capacity should be able to absorb all generated municipal bio-waste. However, there is no information about the current use of the existing capacities and how much of it will actually be available for the treatment of separately collected bio-waste once separate collection of bio-waste will be introduced. There is no quality standard for compost and the implementation of a quality management system for the production of compost from bio-waste has not yet started.

3.2 Prospects for meeting the recycling targets for packaging waste

38 % **of maximum score**	Based on the provided information and the analysis done, it is concluded that Hungary is **at risk for not meeting the 65 % recycling target for packaging waste in 2025**	
77 % of maximum score	Paper and cardboard	Not at risk
69 % of maximum score	Ferrous metals packaging	Not at risk
71 % of maximum score	Aluminium packaging	Not at risk
38 % of maximum score	Glass packaging	At risk
32 % of maximum score	Plastics packaging	At risk
62 % of maximum score	Wooden packaging	Not at risk
Current situation and past trends:	The total packaging recycling rate is 47.3 %, 17.7 percentage points below the 2025 target. The application of the new calculation rules would probably decrease the RR, but this would not result in a different result of this assessment. The waste streams more than 15 percentage points below the target are plastics, aluminium and glass packaging. The total packaging recycling rate has decreased by 2.8 percentage points over the past five years.	
Legal instruments:	The amended Packaging and Packaging Waste Directive is transposed into national law with a delay of less than 12 months. Responsibilities to reach the target are not cascaded and the responsibilities are fragmented. Support tools and enforcement mechanisms seem not to support improved performance of packaging recycling, but target MSW performance.	
Economic instruments:	Hungary has a landfill tax in place. Ban on landfilling untreated municipal waste since 2002, the disposal of hazardous wastes since 2003, and a partial ban on organic wastes. No incineration tax is in place. PAYT is integrated into the waste management system of the country. There are product fees for different packaging materials. Voluntary DRS schemes exist for some beverage glass bottles, beverage plastic bottles and wooden packaging. No DRS for aluminium drink cans or plastic crates.	

Separate collection systems:	Door-to-door or high convenience collection points are the dominant systems for most of the packaging waste fractions. A medium share of the population is covered by high convenience collection service for ferrous and aluminium packaging waste. There are plans to improve metal packaging recycling, however these focus on aluminium beverage cans only. Separate collection is mandatory for non-households except for wooden packaging waste. There are no firm plans to introduce mandatory separation at source for non-household wooden packaging waste.
Extended producer responsibility:	All main packaging fractions are covered by EPR schemes, covering household and non-household packaging. No advanced fee modulation implemented.

3.3 Prospects of meeting the landfill of municipal waste target

14 % **of maximum score**	Based on the provided information and the analysis done, it is concluded that Hungary is **at risk for not meeting the 2035 target to reduce the amount of municipal waste landfilled to 10 % or less of the total amount of municipal waste generated.**
Current situation and past trends:	The landfilling rate for municipal waste was 54.0 % in 2020, indicating a distance to target of 44 percentage points. Over the past five years, the overall landfilling rate of Hungary has increased by 3.3 percentage points.
Diversion of biodegradable municipal waste from landfill:	Hungary has reported 28 % biodegradable waste landfilled for in 2019 of the total amount (by weight) of biodegradable municipal waste produced in 1995, and therefore met the 2016 target.

List of abbreviations

Abbreviation	Name
CE	Circular Economy
DRS	Deposit Return System
EC	European Commission
EEA	European Environment Agency
EEE	Electrical and Electronic Equipment
Eionet	European Environmental Information and Observation Network
EPR	Extended producer responsibility
ETC/CE	European Topic Centre on Circular Economy and resource use
ETC/WMGE	European Topic Centre on Waste and Materials in a Green Economy
HEA	Hungarian Energy and Public Utility Regulatory Authority
MBT	Mechanical biological treatment
MS	Member state
MSW	Municipal solid waste
NHKV	National Waste Management Coordination and Asset Management Company
NWMP	National Waste Management Plan
PAYT	Pay-as-you-throw
POM	Put on the market
PPWD	Packaging and Packaging Waste Directive
PRO	Producer Responsibility Organisation
RR	Recycling rate
SRF	Success and risk factor
SUP	Single-Use Plastic
TOC	Total Organic Carbon
WEEE	Waste Electric and Electronic Equipment
WFD	Waste Framework Directive

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Annex 1 Implementation of previous early warning recommendations

In 2018, the European Commission assessed that Hungary would be at risk of not meeting the Waste Framework Directive's target to prepare for re-use and recycle at least 50 % of municipal waste, and provided a set of policy recommendations to improve the situation (EC, 2018a). This annex lists the recommendations and a self-assessment of the Hungarian authorities on the status of taking them into account.

Recommendations on separate collection

Since it is not yet known how well the newly established municipal waste management system is performing, the longer-term action will depend on the results of the reform. However, in the short term, the following actions could help improve performance:

1) Amendment to the minimum standards in the national waste management service plan to stipulate that a mandatory door-to-door separate collection of paper is required; service operators to provide this service to every street-level property in urban and suburban areas on at least a fortnightly basis.

The Hungarian authorities report that the minimum standards will be examined in the new National Waste Management Public Service Plan currently under preparation, and consider this recommendation implemented (Ministry for Innovation and Technology, 2021).

2) Furthermore, should the national performance data indicate a lower municipal waste recycling rate than expected, introduction of the following additional changes to the minimum standards:

a. a reduction in the available volume for residual waste collected from households; and

b. a reduction in the frequency of residual waste collections from households.

These aspects among many others are considered when setting or resetting the minimum standards. The Hungarian authorities consider this recommendation not implemented. (Ministry for Innovation and Technology, 2021)

Recommendations on communication and awareness-raising

3) To maximise the effectiveness of the available budget for communication:

a. Focus of the spending on the areas that already perform reasonably well, with the aim of encouraging them to do better; and therefore

b. Linking investment to the various changes in recycling services occurring in different areas, focusing on those with good logistics where collection services have recently improved.

4) Consideration to be given to making additional funding available for communication activities, should there be a need to provide support at both local and national levels.

These aspects are taken into account; however, the scope of communication and its budget can change when needed, and currently more fields are involved, e.g. two phases of the Clean Country Program aiming to curb illegally abandoned waste have been announced (phase 1 supports the disposal of abandoned waste, and phase 2 supports the introduction of several measures aiming to

waste prevention). The Hungarian authorities consider recommendation 3) partly implemented and recommendation 4) implemented. (Ministry for Innovation and Technology, 2021)

Longer-term priority actions

Recommendations on economic incentives/waste charges

5) Consideration of reforming the service fee so that it serves as a better incentive for recycling. This could be done by introducing an additional performance tier above the current 'minimum standard' in the service fee. Under this scheme, those that achieve the higher standard would receive a higher 'correction fee' than those that reach the current minimum standard — which is set too low to encourage a substantial improvement in performance.

The Hungarian authorities state that several other aspects need to be considered when determining the charges for public services to ensure service efficiency, such as populations' financial capacity. The Hungarian authorities consider this recommendation partly implemented. (Ministry for Innovation and Technology, 2021)

Recommendations on technical support to municipalities

6) Further development of the evidence base for waste management optimisation in Hungary by Nemzeti Hulladékgazdálkodási Koordináló és Vagyonkezelő Zártkörűen (NHKV). This could be done by collecting from and sharing with municipalities and service operators information on best practice in terms of cost-effective system performance.

No response from the Hungarian authorities considering this recommendation.

7) Use of the performance data to ensure that the variation in waste management systems across Hungary is kept to reasonable levels, with no more than five or six service solutions operating across the whole country.

According to the Hungarian authorities, the field is constantly reviewed based on the performance data. This recommendation is considered as partly implemented. (Ministry for Innovation and Technology, 2021)

8) Development of a system at national level that provides technical support for municipalities, specifically in the following areas:

- *a. choosing collection services;*
- *b. service procurement;*
- *c. service management;*
- *d. communication campaigns;*

coupled with active sharing of good ideas and practices that can improve efficiency in terms of cost reduction and improvement in performance.

Hungary aims to connect the measures from the Climate and Nature Protection Action Plan with available support and tools to municipalities. The Hungarian authorities consider this recommendation partly implemented. (Ministry for Innovation and Technology, 2021)

Annex 2 Detailed scoring of success and risk factors

Assessment sheet - Recycling target for municipal waste

MS Hungary

Date Jun-22

SRF		Assessment result	Weight	Score
Current situation and past trends				
MSWR-1.1	Distance to target	Distance to target > 15 percentage points or no data reported	5	0
MSWR-1.2	Past trends in municipal solid waste recycling rate	RR < 45% and increase in last 5 years < 10 percentage points	1	0
Legal instruments				
MSWR-2.1	Timely transposition of the revised WFD into national law	Transposition with a delay of less than 12 months	1	1
MSWR-2.2	Clearly defined responsibilities for meeting the targets and support and enforcement mechanisms	Clearly defined responsibilities and good set of support tools but weak/no enforcement mechanisms for meeting the recycling targets OR Unclear responsibilities but clearly defined enforcement mechanisms and a good set of support tools for meeting the recycling targets OR Clearly defined responsibilities and enforcement mechanisms but no/weak support tools for meeting the recycling targets	1	1
Economic instruments				
MSWR-3.1	Taxes and/or ban for landfilling residual or biodegradable waste	Ban, or landfill tax > 30 EUR/t* with escalator, or landfill tax > 45 EUR/t	1	2
MSWR-3.2	Taxes on municipal waste incineration	No incineration taxes or taxes < 7 EUR/t*	1	0
MSWR-3.3	Pay-as-you-throw (PAYT) system	PAYT scheme fully rolled out (to at least 80% of the population) OR Implemented in some regions / municipalities (50-80% covered) and firm plans for rolling out to at least 80% of the population	1	2

Separate collection systems				
MSWR-4.1	Convenience and coverage of separate collection systems for the different household waste fractions			
	Paper and cardboard	A high share of the population is covered by high convenience collection services	0.46	0.92
	Metals	A medium share of the population is covered by high convenience collection services	0.08	0.08
	Plastics	A high share of the population is covered by high convenience collection services	0.28	0.56
	Glass	A high share of the population is covered by high convenience collection services	0.18	0.36
	Bio-waste	A low share of the population is covered by high convenience collection services	0.84	0
	Wood	A low share of the population is covered by high convenience collection services	0.06	0
	Textiles	A low share of the population is covered by high convenience collection services	0.06	0
	WEEE	Medium convenience collection services dominate	0.04	0.04
MSWR-4.2	Firm plans to improve the convenience and coverage of separate collection systems for the different household waste fractions			
	Paper and cardboard	N/A (for countries in which a very high share of the population is already covered by high convenience collection services)	0.23	0
	Metals	There are plans to improve the collection service but unclear plan for implementation	0.04	0.04
	Plastics	N/A (for countries in which a very high share of the population is already covered by high convenience collection services)	0.14	0
	Glass	N/A (for countries in which a very high share of the population is already covered by high convenience collection services)	0.09	0
	Bio-waste	No firm plans to improve the convenience and coverage	0.42	0
	Wood	No firm plans to improve the convenience and coverage	0.03	0
	Textiles	No firm plans to improve the convenience and coverage	0.03	0
	WEEE	No firm plans to improve the convenience and coverage	0.02	0

Extended producer responsibility (EPR) and similar schemes				
MSWR-5.1	Fee modulation in EPR schemes for packaging	No advanced fee modulation OR fee modulation meets less than two assessment criteria	1	0
Bio-waste treatment capacity and quality management				
MSWR-6.1	Capacity for the treatment of bio-waste	Enough bio-waste treatment capacity for 80% of generated municipal bio-waste	1	2
MSWR-6.2	Legally binding national standards and Quality Management System for compost/digistate	No national standards or quality management system, or still under development	1	0
			Total score	**10.00**
			Maximum score	33.08
				30%

Assessment sheet - Recycling target for packaging waste

MS Hungary

Date Jun-22

SRF		Assessment result	Weight	Score
Current situation and past trends				
P-1.1	Distance to target - Overall packaging	> 15 percentage points below target, or no data reported	5	0
	Distance to target - Paper and cardboard packaging	< 5 percentage points below target, or target exceeded	5	10
	Distance to target - Ferrous metals packaging	< 5 percentage points below target, or target exceeded	5	10
	Distance to target - Aluminium packaging	< 5 percentage points below target, or target exceeded	5	10
	Distance to target - Glass packaging	> 15 percentage points below target, or no data reported	5	0
	Distance to target - Plastics packaging	> 15 percentage points below target, or no data reported	5	0
	Distance to target - Wooden packaging	< 5 percentage points below target, or target exceeded	5	10
P-1.2	Past trends in packaging waste recycling rate	RR < 55% and increase in last 5 years < 10 percentage points	1	0
	Past trends in paper and cardboard packaging recycling	RR > 70% and increase in last 5 years < 5 percentage points, or RR > 65%, and increase in last 5 years < 10 percentage points, or RR < 65% and increase in last 5 years > 10 percentage points	1	1
	Past trends in ferrous metals packaging recycling	RR > 65% and increase in last 5 years < 5 percentage points, or RR > 60%, and increase in last 5 years < 10 percentage points, or RR < 60% and increase in last 5 years > 10 percentage points	1	1
	Past trends in aluminium packaging recycling	RR > 45% and increase in last 5 years > 5 percentage points, or RR > 40% and increase in last 5 years > 10 %, or RR > 50%	1	2
	Past trends in glass packaging recycling	RR < 60% and increase in last 5 years < 10 percentage points	1	0

	Past trends in plastic packaging recycling	RR < 40% and increase in last 5 years < 10 percentage points	1	0
	Past trends in wooden packaging recycling	RR > 20% and increase in last 5 years > 5 percentage points, or RR > 15% and increase in last 5 years > 10 %, or RR > 25%	1	2
Legal instruments				
P-2.1	Timely transposition of the revised Packaging and Packaging Waste Directive into national law	Transposition with a delay of less than 12months	1	1
P-2.2	Clearly defined responsibilities for meeting the targets and support and enforcement mechanisms	Unclear responsibilities and weak/no enforcement mechanisms for meeting the recycling targets, but good set of support tools. OR Unclear responsibilities and no/weak support tools for meeting the recycling targets, but clearly defined enforcement mechanisms. OR Clearly defined responsibilities but weak/no enforcement mechanisms for meeting the recycling targets, and no/weak support tools. OR Unclear responsibilities, weak/no enforcement mechanisms and lack of support tools for meeting the recycling targets.	1	0
Economic instruments				
P-3.1	Taxes and/or ban for landfilling residual or biodegradable waste	Ban, or landfill tax > 30 EUR/t* with escalator	1	2
P-3.2	Taxes on municipal waste incineration	No incineration taxes or taxes < 7 EUR/t*	1	0
P-3.3	Packaging taxes	Packaging taxes in place	1	2
P-3.4	Pay-as-you-throw (PAYT) system	PAYT scheme fully rolled out (to at least 80% of the population) OR Implemented in some regions / municipalities (50-80% covered) and firm plans for rolling out to at least 80% of the population	1	2
P-3.5	Deposit-return systems for aluminium drink cans	No or voluntary DRS for some drink cans	1	0
	Deposit-return systems for glass drink bottles	No or voluntary DRS for some drink bottles	1	0
	Deposit-return systems plastic drink bottles	No or voluntary DRS for some drink bottles	1	0
	Deposit-return systems for plastic crates	No or voluntary DRS for some plastic crates	1	0
	Deposit-return systems for wooden packaging	No or voluntary DRS for some wooden packaging	1	0

Separate collection systems				
P-4.1	Convenience and coverage of separate collection systems for the different packaging waste fractions			
	Paper and cardboard packaging (household)	A high share of the population is covered by high convenience collection services	0.5	1
	Paper and cardboard packaging (non-household)	Separation at source is mandatory for non-household paper and cardboard packaging waste	1.5	3
	Ferrous metals packaging (household)	A medium share of the population is covered by high convenience collection services	1.6	1.6
	Ferrous metals packaging (non-household)	Separation at source is mandatory for non-household ferrous metals packaging waste	0.4	0.8
	Aluminium packaging	A medium share of the population is covered by high convenience collection services	2	2
	Glass packaging (household)	A high share of population is covered by high convenience collection services	1.6	3.2
	Glass packaging (non-household)	Separation at source is mandatory for non-household glass packaging waste	0.4	0.8
	Plastics packaging (household)	A high share of the population is covered by high convenience collection services	1.2	2.4
	Plastics packaging (non-household)	Separation at source is mandatory for non-household plastic packaging waste	0.8	1.6
	Wooden packaging	Separation at source is not mandatory for non-household wooden packaging waste	2	0
P-4.2	Firm plans to improve the convenience and coverage of separate collection systems for the different packaging waste fractions			
	Paper and cardboard (household)	N/A (for countries in which a high share of the population is already covered by high convenience collection services)	0.5	0
	Paper and cardboard (non-household)	N/A (for countries already having mandatory sorting at source)	0.5	0
	Ferrous metals packaging (household)	No firm plans to improve the convenience and coverage	0.5	0
	Ferrous metals packaging (non-household)	N/A (for countries already having mandatory sorting at source)	0.5	0
	Aluminium packaging	Firm plans to improve the separate collection system, with clear responsible entities and defined targets and timeline	1	2
	Glass packaging (household)	N/A (for countries in which a very high share of the population is already covered by high convenience collection services)	0.5	0
	Glass packaging (non-household)	N/A (for countries already having mandatory sorting at source)	0.5	0

	Plastics packaging (household)	N/A (for countries in which a very high share of the population is already covered by high convenience collection services)	0.5	0
	Plastics packaging (non-household)	N/A (for countries already having mandatory sorting at source)	0.5	0
	Wooden packaging	No firm plans to introduce mandatory separation at source for non-household wooden packaging waste	1	0
Extended producer responsibility (EPR) and similar schemes				
P-5.1	Coverage of EPR schemes	All main packaging fractions* are covered by EPR schemes, covering household and non-household packaging	1	2
P-5.2	Fee modulation in EPR schemes for packaging	No fee modulation OR fee modulation meets less than two assessment criteria	1	0
P-5.3	Material specific EPR assessment - Paper and cardboard packaging waste	EPR scheme covering household and non-household packaging	1	1
	Material specific EPR assessment - Ferrous metals packaging waste	EPR scheme covering household and non-household packaging	1	1
	Material specific EPR assessment - Aluminium packaging waste	EPR scheme covering household and non-household packaging	1	1
	Material specific EPR assessment - Glass packaging waste	EPR scheme covering household and non-household packaging	1	1
	Material specific EPR assessment - Plastics packaging waste	No EPR scheme or EPR scheme covering only household, industrial OR commercial packaging OR EPR scheme but without fee modulation	1	0
	Material specific EPR assessment - Wooden packaging waste	EPR scheme covering all non-household packaging	1	2
Total packaging recycling target				**12.30**
			Maximum score	32.39
				38%

Paper and cardboard recycling target

Total score	**23.00**
Maximum score	30.00
	77%

Ferrous metals packaging recycling target

Total score	**21.40**
Maximum score	31.00
	69%

Aluminium packaging recycling target

Total score	**24.00**
Maximum score	34.00
	71%

Glass packaging recycling target

Total score	**12.00**
Maximum score	32.00
	38%

Plastics packaging recycling target

Total score	**11.00**
Maximum score	34.00
	32%

Wooden packaging recycling target

Total score	**21.00**
Maximum score	34.00
	62%

Assessment sheet - Target for landfilling of municipal waste

MS Hungary

Date Jun-22

SRF		Assessment result	Weight	Score
Current situation and past trends				
LF-1.1	Distance to target	Distance to target > 20 percentage points, or no data reported	5	0
LF-1.2	Past trends in municipal solid waste landfill rat	Landfill rate in 2020 > 25% and decrease in last 5 years < 15 percentage points	1	0
LF-1.3	Diversion of biodegradable municipal waste from landfill	Target for reducing the amount of biodegradable municipal waste (BMW) landfilled to 35% of BMW generated in 1995 has been achieved in 2016 or in the year specified in the derogation where applicable	1	2
			Total score	**2.00**
			Maximum score	14.00
				14%