ESA | EFTA Surveillance Authority

Early Warning Report for the 2025 Waste Targets

Foreword by ESA's College

Waste, if properly re-used, recycled or recovered, can be turned into resources, contributing to the transition to a cleaner, climate-neutral and circular economy. Adequate collection and treatment of waste avoids the negative impact that waste can have on the environment and human health.

Re-use and recycling of waste is therefore key for the protection of the environment and to help meet climate goals. Indeed, environmental protection is a central objective of the EEA Agreement.

By virtue of the EEA Agreement, Iceland, Norway and Liechtenstein have committed to set up sound waste management systems. Same as for the EU Member States, the EEA Agreement foresees targets for the EEA EFTA States to increase the re-use and recycling of municipal waste and packaging waste, and to limit landfilling, by 2025, 2030 and 2035.

ESA is responsible for monitoring that Norway, Iceland and Liechtenstein deliver on their targets and is committed to supporting them in their efforts to improve their waste management performance. To this end, ESA developed the present Early Warning Report.

As a basis for this report, the European Environment Agency made an objective screening of the waste management systems of Iceland, Norway and Liechtenstein. The Agency concluded that all three States are at risk of missing at least one of the 2025 targets.

Urgent action is therefore needed to meet the targets for 2025 and beyond. Read in parallel with the European Commission's Early Warning Report for the EU Member States, it becomes clear that there are common challenges across Europe which require further efforts.

To assist the EEA EFTA States, ESA's report provides a deeper insight into the ongoing efforts, opportunities and challenges of Norway, Iceland and Liechtenstein. The States will find recommendations to improve their national waste management systems, developed in close collaboration with the national authorities. ESA also identified good practices that might help other States improving their systems.

Looking ahead, ESA will assess the effects of the measures identified in the present report in the next Early Warning Report, for the 2030 targets. This is the first Early Warning Report for the EEA EFTA States, forming the starting point of a collaborative process to ensure higher levels of environmental protection and resource efficiency.

Early Warning Report identifying EEA EFTA States at risk of not meeting the 2025 preparing for re-use and recycling target for municipal waste, the 2025 recycling target for packaging waste, and the 2035 municipal waste landfilling reduction target

Contents

1 Introduction

The Agreement on the European Economic Area ("EEA") incorporates a comprehensive set of European rules to preserve, protect and improve the quality of the environment, to contribute towards protecting human health, and to ensure a prudent and rational utilisation of natural resources.[1] In the field of waste management, these common rules aim to support Europe's transition towards a circular economy by requiring increased preparation for re-use and recycling of waste and to reduce landfilling.

The proper implementation of those rules is essential to prevent the negative impact of waste generation on the environment and health and to help meet climate goals. Moreover, improving performance in waste management will promote resource efficiency, encourage innovation, create new business opportunities and jobs, and increase economic resilience and competitiveness.[2]

Central to these efforts are the Waste Framework Directive,[3] the Packaging and Packaging Waste Directive,[4] and the Landfill of Waste Directive[5] (together the "waste directives"). Through their incorporation into the EEA Agreement the EEA EFTA States, Norway, Iceland and Liechtenstein, are subject to the same legal framework on waste management as the EU Member States.

To speed up the transition to a circular economy, the waste directives were amended in 2018. The amendments included targets for the preparation for re-use and recycling, as well as the landfilling, of municipal waste, and for the recycling of packaging waste.

Municipal waste consists of various waste fractions from households and other sources, such as paper and carboard, glass, metals, plastic, bio-waste, wood and textiles. Packaging waste, used for the containment of goods, is often made up by glass, paper or cardboard, ferrous metals, plastic or wood. The landfilling of waste is the disposal of waste on land.[6] In line with the waste hierarchy,[7] waste should, by order of priority, be prevented, prepared for re-use, recycled, recovered, or as a last resort, be disposed of.

The waste directives' targets are progressively ambitious with deadlines to be met by 2025, 2030 and 2035. By the end of 2025, the States have to prepare for re-use and recycle 55 % by weight of their municipal waste,[8] recycle 65 % by weight of all their packaging waste

[1] See Article 73(1) of the Agreement on the European Economic Area (the "EEA Agreement"), OJ L 1, 3.1.1994, p. 3.
[2] See, for example, Communication from the Commission of 11 December 2019, 'The European Green Deal' (COM(2019)640 final) and Communication from the Commission of 11 March 2020, 'A new Circular Economy Action Plan for a cleaner and more competitive Europe' (COM(2020)98 final).
[3] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3), as amended by Directive (EU) 2018/851, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021 and which entered into force as regards the EEA EFTA States on 1 August 2022.
[4] European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L 365, 31.12.1994, p. 10), as amended by Directive (EU) 2018/852, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 296/2021 of 29 October 2021 and which entered into force as regards the EEA EFTA States on 30 October 2021.
[5] Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1), as amended by Directive (EU) 2018/850, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 84/2022 of 18 March 2022 and which entered into force as regards the EEA EFTA States on 19 March 2022.
[6] The precise legal definitions of the terms 'municipal waste', 'packaging waste' and 'landfill' are referenced below in the respective Sections 4-6.
[7] See article 4 of the Waste Framework Directive.
[8] Article 11(2)(c) of the Waste Framework Directive.

and reach material-specific targets for recycling of paper and cardboard (75 %), glass (70 %), aluminium (50 %), ferrous metal (70 %), plastic (50 %), and wood (25 %).[9] By 2035, the States also have to reduce landfilling of municipal waste to 10 % or less of the total amount of municipal waste generated (by weight).[10]

The EFTA Surveillance Authority ("ESA") monitors the fulfilment by the EEA EFTA States of their obligations under the EEA Agreement, including their implementation of the waste directives and the achievement of targets. Following the 2018 revision of the waste directives, ESA is tasked, in cooperation with the European Environment Agency, to draw up early warning reports on the progress of the EEA EFTA States towards the attainment of those targets.[11] The early warning report aim to ensure better, more timely, and uniform implementation of the ambitious targets and to anticipate any implementation weaknesses.[12]

The early warning report, due three years ahead of the target deadlines, shall contain:

- an estimation of the attainment of the targets by each EEA EFTA State;
- a list of the EEA EFTA States at risk of not attaining the targets within the respective deadlines, accompanied by appropriate recommendations for the States concerned; and
- examples of best practices that could provide guidance for making progress towards the targets.

Through the early warning report, ESA thereby supports the efforts of Norway, Iceland and Liechtenstein to improve their waste management performance.

This report constitutes the first early warning report for the EEA EFTA States, for the 2025 targets. The report also provides a preliminary assessment of the EEA EFTA States' progress towards meeting the 2035 landfilling target. It is accompanied by country-specific annexes for each of the EEA EFTA States as they are considered at risk of missing one or more of 2025 targets, which include examples of good practices and recommendations.

The report builds on individual country assessments by the European Environment Agency of collected data and existing and planned waste management policies,[13] and follows the same approach and methodology[14] as the similar report published by the European Commission for the EU Member States (the "EU early warning report").[15] The report is based on a collaborative and transparent process involving the EEA EFTA States and their relevant national authorities for waste management, ensuring a robust evaluation of challenges and potential improvements, as summarised in the annexes. Section 2 below further explains the methodology for preparation of this report.

The European Commission issued its early warning report for the 2025 targets for the EU Member States in June 2023. The later publication of this report is, amongst others, due to the later incorporation into the EEA Agreement and thus entry into force of the 2018 revisions of the waste directives as regards the EEA EFTA States.

[9] Article 6(1)(f) and (g) of the Packaging and Packaging Waste Directive.
[10] Article 5(5) of the Landfill of Waste Directive.
[11] Article 11b of the Waste Framework Directive, Article 6b of the Packaging and Packaging Waste Directive and Article 5b of the Landfill of Waste Directive.
[12] See, among others, recital 51 of Directive (EU) 2018/851 amending the Waste Framework Directive.
[13] Available at: Early warning assessment related to the 2025 targets for municipal waste and packaging waste — European Environment Agency (europa.eu)
[14] Available at: Methodology for the Early warning assessment related to certain waste targets — Eionet Portal (europa.eu).
[15] Available at: https://environment.ec.europa.eu/publications/waste-early-warning-report_en and https://environment.ec.europa.eu/publications/waste-early-warning-report-staff-working-documents_en.

In its assessments, the European Environment Agency found that all three EEA EFTA States are at risk of missing one or more of the 2025 targets. Iceland is at risk of missing the targets for municipal solid waste and total packaging waste, as well as material-specific targets for different packaging waste (ferrous metal, glass and plastic). Norway is at risk of missing the target for municipal solid waste, and the material-specific target for plastic packaging waste. Liechtenstein is at risk of missing the material-specific targets for plastic and wooden packaging waste. More details on these findings are included in Section 3 below. Sections 4 and 5 provide an overview of the status and developments of waste management practices for municipal solid waste and for packaging waste, respectively. The preliminary assessment for the 2035 landfilling target is presented in Section 6. The attainment of this target is a matter of concern for Iceland. Section 7 summarises the good practices in the EEA EFTA States, and Section 8 sets out conclusions.

2 Methodology

This report is the result of extensive collaboration between ESA, the European Environment Agency, and the three EEA EFTA States: Norway, Iceland and Liechtenstein. In line with the principle of homogeneity,[16] it is aligned, in so far as relevant, with the EU early warning report in terms of procedure and content, to ensure a similar treatment of and comparison between the EEA EFTA States and the EU Member States.

The underlying assessment was based on the methodology developed by the European Environment Agency for the EU Member States. The methodology took as a starting point the waste data reported by the EEA EFTA States to Eurostat based on reporting requirements under the waste directives. That data allowed the European Environment Agency to calculate the distance to the relevant targets. The Agency also considered existing and planned policies at national level and other relevant information, such as the implementation of legal and economic instruments.

The European Environment Agency made minor adjustments to the methodology for the EEA EFTA States, to account for the fact that it conducted the assessments closer to the 2025 target deadlines compared to the EU Member States.[17] As such, the assessment used the latest available data from reference year 2021, instead of 2020 as was done for the EU early warning report. For Norway, preliminary data for the reference year 2022 on municipal waste was also taken into account.[18] Finally, as some of the data reported by the

EEA EFTA States did not yet fully apply the new calculation rules for the reporting methodologies,[19] a correction factor was applied where relevant.

[16] The EEA Agreement aims to establish a "homogeneous" European Economic Area based on common rules and equal conditions of competition. The principle of homogeneity means in essence that the EEA EFTA States, Norway, Iceland, and Liechtenstein, are to be treated in the same way as the EU Member States.
[17] See: Addendum to Early Warning methodology for EFTA States.
[18] The European Environment Agency used the preliminary data reported by Norway for 2022 to Eurostat for its early warning assessment for Norway, since that data represented the latest available data point. In June 2024, Norway submitted updated and final data for 2022 to Eurostat. At the time of this report, that data has not been published by Eurostat and thus not been taken into account for this report.
[19] Commission Implementing Decision (EU) 2019/1004 of 7 June 2019 laying down rules for the calculation, verification and reporting of data on waste in accordance with Directive 2008/98/EC of the European Parliament and of the Council and repealing Commission Implementing Decision C(2012) 2384 (OJ L 163, 20.6.2019, p. 66), as incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021, and Commission Implementing Decision (EU) 2019/665 of 17 April 2019 amending Decision 2005/270/EC establishing the formats relating to the database system pursuant to European Parliament and Council Directive 94/62/EC on packaging and packaging waste (OJ L 112, 26.4.2019, p. 26), as incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 173/2022 of 10 June 2022.

Following the assessments of the European Environment Agency, concluding that all three EEA EFTA States are at risk of missing one or more of the 2025 targets, ESA analysed the root causes behind the low recycling rates and identified country-specific recommendations and examples of good practices. ESA and the EEA EFTA States' national authorities for waste management discussed the results of this analysis in individual dialogues and in written follow-ups. ESA took the EEA EFTA States' input into account for the finalisation of the country-specific reports.

3 Overall findings

The analysis provided insights into the main challenges and opportunities of the EEA EFTA States with regards to their waste management performance.

Overall, according to the assessments carried out by the European Environment Agency,[20] all three EEA EFTA States are considered to be at risk of missing at least one of the 2025 targets. More specifically:

- Iceland is at risk of missing the 2025 targets to prepare for re-use and recycle 55 % of its municipal solid waste, to recycle 65 % of its total packaging waste, and the material-specific packaging waste targets to recycle 70 % of its ferrous metals, 70 % of glass, and 50 % of plastic;
- Liechtenstein is at risk of missing the 2025 material-specific packaging waste targets to recycle 50 % of its plastic packaging waste and 25 % of its wooden packaging waste;
- Norway is at risk of missing the 2025 targets to prepare for re-use and recycle 55 % of its municipal solid waste, and the material-specific target to recycle 50 % of its plastic packaging waste.

In addition, the distance between Iceland's current landfilling rate and the 2035 target to landfill no more than 10 % of municipal waste is of concern. Norway and Liechtenstein already fulfil this target.

The EEA EFTA States have recently carried out or are in the process of implementing measures and policies to further increase their recycling rates by the end of 2025 and beyond. The results of these measures will be assessed in the next early warning report which will track progress towards the 2030 targets.

However, the distance from certain targets is still too large and further efforts are needed to implement measures on the ground to reach all 2025 targets. For example, some of the main challenges identified for the EEA EFTA States concern low capture rates of some separately collected recyclables, resulting also in low recycling rates, particularly for plastic packaging and bio-waste. Further challenges concern bio-waste treatment capacities, data quality, and lack of suitable economic instruments to steer waste management into higher levels of the waste hierarchy, towards preparation for re-use and recycling.

[20] Available at: Early warning assessment related to the 2025 targets for municipal waste and packaging waste — European Environment Agency (europa.eu)

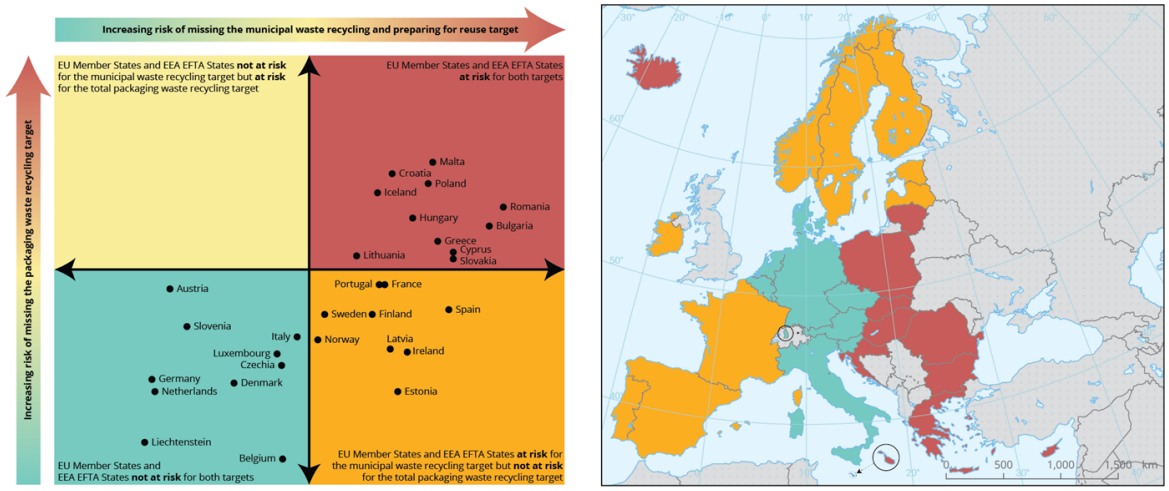

Figure 1: Prospects for EU Member States and EEA EFTA States of meeting the preparing for re-use and recycling targets for municipal waste and packaging waste (Source: European Environment Agency). Some of the EEA EFTA States' data is not reported in accordance with the harmonised reporting rules, which might impact the comparability presented in this figure. This is particularly the case for Liechtenstein, which has not yet established a monitoring and reporting method equivalent to the harmonised reporting rules.

It should be noted that achieving high performance in the preparing for re-use and the recycling of waste requires continuous efforts both in the EEA EFTA States that have been identified as being at risk of missing certain 2025 targets and in those for which the assessment has shown likelihood of achieving them. Moreover, looking ahead to 2030 and 2035, efforts are needed to maintain and further improve performance levels to meet the progressively ambitious targets of the waste directives.

4 Municipal waste

Municipal waste[21] is one of the most complex waste streams to manage due to its diverse composition, the large number of waste producers, and the fragmentation of responsibilities for its management. Moreover, challenges of municipal waste management result, amongst others, from a very high public visibility and impact of municipal waste on the environment and human health. Countries that have developed efficient municipal waste management systems, including efficient collection and sorting systems, tracing of waste streams, engagement of citizens and businesses, and an elaborate financing system, tend to perform better in terms of overall waste management, including meeting recycling

[21] As defined in Article 3(2b) of the Waste Framework Directive: *"'municipal waste' means: (a) mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture; (b) mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households; Municipal waste does not include waste from production, agriculture, forestry, fishing, septic tanks and sewage network and treatment, including sewage sludge, end-of-life vehicles or construction and demolition waste."*

targets. A large share of municipal waste is composed of packaging waste, which has significant potential for circularity.[22]

Legal obligations on the management of municipal waste are laid down in the Waste Framework Directive. By 2025 the States are to prepare for re-use and recycle 55 % of their municipal waste.[23] The directive also includes longer-term ambitious targets: 60 % by 2030 and 65 % by 2035,[24] as well as other requirements such as the obligation to collect certain municipal waste streams separately,[25] and to adopt national waste management plans and waste prevention programmes.[26]

The EEA EFTA States generate significantly higher amounts of municipal waste per person compared to the EU average of 532 kg in 2021.[27]

Out of the three EEA EFTA States, Iceland generated the least amount of municipal waste per person with 659 kg in 2021,[28] 26 % of which was prepared for re-use or recycled. Around 40 % of all municipal waste was landfilled in 2021 and an increasing amount of municipal waste was incinerated (8 %).

Norway generated 768 kg of municipal waste per person in 2022 (736 kg in 2021). Norway incinerated around half of all municipal waste (57 % in 2021; 51 % in 2022), while around 30 % was diverted towards preparation for re-use and material recycling and an additional 10 % composted or digested.

Liechtenstein reported the largest amount of municipal solid waste generated per person with 869 kg in 2021, of which 76 % was prepared for re-use, recycled or composted, and the remaining 24 % was incinerated.

According to the European Environment Agency's assessments, Norway and Iceland are at risk of missing the 2025 target to prepare for re-use and recycle 55 % of their municipal waste. Therefore, ESA identified recommendations for possible measures to improve their re-use and recycling rates for municipal waste, in collaboration with the national authorities.

Both Norway and Iceland have recently introduced mandatory separate collection of municipal solid waste, which they expect to increase the capture and recycling rates from 2023 onwards. However, they can further improve their separate collection systems, as outlined in the country-specific early warning reports for Norway and Iceland, annexed to this report. For example, higher convenience services (door-to-door collection and distributed bring points) in combination with awareness raising measures can help achieve higher recycling rates. Further recommendations include the implementation of a ban on the landfilling of biodegradable waste in Iceland, and introduction of measures to support and follow up on the municipalities' work to achieve municipal solid waste collection targets.

[22] See Recital (6) of Directive (EU) 2018/851.
[23] Article 11(2)(c) of the Waste Framework Directive.
[24] Article 11(2)(d) and (e) of the Waste Framework Directive.
[25] Article 11(1) of the Waste Framework Directive.
[26] Article 28 and 29 of the Waste Framework Directive.
[27] Source of data: Eurostat, 'Municipal waste by waste management operations'.
[28] Unless otherwise specified, the numbers referred to in this section for the EEA EFTA States are based on the data reported by the EEA EFTA States to Eurostat, available at: 'Municipal waste by waste management operations'.

5 Packaging waste

Packaging waste[29] has a high circularity potential, since it consists of various materials which are partly recyclable, including paper and cardboard, glass, ferrous and non-ferrous metals, and plastic. The amount of packaging waste generated in Europe is increasing.

According to data reported to Eurostat, 85.8 million tonnes of packaging waste were generated in the EEA in 2021, compared with 68.9 million tonnes in 2012.[30]

The growing generation of packaging waste suggests that more work on waste prevention and recycling is needed to reduce landfilling or incineration, which has negative environmental impacts such as air pollution and greenhouse gas emissions.

Legal obligations on the management of packaging waste are laid down in the Packaging and Packaging Waste Directive. By 2025 the States are to recycle 65 % of all their packaging waste and reach material-specific targets for paper and cardboard, glass, steel, aluminium, plastic and wood.[31] The directive also includes longer-term recycling targets: 70 % of all packaging waste by 2030, and increased material-specific targets.[32]

Based on the data reported to Eurostat for the period of 2011 to 2021,[33] the total packaging waste generated in the EEA EFTA States is increasing.

Out of the three EEA EFTA States, Iceland generated the least amount of packaging waste, with 148 kg per person in 2021. Total packaging waste generation in Iceland increased by 6.7 % since 2011, mainly due to an increase of paper and cardboard packaging.

Norway generated 175,75 kg of packaging waste per person in 2021, increasing by 26.7 % since 2012, mainly due to a significant increase (50.2 %) in plastic packaging waste.

Liechtenstein generated the highest amount of packaging waste, with 192 kg per person in 2021, increasing by 22 % since 2011, due to increases of all packaging waste fractions except wood.

According to the European Environment Agency's assessment, Iceland is at risk of missing the 2025 target of 65 % recycling of packaging waste. Furthermore, all three EEA EFTA States are at risk of missing one or more material-specific targets for recycling of packaging waste, with plastic packaging being the most problematic waste stream:

[29] As defined in Article 3(2) of the Packaging and Packaging Waste Directive: *"'packaging waste' shall mean any packaging or packaging material covered by the definition of waste laid down in Article 3 of Directive 2008/98/EC, excluding production residues;".* The term 'packaging' is defined in Article 3(1) of the said directive as: *"'packaging' shall mean all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer (…)."*

[30] Unless otherwise specified, the numbers referred to in this section for the EEA EFTA States are based on the data reported by the EEA EFTA States to Eurostat, available at: 'Packaging waste by waste management operations'.

[31] Article 6(1)(g) of the Packaging and Packaging Waste Directive.

[32] Article 6(1), points (h) and (i) of the Packaging and Packaging Waste Directive.

[33] Source of data: Eurostat, 'Packaging waste by waste management operations'.

The 2025 material-specific targets for recycling of packaging waste	The EEA EFTA States' reported recycling rates for 2021
(50 %) Plastic	Norway (28.3 %), Liechtenstein (31.4 %), Iceland (27.6 %)
(70 %) Glass	Iceland (0.0 %[34])
(70 %) Ferrous metals	Iceland (23.8 %)
(25 %) Wood	Liechtenstein (0.0 %[35])

Therefore, ESA recommends measures to improve the EEA EFTA States' recycling rates of packaging waste. These include the introduction of advanced fee modulation for packaging to incentivise design for recyclability, sortability and use of recycled content in packaging, as well as the introduction of deposit return systems for certain packaging to increase capture and recycling rates. The recommendations are outlined in more detail in the country-specific early warning reports, annexed to this report.

6 Landfilling

Landfilling of waste[36] can have dangerous effects on human health and on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect.[37] According to the waste hierarchy established by the waste directives, which gives priority to preparing for re-use and recycling, landfilling is the least preferable waste treatment option and should be reduced.

Legal obligations on landfilling of waste are laid down in the Landfill of Waste Directive. By 2025 the States are to reduce the amount of municipal waste landfilled to 10 % or less of the total amount of municipal waste generated (by weight).[38] The directive also bans the landfilling of separately collected waste, such as plastic, metals, glass, paper and bio-waste.[39]

Based on the reported data for 2021, the amounts of landfilled municipal waste reduced in all three EEA EFTA States in the period of 2017 to 2021. However, there are significant differences between the EEA EFTA States.

While Iceland landfilled over 39.8 % of municipal waste in 2021, decreasing by 23.7 percentage points since 2017, Norway landfilled 4.9 % in 2021 and 3.1 % in 2022,[40] compared to 3.4 % in 2017.[41] Liechtenstein introduced a ban on landfilling of municipal waste in 2000 and no landfilling is therefore taking place.

[34] According to the European Environment Agency's assessment for Iceland, glass is exported for recycling (since 2022).
[35] According to the European Environment Agency's assessment for Liechtenstein, wooden packaging is not recycled in Liechtenstein.
[36] As defined in Article 2(g) of the Landfill of Waste Directive, *"'landfill' means a waste disposal site for the deposit of the waste onto or into land (…)"*.
[37] See Article 1(1) of the Landfill of Waste Directive.
[38] Article 5(5) of the Landfill of Waste Directive.
[39] Article 5(3)(f) of the Landfill of Waste Directive, cf. Articles 11(1) and 22 of the Waste Framework Directive. The ban does not cover waste resulting from subsequent treatment operations of the separately collected waste for which landfilling delivers the best environmental outcome in accordance with Article 4 of the Waste Framework Directive.
[40] For its early warning assessment for Norway, the European Environment Agency used the preliminary data reported by Norway to Eurostat for 2022. Source: https://ec.europa.eu/eurostat/databrowser/view/env_wasmun__custom_12954501/default/table?lang=en. In June 2024, Norway submitted updated and final data for 2022 to Eurostat. At the time of this report, that data has not been published by Eurostat and thus not been taken into account for this report.
[41] See the early warning assessments for Iceland and Norway, available at Early warning assessment related to the 2025 targets for municipal waste and packaging waste — European Environment Agency (europa.eu).

By comparison, the EU average landfilling rate for municipal waste stood at 22 % in 2021.[42]

According to the preliminary assessments carried out by the European Environment Agency, only Iceland is currently still far from the 2035 target. This is due to the significant amounts of bio-waste being landfilled. It should be noted that Iceland is in the process of implementing measures to address this situation, such as a ban on landfilling of biodegradable waste in 2028 and increasing its bio-waste treatment capacities, as explained in more detail in the country-specific early warning report for Iceland.

7 Good practices

The EEA EFTA States have already implemented many good practices for improving their waste management performance. To help the attainment of targets, this report identifies and shares examples of such good practices from Norway, Iceland and Liechtenstein that could be replicated in other States.

The identified good practices address a wide range of subjects in waste management, such as governance, separate collection, re-use, waste treatment, communication and awareness raising, implementation of economic instruments, and effective extended producer responsibility schemes.

The country-specific early warning reports provide an overview of successful initiatives with regards to municipal and packaging waste management that can be considered as such good practices. For example, reference is made to the Nordic labelling system implemented in Norway and Iceland respectively, providing consumers with clear instructions for the sorting of waste. Further good practices include guidance provided to municipalities in the form of a handbook published by the Icelandic Environment Agency on municipal waste management, and the introduction of deposit refund systems for single-use beverage containers such as plastic bottles in Norway and Liechtenstein.[43]

Reference is made to the EU early warning report issued by the European Commission for other examples of good practices from EU Member States which can also be replicated in the EEA EFTA States.

8 Conclusion

This report shows that Norway, Iceland and Liechtenstein are making continuous progress towards the attainment of the 2025 targets set out in the waste directives.

For example, Iceland and Norway have recently adopted significant measures to improve their separate collection of some of the main municipal waste fractions. Iceland also plans to implement a ban on the landfilling of biodegradable waste. With these planned changes, Norway and Iceland expect to see an increase in recycling rates in the years to come.

However, the report has also identified several gaps and challenges in each EEA EFTA State, resulting in all EEA EFTA States being at risk for at least one of the 2025 targets. Given the time sensitivity, these should be swiftly and effectively addressed, as summarised above. Further efforts are therefore needed to ensure that the EEA EFTA States reach all 2025 targets as well as future targets.

[42] Source of data: Eurostat 'Municipal waste by waste management operations', calculated by dividing the amount reported as "disposal - landfill and other" by the total amount of waste generated.
[43] Iceland also has a DPR system in place since 1989. For more information, see the European Environment Agency's early warning assessment for Iceland.

This can be achieved by improving the separate collection and recycling of bio-waste and packaging waste, particularly plastic, including through more convenient collection systems, communication and awareness raising measures targeted towards households and businesses. Moreover, the monitoring and reporting of data on waste preparation for re-use and recycling can be improved, and economic instruments such as advanced fee modulation for extended producer responsibility schemes can be introduced.

ESA is committed to supporting and encouraging the EEA EFTA States in their work to improve their waste management performance, to ensure achievement of the relevant targets. ESA will continue to monitor the EEA EFTA States' implementation of the waste directives' requirements and targets in its general surveillance role and in dialogue with the EEA EFTA States.

ESA notes that this report is issued without prejudice to any other actions which it might take concerning the waste directives, including any ongoing or potential infringement cases.

The next early warning report for the 2030 targets is scheduled for 2027, marking the next milestone in tracking progress towards the attainment of the targets under the waste directives.

Annex 1: The early warning report for Norway

1. Introduction

This country-specific report for Norway forms part of the early warning report for the EEA EFTA States. The early warning report aims to assist EEA EFTA States at risk of failing to meet at least one of the following 2025 waste targets: to prepare for re-use and recycle 55 % of municipal solid waste, set out in Article 11(2)(c) of the Waste Framework Directive,[44] to recycle 65 % of all packaging waste, as well as the material-specific packaging waste targets, set out in Article 6(1)(f) and (g) of the Packaging and Packaging Waste Directive.[45] It also provides an update on how the EEA EFTA States are performing against the 2035 target to send no more than 10 % of their municipal waste to landfill, set out in Article 5(5) of the Landfill of Waste Directive.[46]

This country-specific report identifies good practices and recommendations to help improve Norway's waste recycling performance and thus increase the likelihood of meeting the 2025 targets. It builds on the early warning assessment of the European Environment Agency of collected data and existing and planned policies in the area of waste management and follows the same approach and methodology[47] as for the preparation of the similar report by the European Commission for the EU Member States.[48]

Moreover, this report is based on a collaborative and transparent process involving the EEA EFTA States and their relevant national authorities for waste management. The recommendations identified during this process are based on an in-depth analysis of the most recent developments in the EEA EFTA State and aim to help meet the 2025 targets. The recommendations also take into account the future 2030 and 2035 waste targets.

2. Key findings

Based on the early warning assessment of the European Environment Agency,[49] Norway is considered to be at risk of missing the following 2025 targets: (i) preparing for re-use and recycling 55 % of its municipal solid waste, and (ii) the material specific recycling target of 50 % for plastic packaging.

[44] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3), as amended by Directive (EU) 2018/851, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 1 August 2022.
[45] European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L 365, 31.12.1994, p. 10), as amended by Directive (EU) 2018/852, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 296/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 30 October 2021.
[46] Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999 p. 1), as amended by Directive (EU) 2018/850, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 84/2022 of 18 March 2022, and which entered into force as regards the EEA EFTA States on 19 March 2022.
[47] Methodology for the Early warning assessment related to certain waste targets — Eionet Portal (europa.eu), and Addendum to Early Warning methodology for EFTA States.
[48] See https://environment.ec.europa.eu/publications/waste-early-warning-report_en and https://environment.ec.europa.eu/publications/waste-early-warning-report-staff-working-documents_en.
[49] Available at Early warning assessment related to the 2025 targets for municipal waste and packaging waste — European Environment Agency (europa.eu)

For 2022,[50] Norway reported a **municipal solid waste** recycling rate of 41 %, which is 14 percentage points below the 2025 target of 55 %. The reported data shows that the recycling rate has remained relatively stable over the period between 2018 and 2022, increasing only by 0.3 percentage points over this period. This indicates that further efforts are needed to reach the target. Moreover, the preliminary data reported by Norway for 2022 did not yet comply with the new calculation rules for the reporting methodology, as defined in Commission Implementing Decision (EU) 2019/1004.[51] With the full application of the new calculation rules, the European Environment Agency estimated the recycling rate to be lower at 36 %, which would be 19 percentage points below the 2025 target.

At the time of this report, the low capture rates for separate collection of bio-waste (42 %), plastic (34 %), and textiles (20 %) are identified as the main reasons for Norway being at risk of missing the 2025 target. Despite a high share of the population in Norway being covered by high convenience services of either door-to-door collection or bring point systems for separate collection of the main municipal waste fractions, namely paper and cardboard, metal, plastic, glass, and bio-waste, the capture rates for plastic and bio-waste remain low. For plastic, the low capture rates can be explained by a lack of mandatory separate collection at national level, resulting in various different systems for collection of municipal solid waste streams across the country. For bio-waste, there is a lack of availability of separate collection for food waste for some parts of the population. For wood, textiles, and waste of electrical and electronic equipment (WEEE) only lower convenience collection systems are in place such as civic amenity sites and retail bring points. Whereas relatively high capture rates are achieved for wood and WEEE (despite the lower convenience collection points) of 89 % and 78 % respectively, the capture rates for textiles remain low at 20 %.

Increasing separate collection rates for these waste fractions from household sources, for example through higher convenience services in combination with awareness raising measures, can help achieve higher recycling rates. As there are already high convenience services in place in Norway for the main municipal waste fractions, there are currently no concrete plans to further improve the separate collection systems in addition to the recent changes to the national waste legislation. From 2023, Norway introduced mandatory separate collection of certain municipal waste fractions, such as food waste and plastic, from household sources with defined collection targets.[52] Further changes adopted to cover additional waste fractions, such as paper, cardboard, glass- and metal packaging, and textiles, will take effect from 1 January 2025.[53] Norway expects these changes to further improve the separate collection systems and increase the capture rates for municipal waste from household sources.[54] The business sector, on the other hand, which generated 48%

[50] For its early warning assessment for Norway, the European Environment Agency used the preliminary data reported by Norway to Eurostat for 2022, since that data represented the latest available data point. Source of data: https://ec.europa.eu/eurostat/databrowser/view/env_wasmun/default/table?lang=en. In June 2024, Norway submitted updated and final data for 2022 to Eurostat. At the time of this report, that data has not been published by Eurostat and thus not been taken into account for this report.
[51] Commission Implementing Decision (EU) 2019/1004 of 7 June 2019 laying down rules for the calculation, verification and reporting of data on waste in accordance with Directive 2008/98/EC of the European Parliament and of the Council and repealing Commission Implementing Decision C(2012) 2384 (OJ L 163, 20.6.2019, p. 66), which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 1 August 2022.
[52] Section 10a-4 of the Norwegian waste regulation (FOR-2004-06-01-930), as amended by Regulation of 7 June 2022 no. 971 (FOR-2022-06-07-971), which entered into force on 1 January 2023.
[53] Regulation of 13 May 2024 no. 849 (FOR-2024-05-13-849), which enters into force on 1 January 2025.
[54] According to information provided by Norway during the dialogue held between national authorities and the EFTA Surveillance Authority in June 2024, Norway expects an increase of 1.5 percentage points of overall separately collected municipal waste and an increase of 5 to 6 percentage points of separately collected plastic and bio-waste until 2030.

of Norway's total amount of municipal waste in 2021,[55] does not currently have binding targets for waste separation or sorting. Similar requirements targeting businesses or waste operators collecting non-household municipal waste should be considered to improve recycling rates for municipal waste also from non-household sources.[56] In addition, guidelines or best practices for municipalities could help support their implementation of the separate collection systems.

Moreover, regarding bio-waste treatment, Norway has national standards for compost and digestate quality.[57] There is however no quality management system in place. Regular quality control is important to ensure a high-quality product standard and to create trust in the market for compost and digestate. The introduction of such a quality management system could also help support the development of further bio-waste treatment capacity.[58]

On **packaging waste**, Norway reported a total recycling rate of 58.3 % for 2021,[59] which is 6.7 percentage points below the 2025 target of 65 %.[60] This is due to the recycling rate of plastic packaging[61] remaining low at 28.3 %, which is 21.7 percentage points below the 2025 target of 50 %. According to the European Environment Agency's assessment, while Norway's total packaging waste recycling rate increased by 7 percentage points according to the reported data over the period between 2017 and 2021, its recycling rate for plastic packaging decreased over this period with 8.6 percentage points. Same as for municipal solid waste, the low capture rate for separate collection of plastic from households and non-household sources is identified as one of the reasons for Norway being considered to be at risk of missing the 2025 material specific target for plastic packaging waste.

According to the European Environment Agency's early warning assessment, the capture rate for plastic in municipal solid waste was 34 % in 2021, resulting in 66 % of generated plastic waste remaining in the residual waste destined for incineration. As explained above, introduction of mandatory separate collection of plastic from non-household sources, in addition to the requirements already implemented for plastic from household sources, can increase capture rates for recyclable plastic. Moreover, measures such as advanced fee modulation of extended producer responsibility (EPR) fees for packaging waste can also encourage design for recycling and the use of recycled content for packaging waste and thereby create a market demand and support economic feasibility of sorting and recycling

[55] Information provided by Norway during the dialogue held between national authorities and the EFTA Surveillance Authority in June 2024.
[56] According to Art. 3(2b)(b) of the Waste Framework Directive, 'municipal waste' includes "mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households".
[57] The Norwegian regulation on organic fertilizers (FOR-2023-08-30-1374) sets requirements for compost and digestate, such as a maximum amount of heavy metal, plastic, glass and other foreign objects, sanitisation, stabilisation, etc.)
[58] According to the European Environment Agency's early warning assessment for Norway, Norway's bio-waste treatment capacity was below 80 % of the total generated municipal bio-waste, but Norway plans to increase treatment facilities with several biogas facilities. A treatment capacity covering less than 80 % of the generated bio-waste is a risk factor for missing the target.
[59] For its early warning assessment for Norway, the European Environment Agency used the preliminary data reported by Norway to Eurostat for 2021, since that data presented the latest available data point at the time of its assessment. By the time of this report, Norway submitted updated and final data showing a slightly reduced recycling rate of 55.9 % for 2021 (calculated by dividing the amounts of recycled waste by the total generated waste amounts). Source : https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_12954693/default/table?lang=en
[60] The data was reported according to the new calculation rules as defined in the Commission Implementing Decision (EU) 2019/665 of 17 April 2019 amending Decision 2005/270/EC establishing the formats relating to the database system pursuant to European Parliament and Council Directive 94/62/EC on packaging and packaging waste (OJ L 112, 26.4.2019, p. 26), as incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 173/2022 of 10 June 2022, and which entered into force as regards the EEA EFTA States on 11 June 2022.
[61] According to Eurostat data (https://doi.org/10.2908/ENV_WASPACR), 27 % of Norway's packaging waste is plastic packaging.

of packaging waste, such as plastic. It is noted that Norway has an advanced central sorting (ACS) plant,[62] which can extract certain recyclable waste fractions (mainly metal and plastic) from the remaining residual waste stream and produce one or multiple plastic output streams. ACS plants can be used to complement separate collection systems, to capture plastic waste and other recyclables that remain in the residual waste stream.

On **landfilling** of municipal waste, Norway already achieved the 2035 landfilling target, as it reported a landfilling rate of and 3.1 % for 2022,[63] which is well within the 10 % target.[64]

It is noted that Norway has recently put in place several measures to achieve the targets, such as the separate waste collection system described above, which they expect to lead to an increase in the capture rates for municipal waste from household sources. The effects of such measures will be assessed in the next early warning report for the 2030 targets. It should also be noted that, according to the European Environment Agency's assessment, Norway is considered to be on track for meeting the 2025 target of 65 % for the recycling of all packaging waste.[65] However, further efforts are still needed to reach all the 2025 targets.

Low recycling rates are mainly due to:

- Low capture rates of some separately collected recyclables (e.g., bio-waste, plastic and textiles);
- Lack of waste separation or sorting requirements targeting municipal waste from non-household sources.

3. Key recommendations

Among the measures identified to support Norway's efforts to improve its performance in waste management, three main recommendations are listed below:

1. Further improve separate collection systems for plastic, bio-waste and textiles, especially for waste from non-household sources.
2. Promote awareness raising campaigns specifically tailored to different target groups (e.g., citizens, tourists, pupils) to enhance public participation in separate collection. In particular, regional or national campaigns should be considered to ensure consistent communication for use at local levels.
3. Consider introducing advanced fee modulation for packaging waste to incentivise producers to improve the recyclability, sortability, and recycled content of packaging.

The table below lists a number of possible measures to support Norway's efforts to improve its performance in waste management.

[62] The Romerike Avfallsforedling (ROAF) ACS plant in Lilleström, Norway.
[63] For its early warning assessment for Norway, the European Environment Agency used the preliminary data reported by Norway to Eurostat for 2022. Source: https://ec.europa.eu/eurostat/databrowser/view/env_wasmun__custom_12954501/default/table?lang=en. In June 2024, Norway submitted updated and final data for 2022 to Eurostat. At the time of this report, that data has not been published by Eurostat and thus not been taken into account for this report.
[64] Since 2009, Norway has a ban on landfilling of biodegradable waste, with some exceptions. For more information, see the European Environment Agency's early warning assessment for Norway.
[65] As described above, Norway reported of a recycling rate of 58.3% in 2021, which is 6.7 percentage points below the 2025 target.

OVERVIEW OF POSSIBLE ACTIONS TO IMPROVE PERFORMANCE
Governance
1) Develop and implement a quality management system for compost and digestate.
2) Provide guidelines or best practices to support municipalities in their work to achieve higher separate collection and recycling rates.
Separate Collection
3) Further improve separate collection systems for plastic, bio-waste and textiles, especially for waste from non-household sources.
Waste treatment
4) In case improvements to the separate collection system do not deliver the targeted results, complementing separate collection with central sorting plants to capture plastic packaging waste and other recyclables that remain in the residual waste stream could be considered.
Communication and Awareness Raising
5) Promote awareness raising campaigns specifically tailored to different target groups (e.g., citizens, tourists, pupils) to enhance public participation in separate collection. In particular, regional or national campaigns should be considered to ensure consistent communication for use at local levels.
Extended producer responsibility and economic instruments
6) Consider introducing advanced fee modulation for packaging waste to incentivise producers to improve the recyclability, sortability, and recycled content of packaging.

4. Good practices

The following measures implemented by Norway are considered good practices that could be replicated and help EEA EFTA States to achieve the targets:

- Recovery of food waste in Bergen municipality: The waste management company responsible for waste management in the Bergen region[66] is exploring technological options of processing food waste into feed for salmon aquaculture. Food waste is separately collected from commercial sources such as food markets and from household sources and is currently transported outside of the Bergen region for composting and biogas generation. The company is exploring the option to use the food waste for local insects and algae farming producing protein-rich feed, which in turn can be used for aquaculture.[67] In addition to converting food waste into a valuable product, local recovery of food waste is reducing the need for long-distance transport of food waste for treatment.
- Deposit-refund-system (DRS) and environmental tax:[68] The DRS for single use beverage containers covers aluminium cans and PET plastic bottles. It is driven by an "environmental tax" on bottles and cans up to 4 Liter volume. The tax is reduced if the DRS reaches a return rate of at least 25 % and fully abolished if the return rate exceeds 95 %. The DRS achieve high return rates of up to 100 %. The return share is determined by the Norwegian Environment Agency and applies to all the members of each producer responsibility organisation (PRO), operating the return schemes. Across Norway, the deposit refund system is managed and run by Infinitum, the Central System Administrator. Although privately owned, Infinitum is a not-for-profit organisation, working on behalf of retailers and producers.

[66] The BIR AS.
[67] For more information, see: https://hoopproject.eu/bergen/.
[68] For more information, see: https://infinitum.no/about-us/.

Annex 2: The early warning report for Iceland

1. Introduction

This country-specific report for Iceland forms part of the early warning report for the EEA EFTA States. The early warning report aims to assist EEA EFTA States at risk of failing to meet at least one of the following 2025 waste targets: to prepare for re-use and recycle 55 % of municipal solid waste, set out in Article 11(2)(c) of the Waste Framework Directive,[69] to recycle 65 % of all packaging waste, as well as the material-specific packaging waste targets, set out in Article 6(1)(f) and (g) of the Packaging and Packaging Waste Directive.[70] It also provides an update on how the EEA EFTA States are performing against the 2035 target to send no more than 10 % of their municipal waste to landfill, set out in Article 5(5) of the Landfill of Waste Directive.[71]

This country-specific report identifies good practices and recommendations to help improve Iceland's waste recycling performance and thus increase the likelihood of meeting the 2025 targets. It builds on the early warning assessment of the European Environment Agency of collected data and existing and planned policies in the area of waste management and follows the same approach and methodology[72] as for the preparation of the similar report by the European Commission for the EU Member States.[73]

Moreover, this report is based on a collaborative and transparent process involving the EEA EFTA States and their relevant national authorities for waste management. The recommendations identified during this process are based on an in-depth analysis of the most recent developments in the EEA EFTA State and aim to help meet the 2025 targets. The recommendations also take into account the future 2030 and 2035 waste targets.

2. Key findings

Based on the early warning assessment of the European Environment Agency,[74] Iceland is considered to be at risk of missing the following 2025 targets: (i) preparing for re-use and recycling 55 % of its municipal solid waste, (ii) recycling 65 % of its total packaging waste, and (iii) the material-specific recycling targets of 70 % for ferrous metal packaging, 70 % for glass packaging, and 50 % for plastic packaging. In addition, the distance between Iceland's current landfilling rate and the 2035 target to landfill no more than 10 % of municipal waste is of concern.

[69] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3), as amended by Directive (EU) 2018/851 which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 1 August 2022.
[70] European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L 365, 31.12.1994, p. 10), as last amended by Directive (EU) 2018/852, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 296/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 30 October 2021.
71 Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999 p. 1), as last amended by Directive (EU) 2018/850, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 84/2022 of 18 March 2022, and which entered into force as regards the EEA EFTA States on 19 March 2022.
[72] Methodology for the Early warning assessment related to certain waste targets — Eionet Portal (europa.eu), and Addendum to Early Warning methodology for EFTA States.
[73]See https://environment.ec.europa.eu/publications/waste-early-warning report_en and https://environment.ec.europa.eu/publications/waste-early-warning-report-staff-working-documents_en.
[74] Available at: Early warning assessment related to the 2025 targets for municipal waste and packaging waste — European Environment Agency (europa.eu).

For 2021, Iceland reported a **municipal solid waste** recycling rate of 26 %, which is 29 percentage points below the 2025 target of 55 %. Although the reported data shows that the recycling rate has remained stable in the period from 2017 to 2021, Iceland recently introduced mandatory separate collection of municipal solid waste fractions from 1 January 2023,[75] which they expect to increase the recycling rate from 2023 onwards.

At the time of this report, the low capture rates of bio-waste, textiles, plastic, metal and glass and a lack of treatment capacities for separately collected bio-waste are identified as the main reasons for Iceland being at risk of missing the 2025 municipal waste target of 55 % preparing for reuse and recycling. For 2021, Iceland reported that only 24 % of the bio-waste generated was collected separately (excluding home-composting amounts) and Iceland's bio-waste treatment capacity was below 80 % of the total generated municipal bio-waste.[76] While additional treatment capacity is planned, the expected increase in separately collected bio-waste should be considered to ensure sufficient capacities for the treatment of bio-waste also for the future. For textiles, plastic, metal and glass, the reported capture rates for 2021 were 36 %, 22 %, 29 % and 53 %, respectively.

Increasing separate collection rates for these waste fractions, for example through higher convenience services such as door-to-door collection and easily accessible bring points for citizens, in combination with awareness raising measures, can help achieve higher recycling rates. Following Iceland's introduction of a separate collection system in 2023, door-to-door collection of municipal bio-waste, plastic, and paper and cardboard has been implemented in all urban areas, covering around 94 % of the population according to the European Environment Agency's assessment.[77] Additionally, neighbourhood bring points are being set up to collect metal, glass and textiles, with extension to national coverage still in progress. The impact of the new system on the expected capture rates needs to be monitored and assessed. In case collection of metal through bring points proves insufficient and separate door-to-door collection is not feasible, co-mingled door-to-door collection of metals together with plastic could be envisaged. Moreover, Iceland could make use of its general legal provisions[78] for supervision and enforcement of the obligations upon municipalities to reach the waste recycling targets.[79] Moreover, they could consider further strengthening these mechanisms by introducing more tailored provisions for failure to meet the recycling targets.

On **packaging waste**, Iceland reported a total recycling rate of 49.8 % for 2021, which is 15.2 percentage points below the 2025 target of 65 %. However, according to the European Environment Agency's assessment, the reported data only partly complies with the new calculation rules as defined in Commission Implementing Decision 2019/665.[80] With the full

[75] Act No. 103/2021 amending the Act on Hygiene and Pollution Prevention No. 7/1998, the Act on Waste Management No. 55/2003 and the Act on Recycling Fee No. 162/2002, which entered into force on 1 January 2023. Article 12 requires separate collection of at least: paper and cardboard, metal, plastic, glass, bio-waste, textiles and hazardous materials.

[76] According to the European Environment Agency's early warning assessment, a treatment capacity covering less than 80 % of the generated bio-waste is a risk factor for missing the target. The Environment Agency estimates that Iceland generates 80,609 tonnes of bio-waste yearly. To reach 80 % treatment capacity, 64,500 tonnes capacity would therefore be needed. According to the Icelandic authorities, a capacity of approximately 44,000 tonnes was available at the time of drafting the early warning assessment.

[77] For Iceland, no Eurostat data is available regarding the percentages of households living in cities, in towns and suburbs and in rural areas, thus the European Environment Agency assumed for its assessment that 94% of the Icelandic population is living in cities, towns and suburbs.

[78] Provisions on penalties for violations of the Act on Waste Management No. 55/2003 and general provisions of the Local Government Act No. 138/2011 regarding negligence of municipal statutory duties. Article 8 of Act No. 103/2021 also introduced a mechanism for the supervision and enforcement of regional waste management plans.

[79] Article 7 of Regulation No. 803/2023 on waste management amending and repealing Regulation No. 737/2003.

[80] Commission Implementing Decision (EU) 2019/665 of 17 April 2019 amending Decision 2005/270/EC establishing the formats relating to the database system pursuant to European Parliament and Council Directive

application of the new calculation rules, the European Environment Agency estimated the recycling rates to be at 45.6 %, which would be 20.4 percentage points below the 2025 target. Over the period between 2017 and 2021, the total packaging recycling rate saw a modest increase of 5.4 percentage points. While recycling rates for wooden and aluminium packaging improved, the recycling rates decreased for steel packaging (down by 26.7 percentage points), paper and cardboard (down by 1.5 percentage points), and plastic packaging (down by 1.3 percentage points). Considering the new calculation rules, Iceland is still estimated to reach the 2025 material-specific targets for aluminium and wooden packaging,[81] but not for other packaging materials, i.e., ferrous metal, glass and plastic packaging, according to the European Environment Agency's assessment.

The lack of economic instruments is identified as one of the reasons why Iceland is considered to be at risk of not meeting the 2025 target of 65 % recycling for total packaging waste. Measures such as advanced fee modulation of extended producer responsibility (EPR) fees for packaging waste can encourage design for recycling and the use of recycled content for packaging and thereby create a market demand and support economic feasibility of sorting and recycling of packaging waste. Additionally, implementation of specific enforcement mechanisms could also be considered to incentivise municipalities to improve their recycling efforts.

On **landfilling** of municipal waste, Iceland reported an overall rate of 39.8 % for 2021, which is 29.8 percentage points above the 2035 target of 10 %. Despite the reported data showing a notable decrease from 63.6 % to 39.8 % between 2017 and 2021, Iceland's landfilling rate is significantly above target. The main identified reason for the high landfilling rate is the significant amount of biodegradable waste being landfilled. For 2020, Iceland reported having landfilled 70,192 tonnes of biodegradable municipal waste, decreasing slightly to 62,660 tonnes for 2021 (~64 % of total landfilled municipal waste[82]). Iceland plans to implement a ban on the landfilling of biodegradable waste in 2028.[83]

It is noted that Iceland has recently put in place several measures to achieve the targets, such as the separate waste collection system described above, which is expected to lead to a significant increase in municipal solid waste recycling rates.[84] Iceland also expects the planned ban on landfilling of biodegradable waste along with the improvements in bio-waste treatment capacities to reduce the amounts of municipal waste being landfilled in Iceland. Finally, according to the European Environment Agency's assessment, Iceland is in the process of implementing a pay-as-you-throw (PAYT) system to cover the whole population,[85] which is expected to be fully in place in 2024. These dynamic waste management fees for residual waste will incentivise citizens to sort waste at source. The next early warning report for the 2030 targets will assess the effects of such measures. However, further efforts are still needed to reach all 2025 targets.

94/62/EC on packaging and packaging waste (OJ L 112, 26.4.2019, p. 26), as incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 173/2022 of 10 June 2022, and which entered into force as regards the EEA EFTA States on 1 August 2022.

[81] For paper and carboard, the estimated recycling rate decreased from 82.2 % to 74 %, which is 1 percentage point below the 2025 target, according to the European Environment Agency's assessment for Iceland.

[82] Calculated on the basis of the Eurostat dataset 'Municipal waste by waste management operations', by dividing the amount of landfilled biowaste by total amount of landfilled waste.

[83] The action to implement a ban on landfilling of biodegradable waste in 2028 is reflected in Iceland's Climate Action Plan, updated in June 2024: https://samradapi.island.is/api/Documents/cf1138cc-8f2c-ef11-9bc3-005056bcce7e.

[84] For more details on these measures, see the European Environment Agency's assessment for Iceland.

[85] See Article 23(2) of Act No 55/2003 on Waste Management.

Low recycling rates are mainly due to:

- Low capture rates of separately collected recyclables (especially bio-waste, textiles, plastic, metal and glass);
- Lack of sufficient treatment capacity for bio-waste;
- Lack of incentives to divert waste from landfilling.

3. Key recommendations

Among the measures identified to support Iceland's efforts to improve its performance in waste management, three main recommendations are listed below:

1. Assess and precisely define the needs for bio-waste treatment facilities for separately collected bio-waste, to ensure sufficient capacities also for the future.
2. Implement the planned ban on landfilling of biodegradable waste.
3. Consider imposing financial penalties on municipalities should they fail to meet the recycling targets.

The table below lists a number of possible measures to support Iceland's efforts to improve its performance in waste management.

OVERVIEW OF POSSIBLE ACTIONS TO IMPROVE PERFORMANCE
Governance
1) Implement the planned ban on landfilling of biodegradable waste.
2) Consider imposing financial penalties on municipalities should they fail to meet the recycling targets.
Separate Collection
3) Further improve separate collection systems for municipal solid waste fractions with low capture rates, especially metal, glass, and textiles currently collected through bring points. Increasing the convenience of this collection, for example through co-mingled door-to-door collection of plastic and metal, could also be considered, provided that the requirements of Article 10(3) of the Waste Framework Directive are met.
Waste treatment
4) Assess and precisely define the needs for bio-waste treatment facilities for separately collected bio-waste, to ensure sufficient capacities also for the future
Communication and Awareness Raising
5) Continue to promote awareness raising campaigns specifically tailored to different target groups (e.g., citizens, tourists, pupils) to enhance public participation in separate collection. In particular, national communication campaigns to ensure consistent messages for use at local levels should be considered.
Extended producer responsibility and economic instruments
6) Consider introduction of advanced fee modulation for packaging to incentivise producers to improve the recyclability and sortability of packaging waste.

4. Good practices

The following measures implemented by Iceland are considered good practices that could be replicated and help EEA EFTA States to achieve the targets:

- Uniform labelling for waste sorting following the harmonized Nordic labelling system:[86] In 2020, Iceland introduced a voluntary labelling system common to the Nordic countries, including Norway, covering waste fractions across the whole waste management. This system employs harmonised pictograms to facilitate waste sorting for citizens, such as for garden and food waste, paper and cardboard, glass, plastic, metal and residual waste. The shared set of icons and colours aims to incentivise consumers to recycle more while simplifying the sorting process. In 2021, Iceland took the lead in developing standardised pictograms for beverage packaging with deposits, which increased the system's pictogram count to 81.

- Handbook for the municipalities:[87] In 2021, the Environment Agency of Iceland published a manual on the implementation of waste management, in cooperation with the Icelandic Association of Local Authorities. This comprehensive handbook serves as a guidance document for the municipalities and discusses ways to target and improve municipal waste management in line with objectives set in relation to the implementation of a circular economy. It includes details on municipal waste obligations, guidance on the preparation of regional waste management plans and a template for municipal bylaws regarding waste management. The document is regularly updated to reflect new laws and regulations and received feedback on its implementation.

[86] For more information, see: https://www.eupicto.com/about-the-pictogram-system/ and https://fenur.is/taknmyndabanki/.
[87] For more information, see: https://www.vso.is/frettir/handbok-um-framkvaemd-urgangstjornunar/.

Annex 3: The early warning report for Liechtenstein

1. Introduction

This country-specific report for Liechtenstein forms part of the early warning report for the EEA EFTA States. The early warning report aims to assist EEA EFTA States at risk of failing to meet at least one of the following 2025 waste targets: to prepare for re-use and recycle 55 % of municipal solid waste, set out in Article 11(2)(c) of the Waste Framework Directive,[88] to recycle 65 % of all packaging waste, as well as the material-specific packaging waste targets, set out in Article 6(1)(f) and (g) of the Packaging and Packaging Waste Directive.[89] It also provides an update on how the EEA EFTA States are performing against the 2035 target to send no more than 10 % of their municipal waste to landfill, set out in Article 5(5) of the Landfill of Waste Directive.[90]

This country-specific report identifies good practices and recommendations to help improve Liechtenstein's waste recycling performance and thus increase their likelihood of meeting the 2025 targets. It builds on the early warning assessment of the European Environment Agency of collected data and existing and planned policies in the area of waste management and follows the same approach and methodology[91] as for the preparation of the similar report by the European Commission for the EU Member States.[92]

Moreover, this report is based on a collaborative and transparent process involving the EEA EFTA States and their relevant national authorities for waste management. The recommendations identified during this process are based on an in-depth analysis of the most recent developments in the EEA EFTA States and aim to help the EEA EFTA States meet the 2025 targets. The recommendations also take into account the future 2030 and 2035 waste targets.

2. Key findings

Based on the early warning assessment by the European Environment Agency,[93] Liechtenstein is considered to be at risk of missing the material-specific recycling targets of 50 % for plastic packaging and 25 % for wooden packaging. That assessment is however based on the best available data, considering that Liechtenstein has not yet established equivalent methods to the harmonised reporting rules.

[88] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3), as amended by Directive (EU) 2018/851 which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 1 August 2022.
[89] European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L 365, 31.12.1994, p. 10), as amended by Directive (EU) 2018/852, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 296/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 30 October 2021.
[90] Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999 p. 1), as amended by Directive (EU) 2018/850, which was incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 84/2022 of 18 March 2022, and which entered into force as regards the EEA EFTA States on 19 March 2022.
[91] Methodology for the Early warning assessment related to certain waste targets — Eionet Portal (europa.eu), and Addendum to Early Warning methodology for EFTA States.
[92] See https://environment.ec.europa.eu/publications/waste-early-warning-report_en and https://environment.ec.europa.eu/publications/waste-early-warning-report-staff-working-documents_en.
[93] Available at: Early warning assessment related to the 2025 targets for municipal waste and packaging waste — European Environment Agency (europa.eu)

For 2021, Liechtenstein reported a **municipal solid waste** recycling rate of 76 %, which is 21 percentage points above the 2025 target of 55 %. However, Liechtenstein has not yet established a method to determine the weight of the municipal waste recycled equivalent to the calculation rules in Commission Implementing Decision 2019/1004.[94] The European Environment Agency therefore used the best available proxy to calculate the recycling rate in its early warning assessment and assumed a reduction of the recycling rate with 5 percentage points, down to 71 %. The reporting of data inconsistent with the European calculation rules makes it difficult to assess Liechtenstein's recycling performance against the 2025 targets. For example, the data on recycling and composting/digestion refer to separately collected amounts, not to actually recycled amounts after sorting and processing, as required by Commission Implementing Decision (EU) 2019/1004. Additionally, Liechtenstein's waste statistics include all recycled materials delivered to the civic amenity sites as well as direct deliveries of recyclables to waste management companies from households, companies, and industry. It is therefore likely that the reported amounts of separately collected materials for recycling include other waste fractions than municipal waste.

Similarly, Liechtenstein has not yet established an equivalent method to report data on recycling of packaging waste in accordance with the Commission Implementing Decision 2019/665.[95] Since these concerns apply horizontally to most waste streams, a general recommendation on monitoring and reporting has been included in this report. To further increase transparency, the national Waste Management Plan[96] should also be updated, including by adding reference to the recycling targets and envisaged measures to help achieve those targets. The baseline year of the current plan is 2017.

On **packaging waste**, Liechtenstein reported a total recycling rate of 72.2 % for 2021. Same as for municipal solid waste (see above), applying a correction factor to account for reporting standards diverging from the harmonised calculation rules, the total recycling rate for packaging would drop to 62.6 %, which is 2.4 percentage points below the target of 65 %. This is due to the recycling rates for plastic and wooden packaging remaining low. For plastic packaging the distance to the target of 50 % is 27.9 percentage points when accounting for the divergent reporting standards. In addition, wooden packaging is currently not recycled in Liechtenstein, and the distance to the target is therefore 25 percentage points. As far as the material-specific targets for paper and cardboard (75 %), aluminium (50 %), ferrous packaging (70 %) and glass packaging (70 %) are concerned, Liechtenstein reaches these targets even when accounting for the correction factor for divergent reporting standards.

A first factor identified for the low recycling rates of the plastic and wooden fractions is the inconvenience of the system for separate collection. According to the early warning assessment, recyclables, such as plastic other than PET bottles and plastic crates, are

[94] Commission Implementing Decision (EU) 2019/1004 of 7 June 2019 laying down rules for the calculation, verification and reporting of data on waste in accordance with Directive 2008/98/EC of the European Parliament and of the Council and repealing Commission Implementing Decision C(2012) 2384 (OJ L 163, 20.6.2019, p. 66), as incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 318/2021 of 29 October 2021, and which entered into force as regards the EEA EFTA States on 30 October 2021, with the following adaptation for Liechtenstein: "For the purposes of Article 3 and Annex I, Liechtenstein shall use an equivalent method to determine the weight of the municipal waste recycled."

[95] Commission Implementing Decision (EU) 2019/665 of 17 April 2019 amending Decision 2005/270/EC establishing the formats relating to the database system pursuant to European Parliament and Council Directive 94/62/EC on packaging and packaging waste (OJ L 112, 26.4.2019, p. 26), as incorporated into the EEA Agreement by Decision of the EEA Joint Committee No 173/2022 of 10 June 2022, and which entered into force as regards the EEA EFTA States on 11 June 2022, with the following adaptation for Liechtenstein: "For the purposes of Article 6c and Annex II, Liechtenstein shall use an equivalent method to determine the weight of the municipal waste recycled." The EFTA Surveillance Authority understands this adaptation as relating to packaging waste instead of municipal waste.

[96] https://archiv.llv.li/files/au/2020_150_8802_liechtabfallplanung_2070_genehmigt.pdf

almost exclusively collected via civic amenity sites of the municipalities in Liechtenstein. Another factor is the absence of collection or recycling of wood packaging. A third factor is the lack of sufficient incentives for municipalities to prioritise and improve their recycling efforts to ensure better compliance with recycling targets. Specifically, legal instruments that determine consequences for municipalities which do not fulfil the recycling targets are not applied, due to the lack of data. A fourth factor might be that divergent labelling systems confuse citizens when sorting packaging waste. A sizeable amount of packaging is imported from other countries, mostly Switzerland and Austria, which have different labelling requirements. Establishing unified labelling requirements for the Liechtenstein market is therefore challenging, but other measures could be envisaged. For example, Liechtenstein could raise awareness among citizens on how to sort waste bearing the Austrian/Swiss labels. Moreover, Liechtenstein could ensure that the harmonised pictograms which it established for the civic amenity sites are also systematically used by all civic amenity sites.

On **landfilling** of municipal waste, Liechtenstein reaches the 2035 target, as it has banned the landfilling of municipal waste and biodegradable waste since 1 January 2000, and no landfilling is therefore taking place.

It is noted that Liechtenstein does not currently have in place economic instruments, such as an extended producer responsibility (EPR) scheme or a packaging tax. The introduction of such instruments is understood to be complicated due to Lichtenstein's integration in the Customs Union with Switzerland. Therefore, while the introduction of economic instruments could help improve recycling performance, no recommendations to this effect are currently proposed.

Low recycling rates are mainly due to:

- Inconvenience of the separate waste collection system;
- Lack of legal instruments such as consequences for municipalities if the targets are not met.

3. Key recommendations

Among the measures identified to support Liechtenstein's efforts to improve its performance in waste management, two main recommendations are listed below:

1. Improve monitoring and reporting of data, by establishing methodologies equivalent to the harmonised reporting requirements to determine the weight of municipal and packaging waste.
2. Assess opportunities to diversify the collection system away from almost exclusive reliance on civic amenity sites, specifically exploring options to further develop existing private bring-points in supermarkets as well as opportunities for an extension of door-to-door collection or convenient public bring-points where possible, prioritising plastic and wooden packaging waste.

The table below lists a number of possible actions to support Liechtenstein's efforts to improve its performance in waste management.

OVERVIEW OF POSSIBLE ACTIONS TO IMPROVE PERFORMANCE
Governance
1) Improve monitoring and reporting of data, by establishing methodologies equivalent to the harmonised reporting requirements to determine the weight of municipal and packaging waste.
2) Update the Waste Management Plan to reflect the recycling targets and envisaged measures to achieve those targets, in line with Article 30 of the Waste Framework Directive.
3) Ensure that harmonised pictograms developed by the authorities are also used in all civic amenity sites.
Separate Collection
4) Assess opportunities to diversify the collection system away from almost exclusive reliance on civic amenity sites, specifically exploring options to further develop existing private bring-points in supermarkets as well as opportunities for an extension of door-to-door collection or public bring-points where possible, prioritising plastic and wooden packaging waste.
Communication and Awareness Raising
5) Consider the implementation of communication campaigns on different types of labelling on packaging, to make the sorting of packaging imported from neighbouring countries easier for citizens.
Extended producer responsibility and economic instruments
6) Consider the introduction of a deposit return system for wooden packaging to increase the capture and recycling rates.

4. Good practices

The following measures implemented by Liechtenstein are considered good practices that could be replicated and help EEA EFTA States to achieve the targets:

- Ban on landfilling:[97] Liechtenstein implemented a landfill ban for municipal and biodegradable waste from 1 January 2000. The residual waste collected from municipalities is instead incinerated in the *Kehrichtverbrennungsanlage* (KVA) in Buchs (SG). Liechtenstein therefore already exceeds the 2035 landfilling target.

- Deposit-refund system:[98] A deposit-refund system (DRS) is applied for nearly all plastic bottles which have the PET sign on them, plastic crates, and for re-usable glass bottles. For all other plastic bottles and other plastic packaging waste, voluntary take-back in retail is available. The DRS increases separate collection and therefore helps to achieve the recycling targets.

- Littering Toolbox:[99] Liechtenstein established a website called 'Littering Toolbox' that collects examples of measures against littering that have already been implemented, which makes them freely accessible to all interested parties. It primarily informs all those who want to actively combat littering or are planning a campaign. It includes a large number of measures against littering that have already been implemented, including an assessment of what they have achieved. Furthermore, the toolbox enables project managers to publicize the projects they have carried out against littering by submitting their project.

[97] Liechtensteiner Abfallplanung 2012-2070, SR 814.600 Technische Verordnung vom 10. Dezember 1990 über Abfälle (TVA), SR 814.600
[98] Gemeinde Triesen, Richtig Entsorgen, available online https://www.triesen.li/richtig-entsorgen.
[99] National Administration Principality of Liechtenstein, Littering, available online https://www.llv.li/en/individuals/recreational-environmental-and-animal-management/waste-disposal/littering

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