

Extended producer responsibility for packaging

**Full Business and Regulatory Impact
Assessment (BRIA)**

November 2024

Contents

1.0	Title of proposal: Reforming the UK packaging producer responsibility system.....	4
2.0	Purpose and intended effect	4
2.1	Background	4
2.2	Objective and Rationale	7
2.3	Polluter pays principle and negative externalities	9
2.4	Poor quality of material for recycling	10
2.5	Insufficient consumer information and confusion over what packaging items are recyclable	11
2.6	Lack of collection and sorting infrastructure and poorly developed markets.....	11
2.7	System-wide inefficiencies	11
3.0	Consultation	12
3.1	Consultation within government	12
3.2	Public consultation	12
3.3	Business consultation.....	12
4.0	Options.....	13
4.1	Approach to modelling.....	14
4.2	Sectors and groups affected	15
4.3	No policy change – business as usual	15
4.4	Option 1. Packaging EPR fees for packaging waste collected from households, modulated fees, and retention of recycling obligations and the PRN system	16
4.5	De minimis and point of compliance.....	17
4.6	Projected POM and recycling rates	19
4.7	Costs and benefits of packaging EPR.....	20
5.0	Competition Assessment	23
5.1	Scheme administrator.....	24
5.2	Obligated producers and the packaging sector	25
5.3	Public sector	28
5.4	Reprocessors and exporters	29
5.5	Materials Facilities	29
5.6	Compliance Schemes	30
5.7	Waste management companies	30
6.0	Consumer Assessment.....	30
7.0	Test run of business forms.....	33
8.0	Digital Impact Test	33

9.0	Legal Aid Impact Test	34
10.0	Enforcement, sanctions and monitoring.....	34
11.0	Implementation and delivery plan	35
12.0	Summary and recommendation.....	35
13.0	Declaration and publication.....	36
	Annex A – Packaging collection costs in Scotland	37

List of Tables

Table 1:	Estimated number of current and newly obligated producers in Scotland..	18
Table 2:	Summary of NPV (2025-34) proportional to Scotland based on population share of the UK (£m).	21
Table 3:	Consumer Assessment Questions.	30
Table 4:	Digital Impact Test Questionnaire.....	33

1.0 Title of proposal: Reforming the UK packaging producer responsibility system

1. This is the final business and regulatory impact assessment (BRIA) for the reform of the packaging producer responsibility regulations. This follows on from the partial BRIA published alongside the joint public consultation from all UK nations in March 2021¹, and the partial BRIA for the proposed secondary legislation regarding data reporting requirements and civil penalties for non-compliance, published in January 2023². The analysis from these previous impact assessments and corresponding Defra impact assessments published in 2019³ and 2021⁴ has been updated to reflect final policy decisions as reflected in the draft regulations that will introduce these measures. Packaging EPR will cover the United Kingdom as a whole, and has been developed as a joint effort between the four nations.

2.0 Purpose and intended effect

2.1 Background

2. Over 10 million tonnes of packaging waste are produced every year in the UK. A substantial share of this ends up in landfill, though almost two-thirds of it could be recovered, meaning that there are avoidable environmental costs.⁵
3. Extended producer responsibility (EPR) schemes can be implemented to ensure that producers' responsibility for their products is extended to the post-use phase. This includes financial responsibility and can apply to, for example, the environmental or waste management costs of the products they place on the market. This incentivises producers to design for key circular economy outcomes such as reduced consumption of resources, reuse, repair and recycling.
4. A UK-wide producer responsibility system for packaging has been in place since 1997. It is currently governed by the Producer Responsibility Obligations (Packaging Waste) Regulations 2007 (as amended).⁶ Under these regulations, organisations which produce or fill packaging or sell packaged goods are obligated to contribute towards the cost of recycling and recovery of this packaging. The objectives of this system are to:
 - reduce the amount of packaging produced;
 - reduce the amount of packaging waste going to landfill; and

¹ [Reforming the UK packaging producer responsibility system: Partial Business and Regulatory Impact Assessment \(BRIA\) March 2021](#)

² [Reforming the UK packaging producer responsibility system: Partial Business and Regulatory Impact Assessment \(BRIA\) January 2023](#)

³ [Reforming the UK packaging producer responsibility for packaging - impact assessment - Defra January 2021](#)

⁴ [Reforming the packaging producer responsibility system in the United Kingdom - consultation - impact assessment February 2019](#)

⁵ [SEPA Packaging waste](#)

⁶ [The Producer Responsibility Obligations \(Packaging Waste\) Regulations 2007](#)

- increase the amount of packaging waste that is recycled and recovered.
5. Businesses currently prove they have met their recycling obligations through the purchase of Packaging Waste Recycling Notes (PRNs) and/or Packaging Waste Export Recycling Notes (PERNs) which are sold by accredited reprocessors or exporters. Obligated businesses must buy sufficient PRNs/PERNs to offset their obligations, in line with the 'polluter pays' principle.⁷ PRNs and PERNs act as evidence that an equivalent amount of similar packaging has been recycled.
 6. The current producer responsibility system for packaging has helped drive recycling while keeping the cost to businesses low. However, it does not give packaging producers full financial responsibility for the end-of-life management of their packaging or any of the environmental externalities created.
 7. It is estimated that the current system covers only around 10% of the total cost of managing post-use packaging waste,⁸ which means that most of the cost is borne by local authorities, other public authorities and businesses who consume packaged goods. Additionally, there is significant fluctuation of revenue raised through PRNs. The current system therefore does not meet the polluter-pays principle or provide sufficient financial stability to encourage investment in infrastructure to meet environmental objectives.
 8. Other issues highlighted within previous public consultation proposals are:^{9,10,11}
 - concerns over system transparency, including the fate of materials and producer visibility of PRN fee use;
 - an uneven playing field for domestic reprocessing due to an over-reliance on export markets;
 - limited direct consumer communications to encourage recycling;
 - a lack of producer incentive to design for greater recyclability or reuse, as the price of PRNs is not linked to recyclability or environmental impacts of materials. This means that materials are often reprocessed into much lower-value goods or lost to landfill or incineration after just one use; and
 - a lack of granularity in data reported by producers, as this currently only includes the type of material and does not include the packaging or polymer type.
 9. Therefore, the Scottish Government is introducing packaging EPR along with the other governments of the UK. The four governments are working to deliver a single UK-wide scheme that reflects local needs and priorities.

⁷ Obligated businesses are those who place more than 50 tonnes of packaging and have a turnover of more than £2 million per year.

⁸ [Plastic bottles: Turning Back the Plastic Tide](#), paragraph 38.

⁹ [Consultation on reforming the UK packaging producer responsibility system 2019](#)

¹⁰ [Consultation on Extended Producer Responsibility for Packaging 2021](#)

¹¹ [Consultation on Reforms to the Packaging Waste Recycling Note \(PRN\) and Packaging Waste Export Recycling Note \(PERN\) System and Operator Approval](#)

10. The regulations place obligations on actors across the packaging supply chain. Producers, as defined in the regulations, will be required to:
 - fund the full net costs of efficient and effective waste management services for household packaging. These costs will be allocated to producers based on their share of each packaging material type placed on market each year. From 2026 onwards, fees will be ‘modulated’ based on environmental factors such as recyclability to incentivise more sustainable use of packaging;
 - meet packaging recycling targets through the purchase of evidence notes from accredited reprocessors and exporters. The evidence requirement will be based on the total tonnage of packaging producers place on the market and national recycling targets; and
 - report data on the packaging they place on the market.
11. Producers’ precise obligations will depend on factors including their turnover and the tonnage of packaging they place on the market each year. See the partial BRIA for further details.¹²
12. The fees raised from producers will fund:
 - the full net costs of efficient and effective local authority household packaging waste collection and disposal services;
 - information provision for members of the public and businesses on the reuse of packaging, recovery (including recycling and disposal) of packaging waste, and prevention of packaging litter; and
 - the operating costs of a scheme administrator which oversees the scheme and is responsible for meeting the stated outcomes.
13. Providers of household recycling and waste services will be funded for efficient and effective household waste collection and disposal services. This will take into account factors specific to local areas, such as rurality, levels of deprivation, and policies on waste management in each nation.
14. The scheme administrator (SA) will be a public body, tasked with ensuring the efficient and effective delivery of the scheme, including guidance for all actors on their roles and responsibilities, financial payments to local authorities and meeting the scheme outcomes and targets.
15. Producers’ costs are estimated to total approximately £1.7 billion each year for the UK-wide scheme. An estimated £1.2 billion of this relates to household packaging recycling and waste services (£800 million for household recycling services and recycling centres; £300 million for household residual waste).¹³ In addition, producers will contribute an estimated £300 million through purchase

¹² [Reforming the UK packaging producer responsibility system: Partial Business and Regulatory Impact Assessment \(BRIA\) January 2023](#)

¹³ Note that the £1.2bn includes c. £100m for managing packaging disposed of in street bins. Along with the other UK governments, we intend to bring forward legislation to address this element of packaging EPR at a later date, to be in force by 2026.

of evidence notes, and £100 million in administrative costs for the Scheme Administrator, communications and regulatory activities.¹⁴

16. The policy is focussed on businesses, rather than individuals, but has the potential to impact on all individuals and households in Scotland as it concerns packaging in all forms. It is a UK-wide policy. This policy change can be considered to be strategic given the strong links to a wide array of environmental and wider policy objectives for Scottish Government.

2.2 Objective and Rationale

17. The objectives of the new scheme are:
 - producers are responsible for the full net cost of managing their packaging efficiently and effectively at end-of-life;
 - unnecessary packaging is avoided;
 - more reuseable packaging is used, replacing single-use;
 - more packaging is designed to be recyclable;
 - the recycling rate of packaging placed on the market increases to 76% by 2030; and
 - the quality of packaging materials presented for recycling improves and is more widely used in higher-value secondary applications.
18. Packaging EPR has strong cross-policy links to Scottish, UK and European legislation and strategic direction.
19. The circular economy contributes directly to the Environment and Economy outcomes under the National Performance Framework. Directly applicable National Indicators include:¹⁵
 - Carbon footprint
 - Natural capital
 - Greenhouse gas emissions
 - Waste generated
 - Marine environment
 - Biodiversity
 - Scotland's reputation
 - Perception of local area
 - Condition of protected nature sites
20. Resource use and waste generated are recognised as key sources of greenhouse gas generation, and the Scottish Government reports on progress against both territorial and consumption emissions. Packaging EPR will contribute to objectives set out in the Climate Change (Scotland) Act 2009,¹⁶ as amended through the Climate Change (Emissions Reduction Targets)

¹⁴ [Extended Producer Responsibility for Packaging, Summary of consultation responses and Government response, page 7- March 2022.](#)

¹⁵ [Explore the National Outcomes - Scottish Government](#)

¹⁶ [Climate Change \(Scotland\) Act 2009](#)

(Scotland) Act 2019,¹⁷ and the Climate Change Plan Update 2018-2032.¹⁸ The legislation establishes a target of achieving net-zero emissions by 2045.

21. In 2015, the Scottish Government committed to the United Nations Sustainable Development Goals. The ambition behind the goals is to end poverty, protect the planet and ensure prosperity for all as part of a new sustainable development agenda. Packaging EPR will have a positive impact on a number of these goals, most explicitly Goal 12: Responsible Consumption and Production.¹⁹
22. Scotland is transitioning to a circular economy. In February 2016, “Making Things Last: A circular economy strategy for Scotland” was published.²⁰ This overarching strategy integrated the key elements of the Zero Waste Plan²¹ and Safeguarding Scotland’s resources²² report and built on Scotland’s zero-waste and resource efficiency agendas. Preventing waste arising, reusing and recycling products and materials were central requirements to accelerating a circular economy.
23. The Scottish Government implemented Article 5 of the EU Single-Use Plastics Directive (SUPD) on 1st June 2022. The regulations introduced market restrictions for single-use plastic cutlery, plates, beverage stirrers, straws and balloon sticks as well as single-use food containers and cups made of expanded polystyrene.
24. The Deposit and Return Scheme Scotland Regulations, passed by the Scottish Parliament in May 2020, aim to help improve the quality and quantity of recycling, reduce litter and achieve Scottish Government climate change targets. DRS is a form of producer responsibility. Until 1 January 2028, drinks containers (excluding those made of glass) are exempt from certain obligations under the regulations, including disposal costs, recyclability assessments, and the requirement to provide recycling information; they are subject to data collection and reporting obligations and recycling obligations. From that date, if there is no operational DRS in any part of the UK, the exclusions for drinks containers will fall away so that drinks containers will be subject to all of the obligations in the Regulations. The four nations have agreed to a revised implementation timeline of October 2027 for an aligned DRS scheme across the UK.
25. The Circular Economy (Scotland) Act received Royal Assent on 8 August 2024. The Act aims to support Scotland’s transition to a zero waste and circular economy, significantly increase reuse and recycling rates, and modernise and improve waste and recycling services.

¹⁷ [Climate Change \(Emissions Reduction Targets\) \(Scotland\) Act 2009](#)

¹⁸ [Securing a green recovery on a path to net zero: climate change plan 2018-2032 - update](#)

¹⁹ [The 17 goals, United Nations](#)

²⁰ [Making Things Last: a circular economy strategy for Scotland](#)

²¹ [Scotland's Zero Waste Plan - Scottish Government](#)

²² [Safeguarding Scotland's resources: blueprint for a more resource-efficient and circular economy](#)

26. The 2020 update to the Climate Change Plan, and Programme for Government also commit to publication of a Circular Economy and Waste Route Map.²³ An updated draft Circular Economy and Waste Route Map was published for consultation in January 2024. The Route Map is designed to drive progress in three key areas:²⁴
- setting the strategic direction and laying foundations for delivering a system-wide, comprehensive vision for Scotland’s circular economy to 2030;
 - setting out priority actions from now to 2030 to accelerate more sustainable use of resources across the waste hierarchy; and
 - reducing emissions associated with resources and waste.
27. In 2022, the UK Government implemented a new tax on businesses that produce or import plastic packaging with less than 30% recycled content.²⁵ This aims to incentivise businesses to use recycled materials in the production of plastic packaging, which will create greater demand for recycled inputs and in turn stimulate increased levels of recycling and collection of plastic waste. The Plastic Packaging Tax should complement packaging EPR in providing businesses with the right incentives to design and use plastic packaging that is easier to recycle, driving the overall development of more-sustainable packaging.
28. An amendment to the EU Waste Framework Directive 2018 set a 70% packaging recycling target by the end of 2030.²⁶ The Scottish Government, and our partners in the other UK governments, aim to exceed this target through packaging EPR.
29. In May of 2018 the European Commission’s Circular Economy Package was approved. The legislation aims to move supply chains towards a circular economy maintaining the value of products, materials and resources in the economy for as long as possible. This includes more ambitious recycling targets and full cost recovery of recycling costs from producers. The Scottish Government has committed to meeting or exceeding the EU’s environmental standards after leaving the EU.²⁷ Packaging EPR will contribute to meeting this commitment.
30. A new European Packaging and Packaging Waste Regulation is close to adoption, which includes packaging reduction targets, places restrictions on the use of certain plastic packaging types, sets reuse and refill targets, and requires all packaging (with exemptions) to be recyclable.²⁸

2.3 Polluter pays principle and negative externalities

²³ [Securing a green recovery on a path to net zero: climate change plan 2018-2032 - update.](#)

²⁴ [Scotland's Circular Economy and Waste Route Map to 2030 Consultation](#)

²⁵ [Plastic Packaging Tax: steps to take - guidance](#)

²⁶ [Directive \(EU\) 2018/852 of the European Parliament and the Council](#)

²⁷ [Circular Economy Package policy statement](#)

²⁸ [New EU rules to reduce, reuse and recycle packaging.](#)

31. At present, taxpayers pay most of the costs of collecting and managing packaging waste generated in the home through services provided by local authorities but have limited control over the packaging that accompanies the products they purchase. Whilst we cannot precisely attribute the proportion of costs that are borne by producers at present²⁹, packaging producers do not bear full financial responsibility for the of end-of-life management of the packaging they supply and import and are not accountable for the environmental externalities of their packaging as consistent with the 'polluter pays' principle³⁰. As a result, there is limited incentive for producers to consider the impact of disposing of the packaging they choose to use for their products at end of life.
32. Under packaging EPR, producers will become financially responsible for the costs of the collection and treatment of household packaging waste³¹. This will therefore internalise some of the costs of dealing with packaging waste.
33. With the addition of modulated fees, producers will have further incentives to reduce the environmental impacts of their packaging. For example, producers will have a financial incentive to use less packaging, particularly unrecyclable or hard-to-recycle packaging, in order to improve how their packaging is managed at end of life and to minimise their costs. Where packaging is necessary there will be a financial incentive to make it easily recyclable. This will reduce the negative externalities associated with the production, use and disposal of packaging including natural resource depletion, wider ecosystem impacts associated with the production of raw materials and damage to eco-systems including leakage to the environment, greenhouse gas (GHG) emissions (from both production and disposing of packaging to landfill and incineration), and impacts on land use from landfill sites.

2.4 Poor quality of material for recycling

34. Contamination of materials (for example where unrecyclable materials are mixed in with recyclable materials) collected for recycling during the collection process reduces the value of the materials and results in a loss of material for recycling. Packaging EPR complements other policies, such as a Deposit Return Scheme for drinks packaging, as well as simpler recycling collections in England, which will lead to higher quality recyclate. Packaging EPR specifically, will incentivise producers to consider the design of their packaging and to reduce hard to recycle, or disruptive packaging materials.

²⁹ For example, our current analysis suggests that producer payments under the current regulations would equate to around 7-11% of the full next costs of municipal (household and household-like) packaging waste collection and end-of-life treatment.

³⁰ While producers do pay a proportion of net cost of packaging collection through the PRN system, this is likely to be small. Producers do also likely already pay for a proportion of Construction and Industrial (C&I) and Non-Household Municipal (NHM) costs through backhaul and direct contracts with waste collectors, and as such Household packaging is a priority for inclusion in EPR. Government does not intend to extend packaging EPR fees to these sectors at the current time but will keep these under review once we have improved data on tonnages and costs.

³¹ Net of any income from the sale of these materials to the reprocessing and recycling sectors.

2.5 Insufficient consumer information and confusion over what packaging items are recyclable

35. The current system has not encouraged producers or compliance schemes to educate and inform consumers, although a few have chosen to do so. This is because the costs of doing so would likely be borne by a few organisations, but the benefits could be felt by all. In essence, a “free rider” problem. However, to reach high levels of collection and recycling, consumer education and information must be prioritised and scaled up. The proposed changes will require obligated producers to fund national and local consumer communication and information campaigns that will support increased recycling, reuse, and the prevention of litter.

2.6 Lack of collection and sorting infrastructure and poorly developed markets

36. Some types of packaging are technically recyclable but are not recycled (or not widely recycled) due to limited provision of collection points, collection services, or a lack of sorting capacity to separate this packaging from other packaging types. This may either be because it is not cost effective to put those systems in place currently or because the full societal cost of the packaging is not reflected currently in decisions regarding its use.
37. Examples include food and drinks cartons which despite collection provision increasing in many parts of the UK are not always collected in a way that enables them to be separated for recycling or are not separated effectively from other types of card packaging to enable them to be recycled. Whilst some types of film and flexible plastic packaging are technically recyclable, the collection and sorting infrastructure is poorly developed and there is a lack of end markets for the recovered materials. Other types of flexible plastic packaging are not suited to mechanical recycling such as packaging that is made of more than one polymer.
38. Packaging EPR will incentivise obligated producers to choose to use packaging materials for which there is effective recycling infrastructure in place or provide a means by which new infrastructure is funded to increase the recycling rates of certain packaging if it is more cost effective to do so.

2.7 System-wide inefficiencies

39. There is a lack of shared objectives across the supply chain for long term transition towards more packaging waste being recycled; a failure to include and coordinate different actors in the supply chain; a lack of support to drive market demand for recycled materials; and insufficient mechanisms to deal with uncertainty and learning through innovation. We expect that packaging EPR will lead to packaging producers making their packaging more recyclable and easier for consumers to maximise their recycling. This will reduce collection and treatment costs to Local Authorities, thereby reducing packaging EPR fees they are obligated to cover. There is a need to improve the collection, sorting and reprocessing infrastructure across the whole system. This is unlikely to happen

without government intervention because the costs associated with innovation and improving the flow of knowledge and technology between actors would need to be faced by individual businesses whilst the whole sector would enjoy the resulting benefit. Whilst we should assume that there will be *some* innovation amongst producers at present, as ultimately different actors in the supply chain still need to operate in a competitive marketplace, the current system does not drive the *optimum* level of innovation due to the potential for free riding.

3.0 Consultation

3.1 Consultation within government

40. In introducing packaging EPR, the Scottish Government and our partners in the other UK governments want to design a packaging EPR scheme that has a positive long-term impact, is consistent and works well for all citizens. This requires a joint approach while respecting devolved powers. The Scottish Government and other UK governments are therefore closely collaborating on a redesign of the system. The Scottish Government has also engaged closely with local government, especially via the convention of Scottish Local Authorities (COSLA), on design and delivery of the scheme.
41. As the regulators of the scheme, the Scottish Environment Protection Agency (SEPA) and the environmental regulators in the other nations of the UK have been closely involved in design and delivery of the scheme.

3.2 Public consultation

42. An initial consultation on proposals to reform the producer responsibility system was undertaken in 2019, and a second consultation on proposals for packaging extended producer responsibility in 2021. The summary of responses to the 2019 Consultation can be found here³² and the Government Response to the 2021 Consultation can be found here³³. A third consultation to receive stakeholder feedback on the operability of the draft regulations was undertaken in 2023, responses to this consultation were taken into account in revising and finalising the legislation.

3.3 Business consultation

43. A wide range of business of engagement was undertaken at both a Scottish and UK level. This informed a wide range of affected businesses and trade associations about the proposals and captured their feedback.
44. Engagement has included an industry sounding board established with the support of INCPEN (Industry Council for Packaging and the Environment), the government's Advisory Committee on Packaging (ACP), and Defra's Packaging and Collections Working Group and Resources & Waste Stakeholder Advisory Group. Specific engagement has also taken place with local authority groups

³² [Consultation on reforming the UK packaging producer responsibility system - Summary July 2019](#)

³³ [Packaging and packaging waste: introducing Extended Producer Responsibility - Consultation outcome](#)

and stakeholders in England, Northern Ireland, Scotland, and Wales. These have given stakeholders the opportunity to discuss the proposed reforms and put their opinions forward.

4.0 Options

45. The options considered are:

- **Baseline.** No policy change: continuation of the existing packaging producer responsibility regime in its current form, adjusted for the introduction of DRS in Scotland (and subsequently for the different DRS in England, Wales and Northern Ireland).
- **Option 1.** Packaging EPR scheme: Reform the packaging producer responsibility system such that producers pay the full net cost of collection and end-of-life treatment of packaging from households (Kerbside and Household Waste and Recycling Centres (HWRC)). Introduce modulated fees on packaging, and retention of the PRN system. This is assumed to incentivise the correct behaviours by producers and consumers to deliver the policy objectives. This is the preferred option.

46. Since publication of the last packaging EPR Defra and Scottish IA, there have been notable changes on the preferred option, these are listed below:

- Implementation date: As per the 2023 Collection and Packaging reforms reset, this impact assessment is presented with the new implementation date of 2025.
- Reduction of packaging EPR scope: Since the last published Scottish and UK IA, some components of the Statutory Instrument (SI) supporting packaging EPR needed to be removed and delivered separately in order to focus on delivery for the planned implementation year without imposing any further delay. As a result, three of the functions from the last preferred option which were considered have been stripped from the cost benefits analysis; mandatory recyclability labelling, mandatory takeback of fibre-based composite cups, and binned packaging waste clean-up costs.
- Updated input data: Updating the packaging input data using the Packflow 2023³⁴ report data (year reporting, 2022) from previously 2019 reporting years. This has had a reasonably big impact on the modelling due to the changes in trends since the 2019 data³⁵. The report shows that, for most materials, amount of total packaging placed on the market (POM) has decreased, and relative increases in material recycling rates have impacted the amount of additional recycling from packaging EPR.

³⁴ [WRAP - PackFlow Refresh 2023 Reports](#)

³⁵ [Valpak - PackFlow COVID-19 Report](#)

- Reduction in number of Material Facilities: In line with the de minimis assessment produced last year for the supporting Material Facilities SI, Defra have updated the central analysis to include the revised down facility estimates in scope, using submitted Devolved Administration data. Note, MF costs in the Defra Impact Assessment have been removed from the EANDCB, as they are introduced under separate regulations. They are shown in the central case for full transparency.

4.1 Approach to modelling

47. As packaging EPR is a joint legislation between the four nations of the UK, the economic modelling in this BRIA is fully informed by the modelling provided to the Scottish Government by Defra, which estimates the net present value (NPV) between the baseline/do-nothing scenario and the implementation of packaging EPR.
48. Estimations of costs and benefits will therefore be scaled to Scotland based on a population share of the UK. While this will not be wholly representative of the share of costs and benefits between actors in Scotland (producers, materials facilities, central and local government etc.), this will provide a broadly correct estimate, and avoid potential complications from utilising a range of proxies that would not sum to the correct overall results given by the model.
49. One important adjustment however has been made to better account for the reality of packaging EPR in Scotland. Defra's model has applied an uplift to recycling rates in the baseline scenario based upon implementation of Simpler Recycling³⁶, which aims to simplify local authority recycle collection systems in England to achieve higher recycling rates. While this specific policy will not be implemented in Scotland, the Circular Economy (Scotland) Act 2024 includes proposals to co-design a statutory Code of Practice for service provision which, as outlined in the Circular Economy and Waste Route Map, will develop high-performing services, resulting in improvements to data and reporting by local government, as well as mandatory recycling and reuse targets. However, these proposals are in early stages of development and will require further analysis as measures are developed to understand the impact. We have therefore removed the baseline recycling rate improvement attributed to Simpler Recycling in the UK IA. The effect of this adjustment will be to lower the baseline recycling rates, which may therefore provide a higher relative benefit of implementation of packaging EPR on a unit basis. Such caveats will be noted throughout.
50. Since the 2022 final stage impact assessment from Defra, the evidence base and subsequent analysis has been significantly expanded. Additional pieces of analysis of particular note are:
 - estimates of the impact of Covid-19 on the production and consumption of packaging;

³⁶ [Simpler Recycling in England - Final Impact Assessment May 2024](#)

- assessment of the impact of packaging EPR on consumer prices;
- estimates of obligated producers – including online marketplaces;
- monitoring and enforcement costs; and
- familiarisation costs to all businesses impacted.

4.2 Sectors and groups affected

51. It is assumed that packaging EPR will affect the following stakeholder groups:

- raw material manufacturers;
- packaging designers;
- packaging manufacturers or converters;
- product manufacturers or pack fillers;
- distributors;
- retailers (food and non-food);
- wholesalers;
- waste management organisations; brokers; exporters;
- reprocessors;
- brand owners;
- importers;
- third sector organisations, including public interest groups;
- Scottish Government;
- local authorities;
- regulators; and
- consumers.

4.3 No policy change – business as usual

52. This is the baseline against which the costs and benefits of packaging EPR are compared. In the baseline it is assumed that there will be no reform to current packaging regulations. It is therefore assumed that producers would continue to be required to obtain evidence, in the form of PRN/PERNs, to demonstrate that they have met their recycling obligations. Future PRN/PERN prices are not forecasted, but there are assumptions about the cost to producers of meeting these obligations, which are detailed below.

53. Defra's model has been altered to exclude the impacts of Simpler Recycling, which is applicable to collections in England only, and assumed to be implemented in 2026.

54. The baseline accounts for the introduction of a Deposit Return Scheme (DRS) for drinks containers. It is assumed that a Polyethylene terephthalate (PET), aluminium and steel drinks container DRS will be introduced in England, Northern Ireland, and Scotland in October 2027. The cost attached to any DRS materials collected via household or other business collection services will be a matter for the DRS Deposit Management Organisation. packaging EPR obligated producers will not be expected to pay for the costs of collecting DRS materials not returned to designated DRS collection points.

55. In anticipation of policy implementation, it is expected that some packaging will switch from harder to recycle (or non-recyclable) packaging material types to more recyclable packaging material types in anticipation of the policy pre-2025, due to the Government's announcement of its intention to reform packaging producer responsibility policy combined with voluntary initiatives by industry such as the UK Plastics Pact. These switches have been accounted for in the baseline modelling.
56. In the previous Defra IA, UK placed on the market (POM) packaging data was taken from 2019. Since this initial IA, updated data has been published to account for the impacts of Covid-19 lockdowns, and the eventual ending of restrictions in future years. These updated assumptions have been reflected in the new modelling. As such, the current model used to inform costs and benefits for this BRIA is based on Defra-commissioned 2023 data.
57. The key benefit of this data, taken from updated material specific PackFlow 2023 reports, is that they account for packaging supplied by currently unobligated businesses not captured in the National Packaging Waste Database (NPWD).
58. The data is also granular enough to provide a detailed breakdown of POM for each material type by packaging format and polymer (for plastic). This is important for calculating the impact of modulated fees on individual packaging types. As, for example, different plastic polymers can impact recyclability.
59. According to a report from Eunomia³⁷, the use of some plastic polymers is expected to reduce significantly before 2025, which has been captured in the baseline scenario. It is expected that some of this material switching will be attributable to producers starting to respond to anticipated packaging EPR measures and some will be attributable to other incentives, including the WRAP-led UK Plastics Pact³⁸ and other independent business initiatives. Without robust data on the extent to which these switches will take place, assumptions were informed by WRAP expert judgement and trends emerging from the UK Plastics Pact.
60. It is assumed that all non-recycled packaging waste is collected as residual waste and sent to landfill or Energy from Waste (EfW). This is calculated by subtracting the recycling tonnage from the POM tonnage for each material.

4.4 Option 1. Packaging EPR fees for packaging waste collected from households, modulated fees, and retention of recycling obligations and the PRN system

61. Option 1 is to reform the packaging producer responsibility system. The principal change in this option will see the requirement placed on producers to take financial responsibility for the net costs of managing packaging they supply

³⁷ [Scenarios for Adjusting the Extended Producer Responsibility De Minimis Threshold](#)

³⁸ The UK Plastics Pact is a collaborative initiative that aims to help create a circular economy for plastics. Its membership includes businesses from across the plastics value chain as well as UK governments and NGOs: [WRAP the UK plastic pact](#)

and import which arises as waste in households and Household Waste Recycling Centres (HWRCs), and the introduction of modulated fees. Modulated fees are the mechanism by which those costs are recovered from producers and the costs vary to reflect the environmental sustainability of the packaging and associated criteria, such as the recyclability of the packaging. The IA quantifies these changes for all packaging materials in scope by using a model developed by Eunomia on behalf of Defra. The results of this model have been scaled using a population share of Scotland relative to the whole of the UK, with the exclusion of Simpler Recycling in the baseline as stated above.

62. The 2019 and 2021 packaging EPR consultations, also set out options for introducing payments to cover household-like packaging collected for recycling from businesses. Stakeholders raised concerns about the options in the consultation relating to the complexity and value for money of introducing a new payment mechanism, given that obligated sectors already bear much of this cost, and the potential for fraud in the system. Government has decided to prioritise introducing payments to cover household packaging waste collected from households by local authorities, as soon as possible. As an interim measure, producers will still be required to obtain recycling evidence (PRN/PERNs) to demonstrate they have met their recycling obligations on all packaging.
63. These measures will be complemented by producer funded local and nation-based communications and education initiatives to advise consumers on how to recycle their packaging and the consequences of making the wrong disposal choices. These costs will be included in the fees paid by producers.
64. The consultation BRIA contained two potential approaches to the administration and governance of packaging EPR, various compliance schemes and a Scheme Administrator (SA), or a single Scheme Administrator; the former approach will be taken forward. Producers will retain the choice of whether to join a compliance scheme or manage their own compliance directly. The use of compliance schemes by producers is reflected in the baseline and option 1.
65. An SA will be appointed to manage producers' obligations where fees are required for the management of household packaging waste to support local authorities for the provision of efficient and effective services. Producers therefore supplying or importing household packaging that is expected to end up in household waste, will register with this SA.
66. SEPA will be responsible for monitoring and enforcing compliance activities on part of these obligated producers

4.5 De minimis and point of compliance

67. The proposed de minimis for fully obligated producers under packaging EPR will be set at a turnover of more than £2 million a year and a tonnage of a least 50 tonnes. As such, the de minimis for fully obligated producers under these measures is remaining unchanged. There will however now be a single point of compliance for any piece of packaging and for complying with recycling

obligations. This will mainly fall on brand owners, a new category of producer. Despite this change, many producers will still retain an obligation. Given this, the modelling has assumed that the overall number of obligated producers remains unchanged. A completely new class of producers will also become obligated, that being online marketplaces.

68. Defra modelling has assumed that this will add around 46 additional producers, based on a search of online marketplaces which sell to the UK market³⁹. We can assume that all of these online marketplaces will apply to Scotland as well as the rest of the UK nations. The de minimis threshold for the modelling for online marketplaces has been based on those with more than 300,000 monthly site visits.
69. This closes a regulatory loophole whereby overseas packaged products sold through online marketplaces are not captured under the current producer responsibility scheme. It is recognised however that this may not bring all businesses into scope and will need to be reviewed once packaging EPR is operational.
70. There will also be a new 'lower' de minimis threshold for data reporting requirements, based on producers with a turnover of more than £1 million a year and supply at least 25 tonnes of packaging in the previous year. While not obligated to cover disposal costs, these producers will be liable to report data on the amount and types of packaging supplied and imported.
71. A combination of Defra-commissioned research and other sources has provided a central estimate of close to 3,100 producers obligated for data reporting only.
72. The number of packaging producers currently obligated in Scotland can be sourced from the NPWD by searching for those registered with SEPA only⁴⁰. In 2020, 992 producers were registered with SEPA. This results in a proportion of 13.7% packaging producers registered in Scotland relative to the rest of the UK. This proportion is applied to the central and high estimate of newly obligated producers for data reporting only. The results of these adjustments are shown below in Table 1:

Table 1: Estimated number of current and newly obligated producers in Scotland.

Estimated obligated producers in Scotland	Low	Central	High
Currently obligated producers	992	992	992
Newly obligated producers (online marketplaces)	46	46	46
Data reporting only	0	450	2,025
Total producers	1,038	1,463	3,063

³⁹ [The World's Top Online Marketplaces 2023](#)

⁴⁰ [Environment Agency - National Packaging Waste Database](#)

73. It is important to note that these producer estimates for Scotland are not used to inform later estimates of costs and benefits, as they would not correctly feed into the overall calculation of NPV. These are for indicative reading only of how many producers in Scotland are likely to be impacted upon implementation of packaging EPR.

4.6 Projected POM and recycling rates

74. It is assumed that producers will switch some packaging to more recyclable equivalents in anticipation of modulated fees. It is therefore assumed that black plastic PTTs will be completely phased out by 2025 under option 1. In addition to this, it is assumed that 50% of the 2017 tonnage of household PVC and PS PPTs will be replaced by more recyclable polymer alternatives (PET, PP and HDPE) by 2025⁴¹. These switches are assumed to occur according to a linear trend over this period. The overall tonnage of plastic packaging is not expected to be impacted by these assumptions, rather the composition of plastic polymer types.
75. Not all pre-packaging EPR material switches can be attributed to packaging EPR. As such, the central scenario assumes that 50% of switches and associated benefits are caused by packaging EPR. The net impact on the NPV from these substitution effects is estimated to be small in comparison to those directly resulting from packaging EPR implementation in April 2025.
76. The primary behaviour change mechanism for producers is expected to be from the introduction of modulated fees, which are only applied to household packaging. There may however be some spillover between this and NHM (non-household municipal)/household-like packaging. Indicative fee levels and the likely impacts on producers' behaviour and recycling rates was modelled by Eunomia⁴², which was applied to the modelling to quantify impacts. The level of fees is modulated based on recyclability, based on the recycling rate of the packaging. The preferred method for fee modulation in practice however will be decision for the Scheme Administrator.
77. Since the second packaging EPR consultation there has been engagement with industry on the approach to modulated fees, and there has been further research on international examples. For materials that warrant higher fees based on low recyclability, Defra has publicly engaged with industry stakeholders at public events. Estimations of future costs are based on INCPEN advice that it could take two or more years for producers to implement from the point the modulated fee approach is known, as major investment requires careful consideration. Once these are known, producers are likely to respond immediately to minimize future costs. Producers will be incentivised to reduce costs as quickly as possible as they know their competitors will be doing the same. For example, when the Plastic Packaging Tax was introduced at £200 per tonne for packaging components which contain less than 30%

⁴¹ Based on discussion with WRAP

⁴² [A Study on Two Approaches to Extended Producer Responsibility for Packaging](#)

recycled material, producers began immediately and, in some cases, pre-emptively before the cost was confirmed in legislation.

78. Based on these factors, modelled impacts are estimated to be an accurate representation of producer decision making. Some positive changes will occur without the implementation of packaging EPR, and option 1 captures the additional change directly due to packaging EPR only. The introduction of modulated fees is seen as necessary for maximising the impact of packaging EPR.
79. All material types are expected to see some increase in recycling rates due to increases in collection and shift over time towards easier to recycle materials.
80. This option would meet policy objectives, as it would drive the increased recyclability of packaging and increased recycling of packaging waste, as well as reducing packaging as a component of residual waste.

4.7 Costs and benefits of packaging EPR

81. The structure of monetised costs in Defra's IA is given as follows:

- Costs to producers
 - Producer Compliance costs
 - Cost of purchasing PRNs
 - Net cost of Household Packaging Waste Collection and Management
 - HWRC packaging costs
 - Data reporting costs
 - Familiarisation costs
 - Monitoring and Enforcement costs
 - Scheme Administrator costs
 - IT Investment costs
 - Communications campaigns
- Costs to Materials Facilities
 - Capital costs
 - Operational costs
 - Familiarisation costs
 - Enforcement costs
- Costs to Reprocessors
 - Accreditation costs
 - Mandatory reporting costs
 - Familiarisation costs
 - Enforcement costs
- Costs to the Public Sector
 - Loss of landfill tax
 - IT investment costs

82. The structure of monetised benefits in Defra's IA is also:

- Public sector benefits
 - Household Packaging Waste Collection and Management cost saving

- HWRC savings
- IT Investment Cost Recovery
- Benefits to producers
 - Household collection efficiency savings
- Benefits to reprocessors
 - Secondary market material revenue
- Benefits to society
 - Greenhouse gas savings

83. For a detailed explanation of the methodology behind the calculation of these individual cost and benefit components, please refer to Defra’s IA. The important factor to remember is that Simpler Recycling has been removed, so the costs of packaging EPR for Scotland will be different compared to the original IA for the UK.
84. The calculation of household packaging waste kerbside collection and end-of-life treatment (residual and recycling) costs warrant particular attention. Within the 2021 consultation IA, England estimates were scaled up to estimate total UK costs. Since then, analysts from Zero Waste Scotland worked with WRAP and Defra to estimate specific costs for Scotland. These costs, therefore take account of specific regional differences in collection costs (such as rurality). These costs form an important component of producer compliance costs, so the inclusion of Scottish-specific data is of great benefit. Details of how this was incorporated to the overall cost-benefit analysis are set out in Annex A.
85. The summary of the costs and benefits attributable to Scotland is based on a population share of the rest of the UK⁴³ at 8.06%. These results are presented below in Table 2:

Table 2: Summary of NPV (2025-34) proportional to Scotland based on population share of the UK (£m).

Present Value (2025-34) £m	Impact on Business	Direct/Indirect	Option 1
Transition costs			
Producer - packaging EPR Familiarisation	Yes	Direct	£0.20
Materials Facility - Capital and Familiarisation	Yes	Indirect (sits in separate regulations)	£0.17
Reprocessor/Exporter - Familiarisation	Yes	Direct	£0.06
Public Sector - IT Investment	No	Direct	£8.38
Costs			
Producer - Household Packaging Waste management	Yes	Direct	£864.34

⁴³ [Population estimates for the UK, England, Wales, Scotland and Northern Ireland: mid-2023](#)

(Kerbside collections) - Transfer			
Producer - Household Packaging Waste management (HWRC) - Transfer	Yes	Direct	£29.71
Producer - Scheme Administrator (incl. IT)	Yes	Direct	£11.53
Producer - Compliance Scheme	Yes	Direct	£9.83
Producer - Regulator	Yes	Direct	£13.21
Producer - SA Comms Campaigns	Yes	Direct	£9.26
Materials Facility - Operational Costs	Yes	Indirect (sits in separate regulations)	£1.98
Materials Facility - Regulator	Yes	Indirect (sits in separate regulations)	-£0.08
Reprocessor/Exporter - Regulator	Yes	Direct	£0.02
Reprocessor/Exporter - Additional Data	Yes	Direct	£0.36
Public Sector - Landfill Tax Loss - Transfer	No	Indirect	£2.09

Benefits

Society - GHG Emission Savings	No	Indirect	£14.58
Producer - Net Collection Cost Savings	Yes	Indirect	£15.53
Reprocessor - Secondary Material Market	Yes	Indirect	£3.72
Public Sector - Household Packaging Waste management (Kerbside, HWRC) - Transfer	No		£894.05
Public Sector – IT Investment Cost Recovery	No	Direct	£6.16

Totals

Total Costs			£951.05
Total Benefits			£934.03
NPV			-£17.02

86. Producers cover the cost of household packaging waste management (£894.1m), administrative and regulatory costs including transition familiarisation costs (£44.0m); materials facilities will face additional sampling and compositional costs (£2.1m); reprocessor and exporters will face additional reporting costs (£0.4m); and the public sector will face loss of landfill tax revenue and incur IT investment costs (£8.4m).
87. Potential cost pass through from producers to consumers is not considered in the cost-benefit analysis, rather within the wider impacts (these costs are ascribed to businesses in the cost-benefit analysis).
88. Local authorities will benefit from a transfer of costs for the collection, sorting, treatment, and disposal of household packaging waste to producers (£894.1m); the recycling industry will benefit from additional material sales by reprocessing (£3.7m); producers will benefit from avoided residual disposal costs from diverting household packaging waste from incineration and landfill treatment into recycling, including landfill tax savings (£15.5m); society will benefit from avoided greenhouse gas emissions from diverting waste from landfill and incineration into recycling (£14.5m); and government will be able to recover the build of the Scheme Administrator IT systems through fees (£16.2m).
89. There are also some key non-monetised benefits by affected main groups which are of note. The domestic reprocessing market may benefit due to more material being recycled in Scotland. There may be natural capital benefits from reduced reliance on virgin materials and a reduction in the amount of waste sent to landfill and incineration. There are benefits to consumers from communications on how to recycle and dispose of household packaging waste. This results in environmental benefits from reduced greenhouse gas emissions. There are also several system-wide benefits including increased transparency in the system.
90. The ultimate impact of modulated fees on recycling rates will depend on decisions taken by the Scheme Administrator, and the subsequent decisions of producers. The modelling outputs may therefore not reflect the final approach to modulated fees. Modelling is a simplistic representation of the decisions made by producers under this scenario. The three key outcomes that could be influenced by the impact of modulated fees on recycling rates are;
 - overall packaging recycling rates;
 - greenhouse gas emissions; and
 - household packaging collection and end-of-life management costs.
91. To account for this uncertainty, Defra has conducted sensitivity analysis to understand the impact on the outcomes of the policy should the impacts of modulated fees differ from those estimated for the analysis. Please refer to the Defra IA for a full explanation of this process.

5.0 Competition Assessment

92. This section helps to consider the impact of a regulation or policy on competition between producers, wholesalers, retailers and importers in the Scottish Market. The assessment will follow the Competition and Market Authority (CMA) guidelines, which outline how to determine any competition impact.⁴⁴⁴⁵ These guidelines recommend considering four key questions in order to assess whether a proposed policy would have an impact on competition.
93. A number of businesses and markets across the packaging supply will be impacted by packaging EPR. However, following an in-depth competition assessment we do not expect there to be any concerning and significant impacts on competition. The reasons for this conclusion are set out below.
94. The CMA in their competition impact assessment guidelines outline 4 broad areas of concern that ought to be considered:
 - Whether the policy directly or indirectly limits the number or range of suppliers.
 - Whether it limits the ability of suppliers to compete.
 - Whether it increases incentives to collude.
 - Whether it limits the choices and information available to consumers.

5.1 Scheme administrator

95. Regarding the potential impact of the SA on competition, we can ask what pre-existing markets the SA may enter and distort and also what markets it may create. As detailed in the government response the SA will undertake the following functions:
 - undertake strategic and operational planning;
 - calculate household packaging waste management costs to be paid by producers;
 - determine the fee rates paid by producers for different types of packaging;
 - calculate costs to be paid by individual producers annually;
 - make payments to those who have incurred the household packaging waste management costs (LAs);
 - provide support to producers in data reporting; and
 - prepare annual reports.
96. In summary alongside providing a number of administrative and supportive functions, it primarily calculates what the cost for managing household waste is, how it ought to be recovered via fees, how the recovery is spread across producers; and then it makes payments of these fees to LAs.

⁴⁴ [Competition and Markets Authority \(2015\). Competition Impact Assessment.](#)

⁴⁵ [Office of Fair Trading \(2007\). Completing competition assessments in Impact Assessments: Guideline for Policy Makers](#)

97. The key functions of the SA therefore imply two main relationships. Firstly, a relationship with packaging producers – in determining the fees they pay and obtaining fees from them (functions 3 and 4). The SA will essentially act as an additional regulator of the market for packaging, such that it distorts the market in favour of packaging with the lowest management costs and environmental impact. The competition impacts of this on the packaging market are discussed in the next sections.
98. The second key relationship is with the LAs who incur household packaging waste management costs. The SA determines their household packaging waste management cost requirements and makes payments to them (functions 2 and 5). The SAs function and involvement vis a vis LAs does not constitute a competitive relationship in the sense the SA is a market actor. It rather provides finance to LAs to continue providing the service they already provide. The impact on markets LAs are involved in is discussed in more detail below.

5.2 Obligated producers and the packaging sector

99. We can consider the impacts on both obligated sellers of filled packaging (i.e., brand owners) and on the manufacturers of that packaging itself (the packaging sector)⁴⁶. As the obligations will fall primarily on brand owners the impact on the former is greater and more direct than on the latter, the impacts in that market are indirect knock-on effects.
100. The key intervention into the packaging market is the imposition of packaging EPR fees. In Year 1 of the scheme, producer fees will be proportional to the amount of packaging they place on the market through the use of base fees (in £/tonne of packaging placed on the market). These base fees will vary across the 8 packaging material categories, reflecting variations in LA waste management costs for these different materials. From Year 2 of the scheme, materials with a worst environmental impact (in a first instance less recyclable materials) will attract higher fees as a result of the implementation of fee modulation. Producers will also face costs associated with the running of the scheme administrator and regulation. There will also be data reporting costs relating to the reporting of tonnage data on the Report Packaging Data (RPD) online portal.
101. Concerns related to the first point raised by the Competition and Markets Authority – whether this will result in a reduction in the number or range of producers – while being most pertinent to packaging EPR, does not pose significant concerns to competition in this market. Firstly, packaging EPR does not directly limit the number of suppliers in this market. Any potential limitation that could arise will be indirect, due to producers not being able to financially meet the requirements. Furthermore, this outcome – though possible – we do not foresee as concerning.

⁴⁶ Although it is recognised that these lines are often blurred such that brand owners may also be packaging manufacturers.

102. Costs to producers of complying with packaging EPR payments are likely to be more significant and it must be considered whether this cost could cause some firms out of the market enhancing the market power of those that remain operative. A concern may be that the costs of packaging EPR are equivalent or similar across all producers, and hence would disproportionately impact smaller and medium sized firms, driving them out of the market and enhancing the market power of the larger firms better placed to absorb these costs. Indeed, the CMA guidelines note the importance of small businesses as a source of competitive constraint.
103. However, the most significant costs of packaging EPR are expected to be largely proportional to size. Notably fee payments depend on the amount of packaging placed on the market, which is correlated with the size of the business. Data reporting costs are also anticipated to be higher for larger producers. It is currently uncertain whether regulator costs will be split across producers equally – in a worst-case scenario they may be the same for all producers and hence will constitute a higher burden on smaller producers. Despite this however, regulator fees are expected to be small and hence seem unlikely to be large enough to provoke market exit from smaller producers. It is also worth mentioning that the smallest businesses will also be excluded due to the de minimis.
104. As well as potentially causing incumbent firms to leave, it ought to be considered whether packaging EPR fees – which will raise the cost of entry – are significant enough to deter new entrants to enter. The post-policy competitive constraint relative to the baseline may hence be reduced as the threat of new entrants entering is lowered. The key issue to consider here is the size of the costs relative to the size of revenues. Total costs on average per producer are expected to be around £208,000 a year. The median revenue of current producers can be obtained from the National Packaging Waste Database (NPWD) and was found to be around £26 million⁴⁷. Thus, for the average producer, cost increases due to packaging EPR are less than 1% of revenue. This cost is unlikely to be high enough to reduce new entrants to the sector.
105. Another consideration is how producer base fees – to be set by the Scheme Administrator based on LA net management costs – will impact different material sectors. Variations in costs across these sectors will mainly arise from 1) differences in base fees across materials, which reflect local authority waste management net costs and 2) variations in the weight of packaging units, with heavier units attracting higher fees for producers. These fees will be variable, and so are not expected to place a disproportionate impact on smaller producers or new entrants. There is potential for indirect competition impacts across materials, reflecting their underlying difference in cost. These impacts are however uncertain as they depend on a range of market and business

⁴⁷ As pointed out in the Eunomia De Minimis report ([Scenarios for Adjusting the Extended Producer Responsibility De Minimis Threshold](#)) there are some turnover outliers in the NPWD database hence the median was seen as a more robust measure of the average.

financial drivers that can vary significantly across industries and individual companies. This includes specific price elasticities, the ability of producers to pass through costs, the size of payments relative to turnover as well as variations in virgin packaging material and recyclate costs. The consumer impacts section above estimates that the majority of cost, under the central scenario, would be passed through. In the wider context, average producer costs are small in relation to producer revenue (though this will differ between producers), and competition across packaging materials has many non-price elements, such as design and perceived quality. Another distinct issue arises due to the proposed modulation of packaging EPR fees. Certain producers who are important for competition (e.g., sellers of a cheaply packaged version of a good) may use packaging materials that are cheaper, but more difficult to recycle and hence may attract greater fees. Hence somewhat asymmetrical costs would be imposed, at least until these producers switch packaging types. This would be concerning if it disproportionately advantages these firms relative to the others such that they were forced to leave the market because they were not able to switch packaging material types, i.e., a new barrier to entry. It should be noted that guidance on modulated fees should be published in 2025 and modulated fees will not be implemented until 2026. This will give producers who use unfavourable packaging time to adjust before costs are imposed, ensuring there is a more level playing field by the time modulation in packaging EPR is implemented.

106. The switching of packaging types fee modulation seeks to provoke may have a knock-on impact in the packaging sector (producers of packaging). Manufacturers of packaging materials that attract a higher fee may face a fall in demand. If they are competing with packaging manufacturers who produce low fee attracting materials, they will be supplying to the same market and as such they may no longer be able to compete in that market and the market power of remaining producers would be augmented. Two mitigating factors should be noted regarding this. Firstly, that the market for packaging is a global market, any reduction in demand due to packaging EPR needs to be weighed against global trends which should lessen the impact. Secondly, it is possible that the manufacturers of packaging may be able to switch packaging types relatively easily (within the same material type). As noted, modulated fees will not be coming in until 2026. As such producers will have time to think about what packaging types are more viable to sell and switch, if necessary, before any negative impacts.
107. The second point of concern from the CMA is on the limitation of suppliers' ability to compete. In a sense packaging EPR places restrictions on the nature of the packaging as it will penalise the use of unrecyclable packaging types. While this may appear to constitute a limitation, on all other aspects of packaging, suppliers will retain the ability to differentiate their producers and compete. For example, they may still vary their branding and packaging design. As such we cannot say, as per the CMA guidance, that the measure 'substantially influences [...] the characteristics of the product supplied'. It should also be noted that regardless of competitive concern, this is the key

function of the policy – the societal cost of packaging is becoming internalised in this market. Most importantly, it should be considered that packaging is not the primary concern of consumers, and modulated fees should account for the ability of producers to switch to alternative packaging types such that this does not cause a lessening in the number of products on the market.

108. The third point raised by the CMA is regards to supplier's incentives to compete. The key things to look at here are whether policy directly or indirectly impacts incentives to collude. Incentives to collude tend to increase as producers share more information amongst each other and indeed under packaging EPR obligated producers report a lot more data to the SA and regulator. However, data on individual metrics ought not to be shared more broadly than the SA and regulators, and while the SA will publish annual reports on packaging and fees paid, this information is aggregated. As noted by the CMA, this carries a lesser risk of provoking collusion. Collusion may also increase if there are changes to market conditions. A given market will be more prone to collusion if there are fewer firms, and they are more similar. With regard to this it ought to be noted that the number of obligated producers potentially impacted by packaging EPR is around 10,500. As such a significant number of producers would have to leave for this number to reduce to such an extent that there are few enough firms operative to increase incentives collude. Given the prior discussion on the impact on the number of firms in the market, this does not seem likely. There are also likely to be a significant number of producers in the packaging sector⁴⁸ and we anticipate no direct incentives to collude being imposed on the packaging sector.
109. The final area raised by the CMA is regarding the choices and information available to consumers. Packaging EPR may restrict consumers ability to spur competition between firms by choosing who to purchase from. As noted, consumers choice may become more limited in what types of packaging they can purchase as unrecyclable packaging types are phased out. Certain consumers may be forced to purchase goods in packaging that is of a higher quality and price than they prefer. We foresee however no restriction in consumers being able to decide from which packaging producers they purchase from; nor should the information available that aids consumers in the choice of supplier be reduced. It ought also to be emphasised, that the packaging of a product is not the primary concern of the consumer – rather the actual product. Though packaging types may become less varied there should be no reduction in the availability of actual products.

5.3 Public sector

110. Competition concerns regarding the impact of packaging EPR on the public sector will not relate directly to impacts on LAs, but rather on the markets they in turn operate in. LAs will retain the choice to provide waste management

⁴⁸ NPWD data suggest there are around 500 producers under the category 'Converter': those converting raw material into packaging.

services in house or to outsource to private waste management companies. It is unlikely these markets will be impacted as all that is changing is how the service is paid for by LAs; as they will now receive payments from the SA. In terms of efficiency, it should be noted that although finance is provided by the SA, LAs will need to prove that their costs are necessary costs towards an efficient and effective service, and the SA has power to determine what costs are reasonable for each authority, based on benchmarking of LAs with similar characteristics. As such, there will be pressure on LAs to remain efficient were they to provide services in house or to outsource.

5.4 Reprocessors and exporters

111. Reprocessors and exporters will be required to register with a regulator and report data on the quantity and quality of packaging waste recycled or exported for recycling. Exporters will also be required to obtain greater evidence that the exported packaging waste was received at its final recycling site. As with other actors in the supply chain, there may be concerns regarding the associated costs of these measures indirectly limiting the number or range of suppliers who are able to compete in the market. Stakeholders have however advised us that collecting this information is already necessary for business purposes as the price paid for inputs and price gained for outputs depends significantly on quality and quantity. As these businesses already collect this data, these burdens are likely to be small.
112. Regarding mandatory registration costs however, it was suggested by stakeholders that the number of reprocessors and exporters who are currently in scope but unaccredited would be low, hence the impacts of these costs on changing market structure would likely be small. Additionally on a per business basis, costs of compliance are relatively small (expected here to be £3.0k). Furthermore, the businesses that are unaccredited are also assumed to be small and – though it is liable to change – in the expected scenario regulation will be organised such that smaller reprocessors or exporters pay a lower regulator fee of £500. Hence these costs are expected to be very minimal and unlikely significant enough to provoke changes to the market structure.

5.5 Materials Facilities

113. EPR will also impose costs on materials facilities as they will be required to undertake enhanced sampling and compositional analysis (financing the capital and operational costs for this) as well as meet regulator and familiarisation costs. These additional costs increase the cost of entry to the sector and may reduce the number of competitors. It should also be noted that some materials recovery facilities (MRFs) are already required to submit sampling and compositional data under the current regulations and as such they have something of an incumbency advantage having already made the capital and operational investments necessary to comply with packaging EPR. It should be noted however that, as discussed in the cost benefit analysis section, these requirements are only expected to increase costs by around 1.0-1.5%.

114. Increased operational costs related to sampling are also expected to be lower for larger materials facilities, likely due to economies of scale, and we have found a negative correlation between cost per tonne and site size. As such, smaller facilities are at a greater risk of being unable to compete as effectively in this market due to packaging EPR. In light of this, we have introduced a de minimis exemption to protect the smallest firms from an unduly cumbersome disadvantage here and so they should remain in the market as an important competitive constraint.

5.6 Compliance Schemes

115. Additionally, to the key actors across the supply chain, we can consider compliance schemes. It is proposed that compliance schemes wishing to operate under the packaging EPR system will need to apply for approval under the new packaging EPR regulations. Approval will depend on a fit and proper person test. This constitutes a minimum standard in the market which may result in a direct reduction in competitors, particularly low-quality ones. There are currently 44 packaging compliances schemes registered with the regulators and these adjustments are not expected to be significant.

5.7 Waste management companies

116. Since the consultation IA the decision has been taken to focus solely on packaging EPR payments to local authorities for household packaging waste. We are not planning to introduce packaging EPR payments to cover packaging collected from NHM businesses at this time, and therefore there will be no centrally set fees for this packaging. Producers will cover partial costs of NHM packaging waste collections through the PRN system; however this is the current situation. There is therefore not expected to be any impact on contracts between waste management companies and businesses disposing of packaging waste.

6.0 Consumer Assessment

117. It is important to consider the impact on consumers of affected packaging products. The Scottish Government definition of a consumer is "anyone who buys goods or digital content or uses goods or services either in the private or public sector, now or in the future".
118. The Scottish Government Consumer and Competition Policy Unit specifies the questions below when determining the impact of proposed legislation on consumers. The assessment results are detailed below (see Table 3).

Table 3. Consumer Assessment Questions.

Does the policy affect the quality, availability or price of any goods or services in a market?

The reformed packaging EPR system will not directly affect consumers as its aim is to recover the full net costs of the collection, recycling and management of household packaging waste from packaging producers.

Under packaging EPR, packaging producers will take on the costs of collecting and disposing of packaging waste from households. This is a cost transfer for local authorities who currently pay for these services. It is possible that producers will pass these costs onto their consumers in the form of higher prices. In the previous IA, these potential price impacts on consumers were recognised as a key cost of packaging EPR but were not quantified. Defra have subsequently undertaken research on how businesses are likely to react to the reforms and have quantified likely price changes for consumers.

Although some packaging producers will be exempt from packaging EPR due to the de minimis threshold, it is assumed that the majority of packaging producers will be liable. Hence the fees will largely represent an industry-wide cost increase with all firms facing an increase in cost.

To calculate the exact cost pass through rate (CPT), defined as the amount of the cost increase that is passed onto consumers via increased prices, we would need to make use of measures of the elasticity of demand and the elasticity of the supply in the market for which obligated producers operate⁴⁹. Due to a lack of the data necessary to estimate the relevant elasticity of demand and supply we have instead adopted an approach based on market structures^{50 51}. As explained by the Office of Fair Trading (OFT) the potential cost pass through will theoretically sit between the two extremes of the cost pass through under monopoly, which is 50%, and that under perfect competition which is 100%⁵². In light of this, we have used these figures as a low estimate and high estimate. The central estimate has been obtained as a most likely scenario from the OFT based on a literature review of empirical research conducted by them. It should be noted that perfect competition is regarded as widely non-existent in reality, and likewise that the industries impacted by packaging EPR are almost certainly not pure monopolies. As the high and low scenarios correspond to these market structures, they should be viewed as theoretical maximums and minimums, rather than outcomes which are likely to actually materialise.

⁴⁹ Elasticity of demand and supply refer to the extent that demand and supply change when the price of a good changes. If they are inelastic, when price changes the quantities demanded and supplied respond little. The cost pass through depends on the elasticity of demand relative to the elasticity of supply in the relative market. If the elasticity of demand is large relative to the elasticity of supply (i.e. demand reacts more to a change in price than supply) the pass-through rate will be low while if the elasticity of demand is small relative to the elasticity of supply (i.e. demand reacts less to a change in price than supply) the pass-through rate will be high. For a more in-depth explanation of the role elasticities play in cost pass through, see: [RBB: Cost pass-through: theory, measurement and potential policy implications](#)

⁵⁰ Models of different market structures, the assumptions they make underpinning how prices are set, imply how firms will change prices in response to a change in cost and hence they will pin down a theoretical pass-through rate.

⁵¹ Market structures in economics refer to the characteristics of the market which determine the behaviour of firms within that market. Monopoly and perfect competition are two such market structures. Monopoly refers to where there is only 1 firm that sells the given good and as such this firm can decide the price at which it sells. Perfect competition refers a market where there are a very large number of firms and as such none have the ability to set the price at which they sell.

⁵² [RBB: Cost pass-through: theory, measurement and potential policy implications](#)

The three modelled scenarios are a low scenario (50% CPT), representative of a pure monopoly; a central scenario (85% CPT); and a high scenario (100%), representative of perfect competition.

The total increased cost faced by all businesses impacted by packaging EPR collectively will be equal to the target net cost recovery. Assuming the cost pass through rate applies the same to all businesses, we can apply each of the rates to this figure (inflated to 2023 prices, plus VAT at 20%)⁵³ to estimate the total annual cost passed on to consumers collectively via increased prices under each scenario. The Office for National Statistics (ONS) have estimated that there were 28.4 million households in the UK in 2023⁵⁴ and based on this we have calculated that the change to yearly expenditure for the average household will fall between £28.02 and £56.04 depending on the cost pass through rate with central increase being £47.64. This corresponds to a change to weekly expenditure of between £0.54 and £1.07 a week, with a central estimate of £0.91.

This assumes that households do not adjust consumption in response to packaging EPR meaning we assume that they consume the same goods in the same quantities as they did before packaging EPR. This is a reasonable assumption to make as although noticeable when aggregated in weekly terms, the actual price impact per product is low and unlikely large enough to provoke changes to consumption even were consumers to be quite price sensitive with regard to packaging EPR impacted goods⁵⁵.

Does the policy affect the essential services market, such as energy or water?

No.

Does the policy involve storage or increased use of consumer data?

No.

Does the policy increase opportunities for unscrupulous suppliers to target consumers?

No. The risk of suppliers placing packaging on the Scottish market without paying the legally required scheme fees is minimal and would not affect consumers. In fact, increased transparency means that the likelihood of this happening is lower than in the current system.

Does the policy impact the information available to consumers on either goods or services, or their rights in relation to these?

No negative impact on consumers is expected in this respect. On the contrary, one component of the reformed packaging EPR system is better consumer communication. This is expected to benefit consumers in that they

⁵³ The total packaging EPR payment inflated to 2023 prices is £1.326bn without the addition of VAT and £1.592bn with its addition.

⁵⁴ [Families and households in the UK - Office for National Statistics](#)

⁵⁵ That is not to say that we assume consumers are not demand inelastic, rather that these price impacts are insignificant.

would be better informed on what packaging is recyclable, potentially influencing buying decisions and improving recycling rates.

Does the policy affect routes for consumers to seek advice or raise complaints on consumer issues?

No.

7.0 Test run of business forms

119. Additional administration will be required for a reformed UK packaging producer responsibility system. This will likely include new Scheme Administrator forms, though details are not known at this stage.
120. Any UK-wide change in business forms lies within the remit of Defra. It is expected, however, that there will not be a significant net increase in the time required for stakeholders to fill in forms, as forms under the packaging EPR will replace those under the current PRN system.

8.0 Digital Impact Test

121. Changes to policy, regulation or legislation can often have unintended consequences, should government fail to consider advances in technology and the impact this may have on future delivery. This digital impact test is a consideration of whether the changes being made can still be applied effectively should business/government processes change – such as services moving online. Table 4 below details the evaluation of the proposed market restrictions on current and future digital developments. Overall, it is viewed that the proposed legislation will not have an adverse impact on digital technology developments.
122. In addition to the questions below, it should also be noted that the reform of the packaging EPR scheme will require new IT systems to facilitate the running of this scheme. As outlined in the UK IA, this will include carrying out functions such as tracking the packaging placed on the market, charging producers, and making the necessary payments from scheme administrators to stakeholders that are eligible for payments for managing packaging waste. These costs will be borne by the Scheme Administrator, with costs ultimately passed on to producers through the administrative fees paid to the scheme administrator and/or the regulators.

Table 4. Digital Impact Test Questionnaire.

Question 1. Does the measure take account of changing digital technologies and markets?

Potential changes in digital technologies and markets are being accounted for during the development of this legislation.

Question 2. Will the measure be applicable in a digital/online context?

Any legislation would apply equally to all obligated producers of affected packaging sold on the Scottish market, regardless of whether this packaging is sold digitally or through traditional offline channels.

The running of the scheme will be facilitated with new IT systems.

Question 3. Is there a possibility the measures could be circumvented by digital/online transactions?

No.

Question 4. Alternatively, will the measure only be applicable in a digital context and therefore may have an adverse impact on traditional or offline businesses?

Although digital technologies will be used to facilitate the running of the scheme, it is not expected that this will have an adverse impact on traditional or offline businesses. All businesses will be expected to comply with the new system.

Question 5. If the measure can be applied in an offline and online environment will this in itself have any adverse impact on incumbent operators?

No.

9.0 Legal Aid Impact Test

123. No impact on Legal Aid is expected.

10.0 Enforcement, sanctions and monitoring

124. As outlined in the UK IA, it is expected that the reforms will see more money in the system and additional obligations placed on producers, while the system will also be made more transparent. This means regulators will have to carry out additional compliance, monitoring and enforcement duties. For indications of how compliance may be monitored and enforced, please refer to the UK IA.

125. SEPA will have additional monitoring and enforcement duties to fulfil with the extra obligations being placed on MRFs for how they handle packaging materials coming in and out of their facilities as outlined in the updated MRF code of practice and due to the additional data required to prove compliance with packaging EPR regulations. This data may be commercially sensitive and, as such, additional powers will be required so that SEPA can share this data with the SA.

126. SEPA will also have more monitoring and enforcement duties with regards to the data reporting requirements placed on producers for the packaging waste they place on the market. All producers will be required to submit more data in greater detail than before, but most importantly there will be a new section of packaging producers required to submit data who have not done so until now; due to the new de-minimis threshold created for data reporting requirements only.

127. If organisations do not uphold their new obligations in line with the packaging EPR regulations, enforcement action will be taken with the possibility of sanctions including monetary fines. The precise nature of these sanctions is yet to be decided.

11.0 Implementation and delivery plan

128. The Scottish Government will set out a timetable for implementation and will work closely with the UK government, other devolved administrations and with Scottish packaging producers.

12.0 Summary and recommendation

129. A system of producer responsibility for packaging has been in place since 1997 in the UK. This has helped to significantly increase the recycling of packaging waste and helped meet the UK's and EU's packaging waste recycling targets. However, due to several shortcomings a reformed producer responsibility system for packaging is required.

130. Extended producer responsibility (EPR) is a well-established principle adopted by many countries around the world, across a broad range of products and materials. It places responsibility on producers for the cost of managing their products once they reach end of life and gives producers an incentive to design their products to make it easier for them to be re-used or dismantled and recycled at end of their life.

131. The UK government and the devolved governments are exploring ways in which to design and introduce an extended producer responsibility system for packaging and are evaluating the options below.

Option 1. Packaging EPR: Reform the packaging producer responsibility system such that producers pay packaging EPR fees for the collection and end-of-life treatment of packaging waste from households (Kerbside and Household Waste Recycling Centres). This is assumed to incentivise the correct behaviours by producers and consumers to deliver the policy objectives. This is our preferred option.

132. Taking Defra's cost-benefit analysis results from their regulatory impact assessment and scaling to Scotland using a population share of the UK, the NPV of packaging EPR for Scotland is estimated to be -£17.02m over a ten-year period (2025-34). This negative NPV is partly due to the range of unmonetisable benefits of packaging EPR, such as the domestic reprocessing market that may benefit due to more material being recycled in Scotland; natural capital benefits from reduced reliance on virgin materials and a reduction in the amount of waste sent to landfill and incineration; benefits to consumers from communications on how to recycle and dispose of household packaging waste; environmental benefits from reduced greenhouse gas emissions; and system-wide benefits including increased transparency in the system.

133. Overall, the introduction of packaging EPR in Scotland is expected to overcome the shortcomings of the current system and help to address a range of negative social and environmental externalities through ensuring more producer responsibility for packaging waste. As a result, this BRIA recommends the introduction of packaging EPR in Scotland.

13.0 Declaration and publication

134. I have read the Business and Regulatory Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed:



Date: 28/10/2024

Minister's name: Gillian Martin

Minister's title: Acting Cabinet Secretary for Net Zero and Energy

Scottish Government Contact point: Lynsay Ross

Zero Waste Scotland: Ray Georgeson, Head of Policy

Zero Waste Scotland Contact Point: PolicyManager@zerowastescotland.org.uk

Annex A – Packaging collection costs in Scotland

Zero Waste Scotland (ZWS) provided Defra with outputs from their modelling of Scottish household collection and disposal costs. Having collected data from local authorities in confidence, they were unable to provide the full modelling and were only able to provide aggregated estimates for each waste stream. Further analysis was conducted by Defra to estimate the packaging element of these costs for the IA.

Annex A table 1: Collection, disposal, and transition costs from ZWS modelling, £m

Category	Kerbside residual	Kerbside dry	Disposal	Landfill tax	Transition costs
Rural inaccessible councils	£16	£4	£28	£9	£8
Rural accessible councils	£26	£7	£44	£18	£21
Urban councils	£55	£10	£55	£14	£40
Mixed, mainly urban, no city councils	£26	£11	£43	£16	£25
Mixed, mainly rural councils	£16	£5	£29	£12	£13
All Scottish councils	£139	£37	£198	£69	£107

Packaging residual waste costs were estimated using the following method. Collection costs were estimated by multiplying the kerbside residual waste costs by the proportion of packaging in residual waste in Scotland by weight (21%). This was taken from household waste composition produced by Eunomia for WRAP⁵⁶.

To estimate the disposal costs, specific data on the tonnage of target dry materials collected for recycling and in residual waste in Scotland, provided by ZWS were used. Using the same waste composition analysis, non-packaging dry material was removed from these tonnages. Packaging in scope of the Scottish DRS system as also removed. The remaining packaging in residual tonnages were multiplied by a disposal cost per tonne. This was estimated by first estimating the proportion of residual waste sent to landfill (71%) and EfW (29%) in Scotland⁵⁷. For the proportion sent to landfill, the Scottish Landfill tax rate (£91.35⁵⁸), was added to the assumed landfill gate fee used by WRAP in their household collection modelling (£27.91). Again, the EfW gate fee used by WRAP in their household collection modelling was used (£84.15).

⁵⁶ [WRAP - National Household waste composition 2017](#)

⁵⁷ Waste Landfilled in Scotland and Waste Incinerated in Scotland: [SEPA - Waste data for Scotland](#)

⁵⁸ [Scottish landfill tax](#)

Annex A table 2: Kerbside residual tonnage by material type (Scotland)

Kerbside residual	Rural inaccessible councils	Rural accessible councils	Urban councils	Mixed, mainly urban, not city councils	Mixed, mainly rural councils	All Scottish councils
Paper (all)	7,245	22,971	32,454	28,315	13,482	104,467
Card	2,460	8,224	19,123	9,993	4,330	44,130
Cans Al & Fe	1,227	4,389	6,550	4,603	2,310	19,078
Food and drink cartons	318	801	1,115	689	350	3,273
Container Glass	5,706	14,334	22,006	18,605	7,689	68,339
Plastic bottles	1,317	5,051	11,825	5,981	3,019	27,193
Plastic PTT	3,772	9,007	12,290	10,265	4,756	40,090
Plastic film	6,608	18,436	23,182	20,721	10,857	79,804
Foil and aerosols	796	2,333	3,765	2,833	1,367	11,093

Packaging related dry recycling costs were estimated as follows. Collection costs were estimated by multiplying the total dry collection costs by the proportion of packaging in dry collections by partially compacted volume. A specific estimate for Scotland was not available and the proportion used by WRAP in their England collection costs modelling was used (78%). This was considered appropriate as waste composition analysis⁵⁹ shows that the proportion of packaging in dry recycling by *weight* is similar in England and Scotland.

⁵⁹ [WRAP - National Household waste composition 2017](#)

Annex A table 3: Kerbside recycling tonnage by material type (Scotland)

Kerbside recycling	Rural inaccessible councils	Rural accessible councils	Urban councils	Mixed, mainly urban, not city councils	Mixed, mainly rural councils	All Scottish councils
Paper (all)	10,007	18,509	15,068	22,173	7,738	73,494
Card	4,077	6,912	6,475	9,422	3,231	30,117
Cans Al & Fe	1,098	1,979	2,009	2,947	602	8,636
Food and drink cartons	89	333	308	462	101	1,293
Container Glass	682	6,103	11,902	13,717	4,864	37,267
Plastic bottles	1,414	3,584	3,401	5,449	1,926	15,775
Plastic PTT	355	1,356	1,264	2,020	922	5,918
Plastic film	253	922	783	1,110	778	3,847
Foil and aerosols	37	292	291	427	177	1,225

To estimate net recycling end-of-life treatment costs, target dry materials tonnages were again taken from the ZWS analysis. As with residual waste tonnages, these were adjusted to remove non packaging materials as well as packaging in scope of DRS. The number of local authorities signed up to the Scottish Charter for Household Recycling was used as a proxy for waste collected as multi-stream (93%). It is assumed that LAs would receive material revenue for this packaging. Revenue per tonne rates were assumed for each high-level material type. Where possible these were aligned with WRAP household collection costs modelling. The proportion not collected as multi-stream (7%) was assumed to go to a Material Recycling Facility (MRF) for sorting, with councils paying a gate fee. In line with WRAP's modelling, a MRF gate fee of £60 per tonne was assumed. This accounts for the lower value of this material once DRS packaging is removed.

Lastly, it was assumed that a certain proportion of costs associated with local authorities transitioning to the Scottish Charter for Household Recycling would relate to packaging. As the Charter includes separate food and dry collections, the proportion of packaging in food and dry recycling collections (60%) was used⁶⁰. It was multiplied by total transition costs, added to the packaging recycling collection costs and annualised over the appraisal period.

⁶⁰ [WRAP - National Household waste composition 2017](#)

Annex A table 4: Estimated packaging costs (Scotland)

Item	Costs (£m)
Packaging residual collection	£29
Packaging residual disposal	£18
Packaging recycling collection	£29
Packaging recycling treatment	-£2
Packaging recycling collection transition (annualised over 7 years)	£6
Total net packaging costs	£80



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