

A Deposit Return Scheme for Scotland

Strategic Environmental Assessment: Post Adoption Statement

July 2019

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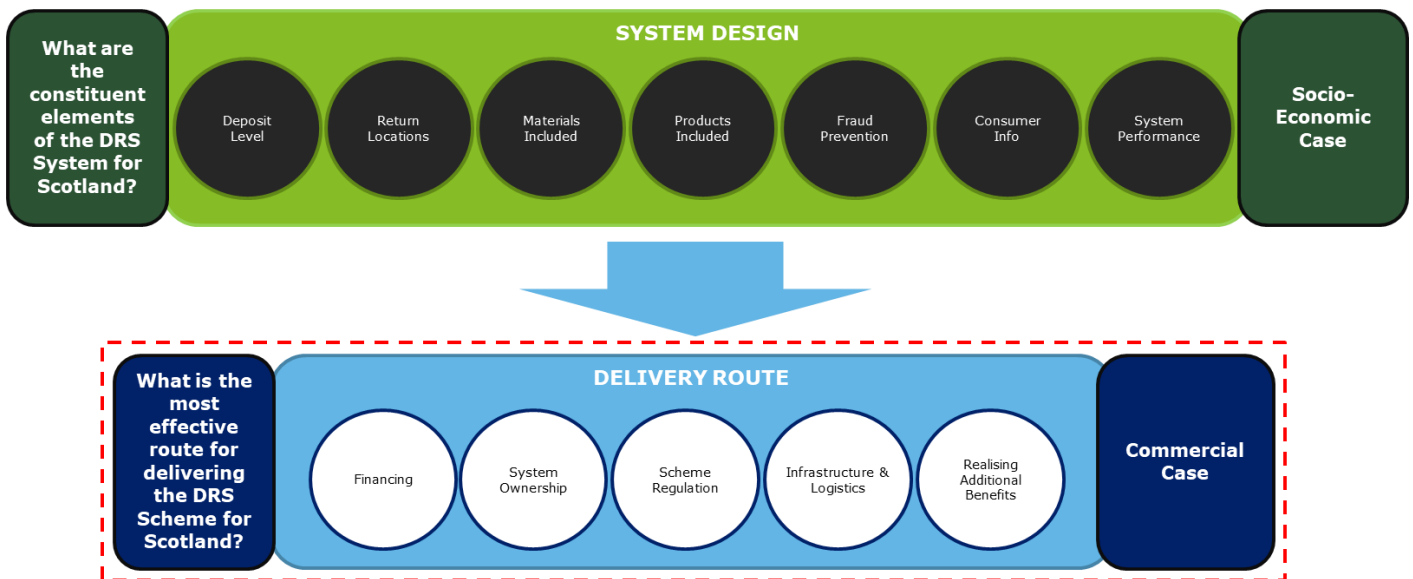
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1. Introduction

1.1 The Deposit Return Scheme

- 1.1.1 The Scottish Government's Programme for Scotland 17-18¹ stated the government's intention to implement a Deposit Return Scheme (DRS) for Scotland on selected single-use drinks containers.
- 1.1.2 A DRS is a scheme where consumers pay a deposit in addition to the purchase price at point of sale; this deposit is then returned to them if they choose to return the item after use for recycling. In the case of drinks, the deposit is paid for the container, and consumers can then return the container to a designated return point to recoup their deposit. The use of DRS usually relates to products and materials which are of potential value for reuse, recycling or recovery, or which, if mismanaged, may have detrimental effects on the environment.
- 1.1.3 Zero Waste Scotland, acting on behalf of the Scottish Government, is supporting development of the DRS for Scotland. Work has included completing a Strategic Outline Case, an Outline Business Case, Full Business Case and a number of impact assessments.
- 1.1.4 Scotland's DRS is comprised of 12 components, which are described in detail in the Full Business Case Stage 1 using the following diagram:



- 1.1.5 There are myriad ways in which these components may be applied to produce a DRS, however an optimal configuration is required to ensure the Scottish DRS achieves its objectives and delivers maximum benefit. To help inform the public consultation process on DRS and identify an optimal configuration of the twelve components, Zero Waste Scotland developed four example schemes. These examples were not proposed as alternative options for Scotland but rather, were

¹ [The Scottish Government \(2017\) A Nation with Ambition – The Government's Programme for Scotland 2017- 18, Pg. 41](#)

put forth to illustrate how different configurations of key components can affect performance. The four example schemes developed by ZWS are summarised in **Table 1.1**.

Table 1.1 Example DRS considered

Example Schemes	Materials Collected	Means of Collection
Example 1: Take back to dedicated points	PET bottles, steel and aluminium cans, and glass bottles	This example scheme would see 1,058 deposit return points being placed in towns with a population of at least 1,000 to receive the returned containers. It is envisaged that the return process would be automated.
Example 2: Take back to dedicated points and some shops (with cartons and cups)	PET bottles, steel and aluminium cans, glass bottles, HDPE bottles, drink cartons and single-use paper based cups	This example scheme would have 2,009 return points placed within a set distance of any shop selling drinks in containers, some of which would be expected to be in shops. It is envisaged that the return process would be automated.
Example 3: Take back to any place of purchase	PET bottles, steel and aluminium cans, and glass bottles	This example scheme would require any retailer that sells drinks in disposable containers to act as a return location, providing a deposit return service for all DRS containers. There are around 17,400 retailers across Scotland. It is envisaged that there would be a combination of automatic and manual returns.
Example 4: Take back to any place of purchase (with cartons and cups)	PET bottles, steel and aluminium cans, glass bottles, HDPE bottles, drink cartons and single-use paper based cups	The means of collection for this example scheme would be similar to example 3, but would cover a wider range of materials.

1.1.6 Extensive modelling was completed to support analysis of these example schemes. The results, and supporting assessments were issued for a three-month public consultation.

1.1.7 Taking into account the consultation responses and further modelling and analysis, the Scottish Government has identified a preferred option which it is now taking forward. This will be a 'return to retail' model, focussed on the collection of PET bottles, steel and aluminium cans and glass bottles, with a deposit of 20p per container, and requiring full cost recovery from producers.

1.1.8 The DRS was screened against the requirements of the Environmental Assessment (Scotland) Act 2005 and it was identified that, as it is likely to have significant environmental effects, a Strategic Environmental Assessment (SEA) was required. The SEA was carried out to assess the likely significant environmental effects of the example schemes and to identify ways in which adverse effects could be avoided, minimised or mitigated. The SEA also explored how any positive effects could be enhanced. The findings were presented in an Environmental Report² (ER).

² [The Scottish Government \(2018\) A Deposit Return Scheme for Scotland: Strategic Environmental Assessment](#)

1.2 Consultation

- 1.2.1 The SEA was undertaken to both inform the decision-making process in the development of the DRS and to engage with the statutory consultees³ and other stakeholders and interested parties via the statutory public consultation process set out in the 2005 Act.
- 1.2.2 Consultation with the statutory consultees was undertaken on the proposed scope of SEA for a five-week period concluding 1st May 2018. Each consultee was provided with the DRS SEA Screening and Scoping Report⁴; issued by Zero Waste Scotland, and comments were invited. Consultation responses were received from all three statutory consultees.
- 1.2.3 A public consultation was held from 27 June 2018 to 25 September 2018⁵, to obtain the opinion of public individuals and organisations on the proposed scheme, the design of any DRS and the options considered and the possible impacts of such a scheme. Views were obtained through the completion of a questionnaire (which was also embedded within the DRS consultation document⁶). The consultation documentation also included the Environmental Report along with a Partial Business Regulatory Impact Assessment, a Scottish Firms Impact Test, an Equality Impact Assessment, a Strategic Outline Case and an Outline Business Case.
- 1.2.4 The public consultation process revealed strong support for a Scottish DRS, and a firm belief that it will support Scotland's wider environmental and climate change objectives. A common concern expressed by respondents was that the DRS be designed to ensure maximum participation and accessibility as this is required to achieve the greatest possible material capture rates, and environmental benefits. This point is confirmed by modelling work, has been considered throughout the scheme design process, and is reflected in the preferred DRS option. **Table 1.2** details the timeline of the SEA consultation documents for the DRS.

Table 1.2 Consultation stages and timeline for the DRS SEA

Stage	Date of Publication/Period
Scoping Report	27th March 2018 to 1st May 2018
Environmental Report	27th June 2018 to 25th September 2018
Consultation period	27th June 2018 to 25th September 2018
Publication of preferred DRS	8th May 2019

³ Section 3 of the Environmental Assessment (Scotland) Act 2005 defines the consultation authorities as Scottish Environmental Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Scotland (HS)

⁴ Zero Waste Scotland (2018). *DRS SEA Screening and Scoping Report*

⁵ [Scottish Government DRS consultation analysis](#)

⁶ [The Scottish Government \(2018\), A Deposit Return Scheme for Scotland](#)

1.3 Purpose of this Post Adoption Statement

- 1.3.1 In accordance with Section 17 of the 2005 Act, the Scottish Government has taken into account findings of the Environmental Report and the consultation responses to the report in coming to its decision on the preferred option for the DRS.
- 1.3.2 Section 18 of the 2005 Act requires that when a plan or programme is adopted (in this case, the DRS), the consultation bodies and the public are informed and the following specific information is made available:
- the plan as adopted;
 - a statement summarising:
 - (i) how environmental considerations have been integrated into the DRS (Section 18(3)a of the 2005 Act);
 - (ii) how the Environmental Report has been taken into account (Section 18(3)b);
 - (iii) how consultees opinions have been taken into account (Section 18(3)c and d);
 - (iv) the reasons for choosing the DRS, as adopted, in the light of the other reasonable alternatives considered; and
 - (v) the measures to be used to monitor the significant environmental effects of the implementation of the DRS (Section 18(3)e).
- 1.3.3 The purpose of this Post Adoption Statement is to provide the specific information outlined under each of the points listed (i) to (v) above and which is presented in the following sections of this statement.

2. How environmental considerations have been integrated into the DRS

2.1 Environmental considerations in the DRS

2.1.1 The design, development and implementation of DRS has been led by environmental considerations, reflecting key Scottish Government commitments and ambitions:

- To contribute to meeting the recycling target of ensuring 70% of all waste is recycled by 2025, as set out in the *Zero Waste Plan*⁷. The target forms part of a wider strategy to make the most of resources and to reduce, reuse and recycle more materials in Scotland.
- To embed circular economy principles into the design of packaging materials for reuse, recycling and recovery in partnership with packaging industries, as part of the transformation led by the Scottish Government's *Making Things Last – A Circular Economy Strategy*⁸ and the *Safeguarding Scotland's Resources: Blueprint for a more Resource Efficient and Circular Economy (SSR)*⁹.
- To enable the public to adopt alternative behaviours to waste management, through access to improved recycling opportunities, awareness campaigns and targeted efforts to tackle littering in both terrestrial and marine environments (consistent with the Scottish Government's *Towards a Litter Free Scotland: A strategic Approach to Higher Quality Local Environments*¹⁰ and its *A Marine Litter Strategy for Scotland*¹¹).

2.1.2 The work has been guided by four investment objectives that a DRS should:

- increase the quantity of target materials captured for recycling;
- improve the quality of material captured, to allow for higher value recycling;
- encourage wider behaviour change in the use of materials;
- deliver maximum economic and societal benefit for Scotland.

2.1.3 In terms of increasing the quantity and quality of materials, the introduction of a DRS offers the chance to embed a step change in recycling performance. DRS in Europe are achieving capture rates¹² of up to 95% for best performing target materials compared with around 60% in Scotland. The preferred option has been modelled to achieve a capture rate of 90% for the target materials.

⁷ [The Scottish Government \(2010\) *Scotland's Zero Waste Plan*](#)

⁸ [The Scottish Government \(2016\) *Making Things Last – A Circular Economy Strategy for Scotland*](#)

⁹ [The Scottish Government \(2012\) *Safeguarding Scotland's Resources - A Programme for the Efficient Use of Our Materials*](#)

¹⁰ [The Scottish Government \(2014\) *Towards a Litter Free Scotland: A Strategic Approach to Higher Quality Local Environments*](#)

¹¹ [The Scottish government \(2014\) *A Marine Litter Strategy for Scotland*](#)

¹² Capture Rates: The percentage of materials that is anticipated to be obtained into the example systems

- 2.1.4 Drinks containers form a highly visible part of the litter stream and by attaching a value to these items, in the form of a deposit, the Scottish Government aim to encourage people who may not dispose of their cans and bottles correctly to return them for recycling. Where DRS have been implemented in other countries, and where data is available, DRS has been identified as making an effective contribution to the reduction in littering^{13, 14}. In light of these studies and subsequent modelling, the operation of all the example schemes in Scotland have been identified as having a substantial effect on litter reduction, with the fall in littered target items expected to match the scheme capture rate.
- 2.1.5 The operation of DRS will divert material to recycling from disposal by landfill and incineration and will have associated carbon emission savings. The preferred option will save an estimated 4,038 ktCO₂eq between 2021 and 2046¹⁵ and therefore represents an optimum environmental outcome taking account of technical practicalities in establishing and operating a successful scheme.

2.2 Environmental considerations through the SEA

- 2.2.1 The SEA has played an integral role in highlighting the environmental factors to be considered in the development of the DRS.
- 2.2.2 Initially, the 12 topics¹⁶ covered by Schedule 3 (6) of the 2005 Act were reviewed, with relevant topics scoped into the assessment (subject to the outcome of scoping consultation). **Table 2.1** details the topics included in the SEA (and the reasoning).

Table 2.1 SEA topics scoped into the SEA

SEA Topic	Justification
Material Assets	The key components and objectives of the DRS are aimed primarily at improving recovery and recycling of selected single-use drink containers in preference to the use of virgin materials. In consequence, material assets which was scoped into this SEA.
Climatic Factors	The recovery and recycling of collected materials in preference to the use of virgin materials will have significant effects on the embodied carbon associated with the lifecycle of the single-use containers. In consequence, climatic factors were scoped into the SEA.
Landscape and visual impacts	The key components and objectives of the DRS are aimed primarily at improving recycling quality and quantity for select single-use drink containers and reducing litter of those materials in both terrestrial and marine environments. In consequence, landscape and visual impacts were scoped into the SEA.
Biodiversity, Flora and Fauna	The key components and objectives of the DRS are aimed primarily at improving recycling quality and quantity for select single-use drink containers and reducing litter of those materials in both terrestrial and marine environments. In consequence, given the potential effects on terrestrial and marine ecosystems, statutory consultees requested that this topic be scoped into the SEA.

¹³ [European Commission \(2013\) Marine Litter study to support the establishment of an initial quantitative headline reduction target.](#)

¹⁴ [Ghent University \(2016\) Deposit-refund schemes for one-way drink packaging.](#)

¹⁵ The 25 year timeframe was revised for the preferred option to reflect the assumed first full year of operation.

¹⁶ The topics are: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage, including architectural and archaeological heritage; landscape; and the inter-relationship between them.

- 2.2.3 Consistent with the requirements of Schedule 3 (1) and (5) of the 2005 Act, the SEA identified and reviewed other relevant Plans, Programmes and Strategies (PPS) which could influence the development and objectives of the DRS. These included PPS at an international/European, national, regional or local level, commensurate with the scope of the DRS. The review identified the relationships between the DRS and these other documents i.e. how the DRS could be affected by the other plans' and programmes' aims, objectives and/or targets, or how it could contribute to the achievement of their environmental and sustainability objectives.
- 2.2.4 For each SEA topic, baseline information was also provided for current actors which could be impacted by introduction of the DRS. The baseline provided information against which key metrics for the DRS (such as tonnes of material recycled and carbon emissions) were assessed to determine the impact of the DRS throughout its operation. The evolution of this baseline was taken to be the Business as Usual (BAU) option. Each example DRS was assessed against this BAU baseline to determine the impact, positive or negative, that each example scheme could deliver.
- 2.2.5 An assessment of each example scheme was undertaken in relation to the four SEA topics: material assets, climatic factors, landscape and visual impacts and biodiversity. The assessment adopted a two-tier approach. The **primary tier** explored the potential for significant, primary environmental effects within the SEA scoped in topic. The **secondary tier** explored the indirect or secondary effects associated with the adoption of the DRS. The activities associated with each example scheme were examined to identify, describe and evaluate (where possible) the likely significant effects that could arise drawing on the following to inform the assessment:
- consultation with statutory consultees and other stakeholders;
 - the contextual information including a review of PPS, the regulatory framework and baseline;
 - the nature of the potential effect (what is expected to happen);
 - the timing and duration of the potential effect (e.g. short, medium or long term);
 - the geographic scale of the potential effect (e.g. local, regional, national);
 - the location of the potential effect (e.g. rural or urban communities);
 - the potential effect on vulnerable communities or sensitive habitats;
 - the reasons for whether the effect is considered significant;
 - the reasons for any uncertainty, where this is identified; and
 - the potential to avoid, minimise, reduce, mitigate or compensate for the identified effect(s) with evidence (where available).

3. How the Environmental Report has been taken into account

- 3.1.1 A DRS should achieve a sustained behavioural change across Scottish society leading to an increase in recycling rates, a potential reduction in demand for virgin material, potential carbon savings and potential reduction in littering. In consequence, subject to exact design and successful uptake by consumers, it has potential to provide environmental benefits across:
- material assets (and in particular the increased recycling of plastics, glass, aluminium and steel);
 - climatic factors and carbon and total greenhouse gas emissions;
 - landscape; and
 - biodiversity.
- 3.1.2 The assessment of the four example schemes presented in the Environmental Report has identified opportunities to mitigate potential negative effects and enhance positive effects associated with their implementation. Following assessment of the example schemes, it is recommended that any chosen DRS exhibits the following characteristics:
- **Materials:** that the DRS accepts the widest practical range of materials to support Scottish Governments recycling targets whilst embedding a culture of recycling.
 - **Return Points:** that the DRS offers return to point of purchase points to maximise convenience to service users, maximise capture rates of materials and minimise the impacts of unnecessary travel.
 - **Scheme Performance:** that the service be a truly national service in order to both maximise performance outcomes and allow ease of participation in both urban and rural settings.
 - **Additional Benefits:** that the DRS captured material is, where possible, reprocessed *within* Scotland and not exported abroad for reprocessing – with consequent increases in greenhouse gas emissions.
 - **Consumer Information/ Fraud Prevention:** that a Scottish consumer information scheme be implemented to help prevent non-target materials entering the DRS (contamination) and to prevent target materials originating outwith Scotland entering the DRS (fraud).
 - **Infrastructure and Logistics:** that existing infrastructure and services should be utilised where practical, to minimise the environmental impact of implementing a DRS.
- 3.1.3 The preferred option, chosen by the Scottish Government, will be a ‘return to retail’ model, focussed on the collection of PET bottles, steel and aluminium cans and

glass bottles, with a deposit of 20p per container, and requiring cost recovery¹⁷ from producers. It seeks to maximise the collection of material, noting that cartons, cups and HDPE are not included within the preferred option. Performance targets and the full cost recovery framework of the scheme will create permanent and consistent incentives to monitor and maximise performance and minimise instances of fraud. Clear consumer information will give consumers a clear understanding of how the scheme operates, while the national, 'return to retail' model will maximise customer convenience and ensure both urban and rural communities throughout Scotland can participate

3.1.4 Proposed mitigation measures of relevance to all example schemes identified in the Environmental Report are summarised in **Table 3.1**.

Table 3.1 Mitigation of environmental effects

Environmental Effect	Proposed mitigation effort
Effects upon landscape through any construction of DRS related infrastructure – counting centre, etc.	<p>Existing infrastructure (such as suitable located buildings and/or Household Waste Recycling Centres) should be utilised to minimise the need for constructing new facilities.</p> <p>If new facilities/infrastructure are required, in order to minimise the effects, the following should be key considerations:</p> <ul style="list-style-type: none"> • Location (with particular consideration to how rural and isolated communities will be served); • For facilities to be located in urban areas, seek to locate the facilities on sites with: <ul style="list-style-type: none"> • Compatible adjacent land uses; • Previously developed land; • Good accessible locations, providing easy access throughout the day and at weekends; • No evidence of poor air quality; • Minimum, non-intrusive footprint of any external return points; • No environmental constraints (such as being an area of high flood risk, or designated assets or features (such as wildlife sites, cultural heritage sites, listed buildings or water bodies)). • Design of the infrastructure, seeking to maximise the use of recycled materials and the highest practicable environmental performance standards.
Effects (including greenhouse gas emissions) from the potential for increased vehicle movements from consumers, retailers and reprocessors	<p>Dedicated take back points and/or counting centres should be carefully located to minimise vehicle movements both within built up areas and to minimise carbon emissions in operating the DRS. Integration or co-operation between retail supply chains and resource management supply chains would seem beneficial. Take back points should seek to utilise retail distribution centres that are closely aligned with recycling transfer stations or logistics networks.</p> <p>Organisations should look to optimise and utilise existing logistics services, and recycling and waste management options, in light of changes as a result of, or interactions with the DRS. For example, retailers should explore the opportunity to utilise back-hauling or reverse logistics when taking collected materials to bulking centres or counting centres. This will help minimise the greenhouse gas</p>

¹⁷ The administrative costs of the scheme will be funded by producers – this will incentivise them to maximise performance of the scheme, as the more it costs to run, the more it will cost producers.

Environmental Effect	Proposed mitigation effort
	emissions from operating the scheme. Local authorities might see specific opportunities to optimise recycling and waste management frequencies and routes, which could reduce greenhouse gas emissions associated with these activities.
Increased carbon emissions relative to BAU from exporting any materials abroad for reprocessing leading to a loss of valuable materials for Scotland's reprocessors and manufacturers.	DRS will improve the value and utility of target materials collected compared to BAU however, further work should explore the existing capacity of reprocessors in Scotland to manage the materials targeted within this example scheme.

3.1.5 In refining and developing the preferred option, where relevant, the Scottish Government will take into account the above proposed mitigation measures.

4. How opinions expressed on the consultation have been taken into account

4.1 Overview

4.1.1 Consultation lies at the heart of any meaningful assessment or appraisal process and is based on the key principle that plan and programme making is better where it is transparent, inclusive and uses information that has been subject to public scrutiny. In this context Zero Waste Scotland, at the direction of the Scottish Government, has sought to ensure that those with an interest in, or who are affected by, the DRS should have the opportunity to present their views on the consultation documentation.

4.2 Public Consultation

4.2.1 Public consultation was held, from 27 June 2018 to 25 September 2018¹⁸ to obtain the opinion of individuals and organisations on the proposed scheme, the design of any DRS and the options considered and the possible impacts of such a scheme. Views were obtained through the completion of a 54 question questionnaire (which was also embedded within the DRS consultation document¹⁹). The consultation documentation also included the Environmental Report along with a Partial Business Regulatory Impact Assessment, a Scottish Firms Impact Test, an Equality Impact Assessment, a Strategic Outline Case and an Outline Business Case.

4.2.2 A detailed analysis and response to the completed public consultation on DRS was published by Scottish Government in a separate document (21 February 2019). This section of the PAS addresses those elements of the public consultation which specifically pertain to environmental issues.

4.3 Consultation on the Environmental Report

4.3.1 The Environmental Report was published to accompany the public consultation documentation on DRS. To direct consultee responses, the Environmental Report included five questions concerning baseline information presented, the assessment findings, proposals for mitigation and for monitoring.

4.3.2 Consultation responses to the Environmental Report were received from the three statutory consultees (SEPA, SNH and HES):

- SEPA stated that it was “*content with the adequacy and accuracy of the ER. With regard to the topics within our remit we welcome the clarity with which the potential effects of all the alternatives have been presented in the ER, together with mitigation measures and discussion of interrelated effects with potential*

¹⁸ [The Scottish Government \(2018\), DRS consultation feedback](#)

¹⁹ [The Scottish Government \(2018\), A Deposit Return Scheme for Scotland](#)

changes in other policy areas which may occur over the lifetime of the scheme.”

- SNH stated that it *“agrees with the conclusion of the Environmental Report. We welcome the amendments made to the assessment which address our concerns as set out in the scoping report. Firstly, we note that Biodiversity, Fauna and Flora has been scoped into the assessment. We are also content with the updated overview of the relevant plans, programmes and strategies (PPS).”* SNH also highlighted a number of instances where it was important to ensure consistency between the detailed assessment and its summary.
- HES stated that they *“agree with the findings of the assessment in relation to the historic environment.”*

4.3.3 In addition, responses to the public consultation document were analysed for content relevant to the SEA. A total of 714 responses to individual questions were identified.

4.3.4 Approximately 90% of responses were from individuals, with the remainder from organisations, including:

- public sector organisations;
- food and drink producers;
- environmental, conservation, food and health charities;
- recycling and waste management organisations;
- packaging manufacturers;
- environmental consultancies;

4.3.5 The main **opportunities** identified by respondents are summarised as follows:

- 96%²⁰ of respondents who referenced litter expect that the DRS will have a positive impact upon litter;
- 92% of respondents who referenced biodiversity expect a positive impact upon biodiversity;
- 90% of respondents who referenced landscape and townscape expect a positive impact upon landscape and townscape;
- 74% of respondents who referenced climate change expect that a DRS will provide a positive impact upon Scotland’s efforts toward mitigating climate change;
- 82.5% of respondents who referenced the quality of materials collected expect that the DRS will provide better quality materials;
- 9% of respondents who provided SEA related comments believe a DRS will provide opportunities for Scotland to showcase the achievements of a DRS and our wider environmental efforts;

²⁰ Any percentage figures shown refer to respondents who specifically addressed the SEA topic, and so should not be viewed as a percentage of the total number of responses received.

- 8% of respondents who provided SEA related comments stated that a DRS will provide an opportunity to develop greater awareness of waste and environmental issues in Scotland;
- 4% of respondents who provided SEA related comments expect that a DRS will catalyse investment and improvement in reprocessing equipment to provide high quality materials;
- 3% of respondents who referenced packaging believe that the DRS will provide an opportunity to develop innovative, sustainable solutions;
- 3% of respondents referenced the circular economy and believe the DRS will be an excellent opportunity to support Scotland's efforts to instil a circular economy.

4.3.6 The main **risks** of concern which could jeopardise a DRS, by number of respondents, were:

- 11% of respondents who provided SEA related comments expressed concern that low participation in the scheme could risk jeopardising the DRS;
- 11% of respondents who provided SEA related comments highlighted that limited accessibility to facilities could risk the success of the DRS.

4.3.7 The main **recommendations** proposed by respondents include:

- 21% of respondents who provided recommendations relevant to the SEA suggest that educating users on how to use the DRS, and highlighting the benefits of the DRS, could maximise opportunities;
- 11% of respondents who provided recommendations relevant to the SEA suggest that the operator should ensure easy access / ease of use to maximise opportunities;
- 8% of respondents who provided recommendations relevant to the SEA suggest that the DRS should be a UK wide initiative;
- 7% of respondents who provided recommendations relevant to the SEA suggest enforcement practices such as fines, laws etc. should be introduced for public and/or organisations to ensure participation in the DRS;
- 4% of respondents who provided recommendations relevant to the SEA suggest that any DRS operator should work with local authorities to utilise available fleet, staff and infrastructure.

Responding to the Consultation

4.3.8 The high number of responses to the DRS consultation is welcomed by the Scottish Government. It is evident that DRS is a topic that has attracted considerable public interest and that overall, the majority of respondents appear to view a DRS as offering a positive opportunity for Scotland's environment. In particular, a high proportion of respondents identified a DRS as having positive effects on litter, material quality, waste targets, biodiversity, landscape and climate change. This corroborates other assessments and extensive modelling work undertaken.

4.3.9 The SEA consultation process confirmed that maximising participation in, and accessibility to, the DRS system will be critical to ensuring the greatest possible material capture rate and associated environmental benefits. The issue of ensuring participation and accessibility have been taken into account in developing the preferred option, as summarised in **Table 4.1**.

Table 4.1 Mitigating Risk to Scheme Performance

Risk	Proposed mitigation effort
Low Participation	<ul style="list-style-type: none"> • The risk of low participation will be mitigated by ensuring the system is convenient to use (adopting a return to retail model with national coverage) and has a sufficiently compelling deposit level; both of which are associated with higher performing schemes elsewhere. • Consumer communications will also enhance understanding of how to use the system, particularly at launch, and a further advantage of a return to retail model is that it is highly visible for consumers both in terms of communicating recycling messages and visibly demonstrating participation by fellow citizens.
Accessibility	<ul style="list-style-type: none"> • Accessibility concerns will be mitigated by ensuring convenience for users through the adoption of a return to retail model with national coverage. This model will include on-line retailers. • They will be addressed by considering placement of return points to minimise access issues, for example by avoiding steps at access points or ensuring automated return points have apertures at suitable heights.

4.3.10 Respondents to the consultation made a series of recommendations. The Scottish Government has chosen a DRS model that aligns with these recommendations. Adopting a return to retail model with national coverage and an appropriate deposit level, covering a range of materials and supported by consumer information, will ensure recommendations made in terms of scheme information, access, coverage and regulation are addressed. This is also detailed in **Section 5.1**.

5. The reasons for choosing the preferred DRS option, in the light of the other reasonable alternatives dealt with

The selection of the preferred DRS option reflects the evidence gathered, the assessments undertaken, the results of modelling and the consultation findings. The development of the final DRS design option is in full compliance with the HM Treasury Five Case Model and Impact Assessment²¹. The rationale for its selection is presented in the Full Business Case.

5.1 Reasons for choosing the preferred DRS option

- 5.1.1 The final design of the DRS has been selected to balance environmental benefits with commercial viability – and technical practicalities. Features of the selected DRS model include:
- a focus on the collection of PET bottles, steel and aluminium cans and glass bottles;
 - return to retail for convenience;
 - 20p deposit to incentivise participation;
 - an obligation on producers to fund the scheme thus encouraging continuous monitoring and operational improvement;
 - national coverage (both urban and rural).
- 5.1.2 A comprehensive suite of modelling, undertaken by Zero Waste Scotland, shows that the preferred DRS option could deliver an increased capture of the target materials of over 90%. The preferred DRS option will lead to a significant reduction in littering rates of collected materials and will also reduce carbon emissions. This is documented in the Full Business Case Stage 1.
- 5.1.3 Zero Waste Scotland has engaged extensively with DRS operators and regulators across the world. Feedback from systems overseas, and experience at site specific schemes in the UK, show that material quality for targeted materials is very high compared to other collections methods. Although this evidence is qualitative rather than quantitative, no counter-examples have been identified at any point in the research.
- 5.1.4 The Scottish Government has undertaken extensive public consultation on the DRS, with the majority of respondents identifying that a DRS offers a positive opportunity for Scotland's environment. Two risks (low participation and accessibility) were highlighted by respondents, who considered that either could affect the performance of a DRS. The design of the preferred DRS has taken these concerns into account and they will be mitigated by adopting a return to

²¹ [HM Treasury \(2018\). *The Green Book: Central Government Guidance on Appraisal and Evaluation*.](#)

retail model that is national in scope and local in availability, provides an attractive deposit level, and can be integrated into consumer habits.

5.1.5 The selected DRS model also aligns with the recommendations raised by respondents:

- **ensure consumer awareness:** a comprehensive campaign of consumer information will be provided in advance of the scheme launch (and for the duration of its operation) to help and inform consumers and support sustained use of the scheme;
- **ensure ease of access/ease of use:** a return to retail model has been selected in preference to a scheme that requires material being returned to dedicated sites in order to ensure that the DRS is national in scope and local in availability, with return points sited to maximise convenience to users;
- **ensure national coverage:** adopting the return to retail model provides a wide range of locations across Scotland (both urban and rural) where target materials can be returned. Principles for co-operation on DRS have also been agreed with other governments²²;
- **ensure it pays:** the DRS provides a financial incentive to return target material, and a financial penalty should customers choose not to;
- **ensure it is regulated:** the DRS will be implemented by regulation and supported by a monitoring and evaluation framework;
- **ensure local authority involvement:** the development of the DRS has involved engagement with a variety of sectors including local government and the Scottish Government will expect the scheme administrator to work collaboratively with local authorities to realise benefits where possible.

5.1.6 While HDPE, single use cups and beverage cartons also contribute to the four objectives of the DRS there were specific concerns identified in the Outline Business Case (OBC) and public consultation that have resulted in their exclusion. For all three materials, the Full Business Case Stage 1 identified that there were no national schemes that used a primarily automated (RVM) collection approach which included these three materials. Furthermore, the results of the wider consultation and stakeholder engagement process show that the commercial risks of capturing drinks cartons /cups would outweigh the benefits.

5.1.7 In addition, the January 2019 Scottish Budget announcement signalled support in principle for the use of charging and other measures to reduce the use of single-use disposable cups.

5.1.8 HDPE is primarily used for dairy products and there was the lowest support (53%) for including this in the scheme. Concerns primarily centred around perceived hygiene risks which could impact on participation in the scheme. As it is primarily used for dairy products there is limited potential for market distortion by excluding HDPE. In addition, cartons are primarily used in dairy, dairy alternatives and fresh

²² [Scottish Government, Welsh Government, UK Government and the Northern Ireland Executive \(2018\). Principles for co-operation on deposit return, as agreed by Ministers from the UK, Welsh and Scottish Governments and representatives of the Northern Ireland Executive at the Deposit Return Scheme Summit on 5 July 2018.](#)

juice categories, so again there is limited scope for market distortion especially when combined with excluding HDPE.

5.2 Reasons for the rejection of reasonable alternatives

- 5.2.1 The preferred DRS option has been identified as the optimal configuration of component features, maximising environmental benefit while balancing technical limitations and economic considerations.
- 5.2.2 Conversely, while many reasonable alternative configurations of the twelve DRS components were shown to produce environmental benefits, none were found to achieve a superior balance of outcomes, and therefore were rejected. For a full account explaining how the preferred DRS Option was developed, refer to the Full Business Case.

6. The measures decided concerning monitoring

- 6.1.1 Section 19 of the 2005 Act requires the responsible authority to monitor significant environmental effects of the implementation of the Plan. The responsible authority will be the Scottish Government.
- 6.1.2 It is not necessary to monitor everything or monitor an effect indefinitely. Instead, as noted in the SEA guidance²³, it is “practical to make a clear link between the significant effects predicted within an assessment and the indicators selected to monitor the likely environmental effects”.
- 6.1.3 The Environmental Report identified a number of significant positive effects for the DRS example scheme 3, which are relevant to the preferred option of the DRS:
- The preferred option is anticipated to yield a national recycling rate for the target items in excess of 90%, which offers a strong opportunity to contribute toward Scottish waste and environmental objectives.
 - The preferred option assumes the volume of targeted items littered will fall in relation to the capture rate (i.e. a 90% reduction). However, research indicates that littering is a complex behavior and in certain contexts, an area which is already littered may be prone to further littering (of non-targeted materials), such as on beaches and in dense urban areas.
 - The preferred option could have cumulative significant positive effects on biodiversity, particularly in respect of those sites protected for their importance to wild birds and marine habitats which are particularly vulnerable to the effects of litter.
- 6.1.4 The preferred scheme is modelled to contribute a cumulative reduction in greenhouse gas emissions of 4,038ktCO₂eq between 2021 and 2046 from the diversion of waste from landfill and incineration.
- 6.1.5 Monitoring of these aspects can help to answer questions such as:
- Were the Environmental Report assessments of effects accurate?
 - Is the DRS contributing to the achievement of the Scottish Government objectives?
 - Are mitigation measures performing as well as expected?
 - Are there any unforeseen adverse effects? Are these within acceptable limits, or is remedial action desirable?
- 6.1.6 For the four topics considered, monitoring will focus on the indicators and sources of information set out in **Table 6.1**.

²³ Scottish Government (2013) *Strategic Environmental Assessment Guidance*.

Table 6.1 Adopted Monitoring Measures

Topic Area	Indicator(s)	Possible Source(s) of Information
Material Assets	Annual (where information allows) trends in: <ul style="list-style-type: none"> • volume of DRS collected waste (PET, metals and glass), capture rate and recycling rate. 	Scottish Government DRS Scheme Administrator SEPA waste data
Climatic Factors	Annual (where information allows) trends in: <ul style="list-style-type: none"> • emissions of greenhouse gases associated with diversion of DRS collected waste from landfill and incineration; • the carbon metric for target materials. 	Scottish Government SEPA Scottish Environment Statistics (Scottish Government)
Landscape and Visual Impacts	Annual trends in: <ul style="list-style-type: none"> • Capture rate, assuming that an increase in capture rate will have an equal reduction in the number of littered containers. 	DRS Scheme Administrator SEPA Waste Data
Biodiversity and Nature Conservation	Annual (where information allows) trends in: <ul style="list-style-type: none"> • condition of designated sites (terrestrial and marine) which have been affected by littering; • land take for DRS operations. 	Joint Nature Conservation Committee Scottish Natural Heritage DRS Scheme Administrator

6.1.7 The Scottish Government will implement these measures as part of a monitoring framework for the DRS that will include reference to a roadmap of actions and progress indicators.



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This publication is available at www.gov.scot

Any enquiries regarding this publication should be sent to us at
The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

ISBN: 978-1-83960-004-3 (web only)

Published by The Scottish Government, July 2019

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA
PPDAS603850 (07/19)

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